Mapping of VET graduate tracking measures in EU Member States

Final Report

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Abstract

The systematic review and renewal of Vocational Education and Training (VET) is crucial to ensuring its continued quality and labour-market relevance. A better understanding of the performance of VET graduates in the labour market is one of the key sources for assessing and improving the quality and labour market relevance of VET, alongside forecasts of skills supply and demand. VET graduate tracking measures can provide this information to stakeholders. This study of such measures currently used in Member States finds that some countries do not have measures, others do not have regular measures and that many measures use either administrative data or survey data. Survey data often relies on convenience samples and small sample sizes which limit their use. There are good examples of measures which combine data and track cohorts of VET graduates over several years to measure educational and employment outcomes. The Commission could provide support or incentives to the creation or further development of good quality measures at national, regional or provider level.

Executive summary

The systematic review and renewal of Vocational Education and Training (VET) is crucial to ensuring its continued quality and labour-market relevance. A better understanding of the performance of VET graduates in the labour market is one of the key sources for assessing and improving the quality and labour market relevance of VET, alongside forecasts of skills supply and demand.

This study has four specific objectives:

- Objective 1: Mapping of VET graduate tracking measures used at system level accompanied by illustrative examples at provider level;
- Objective 2: Analysis of graduate VET tracking measures and development of their typology;
- Objective 3: Identification of strengths and weaknesses of these measures and definition of recommendations for issues to be improved at Member State and EU levels;
- Objective 4: Review of options for EU activities in this field to improve data collection systems both at national and EU level.

Study approach

The study methodology involved two processes, the mapping and description of VET graduate tracking measures at EU and Member State level, and the development of scenarios for EU-level actions in the field.

The mapping of VET graduate tracking measures in EU Member States and a review of EU-level initiatives related to graduate tracking included expert consultation (seven experts involved in the development of EU-level initiatives related to graduate tracking or to data collection in the field of VET).

The mapping and description of measures in EU Member States was conducted in two waves:

1. A mapping of measures in all EU Member States mainly based on desk research. When the information found through this means was scarce, country researchers contacted national authorities or training providers via e-mail or phone. This identified 84 measures.
2. An in-depth review of 31 of the tracking measures. This review was based on desk research and semi-structured interviews. A total of 46 interviews was conducted as part of this exercise.

The development of scenarios for EU-level action built on the information collected through the scoping interviews, the interviews conducted as part of the in-depth review, and a Delphi survey.

The objectives of the Delphi survey were:

- To develop possible alternatives for EU intervention in VET graduate tracking.
- To explore the underlying reasons for views on the different alternatives.

There were two rounds of surveys of experts. The first had 23 respondents; the second 22.

Results of the mapping

Member States

In total, 24 EU Member States have VET graduate tracking measures, of which 19 have national measures. Only four countries do not currently have any VET graduate tracking measure (BG, CY, EL and LV), of which BG are developing a measure and LV has recently piloted a set of provider-level surveys.

In 19 countries the study identified *regular* VET graduate tracking measures, of which:

- 8 countries had measures that covered IVET and CVET (AT, DE, DK, FI, FR, IE, NL and UK)
- 17 countries have measures that included both employment and education indicators (AT, BE, CZ, DE, DK, EE, ES, FI, HU, IE, IT, LU, MT, NL, PT, SE and UK)

In two countries (FR, SK), measures only cover employment results and do not also refer to indicators related to education and training. In one case (BE), the regular measure that refers to education and training related indicators does not include results related to the progression to further education and training.

Of the 85 measures identified, 59 used surveys and 35 used Administrative learning and employment data (such as social security and tax data). Nine measures in six countries (DE, EE, IE, NL, SE and UK) use administrative and survey data.

The robustness of the data collected varies. Of the 85 VET tracking measures analysed, 44 have measures which cover the whole reference population, while the others use samples. From those using samples, 19 use convenient sampling, which limits the generalization of results to the full reference population. In the in-depth review, comparator groups were used in only a third of measures.

Longitudinal measures are rarely implemented. Only one country currently has such measures in place. Moreover, nine countries collect information on graduate results up to one year after completing their studies, but not later. This limits the analysis of graduates' labour market integration as this is likely to happen in the longer term.

The in-depth review (covering 31 measures) has shown that some measures track both VET graduates and drop-outs (8 measures) and around a third (10) cover graduates who have migrated to other countries or regions.

VET graduate tracking data appears to be used differently across Member States. For instance, from the measures reviewed in depth, some appear to systematically feed data into policy making (e.g. to plan VET offer, inform quality assurance processes) while others are likely to have more informal arrangements. Moreover, a few, but not all, use VET graduate tracking data to provide prospective students information on career prospects or progression.

EU-level interventions related to graduate tracking

There are currently no EU-level VET graduate tracking measures. Some one-off tracking measures were developed in the past, most focused on higher education graduates (CHEERS, REFLEX, HEGESCO).

One EU-level study examined the scope to compare national tracking measures of secondary education – including VET graduates (CATEWE). This study concluded that there is limited scope for EU-level comparisons due to the different purposes, design

and content of national surveys. The study proposed a strategy for 'partial harmonisation' based on a preliminary set of criteria to which surveys could be encouraged to converge, as well as a new European-wide survey.

While no European-wide VET graduate survey has been developed, there are EU-level surveys designed for other purposes that could enable the measurement of graduates' progression into the labour market. In particular, the LSF, SILC, AES and PIAAC could potentially be useful to track VET graduates as they all differentiate between general and vocational education. Also, the SILC and the LFS collect some longitudinal data which could be used for tracking VET graduates.

The LFS and its 2009 ad hoc module 'Entry of young people into the labour market' and the PIAAC survey have already been used in the analysis of the outcomes of VET graduates. However, the analyses conducted to date were mainly cross-sectional (contain information from a specific point in time). Only the LFS and the SILC include longitudinal components. Additionally, the longitudinal subsamples used are unlikely to be representative of the different attainment levels and orientation of VET graduates, and probably do not include a sufficient sample of VET graduates to allow for analyses of their employment outcomes.

Beyond surveys, there are ongoing initiatives which aim at improving the quality of tracking systems –including in VET- at EU and international level (the 2016 study 'Carrying out tracer studies', the activities of the INGRADNET network). The 2017 Council Recommendation on tracking graduates includes a recommendation for the Commission to improve the availability of qualitative and quantitative information about what graduates from tertiary education and VET in Europe do after they complete their education and training.

A typology of measures

Eight types can be distinguished. The greatest number of VET graduate measures can be classified either as **Type 4** (these 19 measures collect **precise/discrete data at multiple measurement points for the total reference population**) or as **Type 1** (these 18 measures collect **precise/discrete data at single measurement points for a sample of the total reference population**). The third biggest group includes measures classified as Type 3 (these 15 measures collect **precise/discrete data at single measurement points for the total reference population**)

Table I: Categorisation of VET graduate tracking measures

Dimension 1. Type of data	**Dimension 2. Representation of the population**		**Dimension 3. Measurement strategy / tracking methods**			
			Single measurement point		***Multiple measurement points***	
Discrete information on the educational activities, qualifications achieved, and employment subsequent to graduation (single programme/cohort and year) (65)	Sample (29)	Admin data	MT2	1	DE3	1
		Survey	AT2, AT4, AT5, BE-fr2, DE4, DE5, DE7, FR1, IT1, IT2, IT3, IT4, MT1, MT3, NL5, NL6	16	DE2, HU1, IE1, FR2, FR3, FR4 PL2*, PT1	8
		Admin data & survey	AT3, SE1	2	DE1	1
			Type 1	**19**	**Type 2**	**10**
	Total reference population of the VET graduate tracking measure (36)	Admin data	NL1, NL4, SE2, SE3	4	AT1, BE-nl2, CZ3, DE6, DK1, DK2, DK3, EE1, ES1, FI1, FI2, LU1, NL2, NL3	14
		Survey	ES2, ES3, HU2, HU3, HU4, LU3, NL7, SI1, SI2, SI4, UK4	11	PT2, RO1, UK5	3
		Admin data & survey	BE-fr3	1	LU2	1
			Type 3	**16**	**Type 4**	**18**
In (broad) categories (e.g. information classified by ISCED 2011 levels) (19)	Sample (11)	Admin data	-	-	-	
		Survey	FR5, HR1, LT2, PL3, UK6	5	CZ1, CZ2*, IE3	
		Admin data & survey	BE-fr1, CZ4, EE2	3	-	
			Type 5	**8**	**Type 6**	**3**
		Admin data	IE2, LT1, UK3	3	BE-nl1, SK1,	2

	Total reference population of the VET graduate tracking measure (8)	Survey	SI3, UK2	2	-	-
		Admin data & survey	-	-	UK1	1
			Type 7	**5**	**Type 8**	**3**

Source: ICF/3s research. Templates. The following measures are not classified because information on at least one category is missing: ES4, FI3, PL. *In these cases, one point of measurement is actually before graduation.*

Options for EU activities

The following options for EU level intervention were proposed:

- Option A. Developing a new EU survey to track VET graduates.
- Option B. Adjusting an existing EU survey to enable VET graduate tracking.
- Option C. Developing a new EU measure based on national administrative data to track VET graduates.
- Option D. Provide support or incentives to the creation or development of measures at national, regional or provider level.
- Option E. Status quo – no additional actions at EU level. This option would imply not proceeding with the activities described in the Proposal for a Council Recommendation to support the tracking of VET graduates, or any other activities in this area. EU level action in the field of graduate tracking would continue to focus on higher education. Member States would still be able to use EU funds for VET graduate tracking measures but this topic would not be a priority.

Option D could adopt different forms and include the following:

a) Peer learning activities tailored to the level of development of VET graduate tracking in different countries, e.g. bringing together countries that are now starting to design tracking instruments and countries with a longer tradition in the field.
b) Expert support to national technical teams involved in the development and implementation of tracking measures.
c) Working groups or networks composed of specialists in graduate tracking from different countries, focused on supporting policy makers engaged in developing VET tracking systems.
d) The development of international standards for graduate tracking surveys to allow for comparability across countries, based on discussions between experts from different Member States.
e) Disseminating information on good practices in developing and implementing VET tracking measures.
f) Financial support to pilots to develop new VET graduate tracking measures at national level.
g) Issuing Country Specific Recommendations to recommend national VET tracking systems to be in place to improve the quality, accountability and effectiveness of VET systems

The feasibility of these was systematically considered. This concluded that in terms of benefits, option D comes first because it has the potential to promote the collection of data useful to VET providers and students, while options A, B and C would only allow for the collection of data useful to policy makers at national level. Option D is also expected to be less costly and more feasible than A, B and C.

A large majority of Delphi survey respondents and stakeholder interviewees reached similar conclusions. Eighteen out of 21 survey respondents chose Option D as their preferred option. National experts interviewed as part of the measures' in-depth review also most often suggested actions that would fall under option D (sharing of good practices, capacity-building and support activities, funding for national and regional measures, support to expert groups and development of international standards/indicators).

The order of the remaining options is less clear. According to the preliminary options assessment, option D would be followed by option C (developing a new EU measure based on national administrative data), option E (status quo – however, with no EU added value), option B (Adjusting an existing EU survey) and option A (Developing a new EU survey). According to the Delphi survey, option B comes second, then option

C. Options are not mutually exclusive, and several respondents suggested that a combination of options, for instance of options D and B, could be desirable.

There are several supporters of the development of EU tracking measures, either based on a survey or on administrative data, both among participants in the Delphi panel and among interviewees. However, these options raise a significant number of questions and concerns. Regarding the use of national administrative data, there is a need for further information on its potential comparability, for instance, through a feasibility study, to decide whether this would be a viable option. Still, some see the benefits of collecting a small number of basic indicators, at least as a first step towards increased EU-level comparability.

The adjustment of an existing survey should be preceded by an exploitation of current surveys' potential in terms of the analysis of the pathways of VET graduates. This would help check if existing data allows for reliable comparisons between EU countries (and regions) in the field, and would help formulate more clearly what changes would be needed to collect tracking data.

The development of a new EU survey would require the buy-in of Member States. The concerns expressed by the experts consulted suggest that further discussions would be needed about the survey methodology and the potential uses of its results. The foreseen pilot of a graduate tracking survey in tertiary education could help clarify the usefulness and practicality of a similar survey in the field of VET.

Recommendations

These are at EU level for the Commission and other agencies to:

Recommendation 1. *Stimulate and support the development of quality VET graduate tracking measures in Member States*

Recommendation 2. *Promote the use of the results of VET graduate tracking measures at different levels (national, regional, provider) and by different stakeholders*

Recommendation 3. *Work towards an increase in the availability of comparable data at EU level*

Recommendation 4. *Consider Country Specific Recommendations to encourage Member States to implement robust VET tracking measures taking account of the findings of this study as summarised for each country in Tables 12 and 13*

And for Member states to:

Recommendation 1. *Develop regular measures for VET graduate tracking, where these do not exist*

Recommendation 2. *Ensure that regular measures for VET graduate tracking cover the majority of the VET provision (IVET, CVET and different providers)*

Recommendation 3. *Ensure that regular measures for VET graduate tracking cover the full range of information required to assess the quality and relevance of VET provision, including their integration in the labour market and progression to further studies*

Recommendation 4. *Review the methodology of VET graduate tracking measures to increase their quality, by ensuring representative samples – in the case of surveys - and increasing the use of control or counterfactual groups*

Recommendation 5. *Increase the use of longitudinal/multiple measurement point studies*

Recommendation 6. *Make use of existing administrative registers as a source of data on VET graduates' trajectories*

Recommendation 7. *Increase the links between administrative and survey data for VET graduate tracking*

Recommendation 8. *Increase the user-friendliness of published data and promote encounters between those in charge of tracking measures and the potential users of data*

1 Introduction

The systematic review and renewal of Vocational Education and Training (VET) is crucial to ensuring its continued quality and labour-market relevance. A better understanding of the performance of VET graduates in the labour market is one of the key sources for assessing and improving the quality and labour market relevance of VET, alongside forecasts of skills supply and demand.[1]

The European Commission has devoted increased attention to the tracking of VET graduates in recent years.

In 2009, the EQAVET (EU Quality Assurance in Vocational Education and Training) Framework introduced two indicators related to VET graduate tracking.[2] Indicator 5 'Placement rate of VET programmes' refers to the destination of VET learners and the share of employed learners at a designated point in time after completion of training. Indicator 6 'Utilisation of acquired skills at the workplace' focuses on the occupation obtained by individuals after completion of training, and the satisfaction rate of individuals and employers with acquired skills or competences. The EQAVET community of practice has since promoted European collaboration in improving quality assurance in VET, including for instance a peer learning activity on indicator 5 held in 2016.[3]

The 2015 Riga conclusions 'On a New Set of Medium-Term Deliverables in the Field of VET for the Period 2015-2020' established as one of its deliverables the development of *'quality assurance mechanisms in VET in line with the EQAVET recommendation and, as part of quality assurance systems, establish continuous information and feedback loops in I-VET and C-VET systems based on learning outcomes'*. The concrete actions suggested include, among others, the use of information on VET graduate employability, learning, labour market entry and careers; the establishment of systems for data collection and analysis; the establishment of mechanisms to feed back the results of the monitoring to adapt VET provision; and the development of local and regional authorities' and VET providers' capacities to use the information for curriculum design.

The New Skills Agenda for Europe observed that there is room for development of Member States' systems for large-scale tracking of VET graduates. It also announced the Commission's intention to take forward an initiative on tertiary graduate tracking in 2017.[4]

A proposal for a Council Recommendation on graduate tracking was subsequently issued.[5] The recommendation:

- Proposes Member States improve the availability and quality of information about the activity of graduates by collecting relevant administrative data from education, tax and social security databases; developing longitudinal graduate surveys; and possibly link data from different sources anonymously. This should be established by 2020.
- Recommends Member States use graduate tracking data to strengthen career guidance, design and update curricula, improve skills matching, plan for evolving employment, education and social needs, and improving policy development.

[1] Cedefop: Renewing VET provision. Understanding feedback mechanisms between initial VET and the labour market. Research Paper No 37. Luxembourg, Publications Office of the European Union, 2013.

[2] Recommendation of the European Parliament and of the Council on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training. C155/1. 8.7.2009.

[3] PLA on the theme of EQAVET indicator number 5 'Placement rate in VET programmes' took place in Cardiff, Wales, on 29-30 September 2016.

[4] COM(2016) 381 final. 10.6.2016.

[5] COM(2017) 249 final.

- Asks Member States to report to the Commission annually on the implementation and evaluation of the Council recommendation, beginning within two years of its adoption.
- States the Commission will pilot a European graduate survey for tertiary education, provide capacity building support for Member States to put in place graduate tracking systems, and establish and support the network of experts, ensure that data and related analyses are made available.

Against this background, DG Employment, Social Affairs and Inclusion (DG EMPL) commissioned the study 'Mapping of VET graduate tracking measures in EU Member States' in 2017.[6] The study aims to inform the European Commission's initiatives on VET graduate tracking and to provide recommendations on the actions to be taken in this field at EU and Member State level.

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 EU-level VET graduate tracking measures.
- Section 3 presents the findings of the mapping of VET graduate tracking measures in EU Member States.
- Section 4 discusses the current state of play of VET graduate tracking in the EU, and highlights the main strengths and weaknesses detected in the current study.
- Section 5 proposes scenarios for cooperation at EU level in the field of VET graduate tracking.
- Section 6 summarises the findings of this study, by replying to the research questions and presents recommendations for policy makers at EU and Member State level.

1.1 Objectives and scope of the study

The aim of this study is to provide a detailed picture of the VET graduate tracking measures practised in the EU-28 Member States and to develop scenarios for cooperation at EU level in this field.

> VET graduate tracking measures are defined as tools which collect information for analysis of graduates' educational achievements on completion of VET, their further education and higher achievements, and their employment.

The study has the following main objectives:

- Specific objective 1: Mapping of VET graduate tracking instruments used at system level accompanied by illustrative examples at provider level;
- Specific objective 2: Analysis of graduate VET tracking measures and development of their typology;
- Specific objective 3: Identification of strengths and weaknesses of these measures and definition of recommendations for issues to be improved at Member State and EU levels;
- Specific objective 4: Review of options for EU activities in this field to improve data collection systems both at national and EU level.

And the key research questions are:

[6] 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).

- What are the push and pull factors for VET graduate tracking? What are the main features and trends in the design of VET graduate tracking instruments?
- Are there a common set of core characteristics, values and objectives found in most instruments?
- Do the results of VET tracking instruments support the agenda for VET policy, improvement of provision, and curriculum development? Do the results improve the labour market responsiveness of VET at a provider level?
- Are there any links between tracking schemes regionally, nationally and internationally and do they complement each other?
- What are the opportunities for making the schemes more comparative and systematic across the Member States? What are the weaknesses of existing tracking instruments?
- How could EU level action support the process of making the instruments more comparable and systematic across the Member States?

The study covers all EU28 countries. The mapping focuses on the national level. In the countries where VET is a decentralised responsibility, regional measures were also researched.[7] Examples of sectoral and provider measures are also included in the mapping.

The study covers both initial VET (IVET) and continuing VET (CVET). In terms of education levels, it covers lower secondary, upper secondary and post-secondary non-tertiary VET programmes.

1.2 Overview of the methodology

The study methodology involved two parallel processes, the mapping and description of VET graduate tracking measures at EU and Member State level, and the development of scenarios for EU-level actions in the field. The two processes are described below.

1.2.1 Mapping of VET graduate tracking measures

The study comprised the mapping of VET graduate tracking measures in EU Member States and a review of EU-level initiatives related to graduate tracking.

Relevant EU-level initiatives were identified through desk research and an expert consultation. Scoping interviews were conducted with seven experts involved in the development of EU-level initiatives related to graduate tracking or to data collection in the field of VET. Interviewees were conducted with experts involved in the CHEERS, REFLEX and HEGESCO projects, EUROGRADUATE (a feasibility study for a European graduate study), the International Network of Graduate Surveys (INGRADNET), the EQAVET Secretariat, the Cedefop Opinion Survey on Vocational Education and Training in Europe, and the Cedefop European skills and jobs (ESJ) survey.

The mapping and description of measures in EU Member States was conducted in two waves:

1. A mapping of measures in all EU Member States mainly based on desk research. When the information found through this means was scarce, country researchers contacted national authorities or training providers via e-mail or phone.

[7] In Belgium the mapping focuses on Flanders and Wallonia; in Germany, the research focused on the national level and the regions of Saarland, Bavaria and Baden-Württemberg; in Italy, the research focused on the national level but some examples of regional measures have also been mapped; in Spain, two Autonomous Communities were selected for the mapping (Catalonia and Basque Country); in the UK, the mapping focuses on England and Scotland but specific examples have also been included for Wales and Northern Ireland.

2. An in-depth review of 31 tracking measures, selected from the list of mapped measures. This review was based on desk research and semi-structured interviews. A total of 46 interviews was conducted as part of this exercise.

The information from the initial mapping includes background information on VET graduate tracking in the country, and a description of each of the tracking measures identified. An extract of the information collected for each country is available from the country factsheets (see Annex 2).

The information collected as part of the in-depth review is available from the measure reports (see Annex 3).

1.2.2 Scenarios for EU-level action: the Delphi survey

The development of scenarios for EU-level action built on the information collected through the scoping interviews, the interviews conducted as part of the in-depth review, and a Delphi survey.

This section provides an overview on the Delphi Panel technique and the approach used in this exercise. The questionnaires used are available in Annex 6. The first round of the Delphi survey was launched on 23 August and the second round on 3 October 2017.

The objectives of the Delphi survey were:

- To develop possible alternatives for EU intervention in VET graduate tracking.
- To explore the underlying reasons for views on the different alternatives.

The box below provides a brief general description of the Delphi method. We subsequently discuss how we adapted and implemented the method in the context of this assignment.

The Delphi technique is a widely used and accepted method for gathering data from respondents within their domain of expertise (Hsu and Brian, 2007). It can be applied *via* focus groups, but the use of the survey questionnaire is far more common.

Delphi is a technique to gather views and generate consensus among a group of experts (the Delphi panel). While common surveys try to identify 'what is', the Delphi technique attempts to address 'what could/should be' (Miller, 2006).

It is organised as a structured process for soliciting and synthesising knowledge from the panel through an iterative process. The iteration consists of a series of questionnaires distributed to experts accompanied by controlled opinion feedback from the previous round. The survey questionnaires are anonymous.

The feedback process allows and encourages the selected Delphi participants to reassess their initial thoughts about the information he/she provided in previous iteration(s). This feedback stimulates convergence building, identification of common trends and inspection of outliers, so that eventually it is expected that a consensus or prevailing view is reached.

The rationale behind the Delphi Survey is to address and overcome the disadvantages of traditional forms of group consultation, particularly those related to group dynamics, such as the tendency of the views of strong individuals to prevail in focus groups.

The Delphi survey originated in the forecast of future trends and has been subsequently applied in various contexts, especially when phenomena involved are complex.

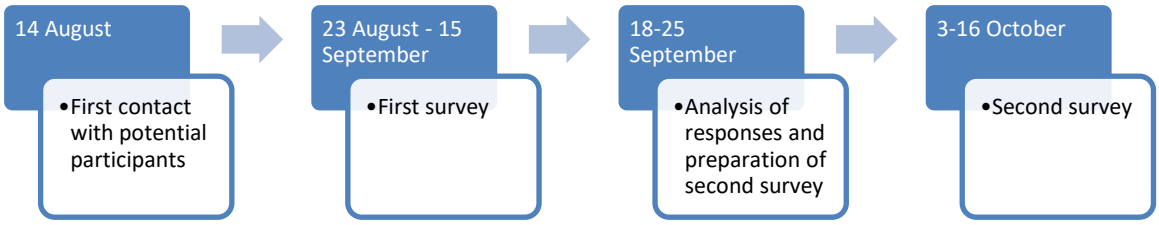
The process typically consists of the following steps:

- [1] Selection and formulation of questions for the questionnaire
    - Critically important step given that once selected and formulated questions are repeated in subsequent Delphi rounds – excessive length of the questionnaire or lack of clearness may result in high attrition of the panel experts.
- [2] Selection of experts for the Delphi panel
    - Members of the panel should possess knowledge sufficient to provide informed answers and be willing to participate.
- [3] Construction of the first questionnaire and sending it to the panel
    - The first questionnaire should contain necessary background information and clarifications to avoid any misunderstandings.
- [4] Analysis of answers to the first questionnaire
    - Specifically, prevailing tendencies and different views are identified.
- [5] Construction of the second questionnaire and sending it to the panel
    - The second questionnaire contains the same broad questions. It is however accompanied by a clear summary of results from the previous round. Experts are asked to reconsider their responses in questions given the results from the previous round and justify their response if they differ from the general tendency.
- [6] Analysis of answers to the second questionnaire
- [7] Repeating steps [5]-[6] if needed

We carried out two rounds of the Delphi survey. Based on past experience, this provides the optimal trade-off between attrition rates and obtaining a convergence of views. In line with the usual practice and our standards of implementing surveys we established a follow-up process including timely and personalised e-mail reminders, and follow-up phone calls, to encourage responses.

The schedule followed is summarised in the figure below.

Figure 1. Process and schedule of the Delphi Survey



The survey was implemented using an on-line platform (SurveyGizmo) as the primary channel (a Word version of the survey was provided as an alternative option).

Based on literature (Hsu & Brian, 2007) and previous ICF experience with the Delphi survey,[8] the following risks were foreseen and mitigated:

- To avoid a low response rate we initially contacted 87 potential respondents, most of whom had already received information on the study at the EQAVET meeting (8-9 June 2017), the meeting of EU VET providers' Associations (8 September 2017), or during scoping interviews. This allowed us to reach 23 respondents to questionnaire 1 and 22 to questionnaire 2, slightly surpassing our initial aim of 15-20 respondents per questionnaire.
- To ensure the robustness of feedback, participants were selected from experts who were likely to be familiar with the topic, and interested in the results of the study and any potential EU actions in the field (see description of participants in section 5.6). In addition, a non-technical and reader-friendly introduction was provided, questionnaires were kept short and there was a limited number of questions focusing on technical aspects of graduate monitoring.
- Another risk of the Delphi technique is that it may potentially enable investigators to unintentionally guide feedback to reach consensus. Being aware of this risk, the research team systematically extracted all the supporting and critical arguments given by respondents to the proposed EU-level actions in the first questionnaire and presented them back to respondents as part of the second questionnaire.

2 Mapping and comparative analysis of EU measures

There are currently no VET graduate tracking measures at EU level. In this section we explore the following international initiatives:

- EU-level graduate tracking measures focusing on other education sectors or levels.
- Surveys collecting relevant data on the progression of graduates into the labour market or further training.

[8] For example, evaluations of Macro Financial Assistance operations in different countries.

2.1 EU-level graduate tracking initiatives

EU-level graduate tracking initiatives have been examined with the main purpose of analysing their capacity to provide useful comparative data and detecting the challenges to their development and use. Lessons learnt from these initiatives are likely to be relevant to the field of VET.

Higher education graduates have been at the centre of several EU-level tracking initiatives including CHEERS, REFLEX and HEGESCO. These three studies have used surveys and have been conducted only once. Their main characteristics are summarised in the table below.

Table 1. Higher education graduate tracking measures at EU level

Title of graduate tracking measure	Country coverage	Research design	Data collection period	Timing of data collection
CHEERS - Careers after Higher Education, a European Research Study	AT, CZ, DE, ES, FI, FR, IT, NL, NO, SE, UK and Japan.	Quantitative survey	1998-2000	3-4 years after graduation
REFLEX – International Survey of Higher Education Graduates	AT, BEfl, CZ, DE, EE, ES, FI, FR, IT, NL, NO, PT, UK, CH and Japan.	Quantitative survey	2005	4-5 years after graduation
HEGESCO - Higher Education as a Generator of Strategic Competences	HU, LT, PL, SI, TK	Quantitative survey	2008	4-5 years after graduation

Sources: Schomburg & Teichler (2006), Allen & van der Velden (2007) and Allen & van der Velden (2009).

These studies provided a wealth of data on the skills and labour market integration of graduates from European higher education systems. The authors observe that although the country differences are not always as large as it is often assumed, the surveys identify differences, both between systems of higher education and between types of study programmes in their success at integrating graduates into the labour market (Allen & van der Velden, 2007).

The main challenges to conducting such surveys include difficulties in the interpretation of results and methodological issues. Regarding results' analysis, researchers need to discern if the differences in results are due to the diverse characteristics of higher education systems or rather to other factors such as the national and local employment rates and other labour market characteristics. There are also methodological challenges to comparability including, for instance, differences in the number of respondents by country or the limitations of existing measures to correct for the differences in living costs between countries (Frawley & Harvey, 2015). Other more general limitations to the use of surveys for graduate tracking are related to achieving adequate response rates and ensuring sample representativeness.

The Eurostudent project uses surveys to collect comparable data on the social dimension of European higher education. It collects, among other things, data on

students' future plans including their assessment of their chances in the labour market and their plans for further studies. However, it does not track individuals once they have graduated. The report on the 5th edition of Eurostudent notes that student survey data and graduate studies are complementary. Student surveys are considered to help identify issues in higher education systems with a shorter time lag than graduate studies (Hauschildt et al., 2015).

A consortium consisting of the European University Association (EUA) and several European universities conducted the study Tracking Learners' and Graduates' Progression Paths (TRACKIT) (2010-2012) which mapped provider-level tracking initiatives in EU countries (EUA, 2012). The study provides recommendations for higher education institutions to develop or improve tracking. It also detects the following challenges to student and graduate tracking:

- Complexity and limited comparability of tracking results: The information derived from tracking is complex and its value for comparison between institutions at national or international level is likely to be limited. Employment of graduates depends on the local and national labour markets.
- Poor management of tracking measures, e.g. lack of coordination of tracking approaches (over-surveying), poor data management and analysis, and random use and ad-hoc application of tracking results.
- Lack of use of tracking results: Tracking results are sometimes not used, e.g. due to insufficient resources at institutional level or due to national regulations.
- Data protection issues: Data protection regulations need to be factored into the development and use of tracking measures. The increased availability of means for data collection and processing needs to be accompanied by a reflection on ethical considerations and a responsible use of resources.
- Costs: the development of comprehensive systems at institutional or national level needs to take into account the availability of funding or resources for the implementation and sustainability of the measures.

Currently, the European Commission is planning to pilot a European survey to collect information on tertiary education graduate employment and social outcomes, based on the results of the Eurograduate feasibility study (Eurograduate Consortium, 2016).

Only one EU-level graduate tracking measure has been identified outside higher education: the 'Comparative Analysis of Transitions from Education to Work in Europe' (CATEWE) study (Smyth et al, 2003). This study compared national datasets of pupil data and national school leavers' survey data from FR, IE, NL, UK-Scotland and SE. The data collection period varied between 1995 and 1997, depending on the country, and the timing of data collection was between 1 and 1.5 years after leaving school. The education level and sector coverage (lower secondary and/or upper secondary, inclusion or exclusion of secondary VET) also varied depending on the country.

The CATEWE study concluded that '*there is limited scope for harmonising national school leaver surveys, which differ widely in design and content, and which serve distinct national purposes*'.[9] The project proposed a strategy for 'partial harmonisation' based on a preliminary set of criteria to which surveys could be encouraged to converge, as well as a new European-wide survey.[10] The latter would be a prospective age cohort study starting at about 15-years-old following individuals for a period of around ten years.

In addition to the EU-level tracking surveys, the International Labour Organisation (ILO) has developed a 'School-to-Work Transition Survey' (SWTS) that has been used

[9] Smyth et al (2003), p. 94.

[10] Raffe (2000).

by several countries from outside the EU.[11] This survey does not focus on graduates; it targets young people aged 15 to 29 regardless of their educational background.

The European Training Foundation (ETF), Cedefop and ILO have recently commissioned a guide for professional research staff and practitioners involved in graduate tracking. The guide 'Carrying out tracer studies' (2016) proposes a methodological approach to graduate tracking both at central level (led by ministries and their agencies) and at provider-level. The guide is relevant both for VET and higher education and proposes two questionnaire versions based on international standards and experiences.

2.2 EU instruments and data collections that could gather relevant data on the progression of graduates into the labour market

In the absence of appropriate longitudinal data on VET graduates, outcomes can be investigated by jointly analysing educational background and current situation (on the labour market), from existing international cross-sectional surveys. These data collections and EU instruments have been examined to:

- Check the quality and availability of comparable data on the labour market integration of VET graduates in EU Member States.
- Explore the possibility of adapting an existing survey to allow for VET graduate tracking.

The exercise involved the identification of surveys that contain data on individuals' labour market integration; checking if these surveys collect data on the highest level of education or training attained and whether graduates can be disaggregated between VET and non-VET; and examining if the surveys have a longitudinal component which would allow individuals to be followed over time.

2.2.1 Which surveys collect data on individuals' progression into the labour market?

There are several large-scale European and OECD surveys that collect data on individuals' progression into the labour market, most significantly: the EU Labour Force Survey (LFS) and its ad hoc modules on young people in the labour market, the Survey on Income and Living Conditions (SILC), the Adult Education Survey (AES) and the OECD Programme for the International Assessment of Adult Competencies (PIAAC) survey.[12] The most relevant data collected are presented in Table 2.

Table 2. Large-scale EU and OECD surveys providing relevant information on individuals' progression into the labour market

Survey	Periodicity	Sample	Most relevant data collected
EU Labour Force Survey (Eurostat)	Quarterly/ yearly (it depends on the variable). The information on labour status is	About 1.6 million individuals (2015). Countries' sampling rates vary between 0.2% and 3.3 %.	• Highest educational attainment level • Orientation of this level (general / vocational) • Labour status • Full-time/part-time distinction, permanency of the job, and other indicators related to working conditions

[11] http://www.ilo.org/employment/areas/youth-employment/work-for-youth/WCMS_191853/lang--en/index.htm

[12] We also examined the Continuing Vocational Training Survey but found no indicators that are relevant to graduate progression. It is an enterprise survey which focuses on CVET provision to employees. It does not look into the consequences of CVET on employees' careers. Source: Eurostat, http://ec.europa.eu/eurostat/web/microdata/continuing-vocational-training-survey (1/3/2017)

Survey	Periodicity	Sample	Most relevant data collected
	collected quarterly.		• Income (only provided as (national) deciles and from 2009)
EU Labour Force Survey ad hoc module on young people on the labour market (2016) (Eurostat)	Every 7-9 years.	(See above)	• Support received for finding work • Method of finding current job • Appropriateness of job given the respondent's level of education
Survey on income and living conditions (SILC) (Eurostat)	Annual	Cross-sectional data: 270,000 persons Longitud-inal data: 200,000 persons	• Highest ISCED level attained (in upper secondary and post-secondary it includes the options general/vocational) • Year when highest level of education was attained • When began first regular job • Self-defined current labour status (employee working full-time, etc.) • Occupation • Number of hours usually worked per week in main job, type of contract and other indicators related to working conditions • Income (several variables) Longitudinal data is collected on labour and income indicators during a four-year period.
Adult Education Survey (AES) (Eurostat)	Every 5 years	225,000 individuals	• Highest level of education or training successfully completed • Year when the highest level of education or training was successfully completed • Orientation of the highest level of education or training successfully completed (general/vocational) • Main current labour status (including full-time/part-time distinction) • Professional status (including temporary/permanent contract distinction) • Year in which person started working in his/her current main job
OECD Programme for the International Assessment of Adult Competencies	It has been conducted once (between 2008 and 2019 depending on the	Around 250,000 (5,000 individuals per country).	• Highest qualification obtained (and orientation) • Time of qualification completion (age or year) • Current labour status (full-time employment, part-time employment, unemployed, student, etc.) • Job title and responsibilities

Survey	Periodicity	Sample	Most relevant data collected
(PIAAC) survey	country). It will be repeated towards 2023.		• Age started working for current employer • Type of contract and other questions about work conditions • Starting job within 3 months or longer • Number of months looking for paid work and other questions about job search strategies • Questions on the match between qualification and job requirements • Gross wage or salary

Sources: Eurostat,[13] Cedefop,[14] Eurofound,[15] OECD.[16]

Smaller-scale international surveys such as the Eurofound Survey on Working Conditions, Cedefop Opinion Survey on VET in Europe and Cedefop European skills and jobs (ESJ) survey collect data on EU VET graduates' current situation in the labour market. The most relevant data collected are shown in Table 3.

Table 3. Lower-scale EU surveys providing relevant information on individuals' progression into the labour market

Survey	Periodicity	Sample	Most relevant indicators
Cedefop Opinion Survey on Vocational Education and Training in Europe	It is envisaged that it could be undertaken periodically (first survey conducted in 2016). It was preceded by a Euro-barometer survey on VET attractive-ness.[17]	35,646 respondents. Around 1,000 people per country.	• Highest level of education attained • Number of years in education • Orientation of the last programme completed • Difficulties in finding a job. If yes, reasons. • Time elapsed until first long-term job after finishing studies • Satisfaction with professional career • Further education
Cedefop's European skills	One-off (2014)	48,676 respondents	• Highest level of education or training completed

[13] EU LFS database user guide, http://ec.europa.eu/eurostat/documents/1978984/6037342/EULFS-Database-UserGuide.pdf; regulation on the ad hoc module, http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1426868392738&uri=OJ:JOL_2015_076_R_0003; SILC, http://ec.europa.eu/eurostat/web/income-and-living-conditions/methodology/list-variables#primary (1/3/2017); AES, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010R0823.

[14] http://www.cedefop.europa.eu/bg/events-and-projects/projects/opinion-survey-vocational-education-and-training-europe and http://www.cedefop.europa.eu/en/news-and-press/news/europe-needs-better-jobs-better-matched-skills-cedefop-survey (1/3/2017).

[15] https://www.eurofound.europa.eu/surveys/european-working-conditions-surveys (2/3/2017).

[16] http://www.oecd.org/skills/piaac/publicdataandanalysis/#d.en.408927 (2/3/2017).

[17] Special Eurobarometer: Attitudes towards vocational education and training. http://ec.europa.eu/public_opinion/archives/ebs/ebs_369_en.pdf (30/3/2017).

Survey	Periodicity	Sample	Most relevant indicators
and jobs (ESJ) survey			• Orientation of the highest qualification attained (vocational or not) • Year when highest level of education was attained • Paid work in the last 7 days, even if it was for one hour. • Full-time/part-time distinction, type of employment contract, and several questions on the type of occupation and employer • Main activity before working for current employer • Gross monthly earnings • Several questions about the match between the respondent's skills and those required in his/her job.
Eurofound Survey on Working Conditions	Every 5 years	43,850 (2015). From 1,000 to 3,300 people per country.	• Highest level of education or training successfully completed (not differentiating between general/vocational pathways) • Full-time/part-time distinction • NET monthly earnings from main paid job, type of employment contract and other questions about working conditions

2.2.2 Which of the existing surveys is more relevant for the analysis of VET graduates' transition into the labour market?

To be of use to the analysis of VET graduates' transition into the labour market, the international surveys have to provide a sufficient sample of VET graduates for analyses at EU level and, desirably, also for comparison between Member States, and differentiate between VET and general education graduates.

Large-scale surveys meet these conditions to a higher extent than smaller-scale surveys. Large-scale surveys have wider overall samples and, consequently, larger samples of VET graduates while also collecting more accurate data on programme orientation.

All the large-scale international surveys differentiate between general and vocational qualifications and this distinction has been refined as from 2014[18]. Since then, the educational attainment level is defined according to the International Standard Classification of Education (ISCED) 2011. OECD and Eurostat surveys follow the Joint Eurostat-OECD guidelines on the measurement of educational attainment.[19] The coding of the variable is based on the ISCED 'integrated mapping' developed in each country. This integrated mapping is a table including information on national educational programmes and qualifications, their characteristics and coding in

[18] Regulation 317/2013 of 8 April 2013, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0317&from=EN

[19] http://ec.europa.eu/eurostat/documents/1978984/6037342/Guidelines-on-EA-final.pdf

ISCED.[20] The Joint Eurostat-OECD guidelines recommend countries to follow a 'diploma approach'. This means that respondents are asked about their diplomas and the orientation is derived from the exact education programme (based on the country integrated mapping).

In the case of smaller scale international surveys, there is either no information on the orientation on the highest qualification attained (Eurofound survey) or the distinction is based on self-reporting. For instance, in the case of the 'Opinion Survey on Vocational Education and Training in Europe', Cedefop developed for the purpose of translation a mapping of the terminology used for 'upper secondary education', and for 'general' and 'vocational' in each country. However, the survey still requires respondents to know if the programme they completed is considered general or vocational education. This approach is less robust than the one followed by large-scale surveys.

A review of the available research confirms that the large-scale international surveys have already been used for the analysis of the outcomes of VET graduates. The most used surveys have been the LFS and its 2009 ad hoc module 'Entry of young people into the labour market' (Cedefop, 2012; Cedefop, 2013; Joint Research Centre, 2015) and the PIAAC survey (Brunello and Rocco, 2015; Forster et al., 2016; Hanushek et al., 2016).

2.2.3 Would it be possible to adapt an existing survey to allow for VET graduate tracking?

One of the potential scenarios for EU-level action proposed in this assignment would be to adapt one of the existing international surveys to allow for VET graduate tracking.

The surveys discussed above are mainly cross-sectional. Only the LFS and the SILC have longitudinal components:

- The SILC collects longitudinal data during a four-year period to study changes over time at individual level, such as transitions from school to work, flows into and out of economic activity and work and changes in the level of income, among other things. It collects longitudinal data on employment status (employed/unemployed/inactive and full-time/part-time), type of contract (permanent/temporary), and income.
- The LFS has recently started capturing the flows between different employment statuses (employed/unemployed/inactive) between consecutive quarters.[21]

In the case of the LFS, the current options for longitudinal analyses are quite limited. Also, longitudinal sub-samples –both in the case of the SILC and the LFS- are unlikely to be representative of all the different attainment levels and orientations, and probably do not include a sufficient sample of VET graduates to allow for analyses of their employment outcomes[22].

[20] Mappings are available online at https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp

[21] Eurostat (2015), News release 189/2015 (26 October 2015). First release of labour market flow statistics. http://ec.europa.eu/eurostat/documents/2995521/7050255/3-26102015-AP-EN.pdf/4294f940-dd69-4799-9664-3726f854e82a

[22] Information on the sub-samples for longitudinal analyses available at: LFS, http://ec.europa.eu/eurostat/cache/metadata/en/lfsi_long_esms.htm and SILC, http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_%E2%80%93_sampling

2.2.4 What data analysis would be possible from different EU-level instruments and data collection?

The analysis possible through the EU instruments and data collections described previously in this section depends on the research method employed. We describe the analysis possible through different methods in the table below, based on:

- The size of the population (whether small-scale, medium-scale or large-scale)
- The specificity of the EU instrument or data collection (whether it is a dedicated survey targeting recent VET graduates, or a generic survey where the target population is specified in very general terms)

Table 4. Grading of existing data collection instruments

Research methodology	Existing measures in this category	Level of analysis
Small-scale generic survey (less than 100,000 respondents)	ESJ survey (Cedefop); Survey on Working Conditions (Eurofound); Opinion Survey on Vocational Education and Training in Europe (Cedefop).	Can provide comparative analysis of quality of learning experience and outcomes for VET students across the EU, linked to the theme of the survey. Sample size should also allow findings to be disaggregated by some learner and course characteristics. However, unable to disaggregate findings by country of education levels/VET provider type with a good degree of confidence. Reliability and generalisability is also limited as sample is not random.
Medium-scale generic survey (between 100,000 and 500,000 respondents)	SILC (Eurostat) AES (Eurostat) PIAAC (OECD)	Could include questions on learner experience of learning and their destinations. Should allow comparative analysis by learner characteristics and also by level and type of education. Not all respondents will however be VET graduates and consequently the overall sample may be too small to disaggregate findings by country.
Large-scale generic survey (over 500,000 responses)	LFS (Eurostat)	Could capture quality and destination and allow findings to be disaggregated by learner characteristics, type of education and countries. It also could allow analysis of labour market outcomes multiple years after graduation. Although a relatively small proportion of the population will be VET graduates, population sizes could be increased by including data from multiple years to provide relatively robust findings.
Dedicated survey	None currently exist	Allows EU level analysis of graduate destinations by learner characteristics, level and type of VET programme. Depending on the sample size, it may also facilitate country-level disaggregation by the type/level of VET programme studied and learner characteristics.
Full population survey or census/admin data	None currently exist	Would allow analysis of learning quality and destinations at country level plus sub-analysis by region and industry. However, in some cases more detailed sub-analysis may not be possible when the overall numbers are too low to provide robust findings.

Source: ICF/3s analysis

3 Mapping and comparative analysis of VET graduate tracking measures in EU Member States

3.1 VET graduate tracking measures in EU Member States

3.1.1 Member States' approach to VET-graduate tracking?

A total of 85 VET-graduate tracking measures in 24 EU Member States (out of 28) have been identified.

A majority of EU Member States (19) have implemented at least one measure at national level for VET graduate tracking. In some of the countries where VET competences are devolved to regional authorities, no measures were identified at national level, but were found at regional levels (BE, ES and UK). Measures at regional level have also been identified in other countries where VET competences are (partially) devolved to regional authorities (DE, IT) as well as in Austria and Poland. Sectoral level measures are available in Austria, Germany and France but have not been identified (based on desk research) in other countries.

There are currently no VET graduate tracking measures in Bulgaria, Cyprus, Greece and Latvia. Bulgaria is currently developing one, at national level, and Latvia has recently piloted a set of provider-level surveys (see section 3.1.1.2).

The following sections describe Member States' approach to VET graduate tracking in more depth referring to the existence of sustained tracking, the policy and institutional background to VET graduate tracking in the Member States, the coverage of measures in EU Member States, the main data collected and the methodologies used.

3.1.1.1 Existence of regular tracking

Research for this study shows that 19 out of the 24 Member States in which VET graduate tracking measures were identified have implemented at least one of them on a regular basis (AT, BE, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LU, MT, NL, PT, SE, SK and UK); all of them are located at national or regional level (BE - BE-fr and BE-nl, ES, and UK - E, W, S and NI)[23]. In Spain, VET graduate tracking is done at a regional level only and in the two regions covered in this study (Catalonia and Basque Country) this is done on a regular basis.[24]

In some countries no national VET graduate tracking measures implemented on a regular basis could be identified (HR, PL, RO, SI, and LT):

- In Poland, one regular measure has been identified in the region of Maloposka focusing on IVET.
- In Slovenia, VET graduate tracking (IVET - upper secondary only) might be available in the future, since a methodology has been tested and piloted.
- In Romania there are county-level measures but these are not available in all counties and are not necessarily done on a regular basis.
- In Lithuania, no regular national tracking measures are yet in place, but an approach is currently being developed.
- In Croatia, only one-off and irregular measures at provider level could be identified.

[23] England, Wales, Scotland and Northern Ireland

3.1.1.2 Policy and institutional background to VET graduate tracking in EU Member States

The research shows that only a few countries specifically refer to VET graduate tracking in policy documents (9) or consider it to be a legal obligation (7).

Tracking is a legal obligation in Estonia, Finland, Portugal and Sweden. In Estonia and Sweden national-level institutions are required to track VET graduates. In Hungary and Portugal this is the duty of VET providers. Tracking at national level is also addressed by legislation in Romania and Slovenia. However, the measures are still being developed.

Box 1 –Legal obligation for tracking VET graduates and systems in development– examples

In **Hungary**, the Government Act 319/2014 defines the roles and responsibilities of the National Office for Vocational Education and Training and Adult Learning (NSZFH). According to this Act, NSZFH is in charge of developing and operating a VET graduate tracking system together with the Hungarian Chamber of Commerce. This new system is currently being developed.

In **Romania**, the National Education Law No. 1/2011, recently amended, deals with the monitoring of graduates' insertion in the labour market. The VET Strategy of Romania for the period 2016-2020 includes several measures related to the monitoring of VET graduates' progression to employment, but these do not seem to be yet in place.

Research shows that the rationale behind VET graduate tracking relates to the following main purposes:

- Informing policy making at central level, with regard to VET governance, funding and quality, and labour market policies (EE, FR, IE, LT and LU).
- Improving the match between labour market requirements and VET (BG, ES-Catalonia, HU, LT, NL and PL).
- Quality assuring VET systems and provision (BE-nl, CZ, FI, HR, HU, LT, PT and SI).
- Monitoring provider performance (UK-Scotland), including for performance-based financing (FI, IE, LT and PT-private schools only).
- Providing guidance to prospective VET students, particularly so for provider level measures (BE-fr, CZ, HU, IT, PL and UK-England and Wales). Beyond guidance, graduate tracking data can be used to increase the attractiveness of providers to potential candidates. This is the case in Poland where VET providers compete for a decreasing number of candidates.
- Providing information for providers, for instance, by allowing them to compare their results with others (FR and PL).

In a few cases, the more general purpose of enabling research on the topic (DK, FR and PL) and on career/employment monitoring of graduates (AT, SK) are mentioned.

Thirteen EU Member States have planned or ongoing reforms which are relevant to VET graduate tracking. The types of reform include:

- Introduction of new VET graduate tracking measures (BG, HU, LT, MT, PL, RO, SI, UK-England).
- Changes to current measures (BE-nl and EE).
- Reference to VET graduate tracking in recent policy documents without any clear indication of the introduction of new measures (HR).
- General VET reforms that could involve changes to VET graduate tracking (BE-fr and SK).

The box below presents some examples of planned and ongoing reforms (in addition to the examples from Hungary and Romania in the box above).

Box 2 – Planned and ongoing reforms – examples

In **Bulgaria**, a recommendation from an audit report of the National Audit Office points to the need to develop a methodology for VET graduate tracking including the elaboration of annual reports on the labour market entry/integration of VET graduates after completing their programme. The Ministry of Education has just started with the conceptualisation of the methodology.

In **England**, data matching measures are expected to be introduced which link learning datasets with tax datasets to measure the employment and pay outcomes of learners.

Slovakia is currently undertaking an extensive reform of its VET system focusing on apprenticeship programmes. A Cedefop review started in 2017 aiming to improve the governance of skills anticipation and matching. The project includes methodological support and guidance to help Slovakia develop and administer tracer studies among secondary level VET graduates.

In Latvia, the State Education Quality Service has recently developed a set of surveys as part of an Erasmus+ project (EQAVET NRP) which among other issues seek to find out the first destination of graduates and the satisfaction of graduates and employers with the skills acquired in VET. These surveys were tested in five VET schools and the results were discussed in a project seminar held in March 2017. No information has been found on the potential further use of these instruments.

The institutions most frequently commissioning and funding VET graduate tracking measures include:

- Ministries, government agencies and government departments at national, regional or provincial level (46 measures).
- National statistics offices (11).
- VET providers (11).
- Employment services (4).
- Chambers and sectoral bodies (3)

Other entities which are commissioning and funding VET graduate measures include: VET provider associations (1 measure), research organisations (2), teacher development centres (1), and in one case, a consortium of several entities. In two measures EU programmes are involved in the funding, namely Erasmus+ and ESF. Data collection can be done directly by the responsible institutions, for instance by an internal research team or by national statistics offices. However, this task is often delegated to external research institutes, universities or consultancies (in 18 measures). VET providers are also frequently involved in data collection (in 19 measures).

The funding structures for the 66 measures for which this information was available are as follows:

- For the majority of measures (38), only national funds are used;
- For 10 measures, national funds are supplemented by EU financial support (in most cases ESF, but sometimes also European Regional Development Fund, Erasmus+);
- One measure is based on EU funds only (RO1);
- For 14 measures other funding sources are indicated: VET providers (8), chambers of commerce (2), regional government (2), various ministries and VET providers (2);
- One measure ESF and VET providers' own funds are used (SI2);

- For two measures national funds and other funds are made available (FR1: partner organisations and sponsors, in particular for survey extensions or specific requests; IT2: participating schools).

3.1.1.3 Coverage of measures in EU Member States (IVET/CVET)

From the 19 Member States VET where regular graduate tracking measures at national or regional level have been identified (see section 3.1.1.1):[25]

- Eight countries have regular national or regional measures in place covering IVET and CVET (AT, DE, DK, FI, FR, IE, NL and UK). In Austria, Finland, UK (England, Wales and Scotland)[26] and the Netherlands the same measure covers IVET and CVET. In Denmark and Germany, two different measures cover IVET and CVET. In France and Ireland two measures cover IVET and one measure covers CVET.
- Eleven countries have regular national or regional measures in place only covering IVET (BE-nl, CZ, EE, ES – Catalonia and Basque Country, HU, IT, LU, MT, PT, SE and SK) or CVET (BE-fr).

It is important to note that, as the study did not aim at mapping all CVET measures in EU countries, it might be that more regular CVET measures are in place in the Member States.

The box below provides some in-depth information on two national and regional CVET measures identified.

Box 3 –National and regional CVET graduate tracking measures - examples

In **Denmark** (see DK2) the course register collects national data on publicly provided adult and continuing education in Denmark. The register is managed by Statistics Denmark, and is based on administrative data collected via the civil registration number (CPR number). The purpose is to monitor the population's participation in adult and continuing education. By combining the register with other administrative data, it is possible to gain detailed information on the course participants' outcomes.

In **Belgium-Wallonia,** a tracking measure (BE-fr1) examines the extent to which jobseekers are employed and/or re-entered education and training programme in the 12 months following participation in a skills training programme (*'formation qualifiante'*) provided by *Bruxelles Formation*, the Francophone public service for vocational training in Brussels. The tracking measure covers both jobseekers having just left or finished school (*'primo-sortants'*) as well as jobseekers who are not new entrants on the labour market. Only *former Bruxelles Formation* training participants are included in the scope of the survey.

3.1.1.4 Type of data collected in EU Member States

Among the 19 Member States with regular measures in place at national and regional levels, nearly all (17) cover both employment and education-related indicators. In France, the regular tracking measures cover employment-related indicators only and in Slovakia, the existing regular tracking measure only refers to unemployment rates of VET graduates. In Belgium, although there is a regular measure that refers to education and training related indicators it does not include indicators relating to progression to further education and training.

For further analysis we focused on the coverage of the following four indicators: employment status, type of employment contract (permanent/temporary, part-

[25] The numbers in the bullet points below add up to 20 and BE-fr and BE-nl are in different categories.

[26] In the UK (Northern Ireland) one separate measure covers only IVET.

time/full-time), earnings, and participation in further education and training. The coverage of these indicators by regular measures in Member States is as follows:

- In eight Member States there is at least one regular tracking measure that covers all of these indicators: Austria, Germany, Spain (Catalonia), Ireland, Italy, Luxembourg, Netherlands and Sweden.
- In five Member States regular tracking measures cover at most three of these indicators (CZ, FI, HU, PT and UK). In all of these cases no data is gathered with regard to earnings.
- In three countries regular tracking measures cover at most two of these indicators (DK, EE and MT). In the case of Denmark and Malta the regular measures do not gather data on the type of contract and earnings. In Estonia the measure does not provide information on the type of contract and participation in further education after completing VET studies.
- In two countries, regular tracking measures cover only one of the four indicators (FR and BE-nl). In France, regular measures (FR2, FR3 and FR5) gather data on the employment status or the type of contract. In Belgium Flanders, the existing regular measure (BE-nl1) collects data on unemployment status (those registered as unemployed in the PES).
- In one country –Slovakia- the existing regular tracking measure does not cover any of the four indicators.

Box 4 – National level VET graduate tracking that covers data related to employment only – example

The **VDAB School Leavers Study (BE-nl1)** provides insight into labour market transitions of recent school leavers in Flanders. The study uses administrative data from the VDAB (Flemish Public Employment Service), the Department for Education and Training and SYNTRA, the Flemish Agency for Entrepreneurial Training. The study has been conducted for the last 30 years.

The study looks at the whole population of school leavers across the Flemish education system (i.e. not just VET), including both graduates and early school leavers. It covers school leavers from lower secondary education up to university. Every year the study looks at a cohort of recent school leavers and tracks whether they registered as jobseeker with the VDAB during the year after leaving school; whether they were still registered as a jobseeker after one year and whether during this year they had signed off at any point (assuming they gained work experience during this time). As an illustration, the results published in 2017 look at the cohort that left school in June 2015 and checks whether they registered as jobseekers between June 2015 and June 2016. Results are compared to those of 2014 school leavers.

3.1.1.5 Methodology of measures in EU Member States

Use of register/administrative data in Member States

All EU Member States regularly collect a variety of information (register/administrative data) about their citizens that could potentially be used for VET graduate tracking. This includes data compiled in registers concerning education, unemployment, social security, taxes, population, ESF beneficiaries, and other activities (e.g. housing, enterprises/business, pensions, employment and contracts).

VET graduate tracking based on administrative data usually requires the combination of data from different registers. This is currently done in 15 countries/regions on a regular or irregular basis (AT, BE-nl, CZ, DE, DK, EE, ES-Catalonia, FI, IE, LT, LU, NL,

SE, SK, UK).[27] It typically involves the combination of one or several education registers and registers which collect information on people's situation in the labour market such as:

- Labour market / public employment services (PES) / (un)employment registers (AT, BE-nl, BE-fr, CY, CZ, DE, DK, EE, EL, ES-Catalonia, FI, FR, HR, HU, IT, LT, LV, MT, NL, PL, PT, RO, SE, SI, SK, and UK-S).
- Population registers (AT, DK, EE and SE).
- Social security (AT, DE, DK, LT, LU, and SE) and pension registers (DE and FI).
- Tax registers (DK, EE, FI, SE, and UK-E).

In 18 countries the combination of data is or could potentially be facilitated by a consistent personal code which allows linkage between different registers. Different codes can be used for this purpose such as:

- A personal identification number or code (AT, DK, EE and SE).
- Social security number (DE, FI and UK).
- Student or education number (FI and NL).
- Public service number (IE) or citizen service number (NL).
- Individual number or code created with the specific purpose of combining information from different databases (DE, NL).

Box 5 – Using a consistent personal code for linking different registers - examples

In the **Netherlands**, every year a national dataset is released combining data from the BRON (Basic education) database kept by the Executive Education Agency and the Social Statistical Database (SSB) with information on labour market participation. Both datasets use a unique number. The number has a different name in each case (BRON: education number; SSB: citizen service number) but are in principle the same. However, the government uses an encrypted personal identifier for the systematic matching/linking of data rather than the more sensitive education number or citizen service number.

In **UK-Scotland**, destination data from learning datasets (both further education and higher education data) and employment data are linked using National Insurance Numbers.

Other countries also have personal codes for each citizen which could potentially be used to link different registers. However, the matching of registers requires adapting the databases and this exercise can be technically complex. Also, data protection law may require that data is rendered anonymous so that individuals are no longer identifiable.

Two countries have been found to be currently creating personal codes with the purpose of register matching:

- Croatia introduced a Personal Identification Number in 2009 to be used in all official records and is currently restructuring databases around this number.
- Lithuania is currently developing a 'National system of monitoring and forecasting of human resources', which is based on data from the social security register on the occupations of employed people and the data on graduation from educational institutions, including initial VET. A code is currently being created which will allow linking data from the two sources.

Sources/methodologies used in Member States for tracking VET graduates

[27] For a further eight countries it was indicated that this could possibly be done.

For the 19 Member States where regular VET graduate tracking measures at national or regional level were identified, analyses show that:

- Six countries have regular measures that combine survey and administrative data (DE, EE, IE, NL, SE and UK).
- Seven countries use survey data only in their regular national or regional graduate tracking measures (CZ, ES-Basque Country, FR, HU, IT, MT and PT).
- Seven countries use only administrative data in their regular national or regional graduate tracking measures (AT, BE, DK, ES-Catalonia[28], FI, LU and SK).

In those cases where administrative data is used for tracking, one and the same person can be followed over time because continuous measuring is possible; however, these measures are not necessarily designed as longitudinal studies. Only in Germany is a survey-based longitudinal data collection approach applied where the same person is followed over a longer period of time (see section 3.2.3.2).

In those countries where exclusively quantitative or qualitative surveys are used (CZ, ES-Basque Country, FR, HU, IT, MT and PT), three apply systematic sampling (CZ, HU and IT), two convenience sampling (MT and PT), one random and convenience sampling (FR) and one refers to the total reference population (ES).

3.2 Key features of VET graduate tracking measures

3.2.1 Coverage of VET graduate tracking measures

3.2.1.1 Graduates included

VET graduate tracking measures may be specifically designed for VET graduates, but in many cases VET graduates are only part of the graduate population being tracked. Therefore, we can distinguish between

- VET-specific measures, which focus on the tracking of VET graduates exclusively;
- Wider measures, which track graduates from different types of education (e.g. all upper secondary graduates, including VET and other tracks) or wider groups of people, not exclusively graduates (e.g. all people in a given age cohort).

The research has identified 39 measures that solely cover VET graduates(seven are based only on administrative data , four on administrative data and survey, 28 on a survey only) and 46 wider measures (19 are based on administrative data only, five on administrative data and survey, 22 on a survey only). The wider measures identified cover:

- All graduates from lower secondary education (MT3, NL4, NL5).
- All graduates from upper (and lower, in some cases) secondary education (CZ2, IE2, IE3, IT2, IT3, PT1, SE1, SE2, SE3, SI4, SK1, UK6).
- All graduates from upper secondary and post-secondary non-tertiary education (BE-F1).
- All graduates from upper secondary education and CVET (UK5).
- All graduates from upper secondary, post-secondary non-tertiary education and CVET (FR5, UK4).
- Graduates from different education levels and providers, from (upper) secondary education upwards, including higher education (AT1, AT5, CZ3, EE1, ES2, FR2, IT1, LU3, MT1, MT2, UK1).
- Students in all formal education levels and types (DK1, FI1, FI2, FR1, LU1, LT1).
- Apprenticeship and skills programmes (UK3).

[28] Please note: as for Spain two regional measures are presented, this sums up to 20, though it is only 19 Member States.

- Employed people and/or jobseekers (BE-W1, DE3, DE4, PL1).
- People completing different types of training targeting unemployed people, including CVET among other programmes (FR4, DK2).
- Cohorts of young people from the same age group or with the same education level (DE1, DE2).

Some of the measures collect information not only on graduates but also on drop outs – which are sometimes used as a comparison group - (e.g. AT1, AT3, BE-fr1, DE1, DE6, LT1, PL1, PT1, SI1, UK1, UK3) and early leavers from education and training and young people not in education, employment or training (NEET) (e.g. AT1, IE1, LU1, NL5, and NL6).

For those measures where information on graduates who migrated after graduation is gathered (e.g. AT3, BE-fr1, DE1, FI1, MT1, NL5, NL6, PL1, PT1, SI1), it is not always clear whether this means migrants living in the country or graduates who migrated to another country. For those measures where clear information is provided (mainly those investigated in-depth) usually online surveys are used allowing for potential contact with graduates who migrated.

While administrative data usually cover wider target groups, surveys tend to focus on smaller, but often better-defined groups. It is also important to see who is in charge of the data: Public Employment Services may not have data available for those groups of VET graduates entering employment directly after finalising VET, as they may not register at PES. For surveys, access to respondents' contact data is crucial and this may only be held by providers.

The added value of wider measures is that they provide the possibility to compare different groups of graduates; however, this is not always done (see also section 3.2.3.3). Some countries, however, use these wider VET graduate tracking measures for gaining better insights into the functioning of the education system and to compare the progression of graduates from different educational pathways and levels.

Box 6 – Use of wider VET graduate tracking measures - examples

The Estonian measure **'Labour Market Success of Vocational and Higher Education Graduates'** (EE1) uses administrative data and covers VET and HE graduates of 2005 to 2013. The measure collects data on the employment status and the average income of graduates and provides feedback on the functioning of the education system for actors at various levels of aggregation (e.g. school level).

In France, the **Generation survey** (FR1) collects data on young people three years after they have left the educational system. It covers all IVET graduates up to PhD level, whatever their level or field of specialisation, and covers both learners undertaking schools based learning and those that completed apprenticeships. The use of a common methodology for all of the student population provides the possibility to assess how different learning characteristics affect the young people in their first years on the labour market, including whether it affects the rate they find employment, their occupations and their remuneration levels. More generally, the Generation survey sheds light on how young people fare or even compete in the labour market according to their specific educational level or field of specialisation. It also allows for analysis of the extent to which the same specific labour market conditions may differently impact young people of a given generation based on their socio-economic background or level of educational attainment. Every three years, a new survey is carried out among all young people who left the education system in the same year. Seven 'Generations' have been surveyed so far (Generations 1992, 1998, 2001, 2004, 2007, 2010 and 2013) and also a comparison across 'Generations' is possible.

In Lithuania, the '**National system of monitoring and forecasting of human resources'** (LT1) is expected to be launched in 2019. It will combine different administrative data. Its main aim is to provide quantitative data on the situation of human resources in the country in order to enable a clear understanding of the economic, labour market, educational and social problems and challenges related to human resource development and deployment. The new system will include a wide range of data on employment, economic status, career, migration, and progression to further education and learning. It will collect data on graduates of general education, initial VET and higher education. Data collected since 1995 will be used.

The Maltese '**Graduate Tracer Study**' (MT1) was an online survey of all academic and vocational students in licensed further and higher education institutions who completed their studies in Malta in 2013/14. It covered learners at MQF Levels 1 to 7. The aim of the study was to investigate whether graduates find adequate employment or if there is a mismatch between education and employment. The coverage of different types of graduates facilitates the comparison of their performance in the labour market.

3.2.1.2 VET sector (IVET/CVET) and education levels covered

The level most often covered by the measures mapped is upper secondary (73 measures) followed by lower secondary (30) and post-secondary non-tertiary (28) education. CVET is covered by 23 measures.

The reasons for targeting specific VET sectors and education levels can be explained as follows. On the one hand, VET is mostly delivered at upper-secondary level across EU countries and thus it is not surprising that this level (IVET) is most commonly covered. On the other hand, CVET is often more decentralised in Member States and this study did not aim to complete a comprehensive mapping of all CVET tracking measures. It is thus not surprising that fewer measures have been found for CVET than for IVET, even if CVET is delivered by the same providers as IVET in many countries. Another reason is the age of the analysed target groups: measures based on administrative data

usually focus on younger adults because the measures are relatively new (e.g. graduates since 2008/09 in the case of BibEr data, AT1) and the outcomes of investment in IVET have been of more interest to policy makers than CVET.

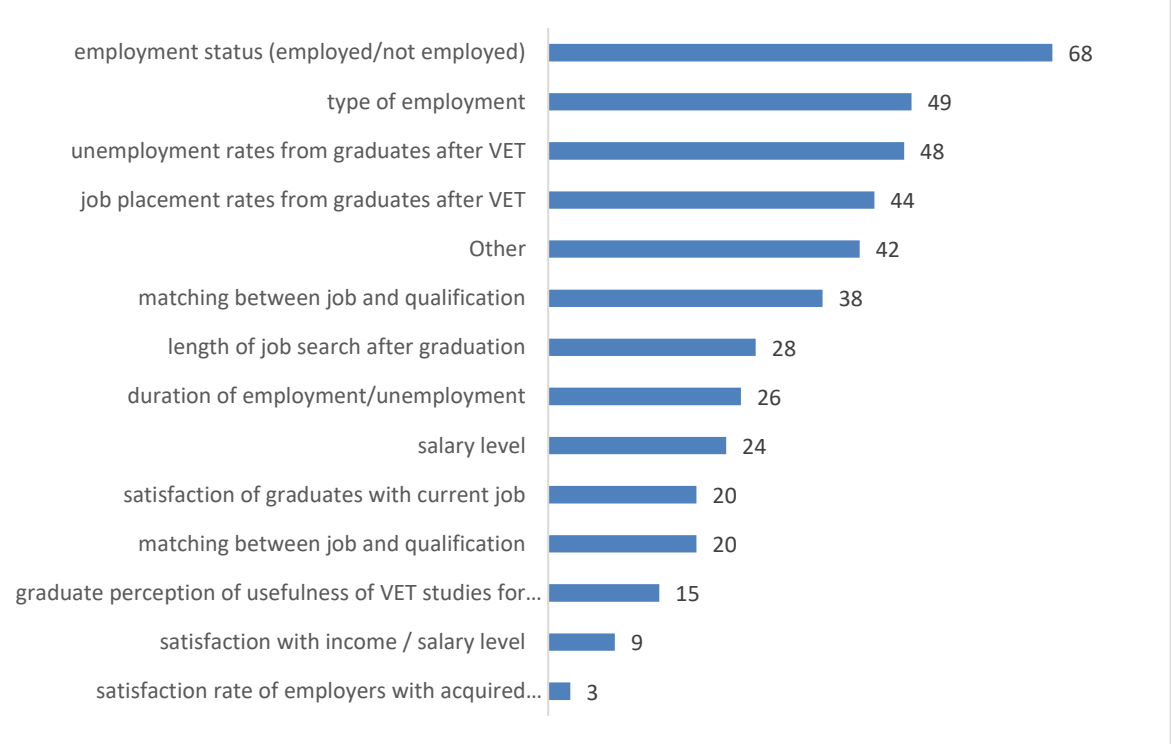
3.2.2 Main data collected by VET graduate tracking schemes

The majority of measures (66) gather data on graduates' destinations in terms of both employment and further education and training. Sixteen measures collect employment-related data only (BE-nl1, CZ3, CZ4, EE1, ES1, ES3, FR1, FR2, FR3, FR4, IT2, LU3, MT2, SK1, UK3, and UK4); three measures only collect education-related data (DK1, NL1, and NL4); and there is no information on the data coverage of the Romanian measure (RO1).

The VET graduate tracking measures reviewed capture a variety of employment and education data.

With regard to **employment-related data**, most measures (68 of 85) collect data on the employment status (employed/non-employed) of graduates. The next most common type of data collected is the type of employment (permanent/temporary; part-time/full-time; contract/self-employed) (49). Far fewer collect data on salary (24) and match between job and qualification (20).

Figure 2. Employment-related data. Number of measures covering them

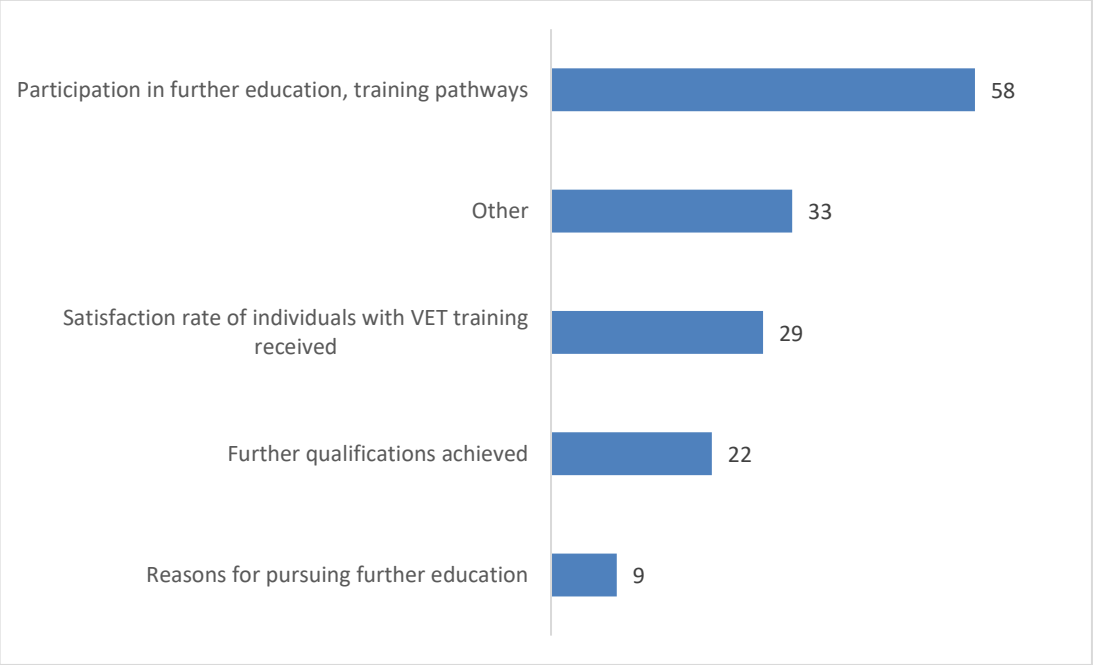


Source: ICF/3s research.

There is a great variety of data included under the 'other' category, such as: field/sector of employment (e.g. AT1, BE-fr1, DE3, DE7, ES1, FR2, MT1, NL3, IT3, PL2), number of job changes (e.g. AT2, AT3), number of applications until the first job (e.g. AT4, DE1), means used to find employment (e.g. AT4, ES2, FR4, IT3), employment during education and training (e.g. AT5), size of employer of current job (e.g. DE3, DE6, PL2), information on occupational health (e.g. DE4), unemployed graduate perception of the reasons for not finding a job (e.g. ES2, MT1), household arrangements (living alone or with parents) (IT1), and geographical mobility (e.g. MT1, PL3).

The education-related data most often covered by VET graduate tracking measures is, by far, participation in further education (covered by 58 measures). Fewer collect data on further qualifications obtained (22).

Figure 3. Education-related indicators. Number of measures covering them



Source: ICF/3s research.

The measures cover a wide variety of 'other' education-related data. In most cases these refer to the characteristics of the completed VET programme or the graduates' participation in education after graduation. This includes: plans for the future after graduation and their fulfilment (AT4), willingness to pay for further education and training (AT4), type of support measures for CVET provided by the current employer (DE1), participation in training measures for the unemployed (DE6), satisfaction with the previous training as a preparation for their current training (NL5, NL6), and reasons for not pursuing more education (MT3, PL2).

When looking at the data collection approach (see Section 3.2.3.1), the research clearly shows that indicators referring to subjective or qualitative information are only addressed in surveys. For example, subjective information, such as 'satisfaction of graduates with current job', 'graduate perception of usefulness of VET studies for finding employment', 'satisfaction with income / salary level', 'satisfaction rate of employers with acquired skills/competence', 'satisfaction rate of individuals with VET training received', 'career progression and satisfaction', 'reasons for pursuing further education' cannot be collected by analysing administrative data. Administrative data, however, can provide more reliable information related to indicators such as employment status or salary level but are also often included in surveys.

When comparing the data collected from this research with the indicators proposed in the recently issued 'Proposal for a Council Recommendation on tracking graduates',[29] it appears that:

- The following data recommended in the Proposal are covered by many of the measures identified in the mapping: transition to employment or further education and training, type of contract and employment status.

[29] COM (2017) 249 final. Brussels, 30.5.2017.

- The following data are covered by some of the measures identified: earnings, relevance of study to employment, career progression and satisfaction (the mapping only identified satisfaction with the current job and satisfaction with income/salary level), and perceptions of the quality and relevance of their education and training experience.
- The following data are not systematically covered in the mapping research:[30] socio-biographical and socio-economic information, data on previous VET studies (study intensity, study method, qualifications, credits received, field of study), 'occupation, professional status and/or activity', 'geographical and/or sectoral mobility' and 'participation in volunteering or civic engagement activities'.

Table 5. Level of coverage of the indicators recommended in the Proposal for a Council Recommendation on tracking graduates, based on the mapping (85 measures)

Type of indicator	Indicators in the Proposal for a Council Recommendation on tracking measures	High coverage (>30 measures)	Medium coverage (15-29 measures)	Low coverage (<15 measures)	Not covered by the mapping
Indicators on individual background	Socio-biographical and socio-economic information				x
Indicators on completed studies	Study intensity				x
	Study method				x
	Qualifications				x
	Credits received				x
	Field of study				x
Indicators on graduates' destinations	Transition to employment (or further education and training)	x			
	Earnings		x		
	Type of contract	x			
	Employment status	x			
	Occupation, professional status and/or activity				x
	Geographical and/or sectoral mobility				x
	Relevance of study to employment		x		

[30] Please note that the mapping focused on (certain) data on graduates' destinations. This does not mean that the measures covered do not collect the information listed in this bullet point. It only means that the current mapping cannot provide reliable evidence on coverage.

Type of indicator	Indicators in the Proposal for a Council Recommendation on tracking measures	High coverage (>30 measures)	Medium coverage (15-29 measures)	Low coverage (<15 measures)	Not covered by the mapping
	Participation in volunteering or civic engagement activities				x
	Career progression and satisfaction		x[1]	x[2]	
	Perceptions of the quality and relevance of their education and training experience		x		

[1] *The mapping has covered the 'satisfaction with current job'.*

[2] *The mapping has covered the 'satisfaction with income/salary level'.*

Source: ICF/3s research.

However, they were covered in the examination of the 31 measures subject to an in-depth review (see table below). From the analysis of these 31 case studies more detailed information about the coverage of these indicators is available:

- Although almost all of the measures (30) collect some background *socio-biographical and socio-economic information* (including all of the measures which are based on administrative data) the type and amount of information collected varies considerably across measures. While some collect only basic data such as age and gender (e.g. NL5), others collect more detailed information (e.g. civil status; net income of partner; children in the household, age of the children, citizenship, occupation mother/father).
- Information about the *study intensity and the study method* is rarely collected. Only three measures (CZ1, DE1, and IT1) collect information related to study intensity and six measures (CZ1, DE1, EE2, MT1, UK1, UK3) related to study method.
- *Qualifications* are addressed in two thirds of the measures (21). This could, for example, include the qualifications and certificates obtained (e.g. BE-fr1) or information on key competences and VET-related skills acquired (e.g. EE2).
- None of the measures – with the exception of DE1 – cover *credits received*.
- The *field of study* is collected by the majority of measures (24). There are a few exceptions which do not include this information (BE-nl1, DE7, HU1, IE1, LT1, PL2 and SE1).
- Most of the measures (22) cover the *transition to employment (or further education and training)*, *earnings* (21) and *type of contract* (23). In the case of Denmark (DK2) these indicators are only available by combining the register with other data at Statistics Denmark.
- While all the measures cover *employment status* (employed or unemployed) only 20 ask for *occupation, professional status and/or activity*.
- The indicator *geographical and/or sectoral mobility* is covered by 12 (AT1, AT3, BE-nl1, DE1, DE6, DK2, EE2, FI2, FR1, HU1, LT1, MT1) measures.
- In 18 measures the *relevance of study to employment* is covered. Most often this refers to the match between job requirements and qualification as well as the match between position and level of education.

- There are only six cases where participation in *volunteering or civic engagement activities* is covered. Four of them (AT1, AT3, FI3, FR1) refer to civil service and in the case of Austria and Finland to mandatory military and civil service.
- In 12 cases (BE-nl1, CZ1, DE1, DE4, EE2, FR1, HU1, IT1, MT1, NL5, NL6, PT1) information about *career progression and satisfaction* is covered. All of them are based on quantitative surveys (EE2 also includes administrative data).
- With regard to the perception of the *quality and relevance of education and training experience* there are 13 measures that cover this indicator: BE-nl1, CZ1, DE1, EE2, HU1, IE1, IT1, NL5, NL6, PL2, PT1, SI1 and SE1.

Table 6. Level of coverage of the indicators recommended in the Proposal for a Council Recommendation on tracking graduates, based on the 31 measures reviewed in-depth

Type of indicator	Indicators in the Proposal for a Council Recommendation on tracking measures	High coverage (>20 measures)	Medium coverage (10-20 measures)	Low coverage (<10 measures)
Indicators on individual background	Socio-biographical and socio-economic information	x		
Indicators on completed studies	Study intensity			x
	Study method			x
	Qualifications	x		
	Credits received			x
	Field of study	x		
Indicators on graduates' destinations	Transition to employment (or further education and training)	x		
	Earnings	x		
	Type of contract	x		
	Employment status	x		
	Occupation, professional status and/or activity		x	
	Geographical and/or sectoral mobility		X	
	Relevance of study to employment		X	
	Participation in volunteering or civic engagement activities			x
	Career progression and satisfaction		X	
	Perceptions of the quality and relevance of their education and training experience		X	

Source: ICF/3s research.

3.2.3 Methodology used

In this section we present the methodology used in the 85 measures identified in the study.

3.2.3.1 Data collection approach

The 85 measures identified can be distinguished based on their data collection approach. The method most often used in VET graduate tracking measures is surveying (in 59 measures); administrative data is collected in 35 measures:

- In the majority of cases, data is collected based on surveys only (50): 42 measures use quantitative survey methods only, 4 measures use qualitative survey methods only (IT1, IT2, IT3, IT4) and 4 measures use both, quantitative and qualitative methods (AT4, FR4, HR1, RO1).
- 26 measures are based on administrative data only.
- 9 measures use data collected by surveys as well as administrative data (quantitative surveys: AT3, BE-fr1, DE1, LU2, SE1, UK1; qualitative surveys: BE-fr3, CZ4, EE2).

Administrative data is used in national and regional level measures only. However, there is one exception: a provider level measure in the Czech Republic ('Tracking of graduates' labour market outcomes at the vocational school Horovice' - CZ4) which combines data collected from a survey with administrative data (unemployment register).

More information on the data collection approach is available for those measures where case studies have been conducted. From the 31 measures analysed in-depth 14 measures used qualitative or quantitative survey methods only. The in-depth review provided some insights into the rationale for choosing different survey techniques. This found that:

- Seven measures (CZ1, DE4, IT1, MT1, NL5, NL6, and PT1) exclusively opted for an online questionnaire or computer-assisted web-based interviews (CAWI), mainly because of the availability of email addresses and cost considerations. In order to attain reasonable response rates, reminders were sent out (e.g. PT1 and MT1). Another measure (FI3) conducted a survey in a digital form.
- Two measures (FR1, and IE1) exclusively conducted their surveys through telephone interviews. For the measure in France (FR1) it was reported that when designing the 'Generation Survey' in 1997, the internet was not frequently used and that telephone interviews were chosen as the face-to-face option would have been too costly. Since 2017, a mixed approach using telephone and online technologies is used.
- For one measure (DE7) a paper-based approach was chosen because from experience a higher response rate was expected compared to online surveys.
- One measure (HU1) is based on face to face interviews.
- Two measures combine several techniques (PL2 and SI1):
    - In a Polish measure (PL2) telephone surveys (CATI) and online questionnaires (CAWI) are used. CAWI is preferred, but answers received via internet contact are not enough to attain the intended sample (approx. 1/3 of data is collected this way) and it is considered necessary to call the graduates. This approach was chosen because it was less expensive than face-to-face interviews.
    - In Slovenia (SI1), the main aim of the survey 'Monitoring of employability of graduates of upper-secondary vocational and technical schools' was to develop and to test the methodology for collecting and analysing data on graduates and their employment status. Therefore, a combination of online questionnaires and interviews was chosen to compare these.

For those measures using administrative data only (11 of 31 measures studied in-depth), the rationales for choosing this approach is mainly relate to data accessibility and objectivity. These measures mainly combine register data from different sources (e.g. social security, employment and unemployment registers, education registers, tax registers, population registers. An example is presented in the box below.

Box 7 – VET graduate tracking based on administrative data only - example

The Austrian measure **'Education-related employment career monitoring'** (AT1) is a national level initiative which has been developed to analyse the transition from education to employment of graduates and drop-outs of all formal education and training programmes in Austria. BibEr includes administrative data about education and the labour market. The most important data sources of BibEr are the social security, the unemployment and the education registers. All data that is used for the 'BibEr data cube' is merged by an anonymous key and labelled with the branch-specific personal identification number (*bereichsspezifisches Personenkennzeichen*) of official statistics in Austria. To ensure data protection, the method of 'target record swapping' is used: Individual characteristics of data sets at a certain percentage (those that are potentially easier to identify) are interchanged ('swapped') with those of other data sets. Care was taken that the target swapping for cases where cell frequencies are greater than 30 do not lead to distortions of the results.

Where administrative and survey data is used together (used in 6 of the 31 measures studied in-depth: AT3, BE-fr1, DE1, EE2, SE1, UK1), it allows in some cases for the more objective data from administrative records to be combined with individuals' responses to surveys. The measure DE1 unusually uses an identifier to link the panel survey results to the register data of the individual respondents. Some examples of measures that use both are presented in the box below.

Box 8 – Combination of survey and administrative data - examples

The '**Labour market entry among upper secondary school graduates**' measure in Sweden (SE1) combines administrative and survey data. This complements other existing graduate tracking measures that only use administrative data (e.g. the 'Establishment on the labour market three years after upper secondary school' measure). In particular, the use of survey data enables the tracking measure to provide further detail on some qualitative aspects that are not, or only partially, covered in the administrative data, including the main occupation of the graduates, as well as the matching between job and qualification.

The '**VET Graduates` Research**' measure in Estonia (EE2) combines three methods: administrative data analysis, web-based questionnaire for graduates and interviews with graduates and relevant stakeholders (e.g. members of the Commission of Occupational Examination, and public servants in education).

The '**Ulysses Survey**' (BE-fr1) is conducted through telephone interviews. This option was preferred to ensure that respondents fully understand the questions and it was relatively long (average duration of 15 minutes). A relatively large number of respondents do not always have a good command of written and / or spoken French, which would need the assistance of an interviewer. Administrative data collected by Brussels Formation is used to establish the social background of the surveyed individuals (age, gender, nationality, etc.). Bruxelles Formation is currently looking into the possibility of updating the tracking system by making use of available administrative data (on employment and re-entry into education or training) to complement the survey data. This would remove survey bias as well as response subjectivity.

The German '**National Educational Panel Study'** (NEPS; DE1) is a longitudinal study where one individual is surveyed several times by using a multi-method design: paper-and-pencil approach, computer-assisted telephone interviews [CATI], computer-assisted personal interviews [CAPI], self-filling questionnaires on the computer, online surveys, competence tests [PAPI] and participatory observations [only within the newborn cohort]. The panel has 60,000 people so that quantitative analysis can be carried out. Data gathered for Starting Cohort 6 'Adults' (SC6) allows for, for example, tracing the acquisition of education across the adult life course and following the course of education and employment of younger cohorts after their job entry. In SC6, there is a link with the social security data of the Federal Employment Agency *(Bundesagentur für Arbeit).* In the first contact the permission is obtained from the participants that the NEPS can link the survey data with social security data. This is necessary due to data protection regulations as well as because most people in Germany do not know their social security number and hence name and address have to be provided in order to access their social security number. For linking the two data sources a non-probabilistic procedure is followed which is conducted by experts from the IAB (Institute for Employment and Research of the Federal Employment Agency). Up-to-now approx. 95% of the participants agreed to link the survey with social security data. The added value of combining the two approaches is that retrospective subjective information received from the adults can be verified and enriched with factual information obtained from administrative data

3.2.3.2 Timing and frequency of data collection

One important feature of tracking measures is the measurement strategy applied. Data might be collected at different times:

- At a single measurement point (single cross-sectional): data and information about individuals is collected at one moment in time (for example, 12 months after graduation – single observation).

- At multiple measurement points (multiple cross-sectional): outcomes for the same individuals are collected at several moments in time after graduation (for example, 12, 36 and 60 months after graduation). A specific variation of this measurement strategy is continuous measuring. This refers to longitudinal studies where the same individuals are followed over time in a continuous way (e.g. each month or each year or at varying times over a 20-year time span).

Forty-six of the 85 measures collect data at a single measurement point and 37[31] measures collect at multiple measurement points[32]. In those cases where multiple measurements are applied and where this information is available most often the same individuals are measured up to five times after graduation. In some of the multiple cross-section measures based on administrative data they could be used also for longitudinal studies.

The time lapse most often chosen is a period of 1 to 2 years after graduation; a few measures collect data earlier (e.g. six weeks after graduation in the case of PT2 or six to nine months after graduation in the case of NL7). A few measures collect data up to six years after graduation. In UK3, administrative data is analysed for up to seven years after graduation, as national guidance[33] states that this is the maximum period of time when qualification attainment is likely to affect earnings

For most of the measures where this information is available, the rationale for the time frame chosen is that graduates should have gained some kind of work experience and have reached some stability in their employment/career. This is believed to be the case within one to two years after graduation (AT1, AT3, DE6, FI1, and PT1). It is also in some cases when mandatory military and civil service should have been ended. One measure (ES1) stops tracking after five years, because it is believed that after this period labour market results can no longer be treated as graduates' incorporation into the labour market. Further information on the rationale for choosing specific time lapses after graduation in the single cross-sectional studies is provided in the box below.

[31] The measure FR1 uses a mixed approach: There is alternately a 'full generation' survey and a 'light-generation' survey; the latter includes only one measurement point whereas the 'full generation' survey includes three measurement points. In this study, this measure is counted as collecting data at multiple measurement points.

[32] Information on measurement points was not available for two measures

[33] BIS research paper 105 (2013) Review of the economic benefits of training and qualifications, as shown by research based on cross-sectional and administrative data

Box 9 – Rationale for choosing the measurement point - examples

In a **Polish** measure (PL2) the time lapse after graduation was based on consultation with experts and desk research on similar measures. This found that if graduates are not contacted fairly quickly, they will be less willing to participate in a study and will not recall certain things (e.g. their earnings from the first job, the relevance of their training). Hence, 12 months after graduation (or slightly more) is considered an optimal time not only for graduates to remember about their studies, what they have learned and to reflect on whether their studies were useful, but also to enter and navigate the labour market. In addition, within this period young people still have a bond with the place they undertook IVET. Providers receive information from the survey one year and a half after the end of the study and they would be less supportive of this measure if this period was prolonged.

In an **Austrian** measure (AT3) for graduates of dual VET, a time lapse of 3 years after graduation was chosen for analysing administrative data in order to reduce the share of graduates conducting their military or civil service after graduation and to capture employment outcomes and work experience following graduation.

In a **German** measure (DE7 – covering CVET) data and information for graduates in three years (2008, 2009, and 2010) was collected at one moment in time in 2014 (which means that data on graduates of 2008 was collected 6 years after graduation, data on 2009 graduates 5 years after graduation and data on 2010 graduates 4 years after graduation). The time frame for surveying graduates was chosen because the study wished to capture the extent that those who obtained the master craftsperson's qualification became self-employment or established a company.

In an **Irish** measure (IE1) learners were contacted nine-months to a year after they completed their course. It was felt that this gave enough time for learners to enter the workforce and sustain employment. Similarly in a measure from Malta (MT1) the time frame of one to two years was chosen so that contact details of graduates were most probably still valid and most of the graduates would already have been able to enter the labour market.

More detailed information on the measurement strategy used is available for the 31 measures that were reviewed in-depth. From these, 15 collect data at one specific moment in time (at a single measurement point), and 16 at multiple measurement points. In most of the measures where there is multiple measurement, it is completed over a few years; the longest period of tracking is six years CZ1). For example: In AT1 there are four measurement points (6, 12, 18 and 24 months after graduation), in FI2 there are three measurement points (1, 3 and 5 years after graduation), in HU1 there are two measurement points (19 months and 2 years and 7 months after graduation) and in ES1 there are five measurement points (1, 2, 3, 4, 5 years after graduation).

Some measures even start measuring before graduation (CZ1, FI3, PL2, and PT1 - see also box below).

Box 10 – Measures starting measuring already before graduation - examples

The '**Observatory of secondary students' trajectories**' measure (PT1) conducts three different surveys: 'Students entering upper secondary' (students in the first year of upper secondary); 'Students leaving upper secondary' (students in the third (last) year of upper secondary) and 'Youth post-secondary' (14 months after the expected completion of upper secondary). Each of the surveys has a different focus. The 14 month time lapse for the graduate survey measure was selected because (a) some graduates would repeat their last year or try to improve their grades or repeat

the access exams to university and (b) if they did delay entry to further studies their destination would be known after 14 months not 12.

The '**OPIX student feedback**' measure (FI3) conducts three different surveys:

■ The first 'entering' survey (tulokysely) is completed at the beginning by the new students;

■ The second survey is completed during their course in the second year of their studies (olokysely); and

■ The third survey is completed at the final phase of the studies but when the students are still registered as such (päättökysely). This third survey only focuses on intended destination after completion.

For measures using administrative data (e.g. DE6, DK2 and AT3[34]) tracking over longer periods would in general be possible, but interviewees did not indicate that these measures were currently used in this way or that this was planned for the future. From the measures reviewed in-depth, four out of the 16 measures with multiple measurement points are considered as longitudinal studies. For example, one German measure (DE1) is clearly conceptualised as a longitudinal survey and measures different cohorts every year up to 20 years after graduation depending on the size of the panel sample (see box below).

Box 11 – National Education Panel – Germany (DE1)

The **National Educational Panel Study** (NEPS) aims 'to collect longitudinal data on the development of competences, educational processes, educational decisions, and returns to education in formal, non-formal, and informal contexts throughout the life span'. The NEPS is commissioned by the Federal Ministry of Education and Research (BMBF) and carried out by the Leibniz Institute for Educational Trajectories (LIfBi), an independent research institution.

The NEPS uses a multi-cohort sequence design and follows samples of six starting cohorts in a longitudinal manner. The starting cohorts are: new-borns, kindergarten (4-year olds), 5th grade, 9th grade, first-year students, and adults (birth years 1956 to 1988). For tracking VET graduates, the 9th Grade cohort can assess educational or vocational paths adolescents choose after completing compulsory schooling. Cohort 6 'Adults' is also asking participants retrospectively about their education and employment history. The six starting cohorts are being followed over several years and usually are surveyed once a year.

3.2.3.3 Sampling approaches

Out of the 85 VET graduate tracking measures analysed, 44 refer to the total reference population and 41 are based on a sample. Most of the measures using administrative data (27) cover the total reference population. Moreover, 14 measures using a survey and three measures (BE-fr3, LU2, and UK1) using both survey and administrative data refer to the total reference population.

For the 41 measures that use a sampling approach, most measures are based on survey data (33), two of them are based on administrative data (DE3 and MT2) and six of them use both administrative and survey data (AT3, BE-fr1, CZ4, DE1, EE2, and SE1).

[34] AT3 combined administrative and survey data gathering; the survey, however, did not gather information for the same individual, but graduates of dual VET in general. Administrative data could potentially be used for tracking the same individual over longer periods of time, but this is not done yet.

As for the sampling technique,[35] around half of the measures that use samples use convenience sampling (19). Random and systematic sampling techniques are less often used. Twelve measures are based on systematic and nine on random sampling. None of the VET graduate measures at sectoral and provider levels use systematic or random sampling.

The in depth analysis of 31 measures enables the characteristics of sampling approaches and the reference population to be explored in more detail. This found that around half of the examined measures (14 of 31 - AT1, BE-nl1, DE6, DK2, EE1, ES1, FI2, FI3, LT1, LU1, SE2, SI1, UK1 and UK3) cover the total reference population. Most of these are based on administrative data. Only two of these measures (FI3 and SI1) are based on a survey. In the case of FI3 the total reference population is all VET students at the *Esedu Savo* Vocational College in Eastern Finland, and in SI1 the target group includes all students who were enrolled for the first time in the first year of VET programmes 6 years before the survey was conducted. These populations (FI3: approx. 2,000 and SI1: 1,271) are much smaller than in measures based on administrative data.

From the 31 measures investigated in-depth 17 measures use a sample. From these, five apply systematic sampling (DE1, HU1, IE1, IT1 and SE1 – for some examples see also box below) and six apply random sampling (AT3, CZ1, DE4, FR1, NL5 and NL6). The response rates in these measures ranged from around 3% (FR1) to 37% (CZ1). The other six measures use a convenience sample (BE-fr1, DE7, EE2, MT1, PL2 and PT1). In all of these cases this was because of the availability of (email) addresses of graduates so they could therefore (easily) be approached to participate in the survey. Response rates, where this information was available, ranged between 5 and 50%.

[35] Systematic sampling (arranging the reference population according to some ordering scheme, e.g. gender, age, region, and then selecting elements at regular intervals through that ordered list), random sampling (all members of the reference population are given an equal probability), or convenience sampling (reference population members who agree to participate). For FR4, the sampling technique could not be identified based on desk research.

Box 12 –Examples of measures based on systematic sampling

The longitudinal **National Education Panel** (DE1) measure uses a stratified cluster sampling approach for Starting Cohort 4 ('9th Grade'). This was structured as follows:

1. A randomised sample of regular schools at lower secondary level. This distinguishes between five types of school (grammar schools, middle secondary schools, lower secondary schools, comprehensive schools, and schools offering all tracks of secondary education except the grammar school track).

2. A random selection of 1-2 Grade 9 classes at the sampled schools.

3. All students of the selected classes invited to participate in the study. At the time of sampling in 2010/11 the total reference population of 9th graders in Germany was 793,693. The achieved sample at the first wave of the survey was 13,038; in the last wave of the survey (2015) 9,044 were still involved in the panel.

The ***Foras Áiseanna Saothair*** (FAS) programme participant survey (IE1) is based on a stratified sample by programme, age (over 25; under 25), gender, location and length of time unemployed. The measure includes both learners that completed their course and those that did not. The initial sample contained over 17,362 learners that had participated in a FAS programme between January and March 2014. The response rate achieved was at 12%.

The **Labour market entry among upper secondary school graduates** (SE1) measure uses a stratified random selection based on the type of graduation (full graduation or "partial" graduation), region (three groups), national programmes and gender. In some groups, males and females were combined to avoid very small stratums. The sample allocation was specified so as to allow for an analysis by national programme, gender and region. It is also possible to present an analysis for graduates born in Sweden with those born abroad and differences by parents' educational attainment (although the latter is not published in the official data tables). For non-graduates, the analysis is limited to national programme and gender. The total sample selected was 11,502 (10,002 graduates and 1,500 non-graduates).

3.2.3.4 Sample sizes

Nine measures (AT1, BE-nl1, DK2, ES1, FI2, NL5, SE1, SE2 and UK1) investigated in-depth contain information on the size of the total reference population and the share of VET graduates engaged (see table below). The numbers show that the size of the target group of each measure differs quite extensively.

Table 7. Data collection approach, size of the total reference population and share of VET graduates

Measure	Data collection approach[1]	Coverage[3]	VET segment[4]	Size of the total reference population	Share of VET graduates	Measurement points[6] / timing (measurement after graduation)
AT1	Administrative data	wider	IVET/CEVT	1,369,567	455,534	Multiple: 3, 6, 12, 18, 24 months
BE-nl1	Administrative data	wider	IVET	71,518	27,921	Single: 1 year

DK2	Administrative data	wider	CVET	1,152,010	381,746	Multiple
ES1	Administrative data	VET	IVET	242,227	8,494[36]	Single: 2 to 4 years
FI2	Administrative data	wider	IVET/CEVT	1,376,718[37]	409,803	Multiple: 1, 3, and 5 years
NL5	Quantitative survey	wider	IVET	13,672	10,786	Single: 1.5 years
SE1	Administrative & survey data	wider	IVET	202,285	90,866	Single: 1 or 3 years
SE2	Administrative data	wider	IVET	93,511	42,922	Single: 3 years
UK1	Administrative & survey data	wider	IVET/CEVT	50,198	32,925[38]	Multiple: 3-6 months

Source: ICF/3s research.

For 13 measures using a survey the sample and the achieved sample size can be identified (AT3, BE-fr1, CZ1, DE1, DE4, DE7, FR1, IE1, IT1, MT1, NL5, NL6 and SE1). The following table provides an overview on the sample size and the achieved sample size (response rate). Further information on the achieved sample size is provided for some of the measures in the box below. Again, the sample sizes differ widely.

Table 8. Sample size and net sample size (response rate in %)

Measure	Coverage[3]	VET segment[4]	Measurement points[6] / timing (measurement after graduation)	Sample size	Achieved sample size	Response rate in %
AT3	VET	IVET (dual VET)	Single: 2 years[39]	4,635	655	14.1%
BE-fr1	wider	CVET	Single: 13-24 months	1,652	836	50.6%
CZ1	wider	IVET	Multiple: before leaving schools, 3 years and 6 years	7,836	2,905	37.0%
DE1	wider	IVET	Multiple	793,693	13,038	1.6%

[36] Only those in upper secondary VET.

[37] Graduates from the years 2009 to 2015.

[38] Graduates of upper secondary education, but the share of those involved in academic and in VET studies is unclear.

[39] This measure combined survey data with administrative data. Administrative data was collected at multiple measurement points: 8 months, 1 year, 2 years, 3 years, 4 years, and 5 years after graduation.

DE4	wider	IVET/CVET	Single: 4-6 years (Lot 3: graduates of dual VET from the years 2006 to 2008 after entry into the labour market)	317,980	20,036	6,3%
DE7	VET	CVET	Single: 6, 5 and 4 years	2,106	183	8.7%
FR1	wider	IVET	Multiple: 3, 5 and 7 years (for 'full generation' surveys only; 'light generation' surveys: single – 3 years)	693,000	19,500	2.8%
IE1	VET	IVET/CVET	Multiple: 9-12 months	17,362	2,024	11.6%
IT1	wider	IVET	Single: 4 years	36,635	17,584	48.0%
MT1	wider	IVET	Single: 1 to 2 years	1,480	781	52.8%
NL5	Wider	IVET	Single: 1.5 years	13,672	3,690	27.0%
NL6	VET	IVET/CVET	Single: 1.5 years	150,699	28,738	19.0%
SE1	wider	IVET	Single: 1 to 3 years	19,889	9,795	49.2%

Source: ICF/3s research.

Box 13 – Statements on sample size

In the measure '**After graduation of dual VET: Training and professional success of graduates of dual VET in Austria**' (AT3) the interviewee stated that the sample size was sufficient to make general statements for all graduates / drop-outs of the dual system. However, for questions regarding graduates of apprenticeships within specific occupational groups, the number of cases was often too low (fewer than 50) and hence, a statistically accurate analysis is not possible.

In the measure '**What are the career pathways of master craftsperson's in the skilled crafts sector? Graduate survey 2014**' (DE7) according to the interviewee the overall response rate was sufficient to answer the main research questions; however, for some questions (e.g. occupations, income or age of the respondents) the sample size was not sufficient to make meaningful statistical analysis.

For the '**Follow Up Survey of FÁS Programme Participants in Ireland**' (IE1) The sample size is sufficient to disaggregate by programme, gender and age (over and under 25) and broad subject areas. Data is also collected by region but this information is not published as the sample size is too small for these findings to be robust.

The '**Graduate Tracer Study**' (MT1) in Malta checks the data gathered with administrative data available with regard to representativeness. This is used to weight responses. The response rate is deemed sufficient to answer the main research questions.

3.2.3.5 Approaches to measuring the counterfactual

Only three of the 31 measures examined in depth use a counterfactual group. All these measures (AT3, SE1, and UK3) use administrative data to compare graduate destinations with drop-outs.

However, 17 measures (AT1, BE-nl1, CZ1, DE1, DE4, DE6, EE2, ES1, FR1, LU1, LT1, MT1[40], NL5, NL6, PL2, PT1, and UK1-S) compare the destinations of different types of VET graduates. This included:

- Graduates of different education tracks e.g. vocational and academic or school-based VET and apprenticeships (AT1, BE-nl1, CZ1, DE1, ES1, FR1, LU1, LT1, MT1, NL5, NL6, and PT1).
- Graduates of different regions (BE-nl1, PL2, and UK1-S).
- Graduates and drop-outs (DE6 and LU1).
- Graduates of input- and output-oriented curricula (EE2).
- Graduates of different 'generations' (FR1).

Nine measures did not use comparator groups or make comparisons between different groups of VET graduates (BE-fr1, DE7, DK2, FI1, FI3, HU1, IE1, IT1, and SI1).

3.2.4 Data collected and published

The way data on education, training and employment of graduates is collected and published can either be:

- *Precise:* discrete information on the educational activities or qualifications achieved (for example, the type of programme, the year of participation, type

[40] For MT1, the comparison between different groups of graduates was not done systematically; however, for some indicators results are compared (e.g. comparison of employment status between graduates of vocational education and academic education).

of provider) and subsequent employment (in work, unemployed, earnings, sector of employment), or

- *Summary information*: more or less broad categories of educational programmes or qualifications and subsequent employment are used (for example, providers classified by ISCED, or only stating 'employed' or 'not employed').

Another possible distinction about data collected is, whether the data provides objective information (e.g. age, sex, employment status, qualification obtained), usually produced by administrative datasets, versus individually estimated information (satisfaction with the VET programme completed, career plans and their fulfilment, reasons for successful or unsuccessful school-to-work transition, etc.), usually produced within surveys.

And finally, the data collected may be different to the data published, mostly for reasons of protection of individual data, but also for simplifying complex results.

Most of the measures (65) try to gather precise (discrete) information, especially administrative data collections and quantitative surveys. Only a few (19) gather information on more or less broad categories, especially when the target group and how to approach the specific target group are defined broadly[41].

The collection of precise (discrete) data does not mean that this kind of data is published in the same way. For the majority of the national tracking measures (27) the data collected is only made publicly available in more or less broad categories. This is observed mainly in quantitative surveys (especially due to individual data protection), but also sometimes for administrative data (again, with the main reason being individual data protection). However, a considerable share of the national level measures provide precise (discrete) information to the public (20).

Publicly available data is usually presented in the form of downloadable summary reports (available for 61 measures). In some cases, tables with aggregated data can be downloaded as Excel files (19 measures) and, in 16 cases, data is presented in other formats. Annex 8 lists the links to publicly available data for the measures where it is available.

3.2.5 Data protection and accessibility

In most cases, full data is not publicly available or only partly made available on request for specific users. Only nine VET graduate tracking measures make the data collected fully available to the public. Most often data is available with limitations. Data are usually made available at an aggregated level only (35). In 11 cases 'other limitations' to making data available were reported. The limitations include, for example, the availability of a limited data set that can be used for testing only (DE3), or the fact that data can only be accessed under certain conditions (such as safe rooms, e.g. AT1).

Overcoming data restriction issues for researchers and other (public) organisations often needs specific agreements to respect individual data, and often still the data collection organisation will check the analyses, to see whether individual data protection may be breached or not. The example in the box below shows this kind of multi-layer data protection procedure.

[41] This information is not available for ES4.

Box 14 – Multi-layer data protection procedure – examples

For accessing the **German NEPS** measure data (DE1) the prerequisite to access the data is a data use agreement with the Leibniz Institute of Education Trajectories e.V. (LIfBi). There are several ways available to access the data once a data use agreement has been concluded:

- Scientific Use Files for downloads: These data files are restricted versions of the original survey data. The NEPS generates these files using anonymisation techniques based on information reduction such as recording or removing of sensitive information to protect privacy and to minimise the risk of disclosure. Scientific Use Files are available in the download area.

- Remote Access Technology – Remote NEPS offers a 'virtual desktop' in a controlled environment that allows access to more sensitive micro data remotely. No software has to be installed and users can work on any operating system. The only requirement is access to the Internet. An encrypted connection with Remote NEPS provides the gateway to the data. After registration, authorised researchers access the data using an innovative and highly secure biometric authentication system (keystroke biometrics, certified by TÜV). Data are only available for online analyses and cannot be transmitted to the users' system. After data analysis is complete, researchers can request the delivery of output. The NEPS staff review all output requests for confidentiality and use strict controls to ensure the integrity of the output as well as its correct and timely delivery to the researcher.

- On-site access: The analysis of very sensitive information is only provided on-site in Bamberg where the data are available within a controlled physical environment. The secure site prevents any copying or removing of sensitive data from the premises of the NEPS. All input or output devices are locked down and the computers are not connected to the Internet or any local area network. The NEPS staff monitor all work with the data at all times. Any access to printers is controlled, and outputs are reviewed before they can be taken away. In this controlled environment, all data are highly secure and researchers can access the full range of information, including sensitive items.

To ensure data protection, the **'Education-related employment career monitoring'** measure (AT1) uses the method of 'target record swapping': Individual characteristics of data sets at a certain percentage are interchanged ('swapped') with those of other data sets, considering above all 'risky data sets' (those that are potentially easier to identify). Care was taken that the target swapping for cases where cell frequencies are greater than 30 do not lead to distortions of the results. Analysis can only be conducted upon a data use agreement in the Safe Room of Statistics Austria who checks analysis with regard to data protection.

In other countries access to administrative data is regulated in a specific agreement only, where the user of data complies with data security rules, but without a multi-layer data protection procedure.

Box 15 – Regulating access to administrative data in a specific agreement – example

In the Danish **'Cross-sectional course register'** measure (DK2) main numbers are available through the online databank at Statistics Denmark. Statistics Denmark estimates which main numbers should be published. It is also possible to buy more detailed data sets, or to gain access to microdata via paid access, a specific researcher agreement or via ministerial agreements. These agreements establish data security rules that must be complied with. For example, the disaggregation of data in the statistics may be limited to avoid that individuals can be identified; meaning that the data should then be presented at a more aggregated level to 'de-identify' individuals. This access makes it possible to combine the register with other types of administrative data.

3.2.6 Use of data

All VET graduate tracking measures are at least used at the same level as they are located; some are used also at 'lower' levels (e.g. national measures are often used for regional analyses), and some measures referring to 'lower' levels are used for informing 'higher' levels as well (e.g. results of regional measures can be used for informing national decisions or results of provider measures can be taken into account for regional developments).

The five key groups that have been identified as using results from VET graduate tracking (for different purposes) are:

- System level stakeholders (ministries, social partners, national institutes of education, etc.): in particular for informing educational and employment policy, but also for developing and reforming VET on system level (curricula, structures, etc. – as part of quality assurance arrangements).
- Employment offices: information is, for example, used in employment counselling or for evaluating support schemes.
- VET providers (VET institutions): in particular for adapting their curricula (as part of quality assurance activities) and to position themselves in the market, but also for informing prospective VET students about the value of training.
- Prospective VET students and their parents as well as career advisors and guidance counsellors: in particular for gaining information on the outcomes of different educational pathways as a basis for their career choices.
- VET researchers: in particular for conducting national and international comparative analyses and/or for developing findings on the systemic features of VET.

VET graduate tracking measures are therefore used for a variety of purposes, including to:

- Support policy planning and development and evidence-based decision making (39 measures).
- Adapt education and training offers to increase the quality of VET provision and the effectiveness of learning outcomes (31).
- Provide information to prospective students (23).
- Provide career guidance (19).
- Develop indicators for the allocation of funding / resources (12).
- Conduct benchmarking / performance ranking (12).
- Ensure the quality of upskilling or reskilling measures as part of Active Labour Market Policies (8).

Box 16 – Purposes for using data collected in VET graduate measures – examples

The '**Labour market entry among upper secondary school graduates'** national measure (SE1) is primarily used for monitoring outcomes across the 18 national programmes, evaluation of upper secondary education programmes, and budgeting at the system level by the Ministry of Education and the Swedish National Education Agency. This in turn informs and influences discussions between the Swedish National Education agency and the national programme councils around the development of the programmes.

The '**College Leaver Destinations 2014-15**' measure (UK1), carried out by the Scottish Funding Council (SFC), provides data on the destination of 16-24 learners that complete further education or higher education programmes in Scotland. The data is used by providers (colleges) to inform what programmes need improvement and what programmes are working well. Anecdotally, colleges have said that the data is very helpful in their own planning of programme delivery. To support the use of the data, the SFC is planning to produce a data dashboard to make it easier for colleges to interrogate the data. The data is also used by the SFC to monitor programmes against provider Outcome Agreements related to tackling youth unemployment and the mobility of learners from disadvantaged areas.

The **survey of VET graduates regarding their transition from education into the labour market** (CZ1) provides in-depth information about graduates' labour market experience from their own perspective. The results of the graduate survey are published on an online website providing career guidance for students, their parents and other stakeholders involved in the national career guidance system.[42] Interviewees highlighted that this website is a well-known resource among students and is frequently visited, which ensures that students are well aware of the results of graduate surveys. The surveys are perceived as an important source of information for students and as a particularly positive outcome of this VET graduate tracking measure.

Some measures are also used for broader or very different kinds of analyses, which may be quite different from the common uses of VET graduate tracking measures (see example in box).

[42] See http://www.infoabsolvent.cz/Temata/ClankyAbsolventi/13 and http://www.infoabsolvent.cz/Temata/ClankyAbsolventi/25

Box 17 – Using data collected for different kinds of analyses – example

Only scientific institutions are allowed to use the **NEPS (National Educational Panel Study)** data (DE1). For each research project for which the NEPS data will be used, a data use agreement has to be concluded. The description of a project includes the title, a short abstract with the main research questions, and a specification of the duration of data use

The projects using NEPS data refer to a variety of topics and research questions, for example:

- Stratification in Chinese secondary education: a comparative study (…). This project compares educational stratification in Chinese societies with a North American society and a West European society. Both the US (NELS and ELS) and Germany (NEPS) provide publicly available and high-quality panel survey data that are broadly comparable to those in Taiwan (TEPS) and mainland China (CEPS).
- Influence of vocational training on subjective well-being (…): sought to measure how continuous work-based vocational education and training in companies influences the subjective well-being of individuals.
- The effect of refugee immigration on schooling and learning outcomes (…): this research aims to analyse the effect, if any, of the arrival of refugees in Germany between 2014 and 2016 and the integration of refugee children into schools on aggregate schooling and learning outcomes in Germany.
- The relationship between education and civic participation (…): it is often assumed that there is a relationship between an individual's educational outcomes and their engagement in civic and political contexts. This research examines whether this reflects a causal effect or is rather caused by selective mechanisms.

3.2.7 Link to EQAVET

Within the **EQAVET** (European Quality Assurance in Vocational Education & Training) Framework the following two indicators focus on VET graduate tracking:

- Indicator 5: Placement rate in VET programmes
- Indicator 6: Utilisation of acquired skills at the workplace

The links between EQAVET and tracking systems are not clear in most countries. Tracking measures that could be used to inform the indicators are often not used. There could be a lack of communication between those in charge of EQAVET and those responsible for tracking. The interviews conducted during the in-depth review of selected measures revealed that these experts with responsibilities for tracking were often not or only to a limited extent informed about EQAVET.

However, in few cases, an explicit link has been identified. The box below presents the example from Portugal.

Box 18 – VET graduate tracking measure with explicit link to EQAVET - example

In Portugal, the Observatory's '**Youth in post-secondary survey**' (PT1) measure is being used to inform the EQAVET-based model which is currently being implemented to comply with the ex-ante conditionalities of the European Structural and Investment Funds.

The EQAVET-based model has been designed by the National Agency for Qualification and Vocational Education and Training (ANQEP) and is currently being piloted in eight VET schools. When the ANQEP defined the model, it selected a set of indicators including the rates of completion (data available in the statistics of the Ministry of Education), progression to further education and training, and employability.

VET schools collect data on the trajectories of their graduates. However, this is not always done in a systematic manner, and the methodologies used vary across schools and are thus not comparable. It is important for the ANQEP to have an external data source for the EQAVET indicators on progression to further education and training, and employability. The only national-level source of information on these indicators is the Observatory's 'Youth in post-secondary survey'.

3.3 Categorisation of VET graduate tracking measures according to the proposed typology

For classifying the VET tracking instruments analysed the following dimensions are used:

- **Dimension 1 - The way education, training and employment data are included in the measure:** Data could include precise (discrete) information on the educational activities or qualifications achieved (for example, the type of programme, the year of participation, the provider type) and subsequent employment (in work, unemployed, earnings, sector of employment). Alternatively, they could include summary information on more or less broad categories of educational programmes or qualifications (for example, classified by ISCED 2011). Only measures which include discrete educational data allow tracking graduates in detail.
- **Dimension 2**
  - **Representation of the population**:
    - Data can be collected from a **sample** of the total reference population of a specific VET graduate track only. Some samples can be treated as a fair representation of the total population within the limitations set by statistical probability and systematic measurement errors, while other samples cannot be representative for statistical analysis (convenient sampling). Almost all surveys are based on samples. The size of the sample and the applied criteria for sample selection determine the type of analyses that can be conducted.
    - Data can be collected for the **total reference population of a specific VET graduate track** (e.g. provider level: all graduates of a specific VET programme of a specific provider in a certain year; regional level: all graduates of specific VET programmes offered at different providers in a region in a certain year; national level: all graduates of specific VET programmes in the country in a certain year).

    - Alternatively, the **population** could be covered practically **as a whole ('census')**, for example, in population registers or in social security registers (in countries with near to universal insurance coverage). Measures based on the population allow a wide set of analyses, for example, to track comparatively rare qualifications or to achieve detailed break downs for smaller units.

  - **The population observed**:
    - Measures can report on a group of individuals who participate in or have graduated from a particular educational programme only ('treated'). Surveys of the graduates of one particular school would be an example.
    - Alternatively, data sets could cover both a targeted group of participants and non-participants in the particular programme ('treated and untreated'). A merged data set of education and tax records would be an example of the latter. A measure that is confined to the 'treated' population provides more limited analytical opportunities than one for the whole population ('treated' and 'untreated').

- **Dimension 3: Tracking methods / measurement strategy:** Outcomes can be measured at one moment in time (for example, 12 months after graduation), at several moments of time (for example, 12, 36 and 60 months after) or in a continuous way (e.g. each month over a 20-year time span). Multiple and continuous observations allow for longitudinal studies of progression where outcomes at particular reference points are analysed as well as patterns and sequences, for example patterns of moving between unemployment and employment (event history analysis).

The table below presents the classification of the VET graduate measures analysed according to these dimensions. In some cases, the information related to some dimensions or categories was not clear or not available. Therefore, not all measures analysed are presented in the table.

Some aspects are not presented in this table:

- In many cases it was not possible to collect specific information on 'treated/untreated'. The case studies show that this is not commonly done. Thus, we decided to leave this category out.
- For the measurement strategy, we use two categories only: single and multiple measurement points; the latter also includes those measures that are designed (or could be used) as longitudinal studies.
- Only for one measure was it indicated that it is based on administrative data and on a census (NL2); however, no further information on this is available. Thus, this category is also left out.

Based on potential combinations of these dimensions, in principle, 8 types can be distinguished.

Based on the information provided, it can be clearly seen that the greatest number of VET graduate measures can be classified either as **Type 4** (these 19 measures collect **precise/discrete data at multiple measurement points for the total reference population**) or as **Type 1** (these 18 measures collect **precise/discrete data at single measurement points for a sample of the total reference population**). The third biggest group includes measures classified as Type 3 (these 15measures collect **precise/discrete data at single measurement points for the total reference population**).

Table 9. Categorisation of VET graduate tracking measures

Dimension 1. Type of data	Dimension 2. Representation of the population		Dimension 3. Measurement strategy / tracking methods			
			Single measurement point		***Multiple measurement points***	
Discrete information on the educational activities, qualifications achieved, and employment subsequent to graduation (single programme/cohort and year) (65)	Sample (29)	Admin data	MT2	1	DE3	1
		Survey	AT2, AT4, AT5, BE-fr2, DE4, DE5, DE7, IT1, IT2, IT3, IT4, MT1, MT3, NL5, NL6	15	DE2, HU1, IE1, FR1, FR2, FR3, FR4 PL2*, PT1	9
		Admin data & survey	AT3, SE1	2	DE1	1
			Type 1	**18**	**Type 2**	**11**
	Total reference population of the VET graduate tracking measure (36)	Admin data	NL1, NL4, SE2, SE3	4	AT1, BE-nl2, CZ3, DE6, DK1, DK2, DK3, EE1, ES1, FI1, FI2, LU1, NL2, NL3	14
		Survey	ES2, ES3, HU2, HU3, HU4, LU3, NL7, SI1, SI2, UK4	10	PT2, RO1, SI4, UK5	4
		Admin data & survey	BE-fr3	1	LU2	1
			Type 3	**15**	**Type 4**	**19**
In (broad) categories (e.g. information classified by ISCED 2011 levels) (19)	Sample (11)	Admin data	-	-	-	
		Survey	FR5, HR1, LT2, PL3, UK6	5	CZ1, CZ2*, IE3	
		Admin data & survey	BE-fr1, CZ4, EE2	3	-	
			Type 5	**8**	**Type 6**	**3**
	Total reference population of	Admin data	Benl1, IE2, LT1	3	SK1, UK3	2
		Survey	SI3, UK2	2	-	-

	the VET graduate tracking measure (8)	Admin data & survey	-	-	UK1	1
			Type 7	**5**	**Type 8**	**3**

Source: ICF/3s research. Templates. The following measures are not classified because information on at least one category is missing: ES4 (dimension 1 missing), FI3 (dimension 3: all measurement points are actually before graduation; at graduation phase, students are asked about their planned or envisaged destination), PL1 (dimension 3: measure is based on admin data, measurement strategy unclear). *In these cases, at least one point of measurement is actually before graduation.*

3.4 Summary

Table 10 below presents an overview of VET graduate tracking approaches identified within each Member States and the key characteristics of these measures. Table 13 presents the suggested stage of development of Member States VET graduate tracking systems. Countries are grouped into three clusters:

- **Non-systematic:** Member States where the study does not identify regular measures for VET graduate tracking.
- **Partially systematic:** Member States where the study identifies regular VET graduate tracking systems but which may not cover all the regions in the country, take measurements at multiple measurement points or contain all key indicators on employment status, type of employment contract (permanent/temporary, part-time/full-time), earnings, and participation in further education and training.
- **Systematic and well-established:** Member States where the study identifies regular VET graduate tracking systems that cover all regions, include four key employment and learning indicators and have measures which take multiple measurement points.

Table 10 and 11 show that there are nine countries that do not have systematic measures for VET graduate tracking, but which may have specific graduate measure in place. However, one of these countries is undertaking reforms in order to introduce a tracking measure and most others have undertaken some one-off studies to track VET graduate destinations.

Fourteen Member States are identified as having in place partially systematic VET graduate tracking. Some of these countries, such as UK and SK cover most but not all of the four key indicators. Two countries have regular measures of advanced development but that are applicable at regional level and do not cover the whole of the country (BE and ES). Most of these countries also do not combine administrative and survey data.

Five countries are classified as having systematic and well-established measures. However, in some areas in these countries there is also scope to enhance their systems for VET graduate tracking, either by matching administrative and survey data (only two of the countries do this) or by covering CVET as well as IVET.

Table 10. Summary of VET Graduate tracking approaches in Member States

	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK
At least one measure identified	√	√			√	√	√	√		√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√
At least one regular measure identified	√	√			√	√	√	√		√	√	√		√	√	√		√		√	√		√		√		√	√
Regular measure(s) cover IVET and CVET	√					√	√				√	√			√						√							√
Regular measure(s) cover employment and educational indicators	√	√			√	√	√	√		√	√			√	√	√		√		√	√		√		√			√
Regular measure(s) include all four key indicators[43]	√					√				√*					√	√		√			√				√			
Has measure(s) that use admin data which combine education register data with employment and/or tax registers	√	√ (Be-nl)			√	√	√	√		√*	√				√		√	√			√				√		√	√
Regular measure(s) combine admin and survey data for analysis						√		√							√						√				√			√
Irregular or regular measures using multiple measurement points	√	√ (Be-nl)			√	√	√	√		√	√	√		√	√			√			√	√	√	√		√	√	√

*Source: ICF/3s research. * Only identified for Catalonia*

[43] Employment status, type of employment contract (permanent/temporary, part-time/full-time), earnings, and participation in further education and training

Table 11. Suggested maturity of Member State approaches for VET graduate tracking

Country	Typology	
Austria	Systematic and well-established	VET graduate tracking is done on a regular basis (systematic graduate tracking - all sectors of education and levels) – see: AT1 (however, this measure is still considered as a 'project') There are also one-off, or irregular measures – see: AT2, AT3, AT4, AT5.
Belgium	Partially systematic	BE-nl: VET graduate tracking is done on a regular basis: - The measure BE-nl1 covers school leavers from lower secondary education up to university, including IVET. - The measure BE-nl2 covers CVET BE-fr: No regular measures; identified measures include: - A periodical measure focused on CVET in the Brussels region and a specific target group: jobseekers– see BE-fr1. - One-off or irregular measures – see BE-fr2 and BE-fr3.
Bulgaria	Non-systematic	There are no VET graduate tracking measures (so far); reforms are currently planned.
Cyprus	Non-systematic	There are no VET graduate tracking measures. Cyprus has undertaken several studies to assess the impact of labour market activation programmes, including: - Job placement schemes for unemployed graduates from tertiary education and from secondary and post-secondary education. These studies do not focus on the destinations of graduates per se, but on the destinations of those who participate in a job placement scheme. - A CVET programme (Accelerated Initial Training Programmes) which provided basic training to unskilled persons entering the labour market and the unemployed. This was a one-off study conducted in 2015 and used as a source of information for the development of a new training scheme for the unemployed.
Czech Republic	Partially systematic	VET graduate tracking is done on a regular basis in the case of IVET. While the surveys (see CZ1 and CZ2) are one-off projects, they have happened at regular intervals since 2003 (roughly every three years). There is another regular tracking measure (CZ3) but this one does not clearly differentiate between VET and general education.
Germany	Systematic and well-established	VET graduate tracking is done on a regular basis – see DE1: National Educational Panel Study – NEPS; DE4: BIBB/BAuA Labour Force Survey 2006 & 2012 (approx. every 6 years). There are also one-off, or irregular measures – see DE5, DE6, DE7.

Denmark	Partially systematic	VET graduate tracking is done on a regular and systematic basis in the case of IVET: progression into further education (see DK1) and into employment (see DK3). In the case of CVET, a regular measure focused on progression into further education has been identified (see DK2).
Estonia	Partially systematic	VET graduate tracking is done on a regular basis – see EE2: VET Graduates´ Research
Greece	Non-systematic	There are currently no measures for VET graduate tracking. Greece developed a one-off tracking study of apprenticeship graduates in 2015 as part of the reengineering of the public employment service (Source: Greek Public Employment Service representative; further information on this study is not publicly available).
Spain	Partially systematic	There is not structural approach to VET-graduate tracking at national level. Graduate tracking measures are established at regional level. This study did not aim at mapping tracking measures in the 17 Autonomous Communities (regions). In the two regions reviewed (Catalonia and the Basque Country), VET graduate tracking is done on a regular basis in the case of IVET. No measures covering CVET were identified.
Finland	Partially systematic	VET graduate tracking is done on a regular basis – see FI1 and FI2.
France	Partially systematic	VET graduate tracking is done on a regular basis – see FR2, FR3 for IVET and FR5 for CVET.
Croatia	Non-systematic	No, there are one-off, or irregular measures at provider level– see HR1: Self-evaluation of VET schools.
Hungary	Partially systematic	Yes, VET graduate tracking is done on a regular basis in the case of IVET– see HU1. No measures covering CVET have been identified.
Ireland	Systematic and well-established	VET graduate tracking is done on a regular basis – see IE2 and IE3 for IVET and IE1 for CVET.
Italy	Partially systematic	There is a structural approach to VET graduate tracking in the case of IVET – see IT1 'Inquiry into the study and work paths of diploma graduates' - although the periodicity of the inquiry has been somewhat irregular.
Lithuania	Non-systematic	A structural approach is currently being developed (systematic graduate tracking - all sectors of education and levels) – see LT1: National System of Monitoring and Forecasting of Human Resources.
Luxembourg	Systematic and well-established	VET graduate tracking is done on a regular basis in the case of IVET– see LU1 (upper secondary) and LU2 (lower secondary). No measures have been identified with regards to CVET.
Latvia	Non-systematic	There are no VET graduate tracking measures (so far).

Malta	Partially systematic	VET graduate tracking is done on a regular basis – see (MT3). There are also one-off, or irregular measures – see (MT1 and MT2).
Netherlands	Systematic and well-established	VET graduate tracking is done on a regular basis in the case of IVET– see NL1, NL2, NL3, NL4, NL5, NL6 and NL7. CVET graduates that take part in courses also open to them, provided by IVET institutions (MBO) are also part of this tracking. No other regular measures have been identified that systematically track CVET graduates.
Poland	Non-systematic	VET graduate tracking is currently not done on a regular basis at the national level. One regular measure has been identified in the region of Maloposka focusing on IVET –see PL2.
Portugal	Partially systematic	VET graduate tracking is done on a regular basis in the case of IVET– see PT1. No tracking measures were identified in the case of CVET.
Romania	Non-systematic	There are county level measures but not in all counties and tracking is not necessarily done on a regular basis– see RO1. National level tracking measures are currently under development.
Sweden	Partially systematic	VET graduate tracking is done on a regular basis in the case of IVET – see SE1, SE2 and SE3. At the national level, there is no regular or systematic tracking of graduates from CVET, although individual studies have been carried out when required.
Slovenia	Non-systematic	There is no structural approach at national level but some providers collect data on VET graduates regularly – see SI2, SI3, SI4. A structural approach for VET graduate tracking (IVET - upper secondary only) might be available in the future, since a methodology has already been tested and piloted – see measure SI1: Monitoring of employability of graduates of upper-secondary vocational and technical schools.
Slovakia	Partially systematic	VET graduate tracking is done on a regular basis in the case of IVET – see SK1. No measures covering CVET have been identified.
United Kingdom	Partially systematic	In England and Wales, all providers are expected to capture destination information for all learners that complete VET programmes (see UK4 and UK5). In Scotland, destination data is collected and analysed annually (UK1). This covers both IVET and CVET. In Northern Ireland there is a regular measure covering IVET (UK6)

Source: ICF/3s researc*h.*

Table 12. Categorisation of VET graduate tracking measures

Dimension 1. Type of data	**Dimension 2. Representation of the population**		**Dimension 3. Measurement strategy / tracking methods**			
			Single measurement point		***Multiple measurement points***	
Discrete information on the educational activities, qualifications achieved, and employment subsequent to graduation (single programme/cohort and year) (65)	Sample (29)	Admin data	MT2	1	DE3	1
		Survey	AT2, AT4, AT5, BE-fr2, DE4, DE5, DE7, FR1, IT1, IT2, IT3, IT4, MT1, MT3, NL5, NL6	16	DE2, HU1, IE1, FR2, FR3, FR4 PL2*, PT1	8
		Admin data & survey	AT3, SE1	2	DE1	1
			Type 1	**19**	**Type 2**	**10**
	Total reference population of the VET graduate tracking measure (36)	Admin data	NL1, NL4, SE2, SE3	4	AT1, BE-nl2, CZ3, DE6, DK1, DK2, DK3, EE1, ES1, FI1, FI2, LU1, NL2, NL3	14
		Survey	ES2, ES3, HU2, HU3, HU4, LU3, NL7, SI1, SI2, SI4, UK4	11	PT2, RO1, UK5	3
		Admin data & survey	BE-fr3	1	LU2	1
			Type 3	**16**	**Type 4**	**18**
In (broad) categories (e.g. information classified by ISCED 2011 levels) (19)	Sample (11)	Admin data	-	-	-	
		Survey	FR5, HR1, LT2, PL3, UK6	5	CZ1, CZ2*, IE3	
		Admin data & survey	BE-fr1, CZ4, EE2	3	-	
			Type 5	**8**	**Type 6**	**3**
		Admin data	IE2, LT1, UK3	3	BE-nl1, SK1,	2

	Total reference population of the VET graduate tracking measure (8)	Survey	SI3, UK2	2	-	-
		Admin data & survey	-	-	UK1	1
			Type 7	**5**	**Type 8**	**3**

Source: ICF/3s research. Templates. The following measures are not classified because information on at least one category is missing: ES4, FI3, PL. *In these cases, one point of measurement is actually before graduation.*

4 Strengths and weaknesses of VET graduate tracking measures

This section presents what the research literature and interviewees have said about the strengths and weaknesses of VET graduate tracking measures which are in place in relation to their approaches and fulfilling their purposes. It mostly draws on the interviews for the measures reviewed in-depth.

4.1 Strengths

Regular VET graduate tracking measures are widely believed to be important for collecting information on outcomes over long periods. They provide material for comparisons over time as well as between providers/courses and a means to assess trends which one-off studies cannot. Broadly based measures (e.g. those that are developed and funded by different stakeholders bringing together their different interests) seem to be more sustainable and better known to different user groups.

VET graduate tracking measures following graduates' pathways to further education and employment are generally believed to provide better insights into the economic and social outcomes of studies than those focussing solely on further education or solely on employment. Measures which enable employment outcomes to be achieved (a time lapse of 12 months or more) or collect information at different periods after graduation are perceived to provide greater value for policy makers and prospective VET learners than those which collect information shortly after graduation.

4.1.1 Administrative data

The research literature identifies the main strengths of using administrative datasets as their wide coverage (virtually, the whole population) and the availability of up-to-date periodical information which allows tracking of individuals at intervals of time to reflect research needs. Administrative data provide more accurate information than purpose-built survey data, such as on salaries and employment status, since it does not rely on self-reporting. Due to universal data coverage, the combination of administrative datasets enables links to be made between different domains (education, employment, health...) for a large sample of the population. Combined data also facilitates the measurement of progression (e.g. movement from education into labour market or further education) as well as the measurement of longer term effects for graduates and the tracking of individuals. Data collected for administrative procedures means that there are no additional data collection costs though there are to enable use for analysis.[44]

These main strengths were generally confirmed by interviewees:

- Measures based on administrative data use more reliable data than survey-based measures; it has low bias, especially because of the use of factual data only.
- Administrative data is more comprehensive than survey data because the samples are much and can be much more disaggregated than survey data.
- The structure of administrative data is usually stable over many years, while surveys often have changes to data collected; longitudinal studies may be possible.
- Administrative data provides opportunities to compare different groups of VET graduates and in some circumstances to compare VET graduates with school leavers without VET qualifications or with higher education qualifications.

[44] Cf e.g.: Figlio et al, 2015

4.1.2 Surveys

The research literature identifies the main strengths of surveys as the best means to combine specific factual information (e.g. type of studies completed, employment status, salary) and subjective insights (e.g. satisfaction with current job, value of training to job). They can be tailored to reflect various purposes (e.g. to track progression or to meet different stakeholders' needs) or the characteristics of the target groups and their responsiveness to surveys. They are suitable for different groups of graduates from a specific programme up to the population of graduates in a region or nation.[45]

These main strengths were generally confirmed by interviewees along with the following:

- VET graduate tracking measures based on surveys usually capture qualitative information (besides factual information). Therefore, perceptions and experiences (e.g. on course quality and labour market entry problems) and more specific information on motivation, attitudes and values can be covered and connected to factual information. This qualitative information may help to understand individual perceptions of VET and its usefulness and to improve the attractiveness of VET.
- When a survey uses similar data structuring in their responses as published statistical data or other graduate surveys comparisons can be possible (e.g. complementarity with other sources to provide additional, in-depth information about graduates' transition into the labour market, CZ1).
- Surveys can strengthen communications and longer term relationships between VET graduates and providers through asking for feedback and contributing to the improvement of VET programmes (e.g. LT2 and SI4).
- Only surveys can collect subjective information about the satisfaction of graduates with the training received and whether they feel qualified for their job.
- Surveys can provide more detailed insights into specific emerging needs in the labour market to quickly adapt VET programme accordingly (e.g. provider gets more accurate and up-to-date information on the placement of VET graduates and gaps in knowledge and abilities, which can be integrated into courses, FI3).

4.1.3 Cross-sectoral tracking mechanisms

The study identified several cross-sectoral tracking measures. The interviews and desk research associated a range of strengths with using cross-sectoral tracking mechanisms:

- It allows greater consistency in the data collected for different education sectors, which allows comparisons between the destinations of different education sectors and recent trends
- It can help determine whether trends in destinations are due to quality issues with VET or wider contextual factors that may be affecting the destinations of all learners
- It can allow benchmarking between courses that are expected to achieve similar learner outcomes

[45] Based on Gaebel et al., 2012, Michael/Hauschildt, Kristina/Mühleck, Kai/Smidt, Hanne (2012): Tracking Learners' and Graduates' Progression Paths. TRACKIT. European University Association, 2012, pp. 28f and scoping interviews.

4.2 Weaknesses

A major challenge to conducting VET graduate tracking measures and using the data collected is the restriction of individual/personal data protection laws unless steps are taken by those collecting personal information to obtain permissions for use and sharing. Surveys can only address those VET graduates for whom relevant contact details are legally available. Usually the entities in charge of surveys cannot get access to graduates' contact details and contact them directly. They need either the VET providers to contact graduates (ensuring a buy-in of VET providers) or a specific consent from the providers to undertake a graduate survey is needed.

Individual data protection often prohibits disaggregation of specific results to single courses or providers, as the cell population of results may be too small (e.g. data combinations from year of graduation and gender in specific courses) and allow specific individuals to be identified.

4.2.1 Administrative data

The research literature identifies the main weaknesses of administrative data are the time and effort required to overcome technical and legal hurdles to enable data to be used. These may impede the merging of data from different databases at national level and restrict analysis to only some administrative data, such as PES data. National law may need to be changed in order to allow this to be done.

In addition to the difficulties of combining datasets, the most significant shortcomings of using administrative data come from the fact that data collection is not designed for research and, more specifically, for graduate tracking. Existing variables may not be adequate for graduate tracking. It is usually very difficult to make changes to well-established administrative databases so they are not responsive to needs or changes to needs. Also, administrative data does not include subjective information (e.g. respondent satisfaction with current employment) which limits the analysis of graduate integration into the labour market.[46]

These main weaknesses were confirmed by interviewees along with the following:

- Administrative data is often analysed only for a certain point in time (e.g. one or two years after graduation) and as a one-off exercise because of the cost even though the data might allow tracking over longer periods of time to assess the sustainability of career pathways, for example.
- The lack of subjective information about motivations, attitudes or experiences often limits the extent that administrative data measures can be used for quality improvement.
- Administrative data is often too broad for specific analysis, e.g. administrative data on employment often does not cover working hours, the specific status of employment, the profession, self-employment etc. Surveys are often required to provide this.
- Administrative data can classify some VET graduates in other groups (e.g. HE graduates) which makes them difficult to identify.
- The amount of data can be massive which means the analytical time/cost is high and results are hard to extract.

[46] Cf e.g.: Figlio, David/Karbownik, Krzysztof/Salvanes, Kjell (2015): Education Research and Administrative Data, in: Institute for Policy Research, Northwestern University, Working Paper Series, WP-15-13.

4.2.2 Surveys

The research literature identifies that the main weaknesses of surveys to track VET graduates include the lack of accuracy in responses (they are self-response tools) and response biases (they are usually based on samples).

Response biases feature significantly in the literature. This is associated with two challenges: (a) the difficulties of reaching a representative group of the target population after they have graduated and ensuring adequate response rates (size, representative characteristics of respondents) for robust statistical analysis and (b) mainly those with specific motivations answer surveys (either very positive or very negative).[47]

This was confirmed by interviewees along with the following:

- VET graduate tracking measures based on surveys tend to be biased due to the voluntary participation and convenience sampling. Many surveys have low response rates, either by having outdated contact information or use of methods which do not encourage responses.
- Surveys seldom collect information about outcomes from a counterfactual group. They mainly focus only on graduates and not dropouts or those who did not start courses which makes it difficult to make comparative statements for the target group.
- Subjective information can be restricted because the place for asking questions is limited, as questionnaires should not be too long to obtain higher response rates.

Many interviewees with an interest in surveys pointed out that their sustainability was often not safeguarded, as government financing organisations may change their focus over time. While this may also be true for administrative data measures which requires data cleaning and analysis to be carried out, the administrative data itself tends to be more sustainable as it is a wider purpose.

As a consequence, many stakeholders with an interest in the results of VET tracking measures would require both surveys and administrative data to be used to meet all their purposes.

4.2.3 Cross-sectoral tracking mechanisms

A limitation of cross-sectoral tracking mechanisms is that it provides the potential for results to be misconstrued. Some VET programmes aim to provide very different outcomes to general education programmes. For example, active labour market programmes are likely to focus on providing entry to employment, whereas some general education primarily will focus on providing entry to HE. Therefore the findings of any cross-sectoral tracking measures need to be properly contextualised to ensure that the comparisons made are appropriate.

5 Scenarios for cooperation at EU level

This section presents the analysis carried out to help to identify feasible options for EU-level interventions. It draws on a gap analysis which compares the current state with an expected state in order to identify gaps that need to be addressed and to assess measures which can narrow these gaps. The main purpose of the technique is to assess the difference between "where we are" (the present state) and "where we want to be" (the target state).

[47] Based on Gaebel, Michael/Hauschildt, Kristina/Mühleck, Kai/Smidt, Hanne (2012): Tracking Learners' and Graduates' Progression Paths. TRACKIT. European University Association, 2012, pp. 28f and scoping interviews

In the context of this assignment, this was carried out through seven steps:

1. Description of the current state: Review of existing national and EU instruments.
2. Description of the target state: Formulation of (measurable) policy objectives, based on the review of policy documents and, in particular, the Proposal for a Council Recommendation on tracking graduates.[48]
3. Identification of gaps, by comparing the current state and the target state.
4. Identification of options for EU level interventions.
5. Assessment of feasibility of options and their likely impact.
6. Stakeholder feedback on options: Delphi survey and feedback from interviews.
7. Bridging the gap: identification of preferred approach

These steps are discussed under the following subsections.

5.1 Description of the current state: Review of existing national and European interventions

The text below summarises the findings detailed in section 2 and 3 of this report.

5.1.1 Current state of VET graduate tracking instruments at national level

Currently, 9 out of the 28 EU Member States do not have regular and systematic national or regional measures in place for tracking VET graduates. From these, 4 countries do not currently have any VET graduate tracking measure (BG, CY, EL and LV).[49]

From the countries which have regular measures:

- In 11 cases, no measures were identified that cover CVET.
- In 3 cases, measures only cover either employment results or results related to the progression to further education and training, but not the two aspects. Also, 2 countries cover employment results but only in what concerns employment status; tracking measures do not collect information on the quality of employment (type of contract, working hours, earnings).

The robustness of the data collected also varies. For instance, of the 85 VET tracking measures analysed, only 44 have measures which cover the whole reference population, while the others use samples. From those using samples, 21 use convenient sampling, which limits the generalization of results to the full reference population. Also, control or counterfactual groups are seldom used (from the 31 measures that were examined in depth, only 4 have measures which include counterfactual groups).

Many countries are not taking advantage of existing administrative data for VET graduate tracking. The combination of relevant administrative data, or the combination of survey and administrative data, is not done in six MS.

Longitudinal measures are rarely implemented. Only one country currently has such measures in place. Also, nine countries only collect information on graduate results up to one year after completing their studies, but not later. This limits the analysis of graduates' labour market integration as this is likely to happen in the longer term.

The in-depth review (covering 31 measures) has shown that only some measures track both VET graduates and drop-outs 8 measures) and a very limited number (10) cover graduates who have migrated to other countries or regions.

[48] COM(2017) 249 final. Brussels, 30.5.2017.

[49] Bulgaria is currently developing one, at national level, and Latvia has recently piloted a set of provider-level surveys.

Also, VET graduate tracking data does not seem to be regularly and consistently used in all Member States. For instance, from the measures reviewed in depth, only some appear to systematically feed data into policy making (e.g. to plan VET offer, inform quality assurance processes…) while only a few exploit data to provide students information on career prospects or progression.

5.1.2 EU-level interventions related to graduate tracking

There are currently no EU-level VET graduate tracking measures. Some one-off tracking measures were developed in the past, most focused on higher education graduates (CHEERS, REFLEX, HEGESCO).

More recently, the Eurograduate Feasibility Study explored the feasibility of an EU led systematic monitoring of higher education graduates and provided recommendations about the design of a European graduate study. The 2017 Proposal for a Council Recommendation on tracking graduates includes a recommendation for the Commission to develop a pilot phase of a European graduate survey in tertiary education building on the results of the previous study.

One EU-level study examined the scope to compare national tracking measures of secondary education – including VET- graduates (CATEWE). This study concluded that there is limited scope for EU-level comparisons due to the different purposes, design and content of national surveys. The study proposed a strategy for 'partial harmonisation' based on a preliminary set of criteria to which surveys could be encouraged to converge, as well as a new European-wide survey.

While no European-wide VET graduate survey has been developed, there are EU-level surveys designed for other purposes that could enable the measurement of graduates' progression into the labour market. In particular, the LSF, SILC, AES and PIAAC could potentially be useful to track VET graduates as they all differentiate between general and vocational education. Also, the SILC and the LFS collect some longitudinal data which could be used for tracking VET graduates.

The LFS and its 2009 ad hoc module 'Entry of young people into the labour market' and the PIAAC survey have already been used in the analysis of the outcomes of VET graduates (see section 2.2). However, all the analyses conducted to date were cross-sectional.

The LFS and the SILC include longitudinal components. However, the longitudinal subsamples used are unlikely to be representative of the different attainment levels and orientation of VET graduates, and probably do not include a sufficient sample of VET graduates to allow for analyses of their employment outcomes.

Beyond surveys, there are ongoing initiatives which aim at improving the quality of tracking systems –including in VET- at EU and international level (the 2016 study 'Carrying out tracer studies', the activities of the INGRADNET network). The 2017 Proposal for a Council Recommendation on tracking graduates, includes a recommendation for the Commission to provide capacity building support for the establishment of VET graduate tracking systems and facilitate mutual knowledge on the topic among Member States.

5.2 Description of target state: formulation of (measurable) policy objectives

Policies to develop and improve VET (both IVET and CVET) at EU and national levels are seeking, among other things, to better support young people's transition to employment and further education and to ensure VET is relevant to employers' and

labour market needs.[50] In this context, it is important to understand what happens to VET graduates and how they and their employers believe their education and training has contributed to their progression in employment and their contribution to society.

VET policy makers and implementers, VET providers and (prospective) students could be expected to have the following questions which would need information about VET graduates:

- How do VET graduates use their education and training in their employment and out of work activities; what impact does it have on their earnings and their employability; how does it help their early careers and progression, how does it benefit employers requiring new entrants?
- What further education and training do VET graduates undertake; how far does it build on IVET; how does it benefit employers requiring upskilled workers?
- How do VET graduates' experiences in employment compare to students who have not undertaken vocational education or have undertaken alternative pathways (general education, higher education).

VET graduate tracking can provide valuable data to help respond to these questions. It can generate knowledge on the labour market integration of graduates (employability, earnings, career progression, use of the skills acquired in education and training in employment activities), as well as their progression to further education and training. Information on employers' perspectives is more often gathered through other measures that complement VET graduate tracking.

As a consequence the recent proposal for a Council Recommendation includes a set of recommendations to Member States on VET graduate tracking.[51] The table below links each recommendation (column 1) to specific objectives for VET graduate tracking measures (column 2).

Table 12 Proposed Council Recommendations and objectives for VET graduate tracking

Proposed Council recommendations to Member States	Objectives for VET graduate tracking measures
• Improve the availability and quality of data about the activities of graduates and, where appropriate, people leaving (higher education and) vocational education and training without graduating, including through the establishment by 2020 of graduate tracking systems. • Collect data that includes: - The following quantitative data: socio-biographical and socio-economic information; study intensity; study method; qualifications/s; credits received; fields of study; transition to employment or further education	1. All Member States have regular and systematic measures, which cover the whole national territory, for VET graduate tracking in place (with sustainable funding). 2. The quality of the measures in place is increased so that Member States are able to collect relevant data on: - Both on graduates' labour market integration and their progression to further education and training. - A variety of indicators, so as to address the full range of VET policy questions.

[50] See 2015 Riga conclusions.

[51] COM(2017) 249 final.

Proposed Council recommendations to Member States	Objectives for VET graduate tracking measures
and training; earnings; type of contract; employment status; occupation, professional status and/or activity; geographical and/or sectoral mobility. - The following qualitative data: relevance of study to employment; participation in volunteering or civic engagement activities; career progression and satisfaction; perceptions of the quality and relevance of their education and training experience.	- People leaving vocational education and training without graduating, where appropriate.
• Graduate tracking systems include the collection of relevant administrative data from education, tax and social security databases. • Graduate tracking systems include the possibility for public authorities to link, on an anonymised basis, data from different sources, in order to build a composite picture of graduate outcomes.	3. The number of Member States that combine relevant administrative data for VET graduate tracking (from education, employment, social security and tax databases) is increased.
• Graduate tracking systems include the development of longitudinal graduate surveys at education system level, in recognition of the importance of qualitative data on people's transition to the labour market, or to further education and training, and their subsequent career paths. • Encourage a high, representative and continued response rate to longitudinal graduate surveys, including the tracking of graduates who have migrated, whether for the purposes of education and training or on completion of their education and training.	4. The number of Member States that use longitudinal surveys (including qualitative data on people's transition to the labour market, or to further education and training, and their subsequent career paths) is increased. 5. All surveys achieve high and representative response rates to enable robust statistical analyses.
• Ensure the timely, regular and broad dissemination of data and exploitation of the results, with the objective of: a) strengthening career guidance for prospective students, current students and graduates;	6. The dissemination of data collected in VET graduate measures is improved. Raw data can be used for undertaking a wide variety of analyses so as to respond to the needs of different potential users.

Proposed Council recommendations to Member States	Objectives for VET graduate tracking measures
b) designing and updating curricula to improve acquisition of relevant skills and employability; c) improving skills matching to support competiveness and innovation at local, regional and national level; d) planning for evolving employment, educational and social needs; and e) contributing to policy development at both national and Union level.	7. Analysed data is used in all Member States to support policy makers' decisions about VET policies and their implementation. 8. Analysed data is used by VET providers to design and update their curricula and programmes. 9. Analysed data is disseminated among guidance professionals and (prospective) students to inform choices of education and training pathways.
Participate in a network of experts, to be organised in line with existing governance structures for cooperation within the Education and Training 2020 framework, without prejudice to any new structures which may follow it, which will encourage cooperation and mutual learning, explore options for developing mutually compatible and comparable data and consider the optimal frequency of longitudinal surveys.	10. Cooperation structures across Member States are in place to encourage mutual learning, explore options for developing mutually compatible and comparable data and consider the optimal frequency of longitudinal surveys.

Source: ICF/3s research

5.3 Identification of gap

The following table presents the ten gaps identified by comparing the current and target state.

Table 13. Identification of gaps

		Current state	Target state	Gap
1	Existence of regular and systematic measures in Member States	Currently, 19 Member States[52] have regular and systematic measures for VET graduate tracking in place. All of them are located at national or regional level (BE - BE-fr and BE-nl, ES, and UK - E, W, S and NI).	All Member States have regular and systematic national or regional measures for VET graduate tracking in place (with sustainable funding). These measures cover IVET and CVET. Measures cover a variety of results,	9 Member States do not currently have systematic measures for VET graduate tracking in place. Also, 1 Member State (ES) has systematic measures in some regions but it is not clear if these

[52] Please note that the total is 31, as Flanders and Wallonia, and England, Scotland and Wales are counted separately.

		Current state	Target state	Gap
		7 countries have regular tracking measures that cover IVET and CVET. 8 countries have regular tracking measures that cover at least the following four indicators: employment status, type of contract (permanent/temporary, part-time/full-time), earnings and participation in further education and training.	including employment results (employment status and quality) and information on progression to further education and training.	are available across all the regions. In 21 countries, no regular tracking measures were identified covering IVET and CVET. In 20 countries, there are no regular measures that cover at least the four indicators: type of contract (permanent/temporary, part-time/full-time), earnings and participation in further education and training.
2	Quality of measures	The quality of the measures in place shows great variation. Common issues include, for instance: use of convenience sampling, lack of control or counterfactual groups.	The quality of the measures in place is increased (e.g. the measures and instruments comply with a certain benchmark/standard to ensure quality).	Most of the 41 VET graduate tracking measures that are based on a sampling approach used convenience sampling (21). Only 4 of the 31 measures analysed in depth used a control or counterfactual group.
3	Use of administrative data	13 Member States are using administrative data as a part of their *regular* VET graduate tracking measures.	The number of Member States that collect relevant administrative data (i.e. education, tax and social security databases) for VET graduate tracking is increased.	15 Member States are not using administrative data as part of their regular tracking measures.

		Current state	Target state	Gap
4	Combination of data from different sources	15 Member States have implemented measures which combine relevant administrative data for VET graduate tracking.	The number of Member States with a possibility for public authorities to link, on an anonymised basis, data from different sources, in order to build a composite picture of graduate outcomes, is increased.	13 Member States are not linking data from different databases.
5	Use of longitudinal approaches	Only one Member State has a longitudinal measure; others (10) have measures using multiple measurement points for the same cohorts using surveys or administrative data. Multiple measurement point surveys tend to have low response rates (panel mortality). Time lapses from graduation are very variable.	The number of Member States collecting data in measures using multiple measurement points at times to capture key outcomes is increased. There is greater synchronicity in the time lapses of measures.	27 countries do not have longitudinal measures; at least half of the countries do not have measures with multiple measurement points.
6	Availability and use of data to support policy makers' decisions (national/ regional level)	Few concrete examples have been found on the use of data to support policy makers' decisions about VET in Member States.	The availability of data collected in VET graduate measures is improved and there is evidence that they are used to support policy makers' decisions about VET in Member States (national/regional level).	Only a minority of measures seem to systematically feed data into policy making.
7	Availability and use of data to support VET providers' decisions	The research conducted found little evidence of the use of data by VET providers to design and update their curricula and programmes.	The provision of better data on pathways of graduates to VET providers is improved and can be used by them to design and update their curricula and programmes to improve acquisition of relevant skills and employability.	Only a minority of measures provides data to help VET providers design and update their curricula and programmes.

		Current state	Target state	Gap
8	Availability and use of data to inform VET students' choices	There is little evidence of the use of data by potential VET students for better informing their choices of education and training pathways.	The provision of information on labour market outcomes and learning progression to potential VET students is improved and can be used by them (e.g. in the context of career guidance) for better informing their choices of education and training pathways.	Only a minority of measures exploits data to provide students information on career prospects or progression.
9	Cooperation between Member States	There are currently no cooperation structures across Member States specifically focusing on VET graduate tracking.	Cooperation structures across Member States are in place to encourage mutual learning, explore options for developing mutually compatible and comparable data and consider the optimal frequency of longitudinal surveys.	There are currently no cooperation structures across Member States specifically focusing on VET graduate tracking.
10	Comparable data at EU level	The LFS and the PIAAC have been used to analyse the outcomes of VET graduates. However, there are currently no EU-level measures that enable VET graduate tracking. The results from the measures in place in Member States are not comparable.	Increase the availability of comparable data at EU level.	There is no comparable data at EU level.

Source: ICF/3s research

5.4 Identification of options for EU level intervention

The causes behind the gaps identified in the previous section are complex. The lack of regular and systematic measures in some Member States is most likely related to a non-prioritisation of this issue in national or regional agendas, and to the lack of resources for developing such type of measures. The non-use of administrative data is also related to limited cooperation among the authorities responsible for the different policy areas (education, employment, social security and tax).

The fact that the combination of data from different sources is not a common practice in many countries is often linked to data protection regulations. National law may

impede the merging of data from different databases overall, or require that data is rendered anonymous, which can be technically complex.

Quality issues and the limited use of longitudinal approaches are likely due to limited resources and know-how.

The availability of data to different stakeholders and the use made of it depends on the type of data collated in each country; the cooperation mechanisms in place between authorities, VET providers and other stakeholders; and the willingness and capacity of stakeholders to use data to inform their decision making.

Cooperation between Member States and the production of comparable data at EU level depends on the willingness to cooperate of national governments but also of the existence of supra-national structures that facilitate encounter.

Although the main responsibility for VET graduate tracking lies in Member States, the EU can play a role in addressing these gaps. The fact that the EU is giving increased attention to graduate tracking (most significantly, by issuing a proposal for a Council Recommendation) may motivate the inclusion of the topic in national and regional agendas, and the allocation of national resources to tracking measures. The EU could also provide more direct support through funding programmes or capacity-building activities targeting different stakeholders. It is also best placed to support the production of comparable data at EU level, through cooperation activities or by developing an EU-level measure.

Based on this analysis, the following options for EU level intervention can be proposed:

- Option A. Developing a new EU survey to track VET graduates.
- Option B. Adjusting an existing EU survey to enable VET graduate tracking.
- Option C. Developing a new EU measure based on national administrative data to track VET graduates.
- Option D. Provide support or incentives to the creation or development of measures at national, regional or provider level.
- Option E. Status quo – no additional actions at EU level. This option would imply not proceeding with the activities described in the Proposal for a Council Recommendation to support the tracking of VET graduates, or any other activities in this area. EU level action in the field of graduate tracking would continue to focus on higher education. Member States would still be able to use EU funds for VET graduate tracking measures but this topic would not be a priority.

Option D could adopt different forms and include the following:

f) Peer learning activities tailored to the level of development of VET graduate tracking in different countries, e.g. bringing together countries that are now starting to design tracking instruments and countries with a longer tradition in the field.
g) Expert support to national technical teams involved in the development and implementation of tracking measures.
h) Working groups or networks composed of specialists in graduate tracking from different countries, focused on supporting policy makers engaged in developing VET tracking systems.
i) The development of international standards for graduate tracking surveys to allow for comparability across countries, based on discussions between experts from different Member States.
j) Disseminating information on good practices in developing and implementing VET tracking measures.

k) Financial support to pilots to develop new VET graduate tracking measures at national level.
l) Issuing Country Specific Recommendations to recommend national VET tracking systems to be in place to improve the quality, accountability and effectiveness of VET systems

5.5 Assessment of feasibility of options and their likely impact

The scoping interviews conducted as part of the inception phase allowed for a preliminary assessment of the feasibility of the proposed options and their likely impact. In this section we appraise each of the proposed options by assessing their potential to achieve policy objectives (expected benefits and foreseeable unintended consequences), the burden of change (costs and feasibility risks), and the EU added value. These aspects are quantified as follows:

- **Potential to achieve policy objectives** (score: 0 to 10). It includes:
  - **Benefits**, in terms of the potential of this option to respond to identified gaps. The benefits are rated on a scale from 0 to 10, corresponding to the number of specific gaps potentially addressed:
    1. Increase in the number of regular and systematic measures in Member States.
    2. Increase in the quality of national measures (sampling techniques, use of control/counterfactual groups, etc.).
    3. Increase in the use of administrative data in VET graduate tracking.
    4. Increase in the possibility for public authorities to link, on an anonymised basis, data from different sources, in order to build a composite picture of graduate outcomes.
    5. Increase in the use of longitudinal approaches.
    6. Increased availability and use of data to support policy makers' decisions (national/regional level).
    7. Increased availability and use of data to support VET providers' decisions.
    8. Increased availability and use of data to inform VET students' choices.
    9. Increased cooperation between Member States.
    10. Availability of comparable data at EU level.

    The score 0 is status quo.
  - **Unintended consequences** refer to any potential consequences of the measure not linked to the identified gaps (e.g. an inadequate use of tracking measures' results). The unintended consequences are rated on a scale from 0 to -3: -3 corresponds to highly predictable and concerning unintended consequences and -1 to less worrisome or less probable unintended consequences.
- **Costs and risks** (score: -10 to 0)
  - **Costs** (score: -5 to 0), based on a comparative assessment of the costs of the proposed actions. The development of a new EU-level graduate tracking survey is taken as the action involving the maximum costs. The budget set aside by the EU for piloting a graduate tracking survey in higher education (€800,000) can be taken as a proxy for the piloting of a similar survey in VET. Conducting the survey on a periodical basis will involve additional costs for the EU and participating countries. The development of an EU-level survey is thus scored with -5. The other measures are scored higher. The rationale for the scoring is further detailed in the table below. The score 0 is status quo.

- **Feasibility risks** (score -5 to 0). This will be assessed in terms of technical and political feasibility i.e. the likely level of support from Member States and stakeholders. The feasibility is rated on a scale from 0 to 5: 5 corresponds to high feasibility risks linked to several issues both technical and political; 2/3 corresponds to medium feasibility risks linked to some technical and/or political issues; 1 corresponds to low feasibility risks linked to low or improbable technical and/or political issues.

- **EU added value:** the appropriateness of EU level intervention (i.e. the EU added value of putting in place a given initiative compared to what countries are developing on their own initiative). This aspect is valued with a '+' (EU added value) or a '-' (lack of EU added value)..

The higher the value obtained after combining the results of the 'potential to achieve policy objectives' and the costs and risks, the most relevant the option based on the criteria analysed. The EU added value is taken as a pre-condition to positively assess any new EU action in the field.

According to a preliminary assessment of the proposed options, conducted by the research team based on the interim findings and the scoping interviews, the preferred option would be option D (4 points), followed by option C (0 points), option E (-1 points), option B (-3 points) and option A (-5 points). The added value is clear for options A, B, C and D, but not for option E (see 0).

In terms of benefits, option D comes as first because it has the potential of promoting the collection of data useful to VET providers and students, while options A, B and C would likely only allow for the collection of data useful to policy makers at national level. Option D is also expected to be less costly and more feasible than A, B and C.

Table 14. Rating table for the development of policy options for EU actions in the field of VET graduate tracking

Options	Benefits	Unintended consequences	Costs	Feasibility risks	EU added value	Description
Option A. Developing a new EU survey to track VET graduates.	4	-1	-5	-3	(+)	**Benefits:** It could set an example as to the quality of VET graduate tracking. A EU-level survey could be taken as example in terms of methodology and content for the development of surveys at national or regional level. EU-level data could potentially support policy makers' decisions in Member States. It would also involve a certain degree of cooperation between Member States. It would make comparable data at EU level available. **Unintended consequences:** the availability of data at EU level could lead to comparisons of the quality of VET systems in different countries without taking into account other variables explaining graduates employability, namely the dynamics of national and regional labour markets. **Costs:** The option would have a significant cost for the European Commission and Member States. The Commission would fund a feasibility study, the design of the survey or a framework to be used as basis by Member States to design their own questionnaires, and the survey pilot. There would also be ongoing costs for its review. Costs would also be high on national authorities which would be responsible for designing the national versions of the survey, drawing samples and applying the survey on a periodical basis. **Feasibility risks:** Creating a new EU survey would be a cumbersome process as Member States would need to agree on many methodological aspects.

Options	Benefits	Unintended consequences	Costs	Feasibility risks	EU added value	Description
						Countries that already have surveys with this purpose may be reluctant to have a new tool in addition to their own. **EU added value:** The involvement of the EU is crucial for the development of an EU-level survey. The exercise would draw from EU institutions' expertise in developing EU-level surveys. The EU is also best placed to promote coordination between Member States when compared to other international organisations or having a few countries taking the lead.
Option B. Adjusting an existing EU survey to enable VET graduate tracking.	4	-1	-3	-3	(+)	**Benefits:** It could set an example as to the quality of VET graduate tracking. An EU-level survey could be taken as example in terms of methodology and content for the development of surveys at national or regional level. EU-level data could potentially support policy makers' decisions in Member States. It would involve a certain degree of cooperation between Member States. It would make comparable data at EU level available. **Unintended consequences:** the availability of data at EU level could lead to comparisons of the quality of VET systems in different countries without taking into account other variables explaining graduates employability, namely the dynamics of national and regional labour markets. **Costs:** Compared to the development of a new measure, adjusting an existing survey would involve intermediate costs. There would be costs for national authorities which would be responsible for designing new items to collect more detailed information on VET graduates, drawing larger samples (including a larger number of VET graduates), and conducting a higher number of interviews. There would also be costs for the Commission which would have to review the survey regulation (e.g. review sampling rules, create new variables).

Options	Benefits	Unintended consequences	Costs	Feasibility risks	EU added value	Description
						Feasibility risks: Changing an existing survey would be a cumbersome process. In the case of Eurostat surveys it would require changes to legislation. The Eurostat surveys are based on EU legislation for harmonisation (which includes for instance definitions, sampling rules, main variables, etc.). Any changes to EU legislation then need to be transposed to the surveys designed at national level. Changing the legislation behind such long-established surveys and applying the changes to national surveys would be a cumbersome process. Also, countries may be reluctant to increase the periodicity of surveys (to gather longitudinal data) and to increase national samples to obtain more detailed information on VET graduates, as the associated costs are high and this may not be a national policy priority or the country may already have a national survey in place with the same purpose. Large surveys such as the LFS, SILC and the AES contain a wealth of information and different stakeholders would be interested in digging further into different topics or target groups. A change in one of such surveys would require advocating for the need of having more information on a concrete target group (VET graduates) against others (e.g. early school leavers). **EU added value:** The modification of existing EU surveys requires the involvement of the EU.
Option C. Developing a new EU measure based on national administrati	6	-1	-2	-3	(+)	**Benefits:** It could set an example as to the quality of VET graduate tracking. The development of an EU measure based on national administrative data would require countries to use their administrative data for the purpose of VET graduate tracking, and to anonymise their data to be able to link it to data from other countries under an EU-level measure. EU-level data could potentially support policy makers' decisions in Member States.

Options	Benefits / Unintended consequences / Costs / Feasibility risks / EU added value	Description
ve data to track VET graduates.		It would involve cooperation between Member States. It would make comparable data at EU level available. **Unintended consequences:** the availability of data at EU level could lead to comparisons of the quality of VET systems in different countries without taking into account other variables explaining graduates employability, namely the dynamics of national and regional labour markets. **Costs:** The option would have costs for the European Commission and Member States. The Commission would fund a feasibility study, propose sets of indicators to be agreed with the Member States and collect and analyse the information at EU level. National authorities would be responsible for adapting the categories in their national administrative data to the definitions agreed at EU level, and of anonymising the data to be shared at EU level. The initial costs might be similar than in the case of creating a survey, if the measure aimed at including a high number of indicators. However, costs would be lower if envisaging / starting by a lower number of indicators. Also, once the system is in place, the permanent costs would be lower than in the case of a survey as administrative data are collected as part of the regular activities of public services at national level. **Feasibility risks:** It would be a cumbersome process due to the important differences in data collection and categorisation between countries. It is likely that the harmonisation process results at best in very few basic indicators. The type of data collected at national level is often defined in national laws and cannot be easily modified to adapt to potential EU definitions.

Options	Benefits	Unintended consequences	Costs	Feasibility risks	EU added value	Description
						Some countries would likely be excluded from the outset due to data protection issues. Some countries have well-developed graduate tracking systems that have been in place for many years and would be very reluctant to change them. **EU added value:** The involvement of the EU is crucial for the development of a EU-level tracking measure. The EU is best placed to promote coordination between Member States when compared to other international organisations or having a few countries taking the lead.
Option D. Provide support or incentives to the creation or development of measures at national, regional or provider level.	9	-3	-1	-1	(+)	**Benefits:** It would promote the existence of regular and systematic measures in Member States. It would promote the quality of measures, the use of administrative data for graduate tracking, the combination of data from different sources, and the use of longitudinal approaches in Member States. It would promote the availability and use of data to support policy makers' decisions (national/regional level). It would promote the availability and use of data to support VET providers' decisions. It would promote the availability and use of data to inform VET students' choices. It would involve cooperation between Member States. **Unintended consequences:** the extent to which support or incentives would yield the desired degree of change is very uncertain. It would greatly depend on the commitment of national authorities.

Options	Benefits	Unintended consequences	Costs	Feasibility risks	EU added value	Description
						Costs: this option would likely involve lower direct costs compared to the previous ones. The European Commission would fund activities such as expert meetings or support to working groups, and, potentially, grants for the development of pilots at national level. Member States would have low direct costs, mainly related to the participation in meetings and other activities. They could have high indirect costs related to changes in their tracking systems based on the expertise acquire through EU activities; however, these could also be interpreted as savings in the sense that Member States already interested in changing their tracking systems would have relevant support to this process at low costs. **Feasibility risks:** This option would imply implementing activities commonly used under the Open Method of Coordination. The European Commission has significant expertise in organising such activities and Member States are accustomed to them and unlikely to oppose to participate. Feasibility risks are low. **EU added value:** The EU is best placed to promote coordination between Member States when compared to other international organisations or having a few countries taking the lead. Also, it would have the resources to promote support activities or give incentives, which are unlikely to be available at national level in many countries.
Option E. Status quo – no additional actions at EU level.	0	-3	0	0	(-)	**Benefits:** The benefit of this option, compared to the other options available, is that Member States would be given the freedom to develop their tacking systems at their own pace and closely linked to their needs and policy priorities. However, it is possible that none of the gaps identified would be tackled. **Unintended consequences:** leaving the development of graduate tracking systems fully in the hand of Member States could result in the development of low quality systems in particular in those countries with a lower tradition of graduate tracking.

Options	Benefits / Unintended consequences	Costs / Feasibility risks	EU added value	Description
				Costs: The costs for implementing this option is zero, as it requires no additional action from the European Commission or Member States. **Feasibility risks:** The option is very feasible as it requires no additional work. **EU added value:** the EU added value of this option would be low as there would be little guarantees that Member States would make use of EU funds to improve their VET graduate tracking measures.

5.6 Stakeholder feedback on options: Delphi survey and feedback from interviews

In the stakeholders' consultation (Delphi survey), participants were asked about:

- The current needs for data on VET graduate tracking.
- The feasibility of the five options for EU-level action in the field.
- How each of these actions respond to the data needs.

The questionnaires of the Delphi survey did not give information on the preliminary rating of the options presented above. The first questionnaire asked participants to reflect on the benefits, costs, unintended consequences and feasibility of each of the options to refine the information offered in the preliminary rating. It also allowed participants to propose any other option that they thought could be added to the list.

The second questionnaire was based on participants' answers to the first questionnaire. It presented the points of agreement (e.g. the preferred option for EU-level action) and asked participants to reconsider their responses to the first questionnaire in view of these and justify their disagreement if this was the case.

5.6.1 Stakeholder feedback to questionnaire 1

Questionnaire 1 had 23 responses. An additional respondent sent a position paper. The profiles of respondents are as follows:

- 14 representatives of national governmental departments or agencies in charge of education, employment, VET or qualifications, from Austria, Belgium (Flanders), Czech Republic, Estonia, Finland, Hungary, Lithuania, Malta, Netherlands, Portugal, Slovenia, Sweden, Turkey, and the United Kingdom (Wales).
- 4 EQAVET EU-level experts.
- 1 expert in graduate tracking.
- 3 representatives of EU VET providers' associations (EUproVET, EfVET and EVTA).
- 2 representatives of EU-level agencies (Cedefop and ETF).

The following subsections summarise the feedback received.

5.6.1.1 Data needs

When combining all the responses to the questionnaire, the most frequent ranking of data needs stands as follows, from most important (1) to least important (4):

1	Improve the availability of detailed data useful to support policy makers' decisions about VET in Member States (at national or regional level).
2	Provide education and training providers with better data on pathways of their graduates in order for them to be able to adjust their curricula and programmes.
2	Provide students and families with better information on labour market outcomes or learning progression of VET graduates.
4	Increase the availability of comparable data at EU level.

The same number of respondents placed the need for data for education and training providers and for students and families as the second most important need.

However, the variability of the relevance given to each need is high. Each of the options was ranked from first or fourth by a few respondents.

The **arguments supporting the need for data to support policy makers' decisions** include the need for reliable information on the weaknesses and strengths of national VET systems and the effectiveness of VET programmes. Data can be used to:

- Inform national strategies.
- To assist providers to offer programmes relevant to the labour market and to make decisions on VET providers based on their performance (e.g. regarding licences).
- To assist students/their families to make informed decisions.

Respondents mentioned that, on the one hand, the use of data at national level can be translated into measures which can be implemented in the short to medium term (e.g. changes of VET qualifications) and, on the other hand, data can help Member States make longer term decisions. Overall, data is needed to ensure education and training resources are effectively and efficiently applied.

One participant said that often politicians fail to use evidence and are too influenced by their beliefs or opinions. However, s/he explained that data can help challenge such beliefs.

The **arguments supporting the need to provide VET providers with better data** in order for them to be able to adjust their curricula and programmes were often qualified. However, a respondent observed that VET graduate tracking provides only indirect information about the quality of curricula. Another respondent pointed out that it is a challenge for providers to collect and process data.

The **arguments supporting the need to provide students and families with better information** include the consideration that the information on the labour market outcomes and the learning progression of VET graduates can help students make decisions about their education and training pathways. One respondent specified that to ensure that students and families make use of this information, the availability of the information needs to be adequately communicated to the target group. Another respondent believed that it is unclear if students and families would actively use data and another one added that, experience shows that, when this information is available, it is barely used to inform the choice of programme or provider.

As for **EU-level comparable data**, a few respondents explained that such data could contribute to understanding why VET graduates in some countries perform better than in others, and help policy makers make better choices when changing their systems. However, other respondents doubt the usefulness of having comparable data at EU level to inform national policies. The collection, interpretation and use of data is considered to be highly dependent on the context in each country and region. One participant felt that, given the large differences in the labour markets of EU member countries, having a comparable measure that is useful to all Member States would be difficult to achieve.

Respondents observed that graduate tracking data is also useful to support quality assurance processes and for research purposes. One respondent also referred to the potential use of data to inform the creation of VET alumni associations and promote networking among graduates. In terms of additional data users, respondents referred to guidance practitioners and mentors.

Two respondents were sceptical about the need for VET graduate tracking data overall. One suggested that forecasting data would be more useful than data on graduates which tells us about past trends.

5.6.1.2 Preferred option

When combining all the responses to the questionnaire, the most frequent ranking stands as follows, from preferred option (1) to least important (5):

1	Option D. Provide support or incentives to the creation of measures at national, regional or provider level.
2	Option B. Adjusting an existing EU survey to enable/improve VET graduate tracking.
3	Option C. Developing a new EU measure based on national administrative data to track VET graduates.
5	Option A. Developing a new EU survey to track VET graduates.
5	Option E. Status quo – no additional actions are needed at EU level.

The same number of respondents placed options A and E as the least preferred option.

The main reason given by respondents for preferring **Option D** is that it seems more feasible and less costly than other proposed actions, in particular those involving the creation of a new EU-level measure. Also it recognises that the ownership of measures remains with Member States. Measures developed at the national level are expected to better take into account the national/regional contexts, and to be better tailored to the needs of national decision-makers, VET providers, students and families.

Option B (adjusting an existing EU survey) is the second preferred. It is perceived to be less costly and more feasible than creating a new survey as it would be based on an existing process and expertise. One respondent however considers that the existing surveys cannot be adapted to the needs of VET policy makers and providers.

The costs and efforts of developing a new EU measure – **option A** (the design and implementation of a new survey) and **option C** (a measure aimed at harmonising national administrative data) - are often seen as excessive. Respondents observe that VET systems in different countries are very different from each other making data at EU level very difficult to compare.

One participant argued that in his/her country there is already detailed data on VET graduate tracking and s/he cannot see the benefits of an EU-level measure. Another participant pointed out that countries with their own data may reject the development of an EU-level survey.

Still, some respondents chose **option C** as their preferred option, although aware of the difficulties of comparing data from different countries. One participant believed that the Commission could first focus on promoting an alignment of some of the data collected by Member States.

Option A was only preferred by three respondents. One represents an institution at EU level and considers that this option would be the best in terms of obtaining comparable data at EU level. Two respondents considered that this option could give impetus to the improvement of data collection at national level.

Two participants chose **option E** (status quo) as their preferred option.

Three respondents suggested that there could be a combination of options, including actions to promote the development of tracking systems at national level and actions to promote the availability of comparable data at EU level.

Other possible actions at EU level mentioned were:

- Qualitative analyses of school to work transitions, as some studies developed by Cedefop.

- Cedefop survey on opinions about VET could be expanded to collect more information on VET graduates' pathways.
- The promotion of students and graduate tracking in general and not just in the VET sector.
- Tracking VET mobility across Member States.

5.6.1.3 Assessment of each of the options proposed

Option A. Developing a new EU survey to track VET graduates.

- **Added value**

A majority of respondents agreed (14 out of 20) or strongly agreed (7) that a new EU survey would increase the availability of comparable data at EU level. Fewer considered that it would increase the availability of useful data to support policy makers' decisions (9 agree and 6 strongly agree), to help improve Member States' systems for VET graduate tracking (8 agree and 6 strongly agree), to provide students and families with information on labour market outcomes or learning progression of VET graduates (7 agree and 5 strongly agree), or to help providers adjust their curricula and programmes (6 agree and 5 strongly agree).

Participants observed that there is currently no detailed comparable data at EU level on the topic and that an EU survey could be a good instrument to collect such data. One contributor added that the need for comparable data across countries could be explained by the fact that the labour market is increasingly European/global and transparency is a precondition for mobility, skills transfer etc.

Several respondents pointed out that such a measure would be likely to have more added value in countries that do not already have a nationwide measure for graduate tracking. In these countries, the EU level survey could foster the willingness to develop national measures (help convince policy-makers and stakeholders), and contribute to capacity-building in the field.

However, for countries where relevant data is already available through national tracking systems, the added-value of an EU-level survey would be questionable.

Several respondents pointed out that making informed policy decisions at national level does not necessarily require data at European level since national contexts are not necessarily comparable. Decision-making at national level should rather be informed by data at national and regional level. Also, the availability of data does not guarantee its use in decision-making at national level.

With regards to the usefulness of data for individual providers, several respondents observed that it is unlikely that an EU-level survey would provide data with a sufficient level of detail. Also, the availability of data would not guarantee its use. Not all VET providers have the know-how to implement data-driven decision-making.

According to respondents, the level of detail of data from an EU survey would also be insufficient to inform learners' education and training choices.

In the process of creating a new EU-level survey, one respondent suggested that such a survey should build on existing surveys developed by Member States. Other respondents indicated that an EU-level survey should allow for some adaptation at country level and for Member States to collect additional data according to their needs.

- **Unintended consequences**

Respondents referred to the following potential unintended consequences of creating an EU-level survey for VET graduate tracking:

- There is a risk that survey findings are wrongly extrapolated to local, provider or individual level, without taking into account the context. For instance, it is important that guidance practitioners are able to help in translating data into meaningful advice to students and families.
- The long time needed to develop the survey and agree protocols with Member States, may prevent some Member States from wishing to participate.
- The introduction of an EU-level survey might deter or delay countries from creating their own tracking systems.
- Some Member States could feel tempted to manipulate the sampling to try to have good results in the survey.

- **Challenges**

The majority of respondents agreed that 'creating a new EU survey would be a cumbersome process as Member States would need to agree on many methodological aspects' (15 strongly agree, 7 agree and 1 has no opinion) and that 'Countries that already have surveys with this purpose may be reluctant to have a new tool in addition to their own' (15 strongly agree, 6 agree and 2 have no opinion).

Respondents also mentioned the following challenges:

- To ensure comparability, the methodology needs to be consistent across countries and samples from each country need to be statistically robust. This would depend on the level of cooperation of countries.
- Reluctance to participate from some Member States:
    - Countries that already have a nationwide tracking system will probably see little added value in an EU-level survey
    - Some Member States may be reluctant to see themselves compared to other countries in this field.
- The different contexts –including the different VET systems- between Member States make it difficult to compare datasets on EU-level.
- The implementation of the survey will cause bureaucratic burden and costs at national level.
- There is likely to be a lack of resources, appropriate infrastructure and/or know-how for analysing the data and using it to inform policy decisions, in some Member States. The need for additional funding would be a problem in many countries.
- The translation and adaptation of the survey to national languages and contexts is likely to be challenging.
- Survey data is less reliable than administrative data.
- The length of the survey is likely to be too long for respondents.
- The frequency and timing of EU-level data collection would need to be compatible with those of the national surveys.
- It is not clear how the survey would treat programmes delivered by an education provider located in one Member State, and the awarding body located in another Member State. This is the case for a number of VET providers and programmes in Malta, which are offering programmes for which the awarding body is in the UK (for example, City and Guilds or BTEC programmes).

- **Costs**

Respondents observed that creating a new EU survey is bound to be costly. One respondent specified that for the measure to be effective, it needs to be conducted on

a regular basis, and this implies high costs. Another respondent argued that for the measure to be useful to inform decision-making at national level, it needs to have large enough samples to allow for regional-level analysis, and this would be costly.

The costs at national level would depend on the need to hire new personnel to develop the methodology for the survey implementation and the need to subcontract services (e.g. for methodological support, to programme a system to collect and analyse data, etc.). One respondent provided a rough estimation of costs of 30.000 euro per annum, made up of one full-time staff member and ancillary costs.

- **Overall effectiveness**

Above half of the respondents (13) considered that 'the benefits do not justify the costs (it would not be an effective measure)' and 9 respondents consider that 'the benefits outweigh the costs (it would be an effective measure)'.

Option B. Adjusting an existing EU survey to enable VET graduate tracking

The preferred EU survey to collect data on VET graduates is the Labour Force Survey (preferred by 9 respondents). The main reason given is that the overall scope and the topics covered by the LFS seem better aligned with the purpose of VET graduate tracking. One respondent also appreciated the fact that this survey already includes a longitudinal component.

However, respondents pointed out that in its current version, the LFS does not collect sufficient information to allow for VET graduate tracking. One respondent suggested that an ad-hoc module on the topic could be envisaged.

- **Added value**

A majority of respondents agreed (10 out of 20) or strongly agreed (4) that a new EU survey would increase the availability of comparable data at EU level. However, the level of agreement is lower than in the case of Option A (new survey).

Fewer participants considered that it would increase the availability of useful data to support policy makers' decisions (8 agree and 4 strongly agree), to help improve Member States' systems for VET graduate tracking (5 agree and 6 strongly agree), to provide students and families with information on labour market outcomes or learning progression of VET graduates (4 agree and 4 strongly agree), or to help VET providers adjust their curricula and programmes (5 agree and 3 strongly agree).

The main concern regarding the use of an existing survey to increase the availability of comparable data at EU level is the small sample sizes in some countries.

As for the other uses of data, several interviewees doubted that an existing EU-level survey would allow for the collection of data with a sufficient level of detail to support decision-making at national and, most significantly, at provider or student level. One respondent pointed out that, at most, it would allow for analyses at regional level.

Some respondents added that for VET providers to adjust their curricula and programmes, quantitative information from a survey would be insufficient. Such decisions require more qualitative information. Also, to get students and families to use data when deciding on careers, data needs to be well-communicated to this target group.

An added value of using an existing survey would be the possibility to link data focused on VET graduate tracking with other type of data e.g. on labour market activities or socio-economic aspects covered in existing EU surveys.

- **Unintended consequences**

Respondents felt that increasing the size of any of the existing surveys is likely to lower response rates.

Also, as in the case of option A (new survey), respondents referred to the risk of misusing survey findings at local, provider or individual level, due to lack of attention to the context.

- **Challenges**

The main challenge mentioned by respondents relates to the sample size. To be able to conduct analyses in the field of VET graduate tracking, a high number of VET graduates would need to be included in the sample. This is, on the one hand, costly and, on the other hand, it could eventually distort the findings of the overall survey.

Samples might need further changes. For instance, EU survey samples are currently too small for some countries (and regions). Detailed analysis would require increasing samples. One respondent observed that the age coverage of existing surveys may not be adequate for VET graduate tracking: AES includes people aged 25-65, but for VET tracking younger people have to be included; in the LFS age is asked in categories of five years and for VET graduates tracking the exact age is important. Such changes in age coverage or coding would create a problem in terms of comparability of data over the years.

Another respondent observed that the interest of having data on VET graduates may not justify changing an existing survey or creating a specific module, when compared to other data needs. S/he suggests that it could be more relevant to adapt a survey to allow for the tracking of all types of students or graduates.

Another point made by respondents is that any change to an existing survey needs considerable development time and has to fit in with the survey cycle.

Regarding the willingness of Member States to change existing surveys, there were divergent opinions. One respondent considered that there may be some reluctance to accept changes to surveys that are well-known and have long been used at national and regional level. Another respondent argued that it is probably more difficult to create a new survey than to adapt an existing one, as countries are already familiar with the methodology of the latter. Another respondent observed that creating a new survey would increase the risk of survey fatigue.

- **Costs**

Some respondents expect that adapting an existing survey would be cheaper than creating a new one. This is because there is already a platform and tools for collecting and processing data. However, the costs of adapting an existing measure would depend on the changes made to the sample and to the data to be collected.

One respondent suggested that, to lower costs, it could be an option to collect samples over several years and aggregate the data over more than one year. Fewer respondents per year will lower the costs and reduce survey fatigue. This approach would mean that the data available would not be so up-to-date, but it will still be usable for macro-analysis.

- **Overall effectiveness**

Around half of those who replied to this question (10 respondents) considered that 'the benefits outweigh the costs (it would be an effective measure)' and the other half (9) believed that 'the benefits do not justify the costs (it would not be an effective measure)'.

Option C. Developing a new EU measure based on national administrative data to track VET graduates.

- **Added value**

A majority of respondents agreed (10 out of 23) or strongly agreed (4) that a new EU measure based on national administrative data to track VET graduates would increase the availability of comparable data at EU level. The same number of respondents agreed (8) or strongly agreed (6) that such a measure would increase the availability of detailed data useful to support policy makers' decisions in Member States.

Fewer participants considered that it would help improve Member States' systems for VET graduate tracking (8 agreed and 5 strongly agreed), to provide students and families with information on labour market outcomes or learning progression of VET graduates (5 agreed and 3 strongly agreed), or to help VET providers adjust their curricula and programmes (4 agreed and 4 strongly agreed).

In their comments, respondents expressed that they are unsure of the added value of this measure as it is unclear at this stage if national data would be comparable. Several mention that a feasibility study is needed to further assess this option. Others are skeptical about the potential comparability of national data.

Some suggested that the Commission should start by increasing the availability of comparable data by promoting common data collection categories and definitions.

As in options A and B, the type of data that could result from an EU measure based on national administrative data to track VET graduates is not expected to be particularly useful for VET providers, students and families. A respondent observed that VET providers are usually already aware of the administrative data available at national level, and an EU-level measure will not add much to this.

Regarding the contribution of the EU-level measure to help improve Member States' systems for VET graduate tracking, two respondents considered that it could motivate Member States to improve the quality of their data collection and to organise their administrative data. Another respondent mentioned that it could promote greater cooperation across agencies and ministries at national level.

Also, two respondents mentioned that the measure should be accompanied/preceded by activities to improve the comparability of data from different countries and to support countries in the improvement of their national systems.

- **Unintended consequences**

Respondents referred to two potential unintended consequences:

- The exercise could reveal gaps in administrative data collected by countries.
- As in the previous options, there could be a risk of misusing survey findings at local, provider or individual level, due to lack of attention to the context.

- **Challenges**

With regard to the challenges:

- All respondents agreed that 'the process of harmonising data from different Member States would be a cumbersome process due to differences in the purposes of data collection and the categorisation of information between countries' (7 agreed and 16 strongly agreed).
- The majority of respondents agreed that 'The type of data collected at national level can be defined in national laws/regulations. If data categories

turned out to be too different, there would be a need to look into harmonising national laws' (6 agreed and 13 strongly agreed).
- The majority of respondents agreed that 'it is likely that the harmonisation process results at best in very few basic indicators' (10 agreed and 11 strongly agreed).
- The majority of respondents agreed that 'some countries would be likely to be excluded from the outset due to data protection issues' (6 agreed and 12 strongly agreed).
- The majority of respondents agreed that 'some countries have well-developed graduate tracking systems that have been in place for many years and would be very reluctant to change them to adapt to the new EU measure' (7 agreed and 13 strongly agreed).

One respondent observed that it is likely that a few basic indicators is all that is needed for international comparison. The differences between the education systems and labour markets across countries would make any form of detailed comparisons too difficult.

Other challenges referred by respondents include:

- The different coverage of national administrative databases. For instance, whether higher VET is covered and how units and partial qualifications are covered.
- The costs and administrative burden for Member States to reorganise or improve their administrative data collection systems.
- Difficulties in reaching agreements on the approaches to data collection to ensure data comparability.
- Concerns regarding data protection when connecting various data sources, also taking into account that the legislative context varies across countries.

- **Costs**

Several respondents mentioned that the use of existing administrative data can be expected to have lower costs than the use of surveys.

However, the costs depend on which and how much administrative data would need to be adapted by Member States. The minimum costs at national level would include the translation of national data into usable indicators and their adaptation to a common format.

If further harmonisation is needed, costs would be higher. This would include funding at EU level for cooperation and networking activities bringing together national services responsible for VET graduate tracking, and funding at Member States level to adapt their administrative systems.

- **Overall effectiveness**

More than half of those who replied to this question (13 respondents) considered that 'the benefits do not justify the costs (it would not be an effective measure)'. 9 respondents believed that 'the benefits outweigh the costs (it would be an effective measure)'.

Option D. Provide support or incentives to the creation of measures at national, regional or provider level.

Most respondents agree with the usefulness of activities proposed under option D:

- Peer learning activities (10 agreed and 11 strongly agreed, out of a total of 23 survey respondents)

- Expert support to national technical teams (9 agreed and 10 strongly agreed)
- Financial support to pilots (6 agreed and 12 strongly agreed)
- Working groups (10 agreed and 9 strongly agreed)
- The development of international standards for graduate tracking surveys (8 agreed and 8 strongly agreed)
- Disseminating information on good practices (10 agreed and 11 strongly agreed)
- Issuing Country Specific Recommendations (8 agreed and 9 strongly agreed)

Overall, option D is expected to be useful and better received by Member States than the other options. The activities proposed under option D were seen to be particularly useful to countries currently developing or improving their VET graduate tracking measures.

One respondent explained that peer learning can be particularly effective in developing national capacity to carry out tracking measures. It can also support discussions on how data collection can be tailored to the national circumstances.

Another respondent mentioned that expert support to national technical teams allows for country-tailored support to Member States. He added that for this activity to be useful, it is important to define and ensure the knowledge and skills requirements for these experts. Another expert highlighted that it would be important to envisage training and workshops for staff from training providers.

Regarding the provision of financial support for pilots, while some respondents considered that the developing of tracking measures should be the responsibility of Member States, others felt that some countries do not have sufficient national funding to develop a new measure. A respondent considered that EU funding can be particularly useful to support the initial development phases of a tracking system which are more time and cost intensive. Two respondents believed that support should only be given if the country respects a set of criteria or conditions established by the Commission with the aim of ensuring the quality of data collected.

Working groups were seen as an accompanying measure that could help implement improvements needed. For instance, the support of working groups composed of specialists in graduate tracking could help adapt national systems to increase the comparability of data through a common set of questions or variables collected, common definitions, common calculation of indicators, etc.

According to some respondents, the use of international standards can contribute to the development of similar systems of VET graduate tracking and to increase data comparability. One specified that it would only be realistic to have a few standards, or else current tracking systems would need to undergo many changes.

Respondents considered that the dissemination of good practices can be useful. One suggested that there could be a permanent web platform to support the development of institutional graduate surveys with examples and discussions on different issues. A few respondents considered that the dissemination of good practices makes more sense as an accompanying measure to activities that involve personal exchanges (peer learning, working groups).

The potential use of Country Specific Recommendations, while considered useful by many respondents, is criticised by a few. While some respondents mentioned that CSR can motivate and support action at national level, one respondent explained that pressure coming from the establishment of Country Specific Recommendations may be counter-productive as it may lead to an implementation of measures exclusively for

the sake of complying with requirements and not involving the commitment and ownership by all the relevant parties which would ultimately lead to long-lasting benefits.

Several respondents considered that it would be best to combine several of the activities proposed under option D. To these, other activities such as international conferences or round tables, the issuing of relevant papers or guides, etc., could be added.

Two respondents suggested concrete approaches:

- One recommended the approach followed in the implementation of Eurostudent. It involved financial support to an expert group which was in charge of developing a common set of questions, variables and criteria for data collection, delivery and comparative analysis. In addition, support was provided to country teams in the process of implementing data collection.
- The other respondent recommended following the network approach, as in the project INGRADNET. The EU could support the establishment of networks between different countries by organising training workshops and conferences. Other activities could include the establishment of a web platform to inform about graduate tracer study activities, successful methods and relevant questionnaires, or a competition between institutions to conduct tracking studies efficiently and with a high response rate.

- **Added value**

A majority of respondents considered that option D would 'help improve Member States' systems for VET graduate tracking' (8 agreed and 11 strongly agreed) and would 'increase the availability of detailed data useful to support policy makers' decisions about VET in Member States' (8 agreed and 10 strongly agreed).

Over half of respondents believed that option D would 'provide education and training providers with better data on pathways of their graduates in order for them to be able to adjust their curricula and programmes (7 agreed and 8 strongly agreed) and would 'provide students and families with better information on labour market outcomes or learning progression of VET graduates' (6 agreed and 8 strongly agreed).

Option D is considered less suitable to 'increase the availability of comparable data at EU level' (4 agreed, 5 strongly agreed and 10 disagreed). Several respondents explained that option D puts the emphasis on the national dimension rather than on the European one.

- **Challenges**

Respondents mentioned the following challenges:

- Actions deployed under option D are likely to take time to have an effect on tracking measures and their quality.
- The impact on international comparability is not ensured. Despite EU level support, national teams could end up developing very different systems of VET graduate tracking resulting in data that is not comparable at EU level.
- In working groups, expertise may be unbalanced. Individual country needs may not be taken into consideration and some countries may not benefit from the adequate support.

- **Overall effectiveness**

A majority of respondents (17) believed that 'the benefits outweigh the costs (it would be an effective measure)'. Four respondents considered that 'the benefits do not justify the costs (it would not be an effective measure)'.

5.6.2 Stakeholder feedback to questionnaire 2

Questionnaire 2 had 22 responses. The profiles of respondents are as follows:

- 12 representatives of national governmental departments or agencies in charge of education, employment, VET or qualifications, from Austria, Belgium (Flanders), Czech Republic, Estonia, Lithuania, Malta, Netherlands, Norway, Portugal, Turkey and the United Kingdom.
- 4 EQAVET EU-level experts.
- 2 experts in graduate tracking.
- 3 representatives of EU VET providers' associations (EUproVET, EfVET and EVTA).
- 1 representative of an EU-level agency (Cedefop).

The following subsections summarise the feedback received.

5.6.2.1 Data needs

Just above two thirds of the respondents (16 out of 22) agreed with the order of data needs that resulted from the responses to the first questionnaire:

Most important need	1	Improve the availability of detailed data useful to support policy makers' decisions about VET in Member States (at national or regional level).
	2	Provide education and training providers with better data on pathways of their graduates in order for them to be able to adjust their curricula and programmes.
	2	Provide students and families with better information on labour market outcomes or learning progression of VET graduates.
Least important need	4	Increase the availability of comparable data at EU level.

The other respondents all proposed a different order of data needs. 3 (out of 6) agreed that the most important need is to 'improve the availability of detailed data useful to support policy makers' decisions about VET in Member States'; 2 considered that it is most important to 'provide education and training providers with better data on pathways of their graduates'; and 1 believed that the most important need is to 'increase the availability of comparable data at EU level'. Another respondent, while agreeing with the order proposed, acknowledged that for his/her work –in an EU agency- it would be useful to have comparable data at EU level.

Respondents discussed some of the arguments for and against each of the data needs:

- Two respondents disagreed with the argument against the need for comparable data at EU level that focused on context-specificity ('*The usefulness of having comparable data at EU level to inform national policies is unclear. The collection, interpretation and use of data is highly dependent on the context in each country and region.*'). For them, although challenging, it is definitively achievable to collect comparable data at EU level, and this data is useful to support policy makers' decisions about VET in Member States. One of the respondents added that it is up to policy makers and stakeholders to place the results in a proper context.
- One of the respondents who placed the need to 'provide education and training providers with better data' first, explained that in his/her country data is

already detailed enough to inform policy-making. They are now facing the challenge of how to improve the availability and use of data in the field, by VET providers and by (prospective) students.

- Another respondent agreed with the argument that '*it is ambitious to collect and process data on the level of providers*' and observed that graduate tracking should be part of the internal quality assurance system of each provider. This should enhance the responsibility of providers and ensure that the data collected is useful to them.

5.6.2.2 Preferred option

Two-thirds of the respondents (15 out of 22) agreed with the order of EU level actions that resulted from the responses to the first questionnaire:

Preferred option	1	Option D. Provide support or incentives to the creation of measures at national, regional or provider level.
	2	Option B. Adjusting an existing EU survey to enable/improve VET graduate tracking.
	3	Option C. Developing a new EU measure based on national administrative data to track VET graduates.
Least preferred options	5	Option A. Developing a new EU survey to track VET graduates.
	5	Option E. Status quo – no additional actions are needed at EU level.

The order of EU level actions proposed by the other respondents is different for each of them. Three respondents keep option D in the first place, two prefer option B, and one prefers option A. One respondent explains that his/her second preferred option after option D, is option A (not B), and adds that combining tracking initiatives for VET and higher education, could provide a more harmonised approach to graduate tracking at European level.

The main argument against option D is that international comparability is not ensured.

Option A. Developing a new EU survey to track VET graduates

Respondents discussed some of the arguments proposed against option A:

- Arguments on the use of results:
  - One respondent disagreed with the assertion '*there is a risk that survey findings are wrongly interpolated to local, provider or individual level, without taking into account the context*'. S/he noted that comparable data across systems is essential to inform policy-making in Member States, and that it should be interpreted against the background of national contexts. The respondent added that a good combination of EU-level comparative information, national and local information can be achieved and is needed to provide stakeholders with a complete picture of graduates' pathways.
  - Another respondent disagreed with the arguments against the use of survey results overall, observing that the results of other surveys such as PIAAC and PISA are well-accepted and broadly used.
- Arguments on the methodological aspects:
  - One respondent notes that the methodological issues listed are not specific to VET graduates' surveys. Despite these issues, high quality EU graduate surveys were developed in the past (such as CHEERS and REFLEX). As such, methodological issues should not be taken as arguments against the development of a new VET graduate tracking survey.

- Another respondent observes that an EU-level survey would not need to be conducted with a high frequency, it could be done every 4 or 5 years. This means that the coordination with national measures would be achievable.

When asked about the overall effectiveness of this option, a majority of respondents (17 out of 22) considered that 'the benefits do not justify the costs (it would not be an effective measure)'. Five respondents were of the opposite opinion.

Option B. Adjusting an existing EU survey to enable VET graduate tracking

Respondents discussed some of the arguments proposed against option B:

- One respondent observed that even though in the LFS age is asked in categories of five years this may not be an issue. The adapted survey could ask participants about the number of years that have passed since they attained their VET qualification - this seems more relevant than their actual age.
- Another respondent observed that this option would involve a lot of consultation with those responsible for existing surveys and that they may not be open to change the survey design to accommodate for VET graduate tracking. This would be likely to compromise quality and drive up costs, which would compromise the foreseen savings of this measure when compared to developing a new survey specifically dedicated to VET graduate tracking.
- A respondent from a small Member State notes that the concerns regarding current survey samples are highly relevant in their case.

Another respondent recommended that only a core set of questions are added to the survey and that Member States would be given flexibility to develop additional questions.

Other respondents see the usefulness of existing surveys without the need of doing any adjustments. A respondent mentioned that data available from existing surveys may be sufficient to extract relevant information on VET graduates. Another one observed that existing surveys could be used more as examples in terms of the methodology used, to be taken as a basis for the development of a new survey, than as tracking surveys themselves.

All respondents, except for one, agreed that the preferred EU survey to collect data on VET graduates would be the LFS. The other respondent explains that s/he is not necessarily against this option but that the LFS is focused on the general population and does not have a clear longitudinal component, two features that may make it inadequate for VET graduate tracking.

The Delphi questionnaire proposed the use of an ad-hoc module to the LFS on VET graduate tracking, and suggested that the current ad hoc module 'Young people on the labour market (2016)' could be adapted to allow for the collection of more detailed information on the tracks followed by VET graduates. A majority of respondents (14) agreed that this option could, in principle, be adequate. Still, some of the respondents that agree that this may be the best option among existing surveys, pointed out that it may still not be a good way to get useful information for decision-making in the field of VET graduate tracking as this is not its main purpose. Another respondent observed that the module only covers people until the age of 34 a limit which is not ideal in the case of VET graduate tracking.

One of the interviewees who opposed the use of an ad hoc module argued that it is important to first explore the available data to see what the current possibilities of analysis are in terms of VET graduate tracking, before developing any new modules or surveys.

When asked about the overall effectiveness of option B, opinion is quite evenly distributed: 12 respondents believed that 'the benefits do not justify the costs (it

would not be an effective measure)' and 10 considered that 'the benefits outweigh the costs (it would be an effective measure)'.

Option C. Developing a new EU measure based on national administrative data to track VET graduates.

Some respondents discussed option C.

While one respondent concluded that the comparability of data would be low, another one observed that there needs to be a practical approach: the initial aim could be to extract information on general trends and this could evolve to more detailed comparisons later on.

One respondent observed that the arguments proposed against this option focus on European comparability but that, in fact, the measure could aim at supporting national policies (without further explanation of what these might be). Another respondent considered that the measure could set a quality standard for data collection by Member States without interfering in the procedures used. However, another respondent failed to see the direct benefits of option C for national policies.

In a different vein, one respondent observed that administrative data should be used but not as a substitute to tracking data obtained through surveys. The potential advantages of administrative data lie mainly in the population coverage and the ability to track individuals over time, but the coverage in terms of indicators is very limited.

When asked about the overall effectiveness of option C, a majority of respondents (16 out of 22) considered that 'the benefits do not justify the costs (it would not be an effective measure)'. Six respondents believed that 'the benefits outweigh the costs (it would be an effective measure)'. However, a few respondents acknowledged difficulties in assessing the cost-effectiveness of this option. One respondent observed that a feasibility study would be necessary to decide whether the data that is already collected by the administrations of the different Member States could be compared.

Option D. Provide support or incentives to the creation of measures at national, regional or provider level.

One respondent observed that national tracking should be promoted, regardless of the existence of any EU-level measures. S/he added that 'one of the most promising ways of promoting national surveys in countries which lack a tradition of such work is for them to participate in EU-wide research. Capacity building at the national level should always be a major aim of an EU-wide survey'.

One respondent observed that this option would not necessarily contribute to the harmonisation of data collected across EU countries. Another respondent mentioned that, although it would be positive to have some guidelines to ensure a certain degree of comparability, the main aim should not be comparability but rather to help Member States develop tracking systems that are useful to inform VET policies.

In terms of the concrete activities proposed under option D, one respondent disagreed with the usefulness of Country Specific Recommendations. S/he observed that these do not take into account the amount of time and coordination needed before delivering results, and are not helpful to motivate or support action in Member States. There were no other comments on the concrete activities proposed.

When asked about the overall effectiveness of option D, a large majority (20 out of 22) considered that 'the benefits outweigh the costs (it would be an effective measure)'. Two respondents believed that 'the benefits do not justify the costs (it would not be an effective measure)'.

Option E. Status quo – no additional actions at EU level.

A few respondents commented on the argument that 'forecasting data would be more useful than data on graduates which tell us about past trends'. Two respondents observed that forecasting data would be useful but should not be a substitute for graduate tracking data.

5.6.3 Feedback from interviewees for the selected measures' in-depth review

Interviewees consulted as part of the in-depth review of the selected measures were asked about potential EU actions in the field of VET graduate tracking. They were not provided with any initial options; these were simply used as prompts if the interviewee did not have any initial thoughts on the topic.

The EU-level action most frequently proposed by interviewees was the sharing of information on good practice or, more generally, on the approaches to tracking used by the different Member States (mentioned by 9 interviewees out of 47). Some interviewees specified that this could be done through an online platform or by organising events where practices would be presented. Three interviewees suggested the organisation of mutual learning and exchange activities bringing together experts from different Member States, and one proposed peer learning activities for VET providers.[53]

Some interviewees proposed capacity-building and support activities including: technical support to the development of national or regional activities, or funding for technical support by third parties (2 interviewees); guidance on the methodologies to be used in tracking (1 interviewee); and support or guidelines to Member States on data protection issues and the use of data for research purposes (3 interviewees). Regarding the last of these, interviewees asked for support in the implementation of the European Data Protection Directive (Directive 95/46/EC), and its use in the framework of research in cooperation with other EU and non-EU countries.

Four interviewees suggested that the EU could provide funding to support existing national or regional measures. The continuity of some measures is not guaranteed, and those responsible are looking for ways of reducing costs and for new sources of funding. In other cases, although continuity is ensured, additional funding would be needed to revise and improve the current measures. Another interviewee suggested that EU funding could be made available for the development of EU VET graduate tracking tools to be used by providers.

Five interviewees suggested that the EU could promote an initiative to define and agree on a set of common criteria/indicators/standards to be used by Member States in VET graduate tracking that would enable data comparison. More concretely, one of them suggested that it could be interesting to bring together national institutions in charge of VET graduate surveys and try to agree on a limited number of survey questions.

One interviewee suggested that the EU could support an expert group to compare data collection and processing methods across the Member States, and that it could pursue the long-term objective of defining a unique identification number for all EU citizens, which would allow administrative data from different Member States to be matched.

Three interviewees suggested that the EU could develop an EU-level survey.

[53] Please note that only one of the selected measures is implemented at provider level. This surely explains why a low number of activities targeting providers was mentioned in interviews.

Interviewees also expressed the following concerns regarding cross-European analysis:

- It is unclear how the differences between VET systems (e.g. different definitions of VET, IVET and CVET) and types of VET provision (school-based VET, apprenticeships and dual VET) would be reflected in EU comparative measures.
- Linking data from different countries would be challenging and, even if some level of standardisation could be attained, the level of detail would be low and this would compromise the added value of the measure.
- Without a unique identification number, which is not available in many countries, comparison across countries would be very difficult to achieve.
- Some aspects of tracking, such as the adequacy/relevance of education and training for current employment, would be difficult to compare due to the diverse approaches to define this 'adequacy/relevance' across and within Member States. Other aspects of tracking, such as the occupation, could be more easily comparable if international classifications were used (ESCO or ISCO).
- An EU-level survey would be of interest but samples are often too small to provide relevant information to regional decision-makers. S/he believed that regions with responsibility in education policies should be involved on any European initiatives on the topic to make sure these are relevant at the regional level.

An interviewee pointed out that a crucial success factor for a EU-level survey would be that the core questions asked across Member States are homogeneous, but there could be space for specific questions at the Member State level.

5.7 Bridging the gap: identification of preferred approach

The preliminary assessment of the options for EU-level action conducted by the research team identified option D **'**Provide support or incentives to the creation or development of measures at national, regional or provider level' to be the most feasible. This assessment is supported by the responses to the Delphi survey (18 out of 21 respondents chose this as their preferred option). National experts interviewed as part of the measures' in-depth review also most often suggested actions that would fall under option D (sharing of good practices, capacity-building and support activities, funding for national and regional measures, support to expert groups and development of international standards/indicators).

The order of the remaining options is less clear. According to the preliminary assessment, option D would be followed by option C (developing a new EU measure based on national administrative data), option E (status quo – however, with no EU added value), option B (Adjusting an existing EU survey) and option A (Developing a new EU survey). According to the Delphi survey, option B comes second, then option C.

Options are not mutually exclusive and several respondents suggested that a combination of options, for instance of options D and B, could be desirable.

There are several supporters of the development of EU tracking measures, either based on a survey or on administrative data, both among participants in the Delphi panel and among interviewees. However, these options raise a significant number of questions and concerns. Regarding the use of national administrative data, there is a need for further information on its potential comparability, for instance, through a feasibility study, to decide whether this would be a viable option. Still, some see the benefits of a light approach, which would involve agreeing on a small number of basic indicators, at least as a first step towards increased EU-level comparability.

The adjustment of an existing survey should be preceded by an exploitation of current surveys' potential in terms of the analysis of the pathways of VET graduates. This would help check if existing data allows for reliable comparisons between EU countries (and regions) in the field, and would help formulate more clearly what changes would be needed to collect tracking data.

The development of a new EU survey would require the buy-in of Member States. The concerns expressed by the experts consulted suggest that further discussions would be needed about the survey methodology and the potential uses of its results. The foreseen pilot of a graduate tracking survey in higher education could help clarify the usefulness and practicality of a similar survey in the field of VET.

6 Conclusions and recommendations

6.1 Conclusions

6.1.1 Research Q1: What are the push and pull factors for VET graduate tracking? What are the main trends in the design of VET graduate tracking instruments?

The pull factors for VET graduate tracking can be found in the rationales underlying tracking measures:

- VET policy level:
  - Results of VET graduate tracking can inform VET policies and assess the match between VET provision and labour market need. VET graduate tracking data helps national and regional authorities to analyse the adequacy of VET provision in relation to the needs of the labour market, both quantitatively (for instance, by comparing the employability by sector with the number of available VET placements in each field) and qualitatively (for instance, by examining indicators of the satisfaction of individuals with the training received or the satisfaction of employers with VET graduates' competences).
  - VET graduate tracking data allows monitoring of VET providers' performance as part of quality assurance mechanisms,[54] or as part of performance-based financing in the countries where this practice is in place.
- VET provider level: Results of VET graduate tracking can inform VET providers' decision-making and quality assurance processes and provide guidance to prospective students. This is both a pull and a push factor:
  - On the one hand, providers can share this data with candidates. Positive information on graduates' destinations can be used to increase the attractiveness of the institution and enable it to compete with other providers, in particular where there is a decreasing demand for places or where funding closely follows numbers.
  - On the other hand, providers may have concerns about their results and this might hinder their interest in graduate tracking.

[54] Quality can include how well education and training providers prepare young people for positive destinations such as employment or further education. Source: European Commission (2015).

Push factors are mainly related with the costs and the methodological difficulties in the development and implementation of tracking measures, and the analysis and use of results.[55] In the case of surveys, the main methodological issues include:

- Difficulties in reaching the target group. There is often no centralised dataset with contact details, and the entity responsible for data gathering may not be allowed to contact graduates directly due to data protection regulations. Hence, the entity responsible for the survey needs to ensure the buy-in of VET providers to be able to access respondents. This may mean that a certain type of VET provision or certain VET programmes are not covered. Also, it is difficult for providers to keep track of former students' contact information.
- Low response rates. This can be due to survey design and survey fatigue and is particularly relevant in the case of multiple measurement point measures where the same respondent is asked to reply to more than one survey, some of which are conducted a long period of time after their last contact with the VET provider. There are techniques to increase response rates (reminders, follow-up calls, alumni events, feedback) but these have costs.
- Limitations in the number of topics that can be addressed in the survey, to avoid it becoming too long which can lead to low response rates.
- Sample bias, in the case of convenience sampling which is often used.
- Small sample sizes when results are disaggregated, e.g. for sub-analysis by sector, course of study and region.
- Errors which are common in social research (e.g. coding errors, interviewer effect, lack of accuracy in the information provided by students).

In the case of tracking measures based on administrative data, the main methodological issues include:

- The high level of resources needed to match different administrative datasets. Databases need to be adapted by experts and, in many countries, anonymised data will be required to comply with data protection regulations, adding to the complexity of the exercise.
- Lack of access to certain administrative registers due to data protection issues.
- The data collected is not tailored to the purpose of VET graduate tracking meaning that there is a lack of information on certain topics.
- Administrative data does not include subjective information (e.g. the motives for pursuing further education or training).
- There is often no information on certain groups in the administrative register which provides for comparison groups, e.g. early leavers from education and training; inactive people who are neither employed nor registered in the public employment service.
- The high level of resources needed to maintain and exploit tracking systems with a large amount of data.

Another concern for those responsible for tracking measures is the need to present results in a user-friendly way to facilitate their use by a wide range of users. Also, the delay between data analysis and publication can limit its usefulness.

The main trends in the design of VET graduate tracking instruments are discussed in the following section.

[55] Source: Measures' in-depth review, scoping interviews conducted during the inception phase, and Gaebel et al. (2012).

6.1.2 Research Q2: Are there a common set of core characteristics, values and objectives followed by most instruments?

A set of core characteristics, values and objectives is difficult to discern among the variety of measures identified. What we can see are **features** which are **most common**:

- **Scope of measures**:
  - Just under half of the measures (39 of 85) focus exclusively on VET. Many of the measures mapped cover either all secondary education graduates or all graduates from upper secondary education upwards. This seems to reflect a concern about the destination of people once they leave the education system that goes beyond university graduates and the contribution of their education and training to the economy and society.
  - The highest number of measures focuses on upper secondary VET. This reflects the fact that VET is most often delivered at this level across the EU-28.
- **Data collection approach**: The most common method used for VET graduate tracking is quantitative surveys (54). This is followed by administrative datasets (23).
- **Type of data collected:** The majority of measures (66) gather both data on graduates' employment and further education and training.
  - In terms of employment-related data, the list is headed by employment status (68) and type of employment (permanent/temporary; part-time/full-time; contract/self-employed) (49).
  - The most often covered education-related data is participation in further education (58), followed by the satisfaction of individuals with VET training received before their graduation (29).
  - Of the measures researched in depth all collect some socio-biographical and socio-economic information, some data referring to completed studies (qualification, field of study) and the following data on graduates' destinations: transition to employment (or further education and training), type of contract, and employment status.
  - Fewer collect data on graduates' destinations: earnings; occupation, professional status and/or activity; geographical and/or sectoral mobility; relevance of study to employment; career progression and satisfaction; perceptions of the quality and relevance of their education and training experience.
- **Measurement strategy** applied: The numbers of measures designed in a way to collect data at a single measurement point and those using multiple cross-sectional approaches are quite equally distributed.
- **Composition and size of the dataset**: around half of the measures analysed (44 of 85) are based on the whole reference population and the other half are based on a (selected or convenience) sample. Again around half of the 41 VET graduate tracking measures for which this information was available opted for convenience sampling (19).
- **Comparative analysis**: while several measures make analytical comparisons between different sub-groups of VET graduates, measures rarely make comparisons with other groups (non-graduates, higher education graduates).
- **Level of detail of the data gathered and the data made available:** most of the measures analysed (65) gather precise (discrete) information. However, in the majority of cases (27), information is made available on more or less broad categories only.

A **common objective** of most of the 31 measures reviewed in-depth is to provide feedback about the VET system, to inform policies and decisions on the supply of training, the design of programmes and how to prepare young graduates for the transition to the labour market. These measures usually aim to provide results to enable a better estimation of labour market needs, to have a better basis to adapt VET programmes to these needs and, thus, to enhance efficiency and improve VET offers.

Another objective of several measures is to improve the understanding of the transition between school and working life as well as the factors that enable successful integration into the labour market because this transition and labour market integration are seen as crucial steps for young people.

In some cases, the measures aim at informing guidance services and providing useful information for career choices to young people and their parents (e.g. based on information on labour market prospects).

6.1.3 Research Q3: Do the results of VET tracking instruments support the agenda for VET policy, improvement of provision, and curriculum development? Do the results improve the labour market responsiveness of VET at a provider level?

It is evident that the results of tracking measures can be used to provide evidence of the quality of VET and the benefits of VET and information to improve provision and its relevance to learners and employers. However not all countries have measures which focus on all of these and most measures on their own often focus on one or more of the uses for some but not all stakeholders.

For just under half of the VET graduate tracking measures it is indicated that they are used to support policy planning and development and evidence-based decision making. For around one third of the measures it is indicated that the results are used to adapt education and training offers to improve labour market responsiveness by increasing the quality of VET provision and the effectiveness of learning outcomes. However, with many measures the information is not fit for some stakeholders' purposes, such as for providers or learners, or is not available or known about so that it can be used. In some cases this is because of technical factors, such as the quality of the data; in others it is because of the administrative approaches used to share and make available data. To improve the relationship between data producers and data users, a specific mechanism has been set up in Denmark.

Box 19 – Mechanism to improve communication between data producers and data users (DK2)

The Contact Committee for education statistics (*Kontaktudvalget for Uddannelsesstatistik*) organises a meeting once or twice a year to provide the users of the statistics with the opportunity to give feedback to Statistics Denmark, with regard to data quality and publications. These users include representatives from selected ministries, labour market organisations, and stakeholders from the education sector. These stakeholders have for example requested an earlier publication of the register so that the data can be used for their planning purposes.

6.1.4 Research Q4: Are there any links between tracking schemes regionally, nationally and internationally and do they complement each other?

For a little under half of the 31 VET graduate tracking measures analysed in-depth, links with other national or regional tracking measures were identified; links to international tracking measures have not been reported. It is evident from the mapping that measures at provider level complement those at national and regional levels or make up for the absence of measures at national/regional levels. In the main

countries with regional level measures do not have them at national level and vice versa, reflecting administrative levels responsible for VET.

In most cases these links seem to be rather loose and refer to the complementarity of the measure analysed with other measures collecting information on the employment status of graduates and employers' needs. Some examples are presented in the box below.

Box 20 – Complementing other data collection approaches – examples

The **Ulysses survey (BE-fr1)** is part of a comprehensive regional system of analysis of employment and non-employment, including re-integration into employment and re-entry to education and training. It is complementary to the following analyses:

- Follow-up of trainees from socio-professional integration programmes ('insertion socioprofessionnelle');
- Joint reports with Actiris (employment service of the Brussels region) Employment Observatory on positive outcomes – employment or education/training – by field of training;
- Cohort monitoring, carried out within the framework of the Joint Monitoring between Bruxelles Formation and Actiris on the Youth Guarantee;
- Labour market integration of unemployed jobseekers having completed training provided by Bruxelles Formation and its partners – carried out by the METICES research centre of the Universite Libre de Bruxelles (ULB);
- An upcoming study on the links between internships, in-company training, and employment.

The 'Longitudinal analysis of labour insertion of initial VET: 5-year follow-up' in Catalonia (ES1) measure complements the annual survey on labour market insertion of VET conducted by the education department of the government of Catalonia. This department first started its survey in 2006-7 and then decided to develop also the longitudinal measure to:

- Corroborate the results of the survey. For instance, the department wanted to estimate the effect of the non-response bias in survey results.
- Have more long-term data on labour market insertion and the benefits of IVET.

Because the survey depends on the work of teachers and providers to get a response from graduates and the longitudinal study is based on administrative data, it is seen to be more sustainable and accurate.

The **Maltese 'Graduate Tracer Study'** (MT1) complements the following other measures:

- The Employability Index issued in 2015 by Jobsplus (the PES in Malta). They collect information on graduates from the three main public education institutions and match this with information they have on employment/unemployment through administrative data.
- Tracking by The University of Malta of graduates of particular faculties, such as the Faculty of Arts. Some of the questions used in their questionnaire were also used in the Graduate Tracer Survey,
- Postgraduate Scholarship Tracer Study of 2015 for graduates who benefited from national scholarship schemes. The study aimed to analyse the graduates' perceptions and to improve the scholarship scheme.

For some of the VET graduate tracking measures links with measures related to higher education are reported. For example, in Estonia, the 'VET Graduates´ Research' (EE2) is part of a broader approach to satisfaction research in education. In parallel to the 'VET Graduates' Research' similar research projects addressing students and teachers of vocational schools are in the preparation process. Similar satisfaction research is conducted regularly (every 3 years) in higher education.

In some cases, links identified refer to the specific methodologies used, to the use of a common data base or to specific classifications used. A few providers combine results received from national statistics with data collected by themselves (see box below).

Box 21 – Combining results from national statistics with data collected at provider level – example

'**Vipunen Education Statistics Finland**' (FI2) is the national level portal for education data. The metadata is provided by Statistics Finland and is derived from the 'Transition from school to further education and work' database. Data from Vipunen can easily be disaggregated for use at regional and provider level. However, because the official statistical data is published several years after its collection, VET providers have been developing graduate tracking measures to suit their own needs better. As one example, **Esedu South Savo Vocational College**, one VET provider in Eastern Finland, has implemented, as part of its quality assurance arrangements, a student feedback system which enables the provider to get not only more detailed and timely accurate information on the graduates' placement status after their studies but also provides information on the quality of the VET provision experienced by the students (FI3).

6.1.5 Research Q5: What are the opportunities for making the schemes more comparative and systematic across the Member States? What are the weaknesses of existing tracking instruments?

The information collected suggests that the level of comparability of data collected across Member States is currently rather low. The coverage (population, types of programmes) and methodological approaches adopted (choice of time lapse between graduation and measurement, data collection tool, etc.) vary widely across measures.

The highest level of commonality probably relates to the main type of data collected by VET graduate tracking measures (employment status, type of employment and participation in further education). The in-depth review of the selected measures allows for a more detailed analysis of the type of data collected, focusing on the following results: employment status, type of contract (permanent/temporary; part-time/full time; employment contract/self-employed), earnings, and participation in further education and training after completing VET studies. Not all the measures reviewed collect data on the four types of results listed and the categories used for each result vary considerably:

- The most frequent information collected is **employment status**. Often, tracking measures involve the collection of data on the current or past activity of the target group, including the main categories of employed, unemployed and student. Some measures further disaggregate or aggregate these categories. For instance, the categories 'employed' and 'student' can be aggregated into 'positive exit' (BE fr1) or 'positive destination' (UK1). 'Jobseeker' can be a subcategory under 'unemployed'. Instead of a unique category of 'employed' there can be a category for those only working and another one for those studying and working (FI2, PT1). In addition to the main categories, there are others that vary across measures, e.g. pensioner, conscript/conscientious objector, emigrant, inactive, etc.
- Often measures collect data on the **participation in further education and training** together with the employment status. However, some measures based on administrative data –mainly those extracting data from employment/unemployment registers- do not collect this information (e.g. BE nl, DE6, ES1).
- Information on the **type of contract** is not always collected, and the type of data and categories used vary across measures. Some measures focus on the

working conditions (full-time, part-time) (e.g. AT1), some on the type of contract (e.g. CZ1, HU1), and others give information on both aspects (e.g. FR1, IE1). The categories used under type of contract vary across measures. Although the general categories of 'permanent' and 'fixed-term contract' are always covered, other options are also possible, for instance: self-employed (e.g. ES1, PT1), 'temporary subsidised employment' (FR1), 'civil law contracts' (PL2),[56] working without a contract (IT1), paid training (IT1), etc. Some measures build categories based on aggregated data or composite indicators (see box below).

Box 22 – Categories of 'type of contract' built on aggregated data or composite indicators

The German measure '**BIBB/BAuA Employment Survey 2012**' (DE4) includes under the variable 'unsecure employment' those with a limited term contract, those with a permanent employment contract but the feeling that they are high at risk of dismissal, those in temporary work, and the self-employed.

The Swedish measure '**Establishment on the labour market three years after upper secondary school**' (SE2) built a composite indicator from different aspects related to graduates' working conditions (income, periods of unemployment or participation in active labour market policy measures, classification as student). This indicator has the following categories: established position in the labour market, uncertain position in the labour market, weak position in the labour market, outside the labour market, participating in higher education studies, and participating in other studies.

- Information on **earnings** is the least frequently provided in tracking measures from the types of data analysed. Information on income can be given by month (e.g. FR1, LT1), or hour (e.g. DE4, LU1); gross (e.g. DE4, EE1) or net (e.g. EE2, FR1). A few measures focus on the changes in income before and after VET (IE1, UK3). There are also measures that instead of collecting information directly on salaries, collect related qualitative data, such as satisfaction with earnings (CZ1).

The analysis conducted shows that a direct comparison of the results of existing measures is not feasible. The type of data collected and the categories used are different, and so are the methodologies employed and the target populations covered.

With regard to the methodological approaches, findings refer to the following main weaknesses of existing measures:

- Surveys are considered to be resource intensive, they collect only restricted data, use small samples, have a low response rate and a bias from convenience samples. The lack of control or counterfactual groups in almost all the measures makes it difficult to assess the causal relationship between participation in VET programmes and employment/education outcomes. Also, some surveys are not specifically designed to track VET graduates and might miss important elements. In longitudinal approaches, panel mortality is a serious problem and panel updating is time consuming and costly. Changes in methodology of some measures prevent the analysis of changes in indicators over time.
- Administrative data is not generally linked to 'qualitative' information/personal views, nor kept up to date, and it often excludes groups of VET graduates which are not covered by administrative registers. The complexity of the data

[56] In Poland, 'civil law contracts' are used for specific services or works, developed within a specified period time or related to the completion of a specific task.

released often makes it difficult for providers and other stakeholders to interrogate it.

The analysis of the main weaknesses of current measures, and the lack of comparability of results from different measures, indicates that there are opportunities for making the schemes more comparative and systematic through advice on content, timing and methods.

6.1.6 Research Q6: How could EU level action support the process of making the instruments more comparable and systematic across the Member States?

The EU could support the process of making VET tracking measures more systematic across the Member States by supporting mutual exchange and capacity-building actions. The results of the Delphi survey and the feedback from interviewees consulted as part of this study show that these types of actions are likely to be well-received by national and regional stakeholders.

It is however less clear what impact such actions could have on the comparability of results at EU level. EU action could involve activities to work towards greater comparability, for instance, the development of international standards for graduate tracking surveys or the analysis of administrative data collection and the development of guidelines to promote a certain level of comparability. However, the impact on comparability could take time to materialise or never happen. It could, however, improve the quality and relevance of VET tracking measures for their primary users.

Such activities could also be used as preparation for more decisive actions in the future, or be accompanied by other such actions.

The Delphi survey proposed three other types of action: the development of a new EU survey to track VET graduates; adjusting an existing EU survey to enable VET graduate tracking; and developing a new EU measure based on national administrative data to track VET graduates. While none of these options received much support from the experts consulted, there seems to be room to further explore these options, and analyse their potential benefits and challenges. This could include conducting a feasibility study on the comparability of national administrative data or the development of a new survey, and further exploiting current surveys' data for the analysis of the pathways of VET graduates, to have a clearer idea of their potential.

Support activities promoted by the EU can create valuable opportunities to involve national (and regional) stakeholders in the debate about new EU-level measures for VET graduate tracking.

6.2 Recommendations for actions at EU-level

Recommendation 1. *Stimulate and support the development of quality VET graduate tracking measures in Member States*

VET graduate tracking provides valuable information on the performance of graduates in the labour market and can help improve the quality and labour market relevance of VET. However, it is not a common and regular practice in all Member States, while in some its sustainability over time may not be guaranteed. As Table 13 shows, Member States are at different stages of developing tracking measures.

The increased attention of the EU to VET graduate tracking – for instance, by making a Council Recommendation on tracking measures covering VET- is already a sign to policy makers at national level and is likely to contribute to promoting their interest on the topic and facilitating the use of resources to this type of measure.

However, the role of the EU should go beyond the promotion of VET graduate tracking. It should actively encourage the development of regular measures, where these do

not exist, but also promote the quality of existing measures through direct support to Member States in this area.

There is no one way to track VET graduates. Both administrative data and survey data are needed while each present some constraints. Also, the type of measures, their coverage and number are likely to depend on the VET system in place in each country and the stakeholders involved in each type of VET provision. For instance, countries are likely to have different measures for school-based VET and for apprenticeships or dual VET, and CVET.

The EU should therefore not prescribe a single type of instrument. Instead, it should help open new avenues for learning how to increase the quality of the different types of tracking measures. This could include for instance, increasing knowledge of how to ensure high response rates to surveys, how to create and use counterfactual groups, when best to set multiple measurement points, or how to take advantage of the potential of administrative data while respecting data protection regulations.

This can be done through mutual exchange and capacity-building activities involving stakeholders from different Member States. More specifically, it could involve: the dissemination of good practices; peer learning activities tailored to the level of development of VET graduate tracking in different countries; expert support to national technical teams involved in the development and implementation of tracking measures; or working groups or networks composed of specialists in graduate tracking from different countries, focused on supporting policy makers engaged in developing VET tracking systems. The EU could also consider providing financial support to the development of new measures or review of existing measures. For instance, it could mobilise Erasmus+ or ESF funds to projects focusing on starting or improving VET graduate tracking.

Recommendation 2. *Promote the use of the results of VET graduate tracking measures at different levels (national, regional, provider) and by different stakeholders*

The collection of VET graduate tracking data is not a guarantee of its use. Existing data may not be known to all potential users, or be too complex to analyse and use in decision-making. Also, it may not be responding to the needs of relevant stakeholders in terms of its content, accuracy and timeliness.

Policy-makers have an interest in learning about the pathways of VET graduates and the differences by region, field, VET programme or provider. Such information can for instance help identify which fields or programmes are more in demand by the labour market and which ones may need adapting to improve their quality and labour market relevance. However, tracking information cannot be used in isolation. The information needs to be contextualised – in particular, it must take account of the regional or local labour markets - and be complemented by other information such as students' demand for the different VET programmes.

VET providers also have an interest in knowing more about the pathways of their former students, and how these compare to that of students in the rest of the country or region. Again in this case, the information needs to be contextualised; it needs to take account of the local context and the characteristics of the student population. Tracking data may be insufficient to understand what needs to be improved in VET programmes or their delivery but can help identify which aspects should be further examined.

Prospective students, their families, and guidance professionals can use VET graduate tracking data to inform decisions on further studies. However, data needs to be taken with precaution and complemented with other relevant information such as the past trajectory, skills and interests of the prospective students.

Overall, tracking data needs to be adapted to the target audience, their level of expertise in the use of statistical data, and the intended use of the data. Policy-makers and VET providers are likely to benefit from support on how to use data in decision-making. Guidance professionals may have a key role in helping students use tracking data.

Also, it may be useful to promote discussions between those producing data and the potential users. This would contribute to a better understanding of available data and could potentially lead to a better alignment of existing data with the needs of those interested in using it.

The EU can promote mutual exchange and capacity-building activities on the use of tracking data, involving different stakeholders. The type of concrete activities can be similar to the ones described in recommendation 1.

Recommendation 3. *Work towards an increase in the availability of comparable data at EU level*

While priority should be given to incentivising and supporting the development of quality VET graduate tracking measures in Member States (recommendation 1), the possibility of having more comparable data at EU level should not be disregarded.

It should be acknowledged that the development of instruments to have comparable data at EU level raises concerns among experts, mainly related to the costs of such measures and the potential misuse of their results.

However, past initiatives in the field of higher education (such as CHEERS, REFLEX and HEGESCO surveys) seem to indicate that such initiatives could be feasible also in the field of VET. They could provide interesting information on the differences between national VET systems and types of study programmes that are related to a successful integration of graduates into the labour market, while taking into account national and local labour market trends. Also, there are already some instruments that collect data on the labour market results of VET graduates at EU and international level (such as the LFS and PIAAC).

The EU could start exploring the potential use of existing EU measures to collect comparable VET graduate tracking data. The EU-level tracking measure that provides the most scope to do this is the LFS. It contains data from 1.6 million adults per year, which will allow headline findings to be disaggregated by country. Although only a small sub-set of interviewees are likely to be VET graduates, data can also be collated across multiple cohorts (years) to conduct more detailed analysis by level and type of VET programme and by certain learner characteristics.

The LFS is currently being used to monitor the employment rates of VET graduates. However, it could be enhanced by collecting information on graduate perceptions of the relevance of their recent VET programme to their role and its effectiveness in preparing them for entering employment. This should provide broad data for all four key indicators.

There is also scope for synthesising national data or developing new data collection mechanisms. There could include as a first step a feasibility study on the comparability of national administrative data or the development of a new survey.

Support activities promoted by the EU could also involve cooperation activities towards greater comparability of national level data. This could include, for instance, the development of international standards for graduate tracking surveys or the analysis of administrative data collection and the development of guidelines to promote a certain level of comparability. Such activities can also be used to involve national (and regional) stakeholders in the debate about new EU-level measures for VET graduate tracking.

Recommendation 4. *Consider Country Specific Recommendations to encourage Member States to implement robust VET tracking measures taking account of the findings of this study as summarised for each country*

This study shows that not all Member States have VET graduate tracking measures in place and, in some cases, existing measures are not conducted on a regular basis or do not cover the whole country or provide results which have limited use for improving VET provision.

There are currently no VET graduate tracking measures in Bulgaria, Cyprus, Greece and Latvia.[57] Out of the 24 countries where such measures exist, in five there are no measures that are implemented on a regular basis and cover the whole country: Croatia, Lithuania, Poland, Slovenia and Romania.[58] Also, in Spain, VET graduate tracking is done on a regular basis in the two regions covered in this study (Catalonia and Basque Country) but it cannot be confirmed that this is done in the other fifteen regions. While some of these countries have made commitments to develop regular tracking measures, such as Bulgaria, and taken some steps, such as Latvia, these are yet to be implemented.

Other Member States with regular measures also have areas where national VET graduate tracking systems could be improved. Thirteen of these Member States for example do not match administrative and survey data (AT, BE, CZ, DK, ES, FI, FR, HU, IT, LU, MT, PT and SK), four do not have measures that use multiple measurement points (IT, MT, NL, SE) and 11 do not include all four key indicators (BE, CZ, DK, EE, FI, FR, HU, MT, PT, SK, UK).

Tables 12 and 13 in section 3.4 above show the gaps in countries' VET tracking measures and the stage of development of tracking measures respectively. This should assist the Commission in considering Country Specific Recommendations.

6.3 Recommendations to Member States

Recommendation 1. *Develop regular measures for VET graduate tracking, where these do not exist*

This study shows that not all Member States have VET graduate tracking measures in place and, in some cases, existing measures are not conducted on a regular basis or do not cover the whole country.

There are currently no VET graduate tracking measures in Bulgaria, Cyprus, Greece and Latvia.[59] Out of the 24 countries where such measures exist, in five there are no measures that are implemented on a regular basis and cover the whole country: Croatia, Lithuania, Poland, Slovenia and Romania.[60] Also, in Spain, VET graduate tracking is done on a regular basis in the two regions covered in this study (Catalonia and Basque Country) but it cannot be confirmed that this is done in the other fifteen regions.

An analysis of past and current tracking initiatives in the country, where these exist, existing administrative registers which could provide useful data to graduate tracking, and tracking initiatives in other countries, can be the first step towards the development of regular VET graduate tracking measures.

[57] Bulgaria is currently developing a tracking measure at national level and Latvia has recently piloted a set of provider-level surveys.

[58] Lithuania and Slovenia are currently developing new tracking measures.

[59] Bulgaria is currently developing a tracking measure at national level and Latvia has recently piloted a set of provider-level surveys.

[60] Lithuania and Slovenia are currently developing new tracking measures.

The process of design and development of new tracking measures will benefit from involving both those responsible for the technical aspects of tracking (e.g. statistical departments) and the potential data users (policy-makers at national, regional and local level, and VET providers). This would allow measure developers to tailor the instruments to the needs of users, increasing the chances that results will be used to increase VET quality and labour market relevance in the future.

Recommendation 2. *Ensure that regular measures for VET graduate tracking cover the majority of the VET provision (IVET, CVET and different providers)*

VET systems cover a variety of programmes –under IVET and CVET- delivered by a variety of providers (e.g. schools, PES, private providers, companies). Ideally, VET graduate tracking should cover all these programmes and providers, either through common, overarching measures, or through different measures which should allow for a certain level of comparability.

This study shows that, from the 19 Member States where regular tracking measures exist, only seven have measures in place to cover IVET and CVET. In the other countries, the regular measures identified cover either only IVET (BE-nl, CZ, DK, EE, ES – Catalonia and Basque Country, HU, IT, LU, MT, PT, SE and SK) or only CVET (BE-fr).

While it should be noted the current study did not aim at identifying all CVET measures and, therefore, some of the countries listed may in fact be tracking both IVET and CVET graduates, this is not likely to be the case in all Member States. Also, some of the CVET measures identified cover only certain providers or certain types of training. For instance, the measure identified in the French-speaking Community of Belgium only covers participants in a skills training programme ('*formation qualifiante*') provided by the Francophone public service for vocational training in Brussels.

In many Member States, the coverage of VET graduate tracking measures can thus be improved. Also, to better understand the functioning of the national VET system as a whole, it is important to increase comparability between the results of the different tracking measures. For this to happen, communication channels between those in charge of different measures within the same country need to be strengthened.

Recommendation 3. *Ensure that regular measures for VET graduate tracking cover the full range of information required to assess the quality and relevance of VET provision, including their integration in the labour market and progression to further studies*

Regular VET graduate tracking measures should inform analysis of VET quality and labour market relevance. For this, it is important to collect data on a variety of aspects related to labour market integration and progression to further studies. For instance, it is key to know the employment status of graduates but this information should be complemented with data on the quality of employment (e.g. type of contract, working hours, salary). Equally, it is important to know what graduates earn and what they do but this information should be complemented with data on the relevance of their training for their jobs.

For example, this study examined to what extent existing regular measures collected data on employment status, type of contract (permanent/temporary, part-time/full-time), earnings and participation in further education and training. It found that only in eight Member States (out of the 19 that have regular measures), there is at least one regular measure that covers all these data (Austria, Germany, Spain (Catalonia), Ireland, Italy, Luxembourg, Netherlands and Sweden). In the other Member States only some or none of the data listed are covered.

This shows that there is a need to review tracking measures to assess whether and how it would be possible to collect all the above basic data on labour market integration and progression to further studies, as well as other data deemed useful to support decision-making in the VET field.

Recommendation 4. *Review the methodology of VET graduate tracking measures to increase their quality, by ensuring representative samples – in the case of surveys - and increasing the use of control or counterfactual groups*

Surveys can be valuable instruments to collect information on the trajectories of VET graduates. These instruments can be tailored to the specific purpose of graduate tracking and allow for the collection of qualitative information.

However, survey results can only lead to valid conclusions if based on representative samples. The use of convenience sampling and low response rates can lead to a selection bias, meaning that some parts of the target population are not included in the sampled population. The use of convenience sampling, which is very frequent among the measures mapped in this study,[61] leaves out harder-to-reach individuals. Low response rates, a common difficulty identified by those implementing VET graduate tracking measures, can have a similar effect. Non-participants and non-respondents can differ from the individuals in the sample in terms of their trajectories after graduation. This would mean that the survey results should not be generalised to the overall target population.

It is therefore advisable to move towards more robust sampling techniques and to develop strategies and devote resources to ensure high response rates and achieved sample sizes needed for robust statistical analysis.

When extracting conclusions from the results of VET graduate tracking measures, it is also important to be able to say whether the results observed are a consequence of VET or are maybe due to other factors. This requires a counterfactual analysis: the comparison of observed results in VET graduates to those of individuals who did not graduate from VET (counterfactual group). Those who have dropped out is not a sufficient counterfactual group.

This study shows that only a few of the tracking measures analysed use a control or counterfactual group (4 measures out of the 31 measures analysed in depth). These measures are based on administrative data and compare graduates with drop-outs. No measures were identified that compare VET graduates with non-participants in VET which would be a better counterfactual group.

For a larger group of measures (14) comparisons between different groups are made or could be made based on existing data. These include, for instance, comparisons between the results of graduates from different education tracks or from different regions, or between graduates and drop-outs. The use of comparison groups does not allow us to say that the differences in results are due to VET completion. However, data analysts could eventually check the comparability of the two existing groups (e.g. with regards to their socio-economic background and other characteristics) to assess the possibility of using the comparison group as a counterfactual group.

Recommendation 5. *Increase the use of longitudinal/multiple measurement point studies*

Longitudinal studies follow individuals over time and can provide information on employment results at different stages: entrance in the labour market, permanence in the labour market, changes in occupation and the quality of employment, etc. Such studies provide a more complete picture of individuals' academic and professional

[61] 21 out of the 41 measures using a sampling approach, use convenience sampling.

career but also allow a better estimate of the economic and social benefits of VET which should be achieved and attributable to VET in the 3-5 year period after graduating.

Around half of the measures mapped in the study (44 out of 84 where this information is available) collect data at multiple measurement points although few do this more than twice. These measures include both survey and administrative data based instruments.

It could be expected that all measures based on administrative data would be designed as longitudinal studies, as continuous measurement of results should be possible. However, this is not necessarily the case. In some measures, data for tracking is only extracted at one point in time. In such cases, the full potential of measures could be further exploited, as a longitudinal component could be added at a relatively low cost.

In the case of surveys, there is a major challenge to longitudinal studies: ensuring a representative and continued response rate over time. A further analysis of the techniques used by existing longitudinal studies to ensure high response rates can be the first step for Member States to raise the response rates of their studies and encourage the development of new longitudinal studies.

Recommendation 6. *Make use of existing administrative registers as a source of data on VET graduates' trajectories*

All EU Member States regularly collect a variety of administrative data about their citizens that could potentially be used for VET graduate tracking. Data is collected in different registers concerning education, (un)employment, social security, taxes, population, ESF beneficiaries, and other activities (e.g. housing, enterprises/business, pensions, and contracts).

However, tracking based on administrative data is not in place in all Member States. From the 19 countries that have regular tracking measures, 13 are currently using administrative data.[62] Also, in some cases, only a limited number of relevant administrative sources are used.

The limited use of administrative data for VET graduate tracking across Member States is mainly due to the technical difficulties when combining data from different registers and to limitations imposed by data protection regulations.

The combination of the information from different registers requires matching the data based on one or more key identification variables (e.g. name, social security number, date of birth). In some countries this has been facilitated by the use of one consistent personal code across existing registers (e.g. social security number, education number, public service number, or an individual number specifically created for the purpose of combining information from different databases).[63] Other Member States could also envisage the possibility of creating such personal codes as a way to facilitate the combination of data with the purpose of graduate tracking.

Data protection regulations often prohibit the exchange of data containing personal information between different governmental departments, between national and regional authorities, or between the government and other stakeholders producing data relevant for VET graduate tracking. Data exchange would be eased by the

[62] Six countries have regular measures that combine survey and administrative data (DE, EE, IE, NL, SE and UK) and seven countries use only administrative data in their regular national or regional graduate tracking measures (AT, BE, DK, ES-Catalonia, FI, LU and SK).

[63] 17 Member States currently use such personal codes and two are currently creating them.

recognition in national regulations of the interest of using administrative data with the purpose of VET graduate tracking.

It is safer to exchange data which has been previously anonymised. The use of an encrypted personal identifier for data matching could facilitate the matching between datasets (this approach is currently used in the Netherlands).

There are also techniques to increase the security of personal data such as 'data swapping' which transforms a database by exchanging values of confidential attributes among individual records (measure AT1 currently uses this technique). The strict regulation of access to raw data also helps guarantee data protection (see for instance the multi-layer data protection procedure of the measure DE1).

Recommendation 7. *Increase the links between administrative and survey data for VET graduate tracking*

One of the findings of this study is that although some countries use both administrative data and survey data as part of their tracking measures, the two types of data are rarely combined for analysis and in only one cases are they nominally linked using an identifier.

Survey data is seen to add qualitative insights to the factual data collected by administrative registers. Also, the coexistence of the two approaches to data collection can be used as a way to confirm trends in the trajectories of VET graduates. For instance, the results regarding the employment status of graduates measured through a sample-based survey can be contrasted with the data on employment status from an administrative database covering the whole target population.

Although these benefits are obtained from the coexistence of the two types of measures, more could be achieved by combining the results from the two data collection approaches in one dataset. For instance, this could allow surveys to be shorter by limiting the number of questions on factual information – which would already be available from administrative data - and thus increase response rates. The link of the qualitative insights with the more factual information on an individual level would permit a more detailed and precise analysis of the reasons behind career pathways (e.g. whether a person decided to continue studying because s/he could not find a job, or because s/he felt the type of jobs s/he could access were not attractive, etc.).

Recommendation 8. *Increase the user-friendliness of published data and promote encounters between those in charge of tracking measures and the potential users of data*

Collecting data should not be an aim in itself. VET graduate tracking data should serve the purpose of improving the quality and labour market relevance of VET.

Data can be used by policy-makers at different levels as well as by VET providers, prospective students and guidance professionals.

It is important to promote relationships between departments and experts responsible for designing and developing the measures and those who will be using the data to inform decision making, mainly at national and regional level. VET provider representatives and other major stakeholders could also be invited to such discussions. The aim of the discussions should be: to inform potential users of the existing data and to collect feedback on the users' opinion of data strengths and limitations to meet their needs. Ultimately, this process should help improve data collection, analysis and dissemination to better meet the needs of users.

Data available from regular statistical publications is often too complex for a direct use in decision-making. More targeted publications – focusing on the data that are useful

for each target group - using user-friendly formats will undoubtedly facilitate the use of data in decision making. This is particularly relevant to promote the use of data among VET providers, prospective students and guidance professionals.

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ANNEXES

Annex 1. Table of VET graduate tracking measures identified in EU Member States

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
1	AT1	Education-related employment career monitoring (BibEr)	Admin data	national	Wider	IVET/CVET	total	multiple	3, 6, 12, 18, 24 months	precise
2	AT2	After dual VET in Salzburg: An empirical analysis of dual VET graduates three years after graduation (regional study)	Survey	regional	VET	IVET	sample	single	3 years	precise
3	AT3	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	Admin data/Survey	national	VET	IVET	sample	single/multiple	2 years; admin data: 6 months, 1 year, 2 years, 3 years, 4 years and 5 years	precise
4	AT4	Occupational careers of alumni of Secondary Vocational Schools for the Training of Nursery School Teachers	Survey	sectoral	VET	IVET	sample	single	at least 5 years	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
5	AT5	Acceptance and market relevance of education and training in Advertising and Communication	Survey	sectoral	Wider	CVET	sample	single	1, 2, 3, 4 years	precise
6	BE-nl1	School leavers report	Admin data	regional	Wider	IVET	total	single	1 year	broad
7	BE-nl2	Informal measure (no name): SYNTRA graduate tracking	Admin data	regional	VET	CVET	total	multiple		precise
8	BE-fr1	Ulysse Survey	Admin data/Survey	regional	Wider	CVET	sample	single	13-24 months	broad
9	BE-fr2	Study on the labour market integration and longitudinal follow-up of VET learners in the Walloon Region	Survey	regional	VET	IVET/CVET	sample	single	1 and 2 years	precise
10	BE-fr3	Study of young people's trajectories during and after VET in the French-speaking system of the Brussels region	Admin data/Survey	regional	VET	IVET/CVET	total	single	12-24 months (year X+2)	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
11	CZ1	Survey of VET graduates regarding their transition from education into labour market (2015)	Survey	national	VET	IVET	sample	multiple	before leaving school, 3 years, 6 years	broad
12	CZ2	Survey of school graduates regarding their transition from education into labour market (2008)	Survey	national	Wider	IVET	sample	multiple	before leaving school, 3 years, 6 years	broad
13	CZ3	Tracking of school graduates' unemployment through administrative data	Admin data	national	Wider	IVET	total	multiple		precise
14	CZ4	Tracking of graduates' labour market outcomes at the vocational school Horovice	Admin data/Survey	provider	VET	IVET	sample	single	not clear	broad
15	DE1	National Educational Panel Study - NEPS	Admin data/Survey	national	Wider	IVET	sample	multiple		precise
16	DE2	BIBB Transition Surveys 2006 and 2011	Survey	national	Wider	IVET	sample	multiple		precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
17	DE3	Integrated Employment Biographies Sample (SIAB)	Admin data	national	Wider	IVET/CVET	sample	multiple		precise
18	DE4	BIBB/BAuA Labour Force Survey 2006 & 2012	Survey	national	Wider	IVET/CVET	sample	single	4-6 years (Lot 3: graduates of dual VET from the years 2006 to 2008 after entry into the labour market)	precise
19	DE5	BIBB/BAuA Labour Force Survey 2006 & 2012 - Lot 3 "Transition from training to employment"	Survey	national	VET	IVET	sample	single	6 years (for graduates of 2006) and 4 years (for graduates of 2012)	precise
20	DE6	Education Panel Saarland	Admin data	regional	VET	IVET	total	multiple		precise
21	DE7	What are the career pathways of master craftspersons in the skilled crafts sector? Graduate survey 2014	Survey	sectoral	VET	CVET	sample	single	6, 5 and 4 years	precise
22	DK1	Statistics Denmark student register	Admin data	national	Wider	IVET	total	multiple		precise
23	DK2	The cross-sectional course register	Admin data	national	Wider	CVET	total	multiple		precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
24	DK3	From vocational education to the labour market	Admin data	national	VET	IVET	total	multiple	2 months, 1 year, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9 years, 10 years, 11 years	precise
25	EE1	Labour Market Success of Vocational and Higher Education Graduates (2012)	Admin data	national	Wider	IVET	total	multiple		precise
26	EE2	VET Graduates´ Research	Admin data/Survey	national	VET	IVET	sample	single	2 to 4 years	broad
27	ES1	Longitudinal analysis of labour insertion of initial VET: 5-year follow-up. Academic years 2004-05 to 2010-11.	Admin data	regional	VET	IVET	total	multiple		precise
28	ES2	Labour insertion of VET (Census survey on labour insertion)	Survey	regional	Wider	IVET	total	single	6-9 months	precise
29	ES3	Labour insertion of graduates in professional training	Survey	regional	VET	IVET	total	single	1 year	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
30	ES4	Pathways leading to success in or drop out from vocational education of level 1 and 2 (2015-2017)	Survey	regional	VET	IVET	sample	multiple		information not available
31	FI1	Transition from school to further education and work	Admin data	national	Wider	IVET/CVET	total	multiple		precise
32	FI2	Vipunen - Education Statistics Finland	Admin data	national	Wider	IVET/CVET	total	multiple	1, 3 and 5 years	precise
33	FI3	Student feedback at Esedu Savo Vocational College	Survey	provider	VET	IVET/CVET	total	all measurement points before graduation		precise
34	FR1	Generation Survey (Cereq)	Survey	national	Wider	IVET	sample	multiple	3, 5 and 7 years (for 'full generation' surveys only; 'light generation' surveys: single – 3 years)	precise
35	FR2	Survey on active life insertion	Survey	national	Wider	IVET	sample	multiple	7 months	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
36	FR3	Professional Insertion of Apprentices Survey	Survey	national	VET	IVET	sample	multiple	7 months	precise
37	FR4	Job searchers, interns from professional training: which pathways after training?	Survey	national	Wider	CVET	sample	multiple		precise
38	FR5	Survey on the future of candidates with professional titles	Survey	sectoral	Wider	CVET	sample	single	6 months	broad
39	HR1	Self-evaluation of VET schools	Survey	provider	VET	IVET	sample	single		broad
40	HU1	Labour market situation of freshly graduated skilled workers	Survey	national	VET	IVET	sample	multiple	19 months and 2 years,7 months	precise
41	HU2	BÉKSZI's (Békéscsaba Central Vocational School and Student Dormitory) career tracking system	Survey	provider	VET	IVET	total	single		precise
42	HU3	Fáy (Fáy András Technical Automation and Technical Grammar School) career tracking system	Survey	provider	VET	IVET	total	single		precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
43	HU4	Lukács Sándor Mechatronic and Mechanical engineering Elementary School, Vocational School and Student dormitory career tracking system	Survey	provider	VET	IVET	total	single		precise
44	IE1	Follow Up Surveys of FÁS Programme Participants	Survey	national	VET	IVET/CVET	sample	multiple	9-12 months	precise
45	IE2	School Completers – What Next?	Admin data	national	Wider	IVET	total	single	1 year	broad
46	IE3	School Leavers Survey	Survey	national	Wider	IVET	sample	multiple	20-26 months	broad
47	IT1	Inquiry into the study and work paths of diploma graduates	Survey	national	Wider	IVET	sample	single	4 years	precise
48	IT2	AlmaDiploma - Choices of diploma holders 2015: employment and education one year later	Survey	national	Wider	IVET	sample	single	1, 3 and 5 years (3 cohorts)	precise
49	IT3	The condition of diploma holders two years after graduation (2008-2010)	Survey	regional	Wider	IVET	sample	single	2 years	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
50	IT4	Monitoring of employment of those holding a diploma or a qualification in the Monza Brianza province	Survey	regional	VET	IVET	sample	single	1 year	precise
51	LT1	National System of Monitoring and Forecasting of Human Resources	Admin data	national	Wider	IVET/CVET	total	single	12 months	broad
52	LT2	Tracking executed by the initial VET schools	Survey	provider	VET	IVET	sample	single	1 year	broad
53	LU1	Transition School-Active Life (TEVA)	Admin data	national	Wider	IVET	total	multiple	Continuously over 36 months	precise
54	LU2	Local Action for Youth, ALJ	Admin data/Survey	national	Wider	IVET	total	multiple	3 months	precise
55	LU3	Study 13/2010 Insights into school to first job transitions	Survey	national	Wider	IVET	total	single		precise
56	MT1	Graduate Tracer Study	Survey	national	Wider	IVET	sample	single	1 to 2 years	precise
57	MT2	Employment Index 2015	Admin data	national	Wider	IVET	sample	single	2 to 3 years	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
58	MT3	Tracer Study Report 2013	Survey	national	Wider	IVET	sample	single	up to 6 months (e.g. data are collected in 2013 after the graduation in the scholastic year 2012-2013)	precise
59	NL1	MBO; flows and exits, origin, generation, regional characteristics	Admin data	national	VET	IVET/CVET	total	single	1 year	precise
60	NL2	MBO; school leavers, position on the labour market	Admin data	national	VET	IVET/CVET	total	multiple		precise
61	NL3	MBO; school leavers, industry	Admin data	national	VET	IVET/CVET	total	multiple		precise
62	NL4	VO (Secondary education); flows and exits, origin, generation, regional characteristics	Admin data	national	Wider	IVET	total	single	1 year	precise
63	NL5	The Research Centre for Education and the Labour Market (ROA) School Leavers Survey VO (voortgezet onderwijs) Monitor	Survey	national	Wider	IVET	sample	single	1.5 years	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
64	NL6	The Research Centre for Education and the Labour Market (ROA) School Leavers Survey BVE (beroepsonderwijs en volwasseneneducatie) Monitor	Survey	national	VET	IVET/CVET	sample	single	1.5 years	precise
65	NL7	VET map for ROC (Regional Education Centre) Midden Nederland	Survey	provider	VET	IVET/CVET	total	single	6 to 9 months	precise
66	PL1	Labour Offices and their data gathering system ('Syriusz'), which could be used.	Admin data	national	Wider	IVET/CVET	total	information not available		precise
67	PL2	Study on professional career paths of the graduates of vocational schools in Maloposka region	Survey	regional	VET	IVET	sample	multiple	before graduation (2009/2010) and one year after (summer 2011)	precise
68	PL3	Study on professional career paths of vocational schools graduates in Lodzkie region	Survey	regional	VET	IVET	sample	single	1 or more years	broad

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
69	PT1	Observatory of secondary students' trajectories. Youth in post-secondary survey.	Survey	national	Wider	IVET	sample	multiple	14 months (there are two other measurements before graduation)	precise
70	PT2	Survey on active life insertion.	Survey	provider	VET	IVET	total	multiple	up to 6 weeks and up to 6 months	precise
71	RO1	Monitoring the socio-professional insertion of VET graduates at 6 and 12 months after graduation	Survey	county	VET	IVET	total	multiple	6 month, 12 months	precise
72	SE1	Labour market entry among upper secondary school graduates	Admin data/Survey	national	Wider	IVET	sample	single	1 or 3 years	precise
73	SE2	Establishment on the labour market three years after upper secondary school	Admin data	national	Wider	IVET	total	single	3 years	precise
74	SE3	What young people do after upper secondary school	Admin data	national	Wider	IVET	total	single	1 year, 3 years and 5 years (3 cohorts)	precise

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
75	SI1	Monitoring of employability of graduates of upper-secondary vocational and technical schools	Survey	national	VET	IVET	total	single	6 years after starting the upper-secondary education	precise
76	SI2	Monitoring of graduates at Biotechnical Educational Centre Ljubljana	Survey	provider	VET	IVET	total	single	6 to 10 months	precise
77	SI3	Survey on employability at School Center Novo mesto	Survey	provider	VET	IVET	total	single	6 to 10 months	broad
78	SI4	Monitoring of graduates on Biotechnical centre Naklo	Survey	provider	Wider	IVET	total	single	4 and 16 months	precise
79	SK1	Tracking of school graduates' unemployment through administrative data	Admin data	national	Wider	IVET	total	multiple	momthly	broad
80	UK1	College Leaver Destinations 2014-15, SFC Statistical publication	Admin data/Survey	regional	Wider	IVET/CVET	total	multiple	3-6 months	broad
81	UK2	FE Choices	Survey	regional	VET	IVET	total	single	6-12 months	broad

Nbr.	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
82	UK3	Disaggregated Analysis of the Long Run Impact of Vocational Qualifications study	Admin data	regional	Wider	IVET	total	single	1,2,3,4,5,6 and 7 years	broad
83	UK4	Individualised Learner Record	Survey	regional	Wider	IVET/CVET	total	single	6 months	precise
84	UK5	Lifelong Learning in Wales Record	Survey	regional	Wider	IVET/CVET	total	multiple	immediately and 3 months after graduation	precise
85	UK6	Further Education Leavers Survey 2015	Survey	regional	Wider	IVET	sample	single	6 months	broad

Source: ICF/3s research.

[1]Survey/Admin data/Other source; [2]National/Regional/Sectoral/Provider/Other; [3] VET/wider; [4] Segments: IVET/CVET; [5] Basis: total reference population of the VET graduate racking measure/sample; [6] Measurement point: single measurement point/multiple measurement points; 7 Type of data collected: precise/broad categories

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
1	AT1	Education-related employment career monitoring (BibEr)	Admin data	national	Wider	IVET/CVET	total	multiple	3, 6, 12, 18, 24 months	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
2	AT2	After dual VET in Salzburg: An empirical analysis of dual VET graduates three years after graduation (regional study)	Survey	regional	VET	IVET	sample	single	3 years	precise
3	AT3	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	Admin data/Survey	national	VET	IVET	sample	single/multiple	2 years; admin data: 6 months, 1 year, 2 years, 3 years, 4 years and 5 years	precise
4	AT4	Occupational careers of alumni of Secondary Vocational Schools for the Training of Nursery School Teachers	Survey	sectoral	VET	IVET	sample	single	at least 5 years	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Coverage[3]	VET segment[4]	Basis (reference population)[5]	Measurement points[6]	Timing: measurement after graduation	Type of data[7]
5	AT5	Acceptance and market relevance of education and training in Advertising and Communication	Survey	sectoral	Wider	CVET	sample	single	1, 2, 3, 4 years (different cohorts)	precise
6	BE-nl1	School leavers report	Admin data	regional	Wider	IVET	total	single	1 year	broad
7	BE-nl2	Informal measure (no name): SYNTRA graduate tracking	Admin data	regional	VET	CVET	total	multiple		precise
8	BE-fr1	Ulysse Survey	Admin data/Survey	regional	Wider	CVET	sample	single	13-24 months	broad
9	BE-fr2	Study on the labour market integration and longitudinal follow-up of VET learners in the Walloon Region	Survey	regional	VET	IVET/CVET	sample	single	1 or 2 years	precise
10	BE-fr3	Study of young people's trajectories during and after VET in the French-speaking system of the Brussels region	Admin data/Survey	regional	VET	IVET/CVET	total	single	12-24 months (year X+2)	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
11	CZ1	Survey of VET graduates regarding their transition from education into labour market (2015)	Survey	national	VET	IVET	sample	multiple	before leaving school, 3 years, 6 years	broad
12	CZ2	Survey of school graduates regarding their transition from education into labour market (2008)	Survey	national	Wider	IVET	sample	multiple	before leaving school, 3 years, 6 years	broad
13	CZ3	Tracking of school graduates' unemployment through administrative data	Admin data	national	Wider	IVET	total	multiple		precise
14	CZ4	Tracking of graduates' labour market outcomes at the vocational school Horovice	Admin data/Sur vey	provider	VET	IVET	sample	single		broad
15	DE1	National Educational Panel Study - NEPS	Admin data/Sur vey	national	Wider	IVET	sample	multiple		precise
16	DE2	BIBB Transition Surveys 2006 and 2011	Survey	national	Wider	IVET	sample	multiple		precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
17	DE3	Integrated Employment Biographies Sample (SIAB)	Admin data	national	Wider	IVET/CVET	sample	multiple		precise
18	DE4	BIBB/BAuA Labour Force Survey 2006 & 2012	Survey	national	Wider	IVET/CVET	sample	single	4-6 years (Lot 3: graduates of dual VET from the years 2006 to 2008 after entry into the labour market)	precise
19	DE5	BIBB/BAuA Labour Force Survey 2006 & 2012 - Lot 3 "Transition from training to employment"	Survey	national	VET	IVET	sample	single	6 years (for graduates of 2006) and 4 years (for graduates of 2012)	precise
20	DE6	Education Panel Saarland	Admin data	regional	VET	IVET	total	multiple		precise
21	DE7	What are the career pathways of master craftspersons in the skilled crafts sector? Graduate survey 2014	Survey	sectoral	VET	CVET	sample	single	6, 5 and 4 years (different cohorts)	precise
22	DK1	Statistics Denmark student register	Admin data	national	Wider	IVET	total	multiple		precise

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23	DK2	The cross-sectional course register	Admin data	national	Wider	CVET	total	multiple		precise
24	DK3	From vocational education to the labour market	Admin data	national	VET	IVET	total	multiple	2 months, 1 year, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9 years, 10 years, 11 years	precise
25	EE1	Labour Market Success of Vocational and Higher Education Graduates (2012)	Admin data	national	Wider	IVET	total	multiple		precise
26	EE2	VET Graduates´ Research	Admin data/Sur vey	national	VET	IVET	sample	single	2 to 4 years	broad
27	ES1	Longitudinal analysis of labour insertion of initial VET: 5-year follow-up. Academic years 2004-05 to 2010-11.	Admin data	regional	VET	IVET	total	multiple		precise
28	ES2	Labour insertion of VET (Census survey on labour insertion)	Survey	regional	Wider	IVET	total	single	6-9 months	precise

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29	ES3	Labour insertion of graduates in professional training	Survey	regional	VET	IVET	total	single	1 year	precise
30	ES4	Pathways leading to success in or drop out from vocational education of level 1 and 2 (2015-2017)	Survey	regional	VET	IVET	sample	multiple		information not available
31	FI1	Transition from school to further education and work	Admin data	national	Wider	IVET/CVET	total	multiple		precise
32	FI2	Vipunen - Education Statistics Finland	Admin data	national	Wider	IVET/CVET	total	multiple	1, 3 and 5 years	precise
33	FI3	Student feedback at Esedu Savo Vocational College	Survey	provider	VET	IVET/CVET	total	all measurem ent points before graduation		precise
34	FR1	Generation Survey (Cereq)	Survey	national	Wider	IVET	sample	multiple	3, 5 and 7 years (for 'full generation' surveys only; 'light generation' surveys: single – 3 years)	precise
35	FR2	Survey on active life insertion	Survey	national	Wider	IVET	sample	multiple	7 months	precise

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36	FR3	Professional Insertion of Apprentices Survey	Survey	national	VET	IVET	sample	multiple	7 months	precise
37	FR4	Job searchers, interns from professional training: which pathways after training?	Survey	national	Wider	CVET	sample	multiple		precise
38	FR5	Survey on the future of candidates with professional titles	Survey	sectoral	Wider	CVET	sample	single	6 months	broad
39	HR1	Self-evaluation of VET schools	Survey	provider	VET	IVET	sample	single		broad
40	HU1	Labour market situation of freshly graduated skilled workers	Survey	national	VET	IVET	sample	multiple	19 months and 2 years,7 months	precise
41	HU2	BÉKSZI's (Békéscsaba Central Vocational School and Student Dormitory) career tracking system	Survey	provider	VET	IVET	total	single		precise

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42	HU3	Fáy (Fáy András Technical Automation and Technical Grammar School) career tracking system	Survey	provider	VET	IVET	total	single		precise
43	HU4	Lukács Sándor Mechatronic and Mechanical engineering Elementary School, Vocational School and Student dormitory career tracking system	Survey	provider	VET	IVET	total	single		precise
44	IE1	Follow Up Surveys of FÁS Programme Participants	Survey	national	VET	IVET/CVET	sample	multiple	9-12 months	precise
45	IE2	School Completers – What Next?	Admin data	national	Wider	IVET	total	single	1 year	broad
46	IE3	School Leavers Survey	Survey	national	Wider	IVET	sample	multiple	20-26 months	broad
47	IT1	Inquiry into the study and work paths of diploma graduates	Survey	national	Wider	IVET	sample	single	4 years	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
48	IT2	AlmaDiploma - Choices of diploma holders 2015: employment and education one year later	Survey	national	Wider	IVET	sample	single	1, 3 and 5 years (3 cohorts)	precise
49	IT3	The condition of diploma holders two years after graduation (2008-2010)	Survey	regional	Wider	IVET	sample	single	2 years	precise
50	IT4	Monitoring of employment of those holding a diploma or a qualification in the Monza Brianza province	Survey	regional	VET	IVET	sample	single	1 year	precise
51	LT1	National System of Monitoring and Forecasting of Human Resources	Admin data	national	Wider	IVET/CVET	total	single	12 months	broad
52	LT2	Tracking executed by the initial VET schools	Survey	provider	VET	IVET	sample	single	1 year	broad
53	LU1	Transition School-Active Life (TEVA)	Admin data	national	Wider	IVET	total	multiple	continuously over 36 months	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
54	LU2	Local Action for Youth, ALJ	Admin data/Sur vey	national	Wider	IVET	total	multiple	3 months	precise
55	LU3	Study 13/2010 Insights into school to first job transitions	Survey	national	Wider	IVET	total	single		precise
56	MT1	Graduate Tracer Study	Survey	national	Wider	IVET	sample	single	1 to 2 years	precise
57	MT2	Employment Index 2015	Admin data	national	Wider	IVET	sample	single	2 to 3 years	precise
58	MT3	Tracer Study Report 2013	Survey	national	Wider	IVET	sample	single	up to 6 months (e.g. data are collected in 2013 after the graduation in the scholastic year 2012-2013)	precise
59	NL1	MBO; flows and exits, origin, generation, regional characteristics	Admin data	national	VET	IVET/CVET	total	single	1 year	precise
60	NL2	MBO; school leavers, position on the labour market	Admin data	national	VET	IVET/CVET	total	multiple		precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
61	NL3	MBO; school leavers, industry	Admin data	national	VET	IVET/CVET	total	multiple		precise
62	NL4	VO (Secondary education); flows and exits, origin, generation, regional characteristics	Admin data	national	Wider	IVET	total	single	1 year	precise
63	NL5	The Research Centre for Education and the Labour Market (ROA) School Leavers Survey VO (voortgezet onderwijs) Monitor	Survey	national	Wider	IVET	sample	single	1.5 years	precise
64	NL6	The Research Centre for Education and the Labour Market (ROA) School Leavers Survey BVE (beroepsonderwijs en volwasseneneducatie) Monitor	Survey	national	VET	IVET/CVET	sample	single	1.5 years	precise
65	NL7	VET map for ROC (Regional Education Centre) Midden Nederland	Survey	provider	VET	IVET/CVET	total	single	6 to 9 months	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
66	PL1	Labour Offices and their data gathering system ('Syriusz'), which could be used.	Admin data	national	Wider	IVET/CVET	total	informatio n not available		precise
67	PL2	Study on professional career paths of the graduates of vocational schools in Maloposka region	Survey	regional	VET	IVET	sample	multiple	before graduation (2009/2010) and one year after (summer 2011)	precise
68	PL3	Study on professional career paths of vocational schools graduates in Lodzkie region	Survey	regional	VET	IVET	sample	single	1 or more years	broad
69	PT1	Observatory of secondary students' trajectories. Youth in post-secondary survey.	Survey	national	Wider	IVET	sample	multiple	14 months (there are two other measurements before graduation)	precise
70	PT2	Survey on active life insertion.	Survey	provider	VET	IVET	total	multiple	up to 6 weeks and up to 6 months	precise
71	RO1	Monitoring the socio-professional insertion of VET graduates at 6 and 12 months after graduation	Survey	county	VET	IVET	total	multiple	6 and 12 months	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
72	SE1	Labour market entry among upper secondary school graduates	Admin data/Survey	national	Wider	IVET	sample	single	1 or 3 years	precise
73	SE2	Establishment on the labour market three years after upper secondary school	Admin data	national	Wider	IVET	total	single	3 years	precise
74	SE3	What young people do after upper secondary school	Admin data	national	Wider	IVET	total	single	1 year, 3 years and 5 years (3 cohorts)	precise
75	SI1	Monitoring of employability of graduates of upper-secondary vocational and technical schools	Survey	national	VET	IVET	total	single	6 years after starting the upper-secondary education	precise
76	SI2	Monitoring of graduates at Biotechnical Educational Centre Ljubljana	Survey	provider	VET	IVET	total	single	6 to 10 months	precise
77	SI3	Survey on employability at School Center Novo mesto	Survey	provider	VET	IVET	total	single	6 to 10 months	broad

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
78	SI4	Monitoring of graduates on Biotechnical centre Naklo	Survey	provider	Wider	IVET	total	multiple	4 and 16 months	precise
79	SK1	Tracking of school graduates' unemployment through administrative data	Admin data	national	Wider	IVET	total	multiple	monthly	broad
80	UK1	College Leaver Destinations 2014-15, SFC Statistical publication	Admin data/Survey	regional	Wider	IVET/CVET	total	multiple	3-6 months	broad
81	UK2	FE Choices	Survey	regional	VET	IVET	total	single	6-12 months	broad
82	UK3	Disaggregated Analysis of the Long Run Impact of Vocational Qualifications study	Admin data	regional	Wider	IVET	total	multiple	1,2,3,4,5,6 and 7 years	broad
83	UK4	Individualised Learner Record	Survey	regional	Wider	IVET/CVET	total	single	6 months	precise
84	UK5	Lifelong Learning in Wales Record	Survey	regional	Wider	IVET/CVET	total	multiple	immediately and 3 months after graduation	precise

Nb	Country	Title of measure	General type/ Source[1]	Level/ Scope[2]	Cover age[3]	VET segment[4]	Basis (reference population)[5]	Measure ment points[6]	Timing: measurement after graduation	Type of data[7]
85	UK6	Further Education Leavers Survey 2015	Survey	regional	Wider	IVET	sample	single	6 months	broad

Source: ICF/3s research.

[1]Survey/Admin data/Other source; [2]National/Regional/Sectoral/Provider/Other; [3] VET/wider; [4] Segments: IVET/CVET; [5] Basis: total reference population of the VET graduate racking measure/sample; [6] Measurement point: single measurement point/multiple measurement points; 7 Type of data collected: precise/broad categories

Annex 2. Country factsheets with basic information on VET graduate tracking measures

In separate annex.

Annex 3. Measure in-depth review factsheets

In separate annex.

Annex 4. Country excel spreadsheets with basic information on VET graduate tracking measures

In separate annex – not to be published.

Annex 5. List of interviewees

In separate annex – not to be published.

Annex 6. Delphi survey

In separate annex.

Annex 7. List of participants in Delphi panel

In separate annex –not to be published.

Annex 8. Publicly available national data. Format used and links to data

Downloadable summary reports are available for 59 out of the 81 measures mapped. The links to these reports are provided in the table below.

Table 15. Summary reports downloadable as pdf documents

Measure code	Link to summary report
AT1	http://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bildung_und_kultur/bildungsbezogenes_erwerbskarrierenmonitoring_biber/index.html
AT2	http://www.ibw.at/de/ibw-studien/1-studien/fb172/P575-nach-der-lehre-in-salzburg-2012
AT3	http://www.ibw.at/de/ibw-studien/1-studien/fb186/P691-nach-der-lehre-ausbildungs-und-berufserfolg-von-lehrabsolventen-und-lehrabsolventinnen-in-oesterreich-2016
BE-F1	https://www.vdab.be/trends/schoolverlaters.shtml
BE-W1	http://www.bruxellesformation.be/uploads/pdf/Ulysse/ulysse_2015.pdf
BE-W2	https://portail.umons.ac.be/FR/universite/facultes/fpse/serviceseetr/methodo/recherches/recherches_finalis%C3%A9es/Documents/rapport%20sysfal.pdf
BE-W3	http://ccfee.be/fr/publications/alternance/2012-2014-etude-sur-les-trajectoires-des-jeunes-dans-les-dispositifs-bruxellois-francophones-d-alternance

CZ1	http://www.infoabsolvent.cz/Temata/PublikaceAbsolventi?Stranka=9-0-133
CZ2	http://www.infoabsolvent.cz/Temata/PublikaceAbsolventi?Stranka=9-0-96&NazevSeo=Prechod-absolventu-strednich-skol-na-trh-prace- http://www.infoabsolvent.cz/Temata/PublikaceAbsolventi?Stranka=9-0-135&NazevSeo=Prechod-absolventu-strednich-skol-na-trh-prace-
CZ3	http://www.infoabsolvent.cz/Temata/PublikaceAbsolventi?Stranka=9-0-138&NazevSeo=Nezamestnanost-absolventu-skol-se-strednim-a-
CZ4	http://soshorovice.cz/wp-content/uploads/2013/02/VZ_2015_2016web.pdf
DE1	https://www.neps-data.de/en-us/datacenter.aspx
DE2	https://www.bibb.de/de/9039.php
DE3	http://fdz.iab.de/en/FDZ_Individual_Data/integrated_labour_market_biographies.aspx
DE4	https://www.bibb.de/de/12138.php
DE5	https://www.bibb.de/de/12138.php
DE6	http://www.iab.de/de/publikationen/regional/rheinland-pfalz-saarland/publikationendetails-rheinland-pfalz-saarland.aspx/Publikation/k150508303
DE7	http://www.fbh.uni-koeln.de/?q=veroeffentlichungen
EE1	http://dspace.ut.ee/bitstream/handle/10062/51600/2016_LM_success.pdf?sequence=8&isAllowed=y
EE2	http://www.praxis.ee/wp-content/uploads/2014/03/2012-Kutseoppeasutuste-vilistlaste-uuring.pdf
ES1	http://observatoritreball.gencat.cat/web/.content/generic/documents/treball/estudis/insercio_laboral/arxius/Analisi-longitudinal-insercio-laboral-FPI-versio-publicada.pdf
ES2	http://queestudiar.gencat.cat/web/.content/home/estudis/fp/insercio-laboral/insercio-laboral-2016.pdf
FI1	http://www.stat.fi/til/sijk/2015/sijk_2015_2017-01-26_tie_001_en.html
FI2	https://vipunen.fi/en-gb/vocational/Pages/Tutkinnon-suorittaneiden-sijoittuminen.aspx
FR1	http://www.cereq.fr/index.php/publications/Ouvrages/Quand-l-Ecole-est-finie.-Premiers-pas-dans-la-vie-active
FR2	http://cache.media.education.gouv.fr/file/academie/80/0/ZOOM-IVA-2016_716800.pdf
FR3	http://www.education.gouv.fr/cid53598/le-niveau-de-formation-et-de-diplome-demeure-toujours-determinant-dans-l-insertion-des-apprentis.html

FR4	http://travail-emploi.gouv.fr/IMG/pdf/2013-036.pdf
HU1	http://gvi.hu/kutatas/486/szakiskola__2016
HU2	http://www.bekszi.hu/sites/default/files/2011_07_P%C3%A1lyak%C3%B6vet%C3%A9s.pdf
IE1	http://www.solas.ie/SolasPdfLibrary/SolasReportVersion9.pdf
IE2	http://www.education.ie/en/Publications/Statistics/Statistical-Reports/School-Completers-What-Next-2016-Report-.pdf
IE3	http://www.ucd.ie/t4cms/School%20Leavers%20Survey%20Report%202007.pdf
IT1	http://www.istat.it/it/files/2016/09/I-percorsi-di-studio-e-lavoro-dei-diplomati-e-laureati.pdf?title=Percorsi+lavorativi+di+diplomati+e+laureati+-+29/set/2
IT2	http://www.almadiploma.it/info/pdf/scuole/occupazione2016/volume-2016.pdf
IT3	Pdf - http://www.provincia.lecco.it/istruzione-e-formazione-professionale/osservatorio-scolastico/la-condizione-dei-diplomati-a-due-anni-dal-diploma/
IT4	http://www.provincia.mb.it/export/sites/default/formazione_professionale/doc/monitoraggio_1.pdf
LT1	http://www.mosta.lt/images/leidiniai/Specialistu_kvalifikaciju_zemelapio_pirmine_analize_2015.pdf
LU1	http://www.lifelong-learning.lu/bookshelf/documents/infpc_teva_indicateurs_2012-2015_resume.pdf
LU2	https://portal.education.lu/Portals/7/documents/Rapport%20d'activit%C3%A9s%20ALJ%202016.pdf?ver=2017-02-07-163304-603
LU3	http://www.statistiques.public.lu/catalogue-publications/regards/2010/PDF-13-2010.pdf
MT1	https://ncfhe.gov.mt/en/research/Pages/graduate-tracer-study.aspx
MT2	https://jobsplus.gov.mt/resources/publication-statistics-mt-mt-en-gb/publications/research-publications/employability-index-report
MT3	http://guidance.skola.edu.mt/Docs/Tracer%20study%202013.pdf
NL5	ROA has a publication sector here: http://roa.sbe.maastrichtuniversity.nl/?page_id=789
NL6	ROA has a publication sector here: http://roa.sbe.maastrichtuniversity.nl/?page_id=789
PL2	https://www.efs.2007-2013.gov.pl/AnalizyRaportyPodsumowania/baza_projektow_badawczych_efs/Documents/zawodowy_start_badanie_losow_absolwentow_szkol_zawodowych_2011.pdf

PT1	http://www.dgeec.mec.pt/np4/47/%7B$clientServletPath%7D/?newsId=256&fileName=Jovens_possecundario_2014_final.pdf
RO1	http://posdru.isj.gl.edu.ro/files/ancheta1/1.Raport_GL_%20A1_SAM_%20AC_6%20luni_final.pdf
SE1	http://www.scb.se/Statistik/_Publikationer/UF0512_2014A01_BR_A40BR1407.pdf
SE2	http://www.scb.se/Statistik/_Publikationer/UF0512_2014A01_BR_A40BR1501.pdf
SE3	https://www.skolverket.se/om-skolverket/publikationer/visa-enskild-publikation?_xurl_=http%3A%2F%2Fwww5.skolverket.se%2Fwtpub%2Fws%2Fskolbok%2Fwpubext%2Ftrycksak%2FBlob%2Fpdf3321.pdf%3Fk%3D3321
SI1	http://www.cpi.si/files/cpi/userfiles/Datoteke/evalvacija/2013-14/Spremljanje_zaposljivosti_2013_final.pdf
SI2	http://www.bic-lj.si/index.php/zagotavljanje-kakovosti-na-bic-ljubljana/poroila
SI3	http://www.sc-nm.si/kakovost
SI4	http://www.bc-naklo.si/srednja-sola-in-gimnazija/srednja-poklicna-in-strokovna-sola/za-starse/kakovost/
SK1	http://www.cvtisr.sk/skolstvo/regionalne-skolstvo/uplatnenie-absolventov-strednych-skol.html?page_id=10649
UK1	http://www.sfc.ac.uk/web/FILES/Statistical_publications_SFCST072016_CollegeLeaverDestinations201415/SFCST072016_College_Leaver_Destinations_2014-15.pdf
UK3	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/259302/bis-13-637-a-disaggregated-analysis-of-the-long-run-impact-of-vocational-qualifications.pdf
UK6	http://dera.ioe.ac.uk/25111/1/Further%20Education%20Leavers%20Survey%202015%20Report.pdf
FR5	http://travail-emploi.gouv.fr/IMG/pdf/titres-pros-rapport_enquete-devenir_des-candidats.pdf

Source: ICF/3s research

Table 16. Table/s with aggregated data downloadable as Excel files

Measure code	Link to tables with aggregated data
AT1	http://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bildung_und_kultur/bildungsbezogenes_erwerbskarrieren monitoring_biber/index.html
BE-F1	https://www.vdab.be/trendsdoc/schoolverlaters/detail/default.shtml
CZ3	http://www.infoabsolvent.cz/Temata/ClanekAbsolventi/5-1-01/Nezamestnanost-absolventu-podle-kategorii-vzdelani-https://portal.mpsv.cz/sz/stat/abs/polo
DK1	http://www.statistikbanken.dk/statbank5a/default.asp?w=1920
DK2	http://www.statistikbanken.dk/statbank5a/default.asp?w=1600
DK3	http://www.statbank.dk/statbank5a/default.asp?w=1600
EE1	educational statistics website www.haridussilm.ee
ES3	http://www.lanbide.euskadi.eus/estadistica/insercion-laboral-de-los-titulados-en-formacion-profesional-en-2015/y94-estadist/es/
FI1	http://www.stat.fi/til/sijk/tau_en.html
FI2	https://vipunen.fi/en-gb/vocational/Pages/Tutkinnon-suorittaneiden-sijoittuminen.aspx
FR1	http://www.cereq.fr/index.php/articles/Enquete-Generation/Enquete-Generation-2010-l-insertion-des-sortants-de-l-enseignement-secondaire (available for all surveys except the lattest one from 2016)
HU1	http://gvi.hu/kutatas/486/szakiskola__2016
IT1	Other data needs to be requested
IT2	http://www.almadiploma.it/indagini/profilo/profilo.aspx

NL1	http://statline.cbs.nl/Statweb/publication/?VW=T&DM=SLNL&PA=71895ned&D1=0&D2=0&D3=0-13,58&D4=a&D5=0&D6=a&D7=0&D8=l&HD=170504-1207&HDR=T,G1,G4,G6,G7,G3&STB=G5,G2
NL2	http://statline.cbs.nl/Statweb/publication/?VW=T&DM=SLNL&PA=82961ned&D1=0-2&D2=0&D3=0&D4=0&D5=0&D6=a&D7=4-6&HD=170504-1422&HDR=G1,G2,G3,G6,G5&STB=T,G4
NL3	http://statline.cbs.nl/Statweb/publication/?VW=T&DM=SLNL&PA=82963ned&D1=0-2&D2=0&D3=0&D4=0&D5=a&D6=0,2,4-8,11-16,18-19,22-24,26-30&D7=4-6&HD=170504-1518&HDR=T,G1,G2,G3,G6,G4&STB=G5
NL4	http://statline.cbs.nl/Statweb/publication/?VW=T&DM=SLNL&PA=71508ned&D1=0&D2=0&D3=0-1,8,18-19,44,48-49,54-56&D4=0,2,11-12,17-20&D5=0&D6=0&D7=0&D8=l&HD=170504-1548&HDR=T,G1,G4,G5,G6,G7,G3&STB=G2
PT1	http://www.dgeec.mec.pt/np4/47/
SE1	http://www.scb.se/hitta-statistik/statistik-efter-amne/utbildning-och-forskning/befolkningens-utbildning/intradet-pa-arbetsmarknaden/pong/tabell-och-diagram/gymnasieavgangna-lasaren-201011-och-201213/intradet-pa-arbetsmarknaden-2014/
SE2	http://www.scb.se/hitta-statistik/statistik-efter-amne/utbildning-och-forskning/befolkningens-utbildning/intradet-pa-arbetsmarknaden/
SE3	http://siris.skolverket.se/siris/f?p=SIRIS:153:0::NO:::
SK1	Number of all graduates - http://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-stredne-odborne-skoly.html?page_id=9597 Number of unemployed graduates - http://www.upsvar.sk/statistiky/nezamestnanost-absolventi-statistiky.html?page_id=1252
UK2	https://www.gov.uk/government/statistical-data-sets/fe-choices-performance-indicators
UK5	https://statswales.gov.wales/Catalogue/Education-and-Skills/Post-16-Education-and-Training/Further-Education-and-Work-Based-Learning/Lifelong-Learning-Wales-Record/uniquelearnernumbers-by-age-gender

Source: ICF/3s research

Table 17. Data available in other formats

Measure code	Data format	Link
AT1	Access to a limited version of the data cube.	http://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bildung_und_kultur/bildungsbezogenes_erwerbskarrierenmonitoring_biber/index.htm
BE-F1	Open data available for use in research is different formats (json, xml, php).	https://www.vdab.be/trends/open_data/schoolverlaters
DE3	Scientific Use Files. Researchers need to apply for access.	http://fdz.iab.de/en/FDZ_Individual_Data/integrated_labour_market_biographies.aspx
FI1	Web format: Appendix tables.	http://www.stat.fi/til/sijk/tau_en.html
FI2	Browser reporting programme': The user can check the information in tables and graphics, and apply filters. It is also possible to download it as Excel files.	https://vipunen.fi/en-gb/vocational/Pages/Tutkinnon-suorittaneiden-sijoittuminen.aspx
FI3	Website.	http://www.esedu.fi/
FR5	Website.	http://travail-emploi.gouv.fr/IMG/pdf/bilan-tp2016.pdf
HU3	Website.	http://www.fayamszki.hu/dokumentumok1
HU4	Table in pdf format.	http://www.lukacssuli.hu/sites/default/files/dokumentumok/P%C3%A1lyak%C3%B6vet%C3%A9s.pdf
IT2	Pdf slides.	http://www.almadiploma.it/info/pdf/scuole/occupazione2016/schede-a-un-anno_2016.pdf
LT2	VET centres use the data of tracking in their strategical documents that can be found only in Lithuanian version on the website of VET providers.	(Currently giving an error message)
NL5	All data is made available for use in various statistical programs (extensions .dta; .por; .sav) via DANS (Data Archiving and Networked Services), an institute of the Royal Netherlands Academy of Arts and Sciences (KNAW).	https://easy.dans.knaw.nl/ui/datasets/id/easy-dataset:66100/tab/2

Measure code	Data format	Link
NL6	All data is made available for use in various statistical programs (extensions .dta; .por; .sav) via DANS (Data Archiving and Networked Services), an institute of the Royal Netherlands Academy of Arts and Sciences (KNAW).	https://easy.dans.knaw.nl/ui/datasets/id/easy-dataset:66101/tab/2#
PL2	Website.	http://www.obserwatorium.wup-krakow.pl/pl/badania-i-analizy/badania-cykliczne/badanie-absolwentow.html
PL3	Available upon request.	(no link)
UK4	Available upon request.	https://www.gov.uk/government/collections/individualised-learner-record-ilr#ilr-data-applications

Source: ICF/3s research

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