

EUROGRADUATE Consortium

Testing the Feasibility of a European Graduate Study

Final report of the EUROGRADUATE feasibility study

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German Center for Higher Education Research and Science Studies Lange Laube 12 | 30159 Hannover | Germany | www.dzhw.eu

POB 2920 | 30029 Hannover | Germany

Tel.: +49 511 450670-0 | Fax: +49 511 450670-960

E-Mail: hannover@dzhw.eu

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Editor

Kai Mühleck

Authors

Kai Mühleck Angelika Grabher Kristina Hauschildt Julia Litofcenko Shweta Mishra Radim Ryska Martin Unger Martin Zelenka

E-Mail: eurograduate@dzhw.eu

www.eurograduate.eu

Members of the project consortium





German Center for Higher Education Research and Science Studies(DZHW), Germany

Institute for Advanced Studies (IHS), Austria

European Students' Union (ESU), Belgium

Education Policy Centre, Charles University (EPC), Prague



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Preface

Readers have before them the results of a remarkable undertaking, one in keeping with other European multi-national inquiries and analyses. Here is an exemplary case of the search for guidance through pathways of data that do not currently exist. Like the histories of early European explorers, it is reflective of the best of navigational planning. Where are we going and how, the planners ask? What are the unknown territories like? How long will it take to arrive at and return from our destination? What provisions do we need? Who will be in charge? Who will comprise the crew? What are their tasks? These are not unfamiliar questions in European history. They are all asked well in advance of the departure of ships. In fact, the answers to these questions provide benchmarks for determining whether the voyage will take place at all.

Thus, a feasibility study, managed by four organizations in three countries, involving analyses of existing and past studies (both pan-European and individual countries), surveys, and interviews— all covering 34 higher education systems in 32 countries. From ministries to rectors' conferences, to research groups to student groups: the European Graduate Survey feasibility study explored all, and in depth.

What were these explorations about? Essentially, they addressed one of the principal undone tasks of the ground-breaking, pan-European Bologna Process. Through Bologna, 46 countries in Europe adjusted their higher education and degree systems so that they converged in structure and clarity hence opening both borders and opportunities for mobility, provided new pathways into higher education, attracted more students from beyond Europe, and firmed up quality control of degrees and degree processes. After all that, what happened to Bologna's students? What will happen to them tomorrow? How do they fit with today's complex European economies? How will they fit with tomorrow's? Those are the core unanswered questions, the territory of missing information, the object of the voyage.

What did the potential navigators mean by "what happens to our students?" What did they mean by economic fit? Just how firm is their inquisitiveness? What roles are they willing to play on the ships? What difficulties do they anticipate in the uncertain currents and shoals of their voyage? How might they manoeuvre around these obstacles? All these questions are explored in this feasibility study. But these questions are not left hanging in mid-air. With the inputs of those ministries, rectors' conferences, research and student groups, and with shaping by the voyage captains, readers will find a persuasive map for this undertaking. We encourage close reading and deep consideration of the proposals for this voyage.

Clifford Adelman (Institute for Higher Education Policy, Washington D.C.)

Executive Summary

The EUROGRADUATE project

The EUROGRADUATE feasibility study was designed to explore the possibility of conducting a Europewide graduate study to collect and analyse regular, comparable, and comprehensive data on higher education graduates across Europe.

Agendas of European HE policies document a large and growing interest in the professional and personal developments of Europe's higher education graduates. At the same time there is a perception that the demand for effective monitoring and analysis of graduates could not be satisfied by the heterogeneous national-level graduate studies or by current international data sources that are limited in terms of content and/or the numbers of cases or respondents. The EUROGRADUATE feasibility study was initiated as a response to both circumstances and explores the demand for and the feasibility of establishing a Europe-wide study regularly providing comparable and comprehensive data on higher education (HE) graduates.

A wide range of topics could be covered by a European graduate study (EGS), e.g. the transition to the labour markets, employability throughout the working life, international mobility, or skills and competences of graduates. The EUROGRADUATE feasibility study has investigated which topics are seen as most relevant by stakeholders. The data could be collected by various research designs. The EUROGRADUATE feasibility study has developed a model for an EGS to best serve the requirements of the stakeholders. It has assessed the feasibility of the proposed study design and organisation and thus provided a sound knowledge base on which a potential EGS can build upon.

In the course of the feasibility study, the EUROGRADUATE consortium employed multiple research methods:

- Desk research on existing international data sets: A selection of current international/European data sets was investigated to assess their suitability for monitoring and analysing HE graduates in Europe.
- Surveys of national ministries, National rectors' conferences (NRC), and graduate researchers: The EUROGRADUATE feasibility study surveyed the national (in some cases, regional) ministries responsible for HE and the national rectors' conferences regarding their use of already existing graduate data/studies, the range of topics covered by these studies, and their requirements concerning an EGS and the topics/contents it should cover. They were also asked to voice their opinion on a suitable study design for an EGS, as well as their interest in participating in a possible EGS. Similarly, graduate researchers involved in national-level projects were surveyed on the characteristics of their study, their involvement in other (international) studies, their opinion on contents and design of an EGS as well as their interest in participating in a performance of their opinion on contents and design of an EGS as well as their interest in participating in an EGS.

- Interviews with European level stakeholder organisations: Expert interviews have been conducted with organisations of key stakeholder groups to learn more on their views towards a potential EGS. Representatives of the following organisitions have been interviewed: the European Commission (EC), the European University Association (EUA), the European Association of Institutions in Higher Education (EURASHE), the European Students' Union (ESU), BUSINESSEUROPE, EUROCHAMBRES, European Trade Union Committee for Education (ETUCE), and the Organisation for Economic Co-operation and Development (OECD).
- Interviews with large-scale comparative survey projects: Leading researchers of large-scale international survey projects have been interviewed to learn from their experience. The following projects were covered: the European Social Survey (ESS), EUROSTUDENT, the OECD Survey of Adult Skills (PIAAC), the Programme for International Student Assessment (PISA), Research Into Employment and Professional Flexibility (REFLEX), Trends in International Mathematics and Science Study (TIMSS), and U-Multirank.

The research methodology and interim results were submitted for feedback and discussion to the two project boards, namely the project's Scientific Board (made up of four distinguished experts in international HE research) and the project's Stakeholders' Board (comprised of EUA, EURASHE, ESU, BUSINESSEUROPE, EUROCHAMBRES, and ETUCE).

Shortcomings of current data and the added value of a European graduate study

Added values of a European graduate study would be facilitating comparison of national HE systems against international benchmarks, the opportunity of cross-country analyses and peer-learning, as well as extended capacities for graduate tracking in European countries.

European HE policies aim to support HE students in acquiring the skills and competences needed to enter the labour market successfully and in maintaining their employability throughout their working lives. Moreover, HE is expected to foster creativity, innovation, and entrepreneurship, and to promote democratic and civic values (Yerevan Communiqué 2015). Bologna ministers express expectations that measures within HE, such as appropriate teaching methods, practical components in programmes, incentives for high-quality teaching, dialogue with employers, flexible learning paths, or international mobility can help reach these goals.

The EUROGRADUATE feasibility study has assessed existing national and international data sets to determine their capacity to support HE policies by monitoring progress towards these goals and analysing the relationships between measures implemented in HE and graduates' outcomes.

Among existing international data sets, three have been investigated in more depth as they were seen as having the highest potential to monitor and analyse HE graduates (although in no case is this the primary goal of the study): the European Labour Force Survey (EU-LFS), PIAAC, and the ESS. These data sets are of different nature. The EU-LFS is a large household survey done by national statistics offices and centrally processed by Eurostat. PIAAC is the OECD study to test skills among adults, and the ESS is an academically driven cross-national survey to measure attitudes, beliefs, and behaviour patterns of the general population. All of them have been found by the EUROGRADUATE feasibility study to be of limited use for analysing HE graduates in different respects. The EU-LFS has very large samples and provides results that are highly reliable. It allows for monitoring labour market entrance and progression in the labour market for a considerable number of European countries, but it has little or no information on skills and competences, international mobility, innovative and entrepreneurial activities, political values and behaviour or other variables seen as being crucial to analyse graduates. PIAAC or the ESS are richer on variables regarding skills (PIAAC) or political values (ESS) but cover far too few HE graduates to give reliable results for a larger number of countries. Finally, in order to effectively support HE policies, HE outcomes should be connected back to what actually happens within HE. However, none of the datasets provides a detailed account on the HE received by graduates.

By their very nature, national-level graduate studies allow a more in-depth analysis of graduates' development. Most EU and EFTA countries employ graduate studies, even though in 12 countries, no ongoing graduate study could be identified. It should be noted that most nationallevel studies do not cover the mid- and long-term developments of graduates, without which little can be said about graduates' employability. The EUROGRADUATE feasibility study has demonstrated the large heterogeneity of national-level studies which would not allow results to be easily compared.

What would be the added value of comparative data? The development of European HE is primarily influenced by national policies, but is also embedded in international processes such as the Bologna process and EU policy cooperation. To assess the relative performance of national systems and progress in relation to goals and benchmarks set at international level, decisionmakers need comparable information. Cross-country comparisons put a country's respective HE system into a wider context, reveal specific strengths and weaknesses and give the opportunity for peer learning. How are differences in employment outcomes related to characteristics of the higher education system or to the structure of the labour market? Which HE policy measures have proven to be especially useful? How can labour market outcomes be improved, e.g. by practical components in studying, specific learning methods, incentives for quality learning, or flexible learning paths? A European graduate study would help to answer such questions and facilitate peer-learning. A reliance only on national-level studies would not allow for real comparison across systems and thus make it harder to draw lessons from comparative analysis.

A European graduate study would shed more light on the relationship between HE and employment outcomes of graduates. Stakeholder organisations outside HE, such as employers and employee organisations, would be able to use the results for a more well-informed debate about improving European HE. HEIs could use them for their efforts to improve, thus generating added value for institutions themselves as well as for (future) students. Detailed analyses on how labour market outcomes are connected back to what happens within HE are possible without comparing individual institutions. This report recommends not using an EGS for comparing individual HEIs due to methodological difficulties and the problems associated with false interpretation of results. Institutions should, however, be given the opportunity to collect additional data in the framework of an EGS and use it for their own purposes. A specific European added value lies in the capacity-building function of a European study. According to the EUROGRADUATE feasibility study, about one third of all EU and EFTA countries currently have no existing national-level graduate study. For these countries, participating in a European initiative would clearly improve transparency on graduate's careers. The EUROGRADUATE feasibility study has indicated that the data quality of existing national-level studies is heterogeneous. It proposes using the highest existing standards for a European study. Thus participating in an EGS, mutual exchange, and peer-learning could help improve data quality in a number of European countries.

The demand for a European graduate study

The results of the EUROGRADUATE feasibility study clearly reveal a high demand for a sustainable, regular European graduate study among the various stakeholders. Especially the topics "transition into the labour market", "generating and sustaining employability", "quality of HE, skills and competencies acquired in HE, and skills mismatch" as well as "mobility of graduates" would be of interest.

An important question for the feasibility study is whether there is a sufficient demand for a European graduate study. Are the key target groups interested in an EGS and for what reasons? To what extent would the project be advantageous in comparison to the status quo? The opinions of national ministries, NRCs, and researchers as well as international stakeholders on a European graduate study were investigated. The results of the EUROGRADUATE feasibility study clearly reveal a strong demand for a European graduate study among the various stakeholders. About 80 % of the national ministries and more than two thirds of the NRCs see it as (very) important that their country would participate in an EGS. Nearly 90 % of the surveyed graduate researchers would be (very much) interested in participating in an EGS.

Regarding topics of interest, from a national and international point of view the topics "transition to the labour market" and "employability" are seen as highly relevant to be covered in an EGS. "Competences acquired during studies", "quality of higher education" and "skills mismatch" are also important topics for an EGS. Stakeholders and scientific experts assessed the topic "graduate mobility" to be especially important to an EGS, slightly in contrast to national level stakeholders. International stakeholders stress the importance of definitions of these concepts as well as the contextual embedding of the results. Comparisons of individual HEIs are of relatively low relevance for the national stakeholders. Also international stakeholders see this aspect as a very sensitive topic. National and international stakeholders voice their interest in a sustainable, regular European graduate study, not in an EGS as a one-off project. While the transition to the labour market is ranked as a highly important topic, focussing on the observation of short-term developments only would be seen as insufficient. National and international stakeholders have concordantly expressed that an EGS would need to cover mid- and long-term developments of graduates as well. Descriptive aggregate-level analyses, in the eyes of national ministries, NRCs and researchers, should be complemented by in-depth analyses. In both cases contextual embedding and clear definitions are crucial for the usefulness of an EGS according to international stakeholders.

Recommendations on the design of a European graduate study

A European graduate study should be a survey study providing micro data to enable comprehensive analyses and to address the needs of the different user groups. Ideally, a European graduate survey should employ a panel design and cover at least graduates of Bachelor's and Master's level from all types of higher education institutions.

Online survey

A primary question for the design of an EGS is whether to use surveys or administrative data. Results show that an EGS could, to date, hardly be based on administrative data for mainly two reasons: (1) Careers of graduates can be tracked by combining data from institutions' administrations with, typically, social security data. Ten EU and EFTA countries indicated that combining these data sources would not be possible in their country. Mostly this is due to data protection laws and/or because variables necessary to combine the different sources are missing. Thus a considerable number of countries would be excluded from an EGS a priori, conflicting with the goal of Europe-wide information. What is more, purely administrative data is quite limited regarding its scope of information. Variables such as skills and competences, assessments of studies, motivations, and values cannot be captured by administrative data. With administrative data, the topics seen to be of crucial importance could only be treated to a limited extent or, for some topics, not at all. It should be noted, however, that a growing number of countries uses administrative data and that this source could in the long run complement a European survey study if legal and technical restrictions are overcome.

Online surveys are recommended as the survey method to be used by all participating countries of an EGS as they very much facilitate data collection and processing, thus presenting the most cost-efficient method. A diversity of survey methods should be avoided in order to not impair the comparability of data. Letters and telephone calls can be used as additional means of contacting and reminding graduates. The advantages of online surveys could best be realised with a survey that is hosted centrally. The core questionnaire should be developed by the coordinating research consortium in collaboration with national ministries and other member organisations of the EGS to take into account their interests and research questions. It is strongly recommended to collaborate with national-level research teams for translating and adapting the questionnaire to each country's needs. National-level teams should be given the opportunity to add a section of additional questions. Data processing should be done by a central data processing unit in collaboration with the national-level teams, to make use of the expertise of researchers in the respective country while at the same time facilitating compiling the joint international data set.

Key topics: Transition, employability, skills and mobility

The four topics deemed as especially relevant ("transition into the labour market", "generating and sustaining employability", "quality of HE, skills and competencies acquired in HE, and skills mismatch" and "mobility of graduates") are recommended to form the core to be covered in an EGS. In case of repeated studies, single topics could be tackled in more depth or by adding modules on additional topics. For the measurement of skills, the option of skills tests has been discussed. Seeing the much higher cost of such measurement, and taking into account the practical and methodological problems of testing skills among HE graduates, the EUROGRADUATE feasibility study recommends to not use skills test in an EGS. Instead, it is advised to use state-of-the-art innovative measurements for surveys such as the instruments based on the job requirements approach, i.e. graduates are asked to indicate the level of skills required in their current job. Often this is combined with questions about the skills level acquired by the graduate. It is assumed that respondents report actual skills use in a less biased way than if asked for the levels of skills they hold. International stakeholders have argued for employing a broad definition of skills in an EGS, including transversal and soft skills, which are perceived as relevant for adapting to a changing labour market, or civic skills, which HE is expected to foster. An EGS should be able to investigate the outcomes of HE in a broad manner.

Bachelor's and Master's graduates at all HEIS

There is broad consensus among national and international stakeholders that the target group of an EGS should consist (at least) of graduates with academic Bachelor's (ISCED 6) and Master's (ISCED 7) degrees, as long as they are considered to part of higher education in the respective country. Whether short-cycle tertiary degrees (ISCED 5) should be covered is more controversial. Short-cycle tertiary degrees are an important section of HE in some countries, while they do not or hardly exist as part of HE in others. It is therefore recommended to allow for variation between countries and cover ISCED 5 degrees where they make up a substantial proportion of all degrees. ISCED 5 degrees should be covered if they are considered to be HE in the national context and if the share of ISCED 5 graduates goes beyond a certain threshold (e.g. 5% and more of a given cohort of HE graduates).

PhD graduates (ISCED 8) would be a very interesting group for an EGS as they form the most highly-educated part of a country's workforce. A majority of national-level stakeholders would like an EGS to cover ISCED 8 degrees. Concerns have been voiced regarding the technical and operational feasibility of covering PhD graduates. A questionnaire for PhD graduates would presumably need to differ a lot from a questionnaire focussing on Bachelor's and Master's graduates. Furthermore, PhD graduates are often hard to reach. Requiring countries to cover this group and attain high response rates would come at a relatively high cost. For these reasons, it is recommended to not cover ISECD 8 for a first round of an EGS and to reconsider this question for subsequent rounds. A vast majority of national-level stakeholder groups expressed that both academic and professional HE institutions should be covered by an EGS. Additionally, other types of HEIs, including private HEIs, are often mentioned. For this reason, and in order to accurately represent the respective HE systems of the different countries, the EUROGRADUATE feasibility study recommends to cover all types of HEIs that are considered to be part of HE in the national context.

Coverage of EU and additional EHEA countries

Asking national-level stakeholders about the geographical scope for an EGS, a majority thinks that it should aim at covering the entire EHEA in the long term. Some international stakeholders have argued for this goal as well. At the same time, a large and heterogeneous set of countries to start with bears the danger of overburdening the operational capacities of the project coordination. Therefore it is recommended to focus on covering the EU in the first round of an EGS, while being open to additionally covering a growing number of EHEA countries. Additionally, countries willing to participate in an EGS would need to prove the operational capacity to run the national data collection in their country (with the support of a coordinating team). If an EGS is not initially able to cover all EU countries, it should aim to coverat least the following types of countries in order to secure the relevance of its results: (a) countries from the major regions of (at least) the EU, e.g. Southern Europe, Nordic countries, South-Eastern Europe etc., (b) small and large countries, and (c) most of the larger HE systems.

Regular panel study at one, five, and optionally nine years after graduation, starting with two cohorts

The results of the EUROGRADUATE feasibility study clearly support a panel study design, i.e. surveying the same graduates repeatedly over a number of years, as opposed to a cross-sectional design, i.e. surveying a cohort at only one point in time. Covering the mid- and long-term developments of graduates would be seen as an important asset of an EGS by stakeholders at national and international level. The transition to the labour market and employability of graduates are the topics ranked highest by stakeholders. A panel data design is most suitable for covering the immediate transition after graduation *and* mid- and long-term careers and offers more options for analyses than cross-sectional data. For example, it could be analysed how levels of skills and competences shortly after HE influence labour market outcomes at later stages.

For timing the first survey wave, national-level studies can give some orientation. Generally, they are quite heterogeneous in when they contact respondents for the first time, but a considerable number of studies cluster around 12 months after graduation, with a range of six to 18 months. The EUROGRADUATE feasibility study therefore recommends about 12 months after graduation as point for the first survey. The time of observation needs to falls into the same period for all participating countries as this is a prerequisite for comparable information. The second wave should be done at five years after graduation to avoid collecting retrospective data covering very long periods without allowing for any controls and also to update contact information. For both waves it is recommended to contact all graduates, irrespectively of whether they have responded to the first wave, to keep sample sizes modest.

An optional third observation is recommended at nine years after graduation. This last wave would allow observing graduates after going through the early phases of their career phase and/or after starting a family. For reasons of cost-efficiency, it is recommended to keep the third wave optional, although it offers undeniable benefits in terms of data. To lower costs for conducting the third wave, it is advised to focus solely on graduates that have responded to either the first or the second wave. The sequence of surveys one, five, and nine years after graduation in combination with targeting every fourth cohort additionally offers the possibility of comparing up to three cohorts at the same point in time. In order to be able to cover and analyse short- as well as long-term developments of graduates from the beginning, an EGS should start with surveying two cohorts (one cohort one year after graduation and an additional cohort five years after graduation). These should be surveyed at the same time so that they can be compared.

National-level stakeholders as well as international stakeholders have strongly advocated setting up an EGS as a sustainable study with regular repetitions and not as a non-recurring project. A rhythm of a survey taking place every four years is advised, which is linked to several arguments: Monitoring changes in HE requires up-to-date data. Less frequent repetitions therefore do not seem functional. At the same time, more frequent repetitions are harder to coordinate with national-level studies and add to the cost of the study. National-level studies are mostly repeated at intervals of one, two, or four years. An EGS repeated at an even rhythm would be easier to coordinate with national-level studies. All in all, a rhythm of four years seems to best accommodate the need for fresh data as well as considerations of practicality, and cost-effectiveness.

Focusing on the national level, but enabling regional or institutional analyses

Most stakeholders have shared the view that an EGS should provide information directly relevant to policy-makers and the marked interest of national ministries in a European study seems to confirm this. Therefore an EGS should primarily provide comparative information at the level of countries, rather than at the level of institutions or regions. This is not to say that information on the institutions visited by graduates would be irrelevant in any sense. On the contrary, detailed information about the conditions and characteristics of the HE received by graduates, including institutions' qualities, are of crucial importance for interpreting results and needs to be considered. This is possible, however, without comparing *individual* institutions. In line with that, national-level and international stakeholders have highlighted the need for considering the institutional context and at the same time do not see comparing individual regions or institutions as a task for an EGS.

Still, participating institutions might appreciate the opportunity to compare against international results. Therefore the EUROGRADUATE feasibility study recommends allowing for optional additional data collections within the scope of an EGS should countries or institutions want this and are ready to bear additional costs. By over-sampling, interested institutions could be provided with data on their own institution for in-house use. The EGS should, however, not publish institutional-level comparisons.

Sampling/methods

For the data quality of an EGS, it is of paramount importance that sampling procedures of national-level data collections adhere to centrally defined quality requirements. Intense collaboration of the coordinating team and national-level teams as well as external quality control is recommended to ensure this: A sampling experts group of composed of researchers with strong scientific expertise should define the central quality standards. Participating countries or research groups need to agree to these standards before joining the study. Sampling procedures in the respective country need to reflect the country's specific sampling frame (e.g. availability and storage of addresses) and the characteristics of the national HE system. Thus the sampling design for the national-level data collection should be developed cooperatively between a central coordination team and national-level data collectors, involving statistical and subject matter experts of the respective country. Before coming into effect, each national-level sampling plan needs the approval of the sampling experts group or an external quality assurance body appointed by the sampling experts group which checks whether quality requirements are met.

Consider the context

In order to facilitate interpretation of the results and add to the usefulness of an EGS specifically for HEIs and HEI organisations, information on the HEIs at which graduates have studied should be collected as covariates in an EGS, thus becoming part of the micro data set of an EGS. This would allow investigating in more depth how the trajectories of graduates are influenced by the institutional context, e.g. type of institution, financial resources, faculty-student ratios, international orientation, or regional engagement. For reasons of cost-efficiency, existing collections of institutional data should be checked for suitability and compatibility with an EGS, e.g. ETER or U-Multirank. If existing data sources turn out to not have sufficient data, information on HEIs should be collected by a brief questionnaire among HEIs.

Also, information on the national and regional context, e.g. labour market data, would be of high relevance for comparative analyses of labour market prospects of graduates. An EGS should aim at integrating national and regional data on the overall economic situation, labour market and other important covariates.

Organised by a strong central research consortium, governed by participating countries and organisations

Experts of international research projects have emphasised that a strong central coordination is of crucial importance to the data quality and the success of the project. At the same time, it has been highlighted that national-level teams are a strong asset for conducting the study in each respective country and are a valuable source of expertise on the respective HE systems. Thus it is recommended to coordinate the study by a central consortium of research organisations that closely cooperates with national project teams in each participating country. To assure comparability and high quality of data the coordinating consortium should be equipped with the capacity to closely monitor and enforce common standards of data collection, cleaning and delivery. Centralised data collection and data processing procedures help to bring about comparability, facilitate conducting the study, and also serve to unburden national teams. The organisational structure of the EGS should reflect the strong centrality by including a technical advisory group and an external body checking and approving the quality of the plans for the national-level data collections before they are conducted.

Experts of international projects reported good experiences with involving policy makers and other key stakeholder groups in strategic decisions of the project. The EUROGRADUATE feasibility study recommends that representatives of the participating countries, stakeholder organisations, as well as European decision makers should be represented in the main decision-making body of the project, e.g. as members of a general assembly of the project. This body should take the decisions giving direction to the project, e.g. priorities regarding topics and issues to be covered by the project, funding issues, or gathering of new member countries. This organisational structure should help in aligning the project's activities with the requirements of all decision makers and other stakeholder groups as well as in maintaining their support of the project. Furthermore, it would establish control over the project by those organisations funding the project.

Funding

The most promising option for initially funding an EGS seems to be joint funding by European sources (mainly for international coordination) and by national level sources (mainly for national level data collection). This kind of shared funding has been described for the first round of nearly all international projects investigated. An alternative would be a full funding by a European programme such as Horizon 2020 but it is unclear whether an EGS would fit to a Horizon call. International experts have expressed that national-level co-funding would also be an important signal of commitment. At the same time it was felt that European co-funding would be important to raise national funds. Especially for less affluent countries European co-funding could lower the hurdle to participate. An EGS should therefore seek to raise European funds and convince national ministries to fund national level data collections.

Sustainability of funding is a problem reported by most international projects. An EGS should therefore explore options for funding subsequent rounds duly before the end of the first round and investigate sustainable funding opportunities at an early stage. The option of running the project within an existing organisation could be examined. In the long run, an EGS could seek to become a European research infrastructure (ERIC).

Feasibility of a European graduate study

A European graduate study is feasible. Demand is high and a coherent design of an EGS was projected. The feasibility assessment revealed no insurmountable problems. Measures to deal with remaining risks are suggested.

All in all, we may well conclude that a European graduate study is feasible. Demand is high and it was possible to project a coherent design of an EGS addressing the requirements of national-level and international stakeholders. The proposed design and organisation were discussed against the criteria of technical, economical, legal, operational, and schedule feasibility. This discussion revealed remaining risk factors, but did not identify any insurmountable problems. The EUROGRADUATE feasibility study suggests a range of measures to deal with the risk factors:

1. Country-specific conditions for data collection not yet fully known:

Countries differ in data protection laws regarding the availability and storage of graduates' contact information. Both issues have implications for how to contact, recruit, and survey HE graduates in the respective country. The EUROGRADUATE feasibility study has collected information on these issues but not all country-specific conditions for data collection are yet known in detail.

Recommended measures:

- A preparatory study is suggested as the next step after the feasibility study. It should, in collaboration with national experts and ministries, explore data protection regulations and practical conditions relevant for all steps of the project. The study should prepare clear-cut plans on how to implement data collection in each respective country to avoid problems and delays in delivering the project.
- A field test preceding each survey is indispensable. It tests all procedures to conduct the survey, identifies problems, and leads to adapting data collection and the questionnaire, including translated variants, as necessary. The field test helps manage risks related to project implementation at the national level.

2. Potential conflict with existing national-level studies

An EGS could conflict with existing graduate studies, which should be avoided in order to not harm existing research capacities or hinder conducting the EGS. Existing studies could be integrated in an EGS. Several national-level researchers have already expressed readiness to strive for common design standards. Integration of national-level studies will presumably not be an option for all countries, however. An EGS could also complement existing studies, as long as the the timings of the studies can be synchronised. The readiness of national-level projects to coordinate with an EGS cannot be taken for granted.

Recommended measures:

- The team conducting an EGS should start cooperation with national-level re-searchers as early as possible. Two workshops with national-level researchers have already been conducted by the EUROGRADUATE feasibility study. Participants showed strong interest in collaboration. Discussions corroborated that country-specific solutions are needed as suggestions ranged from full integration over the integration of certain repetitions to a complementary study. Exchanges should be continued in preparing a full study.
- Within the framework of the EUROGRADUATE feasibility study a **network** has been founded to maintain contact with national-level researchers and other stakeholders beyond the duration of the feasibility study.
- The question of collaboration with existing national-level studies should be treated in the **preparatory study** mentioned above. Options should be explored by directly communicating with national ministries and researchers.

3. Balance between too few and too many participating countries

Specifically, for the first round, an EGS needs to find a balance between covering too few and too many countries. Too few countries would put into question the relevance of the study, while too many countries may overburden operational capacities of the central coordination team.

Recommended measures:

It is recommended to focus on covering the EU in the first round of an EGS, while being open to additionally covering a growing number of EHEA countries.

- An EGS should aim for having a set of countries securing relevance of its results, e.g. countries from all major European regions, small and large countries, and most of the larger HE systems.
- Minimum technical capacities for national-level research teams should be defined and the number of inexperienced teams limited. The coordinating research consortium should be prepared to assist and support national-level teams and help building capacities though.
- Results of the EUROGRADUATE feasibility study should be disseminated intensively to convince a larger number of European countries to participate.

4. Uncertain funding prospects

Decision makers at national and European level have shown strong interest in an EGS but it is not clear yet whether they would be ready to fund it. Sustainability of funds could be one of the major challenges for an EGS once it has successfully been set up.

Recommended measures:

- In order to successfully raise funds, the proposed study will need to be costeffective and provide value for money. Several features of the design and organisation recommended by the EUROGRADUATE feasibility study help to improve costeffectiveness of an EGS, e.g. online surveys, a centralised data collection, or study repetitions at the moderate pace of four years.
- A preparatory study seems advantageous for securing funds for a first round of an EGS. Details on the implementation of the study in the various countries would have been worked out and national ministries would have had the opportunity to co-determine the contents of the full study.
- The question of continuation of funding should be tackled at an early stage, e.g. by making funding of subsequent round(s) an explicit task of the project. In the long run the project could seek to attain the status of a European Research Infrastructure Consortium (ERIC).
- An EGS will only manage to be sustainable if it is highly relevant to its stakeholders. Thus the project must be **directed towards the needs of decision makers and stakeholders**. They should be represented in the main decision-making body of the project, to assure that their views are taken into account throughout the project.

Overall assessment and next steps

The EUROGRADUATE feasibility study demonstrates that existing data is not well suited to effectively support policies for improving European HE. In line with that, the demand for a European graduate study is high among decision-makers at national and European levels, stakeholders, and research. The EUROGRADUATE feasibility study has shown that such a study is feasible. The report provides detailed recommendations on the design and organisation of a European graduate study that are based on decision-makers', stakeholders' and researchers' requirements and take into account technical, economical, legal, operational, and schedule feasibility aspects. The study suggests that a European initiative could help to overcome the current disparate situation of insufficient international data sets and incomparable national-level studies. Despite the costs for such a study, any money spent on a European graduate study seems well-invested. European funds can be expected to develop leverage effects with regard to national-level investments in countries previously without a graduate study. For countries with already existing graduate studies, they could bring about considerable synergy effects and save costs by a centralized data collection.

Existing data is not well suited to effectively support policies for improving European HE. Consequently, the demand for a regular European graduate study is high and such a study would be feasible.

The EUROGRADUATE feasibility study provides a possible schedule for an EGS and ideas on how to proceed. Intensive dissemination of results will promote the idea of an EGS among stakeholders and decision makers. The newly founded EUROGRADUATE Info Network provides a platform for the continuous exchange of individuals and organisations interested in a European graduate study. A preparatory study is suggested as another important step. This study should work out details of the implementation of the study in a larger number of European countries, find ways of cooperation of existing national-level studies with an EGS, and give ministries the opportunity to co-determine the contents of a full study. The preparatory study could directly evolve into the full study and thus help structuring the way forward. The EUROGRADUATE feasibility study has shown that the road towards a European graduate study is passable – and worth travelling.

1 Introduction

Higher education (HE) graduates are receiving tremendous and growing attention by policy makers at both the European and national levels. HE is seen as of highest and increasing importance in contributing towards the well-being and prosperity of both individuals and societies. High hopes are placed in the social and individual outcomes of higher education which is expected to boost innovation and growth, foster employability and reduce unemployment, and add to social inclusion by being available to an ever larger proportion of the population. At the same time hardly any comparable data on Europe's HE graduates exists to monitor and analyse if and how higher education can have the expected benefits. The EUROGRADUATE feasibility study set out to explore whether this lack of information could be filled and how a potential European graduate study (EGS) would need to be designed to best support decision making of policy makers and higher education institutions (HEIs) and serve the requirements of stakeholders.

1.1 Europe's political agenda and the missing answers on HE graduates

Severe economic crisis hit Europe and the world at the end of the first decade of the 21st century. The continuing economic crisis and its negative repercussions accompanied by demographic changes, changes in the migration patterns, and increasing marginalisation of young people have pushed the European Union and its member states to set up a strategy for renewing the European growth model and creating conditions for *'smart, sustainable and inclusive growth' – Europe 2020* (European Commission, 2010). Higher education is seen as a major cornerstone of building a smart, knowledge-based economy and boosting innovation and goals related to higher education attainment, higher education quality, employability of higher education graduates, and their mobility feature prominently in the European policy documents.

Increasing the share of population who have completed higher education to 40 % is a key target of the Europe 2020 strategy (European Commission, 2011, p.4). With this goal it is expected that there will be sufficient people with appropriate skillsets to meet the projected growth in knowledge intensive jobs. While available data sources allow assessing whether the key target is met in the European countries, little is known about the jobs HE graduates have assumed and why or the extent to which higher education graduates engage in knowledge intensive jobs. The most recent Bologna Implementation Report (European Commission, EACEA, and Eurydice, 2015) shows a considerable qualification/skills mismatch among HE graduates with large variations across countries. Current data hardly allows analysing this problem comparatively in more depth and answer related questions: How is the field of study and skills mismatch related? Does mismatch affect graduates of all types of HEIs and all types of degrees to the same extent? How did mismatch come about, e.g. what kind of problems did graduates encounter during job search what job search strategies were predominantly used?

In addition to increasing higher education attainment, ensuring that higher education curricula and the quality of HE are relevant to meet the changing demands of the labour market is a priority. Higher education institutions, teachers and students have an important role to play in fostering creativity, innovation, and entrepreneurship for strengthening and enhancing the quality and relevance of learning and teaching and improve on the employability of their graduates (Yerevan Communiqué, 2015). To help HEIs in providing their graduates with the skills needed comparative data on the skills and competencies of graduates are required though, to date, not available. Examples of relevant questions are: Have graduates acquired the skills required for by the labour market? Have graduates developed transversal skills such as analytical capacity, critical thinking, communication and team-work, and intercultural skills? Which types of skills have proven to be specifically useful to gain a job and which skills are used by graduates in their current job? What is the relationship between fields of study or types of HEIs, styles of teaching and learning and skills attainment? How do graduates of European countries differ in their skills and competences and are these differences related to characteristics of the HE system?

Higher education graduates must be able to acquire and renew broad sets of skill sets to meet the needs of the changing labour market (Bucharest Communiqué, 2012). This raises the question of whether they engage in lifelong learning activities. Research has shown that European countries very much differ in the proportion of lifelong learners within HE (Hauschildt et al. 2015) but much less is known about the learning paths of HE graduates. What is the proportion of graduates returning to HE? What are their reasons to do so and what are the outcomes of lifelong learning as regards employment prospects of graduates? Which factors explain differences between countries, e.g. the flexibility of the educational system, and how could lifelong learning be fostered accordingly?

The Bologna Process further places employability within the framework of widening higher education participation. In this context, higher education institutions have a role to play in ensuring that students from the underrepresented groups complete their studies and transition successfully into the labour market (EACEA, 2015). By providing skills to a broader cross-section of society and producing highly skilled graduates with the right skills for the labour market, higher education may contribute to growth and social inclusion alike (European Commission, 2011; EUA, 2015). In addition to the existing data sources such as Eurydice and EUROSTUDENT which collect relevant data on the social and economic conditions of higher education students, a European wide data on higher education graduates would be critical in assessing and contributing to EU agenda of widening access and improving social and economic well-being (Yerevan Communiqué, 2015).

Mobility of higher education students is also an important priority area. Increasing the proportion of higher education students completing a study or training period abroad to 20 % is a key target of the European Higher Education Area (European Commission, 2011, p.8). The lack of European wide data on higher education graduates remains a challenge in monitoring and comparing students' mobility (Teichler et al. 2011). What are the reasons and consequences of mobility during HE? Does mobility 'pay off'? Does it cause further mobility after graduation? The latter question is also related to mobility of graduates and the issues of brain drain, brain gain, and brain circulation.



Most certainly higher education institutions are at the core of the European policy agenda. While countries and individual universities and colleges have been collecting data on their graduates, which track their transition between higher education and labour market, however, there is a major data gap on the European level, which prevents comparisons and peer learning across countries (EACEA, 2015). A European wide higher education tracking instrument would enable international higher education comparison of employment outcomes of higher education graduates as it will be useful in assisting policy makers and institutions in this area (EUA, 2015). Regular, comparable, and comprehensive data on Europe's HE graduates is needed to effectively transfer political agendas into political decisions. Developing data systems at national as well as international levels to facilitate cross country comparison and the role of research in policy making are also identified as relevant goals for the future of Bologna process (Bologna Process Researchers' Conference, 2014). Setting up effective processes to collect and analyse information on career paths of graduates is also supported by the standards and guidelines for internal and external quality assurance in higher education (EUA, ENQA, EURASHE, ESU, Education International, Business Europe, & EQAR, 2014). This data will help to evaluate, monitor and compare the success of higher education graduates and help to monitor the progress of higher education policies. The demands placed on higher education institutions to improve social and economic outcomes are not new but as shown they are pertinent and still increasing. In this context the EUROGRADUATE study was started to prepare the ground for a sustainable European wide monitoring of higher education graduates.

1.2 Goals and research question of the study

As described above, the increasing attention on higher education institutions and higher education graduates as well as a lack of comparable European data on higher education graduates provided a strong push for initiating the EUROGRADUATE feasibility study. Against this background, EUROGRADUATE was set up with the primary goal of assessing the feasibility of setting up a sustainable European graduate study. To this end, the EUROGRADUATE feasibility study evaluated the needs and demands of stakeholders for an EGS. It developed a model and for an EGS to best serve the requirements of the stakeholders. It assessed the feasibility of the proposed study design and showed ways for how an EGS could be developed and organised. It thus aims at providing a sound knowledge base on which a potential EGS can build upon. Furthermore, EUROGRADUATE has started to build a network of potential stakeholders and researchers who are interested in a future EGS.

The overarching question of EUROGRADUATE is whether and how an EGS could be set up. This question is broken down to the following four research questions:

- (1) *The demand for an EGS:* The most crucial question for any feasibility study is whether there is sufficient demand. Are the key target groups interested in an EGS? How intense is there interest? To what extent would the project be advantageous to the status quo?
- (2) *The requirements of an EGS:* What should be the characteristics of an EGS in the view of the stakeholders? What kind information should the study be able to provide to be useful for them? What contents should it have?
- (3) The design of an EGS: How should an EGS be designed to be able to provide the information needed by the stakeholders? To what extent would this design be technically, legally, and operationally feasible?



(4) *The organisation and development of an EGS:* How could an EGS be started and developed? Which organisational structure would be fit-for-purpose and would best serve the demands of the stakeholders? How would the project be organised to be technically, legally, and operationally feasible?

1.3 Data and methods

To answer the research questions of the EUROGRADUATE feasibility study a multifaceted methodological approach was used, including qualitative as well as quantitative research methods.

1.3.1 Desk-research on existing international data sets

A choice of current international/European data sets were investigated to assess their suitability for monitoring and analysing HE graduates in Europe. The objective of this research was to learn more on the status quo of data availability: What kind of information was already available through the existing data sets? What were their limitations? Looking at existing international data sets thus helped to define the need and demand for an EGS (research question 1).

In total, eight publicly available data sets were selected: the European Labour Force Survey (EU-LFS), the European Social Survey (ESS), the Programme for the International Assessment of Adult Competencies (PIAAC), the European Working Conditions Survey (EWCS), the International Social Survey Programme (ISSP), the Adult Education Survey (AES), Eurobarometer, and the Luxembourg Income Study (LIS). These data sets were analysed against a set of indicators such as the purpose of the project and its general characteristics, history and future, target population, number of respondents by educational attainment, breakdowns to national/regional/institutional levels, and number of respondents by educational attainment at these levels, definition of graduates (see chapter 2).

1.3.2 Surveys of national ministries, NRCs, and graduate researchers:

EUROGRADUATE also surveyed the national (to some extent regional) ministries responsible for HE, and the national rectors' conferences regarding (a) their use of already existing graduate data/studies, the range of topics covered by these studies, and (if applicable) their shortcomings, (b) their requirements concerning an EGS and the topics/contents it should cover, (c) a suitable study design for an EGS, and (d) the importance they would attach to their country being covered by an EGS. Similarly, graduate researchers involved in national-level projects were surveyed on (a) the characteristics of their study (e.g. organisation, design, flexibility in changes to design, contents, or uses), (b) their involvement in further and/or international studies, (c) their requirements regarding an EGS and the contents it should cover, (d) a suitable design for an EGS, and (e) their interest in participating in an EGS.

These surveys were designed to contribute to the research questions in a variety of ways:

- to assess the demand for an EGS among the three key stakeholder groups (policy makers, HEIs, represented by NRCs, and researchers) and whether they differ in their demand (research question 1);
- to see what existing national-level studies can already provide and whether they leave gaps stakeholders would like to see filled (research question 1);



- to know which information an EGS would need to supply in the view of the stakeholders (research question 2);
- to learn more on the design an EGS should have based on the recommendations of stakeholders (research question 3);
- to know which study design and methods are already used in the countries and/or are recommended by country experts for an EGS, which tells to some extent what would be feasible in the respective country (research question 3);
- to get an idea of the national ministries' readiness to support an EGS in their country (research question 4);
- to check on the research capacities for a potential EGS in terms of existence of experienced research groups and their willingness to participate (research question 4);
- to picture similarities and differences of existing national-level studies and see whether one or more models of similar graduates studies exist one could start building an EGS on (research question 4).

The EUROGRADUATE surveys focussed on the 32 EU-EFTA countries and contacted: 36 national (for Belgium and UK also regional) ministries, 43 national/regional rectors' conferences and 48 researchers (or research groups) that conduct or have conducted national-level HE graduate studies. The identification of such projects built on previous work (Gaebel et al. 2012), existing literature (Hordosy 2014), and extensive desk research. The following criteria were used for selecting these studies: (1) focus on (higher) education (e.g. student or graduate studies but no general population studies), (2) provide statistics on higher education graduates at the national level, (3) collect new micro level data themselves, i.e. primary studies, or based on administrative micro level data, and (4) data collection or field work was carried out no more than 10 years ago (i.e. 2004 or later).

Invitations to participate in the survey were sent out in May/June 2014. Respondents were provided with pdf-questionnaire by email. The field phase ended in September 2014, except for few questionnaires that were provided later. To increase response rates, up to two reminders were sent. For ministries and NRCs telephone reminders were used additionally. The return rate among the ministries and the NRCs was 78 % and 28 %, respectively. The response rate among the research groups was 75% with 33 respondents or 36 studies as three questionnaires referred to two studies at once. One study was subsequently deemed to not fulfil the criteria and the respective responses pertaining to the national studies were excluded from analyses. The resulting final sample for the results referring to national studies therefore consisted of 35 studies in 23 countries/regions (Table 1-1). For data pertaining to a potential EGS, responses were counted once per researcher, resulting in a number of 32 researchers from 23 countries. For ten countries (Austria, Switzerland, Germany, Estonia, Spain, Finland, Hungary, Latvia, Sweden, Slovakia) answers from all three stakeholder groups are available.

	National Ministries	NRC	Researchers
AT ¹	1	2	2
BE fl. (reg.)	0	0	0
BE fr. (reg.)	1	0	n/a
BG	1	0	n/a
СН	1	1	1
СҮ	1	0	n/a
CZ	1	0	1
DE	1	1	3
DK	1	0	1
EE	1	1°	1
EL	0	0	1
ES	1	1	1
FI ³	1	1	2
FR	1	0	3
HR	1	0	n/a
HU	1	1	1
IE	1	0	1
IS	1	n/a	n/a
IT	0	0	2
LI	0	n/a	n/a
LT	1	1°	2
LU	0	1	0
LV	0	0	1
MT	1	n/a	n/a
NL	0	0	3
NO ³	1	0	2
PL	1	0	0
РТ	1	0	1
RO ²	2	0	1
SE	1	1	1
SI	1	1	1
SK	1	0	1
UK ³	1	0	3
UK sco (reg.)	0	0	0
UK N.Ireland (reg.)	1	n/a	0
UK wls (reg.)	0	n/a	0
Number of collected question- naires	28	12	36
Return rate	78%	28%	75%

Table 1-1: Questionnaires by stakeholder group and country

Data source: EUROGRADUATE feasibility study.

Notes: ¹ Austria: two National Rectors' conferences took part in the survey. ² Romania: two representatives of the Ministry responsible for Higher Education. ³ Finland, Norway, UK: research groups/ researchers who performed more than one study, were only counted once in the section on a potential European graduate study. [°] EURASHE member.



1.3.3 Expert interviews with European/international stakeholder organisations:

A total of 10 guided expert interviews were conducted with representatives of eight organisations comprising key stakeholders of an EGS at European/international level, namely the EC (DG EAC and DG Employment), EUA, EURASHE, ESU, BUSINESSEUROPE, EUROCHAMBRES, ETUCE, and the OECD. The interviews with European level organisations were conducted in May and June 2014; the OECD interviews followed in August 2015. All interviews were done face-to-face. The interviews covered similar topics as the survey questionnaires, such as their general interest in an EGS, what kind of information an EGS would need to deliver, key characteristics an EGS would need to have to be useful to them, and, in conjunction with that, their recommendations for the design of an EGS (questions 1-3).

1.3.4 Expert interviews with leading researchers of large-scale comparative survey projects:

In a second series of eight expert interviews the EUROGRADUATE feasibility study turned to several large-scale comparative survey projects. These projects had a focus on higher education (EUROSTUDENT, REFLEX, and the student survey of U-Multirank), skills research (PIAAC, PISA, and TIMSS), or were generally interesting as case of a large-scale European survey project (ESS). Five interviews were done online (via video-conference) and three interviews were conducted faceto-face. The focus of the interviews was on how the projects were developed and how they are organised. The objective of the interviews was to learn about the experiences of these large scale international comparative surveys and to apply them towards setting up a European graduate survey. These interviews covered questions on the initial process of setting up the study, the organisation of the studies (e.g. organisational structure, funding, quality assurance, or assessment of these arrangements), hurdles encountered, mistakes to be avoided, and further recommendations on the development and organisation of an EGS (question 4).

1.3.5 Feedback by and discussions with the project boards

The consortium of the EUROGRADUATE feasibility study received additional input and guidance from the project's Scientific Board (made up of four distinguished experts in international HE research) and the project's Stakeholders Board (comprised of EUA, EURASHE, ESU, BUSINESSEUROPE, EUROCHAMBRES, and ETUCE). Additionally the EC was represented in the meetings of the consortium and the Stakeholders boards. In these discussions valuable additional information on all four research questions could be gathered. Preliminary results were repeated-ly discussed and could be refined based on the input of participants (questions 1-4).

It should be noted that the EUROGRADUATE feasibility study did not entail a pilot study. A pilot might have added interesting information on the feasibility of an EGS but would have asked for more time in preparing the feasibility study and more project resources than were available. Therefore the EUROGRADUATE consortium made up an alternative strategy in extensively drawing on the views, experience, and expertise of researchers in national and international projects as well as stakeholder organisations.

1.3.6 Hypothetical models of a European graduate study

The EUROGRADUATE feasibility study investigates the options for an EGS for a variety of aspects. However, some of the study characteristics are specifically important as they differentiate the general orientation of the study or determine, to a larger extent, the purpose of an EGS. In other words, these key characteristics are connected to different models of an EGS one could aim for. In the discussions of the EUROGRADUATE consortium about the overall direction an EGS could take or should have, three characteristics were especially relevant: (1) the main users of the study, (2) the main purpose of the study, and (3) the level of observation. Below these characteristics are described in terms of their alternative options and further combined to develop five hypothetical models of an EGS. In chapter 6, these characteristics and models will be taken up again to discuss which model(s) are most appropriate for an EGS at the background of voiced interest and requirements of the stakeholders.

- (1) Main users – decision makers or HEIs or HE researchers: The EUROGRADUATE feasibility has in large parts been motivated by the policy papers of HE decision makers. Thus the study has assumed that an EGS would mainly be a tool for fulfilling the informational demands of decision makers. However, it needs to be tested whether policy makers are in fact interested in such a study and should therefore be seen as the primary users of an EGS. Furthermore, the guestion is raised, whether and to what extent other stakeholder groups are interested in an EGS, e.g. policy makers may not be as interested as expected but HEIs may show high interest. If so an EGS could be directed to primarily address the needs of the HEIs which would have implications on the study design. The informational demands of stakeholders do not necessarily conflict with each other. In contrast it seems very likely that, e.g. decision makers would see it as an important asset of an EGS if it reflected the requirements of HEIs or HE researchers as well. Generally, an EGS should aim at taking into account the requirements of all key stakeholder groups as far as possible; students, business, or unions are other important stakeholder groups besides the three groups mentioned above. But an EGS would to some extent be designed and organised differently, depending on which stakeholder group is seen as the main user.
- (2) Main uses - monitoring or analyses: What would policy makers or other stakeholders primarily expect from an EGS? Often policy-related projects are providing comparative monitoring information, i.e. descriptive key figures at the systems level. Alternatively or additionally decision makers could be interested in the relationships of phenomena, e.g. the reasons why graduates differ in their success in the labour market. Such research questions cannot be answered with descriptive figures alone but entail more in-depth empirical analyses. Knowing whether an EGS should rather have an analytic orientation than a descriptive orientation is of crucial importance to the design of such a study. Descriptive reports could be based on comparative aggregate level data while comprehensive in-depth-analyses are hardly attainable without micro-level data. Furthermore, monitoring and analyses ask for a different frequency of repetitions of studies. Monitoring of developments requires regular repetitions at a relatively high pace to generate upto-date information. Clearly, fresh data is also beneficial to analyses; however, analytic approaches are often more interested in identifying generalizable relationships between factors. For this end a slower pace of repetitions or even irregular repetitions would be acceptable.



(3) Main level of observation – system level or level of individual institutions: The systems level is the level of territorial entities governed by a national or regional political authority. Thus systems level information seems most relevant to the decision makers as it helps them to govern the territory they are responsible for. At the same time, policies are often directed at HEIs and therefore the decision makers might additionally be interested in information at the level of individual HEIs. Such information could as well be seen as relevant by HE professionals or other stakeholder groups. Whether an EGS should provide comparative data on individual HEIs or not would strongly influence its design, e.g. the numbers of cases would need to be much higher to give valid statistics on individual HEIs. Note that focussing at systems level does not mean ignoring the institutional level. Analysing how, e.g., study conditions, teaching styles, or facilities influence the career prospects of graduates is possible without reporting on single institutions.

Table 1-2 shows five possible models of an EGS. The table does not show all possible combinations of users, uses, and level of reporting but focusses on five models that were identified as relevant in the discussions of the EUROGRADUATE feasibility study. Note that in conceptualizing the models policy makers have been given priority over the other two user groups. I.e. if a high interest of policy makers is assumed the model is described as "policy driven". As described above, the EUROGRADUATE feasibility study has to some extent been initiated in response to the agenda of European HE policies. Thus policy driven models of an EGS seem to be more likely than other types.

Models	Main and ad	lditional users	Uses			Main level of observation			
	decision makers	HEIs/HE system orgs.	researchers	monitoring	analyses	institutional level	system level		
Model A: 'The policy driven monitoring study'									
	main	add.	add.	Х			Х		
Model B: 'The QA study'									
	add.	main	add.	Х		Х			
Model C: 'The research driven study'									
	add.	add.	main		Х		Х		
Model D: 'The policy driven monitoring and analyses study'									
	main	add.	add.	Х	Х		Х		
Model E: 'The all-in-one study'									
	main	main	main	Х	Х	Х	Х		

Table 1-2: Hypothetical models of an EGS

The "policy driven monitoring study": Model A has decision makers as the main users. This model would be appropriate if policy makers show a high interest in an EGS and at the same time would mostly be interested in monitoring information, i.e. descriptive information in the form of aggregated indicators. For such a study aggregate level information on, e.g. different characteristics of HE systems, would be sufficient and no international micro-level data set would be required. Such a study would need to be repeated at relatively high frequency to allow for monitoring the developments in HE and providing up-to-date information to policy makers. The main level of observation is the systems level, as policy makers mostly require information at the level of HE systems (typically national-level information). An example of a study close to this type, though related to HE students, would be EUROSTUDENT.

The "research driven study": Model B would mainly be devoted to answering questions prevalent in state-of-the-art academic HE research. This model would be appropriate if policy makers and HEIs only show a modest interest in an EGS while researchers would be highly interested. Academic HE research goes beyond monitoring and involves empirical analyses. To allow for indepth analyses and answer academic research questions presupposes comparative micro-level data. Up-to-date information is an asset for research but a research driven study would not need to be repeated at a similarly high pace than a policy driven study as research is more often interested in identifying general mechanisms than in describing most recent developments. Typically but not necessarily comparative research questions refer to the level of HE systems. An example of a study close to this type would be the European Social Survey.

The "QA study": Model C focusses on providing information at the level of individual HEIs which could be used by HE professionals for QA purposes or for steering and improving their institution in general. Additionally, policy makers could use such a study in various ways for HE policies, e.g. for performance-based allocation of funds. However, such information is already available in most countries and the added-value of collecting it in the frame of European study is questionable. Still, this model would be appropriate if HEIs would show a high interest in an EGS and if policy makers and researchers would be interested only moderately or if policy makers would be interested in using an EGS for policies directed to individual HEIs. QA studies predominantly work with descriptive monitoring information, though they may sometimes apply analyses as well. Assuming that monitoring would be the use for comparative purposes within an EGS, information aggregated at the institutional level would be sufficient, e.g. for comparing figures of a specific institution with a European average. More in-depth analyses would require micro-level data. For QA purposes the study would need to be repeated at a relatively high pace to provide HE professionals or decision-makers with up-to-date information. The main level of observation would be the HEIs. To our knowledge no such study exists for international comparisons, but QA studies comprising all or most HEIs of a certain country are quite frequent in Europe. Ranking studies would be an example for international comparisons of HEIs, though not for QA purposes. Obviously, the question whether information on individual HEIs would be publicly available or would only be used in-house by HEIs or decision makers is crucial for this model.

The "policy driven monitoring and analyses study": Model D is to some extent a mix of models A and B. The main users would again be decision makers. This model would be appropriate if policy makers would be highly interested in an EGS for receiving both, monitoring information and in-depth-analyses to answer specific policy-related research questions. The latter would presuppose micro-level data. To fulfil monitoring requirements such a study would need to be repeated regularly and at a relatively high pace. The most relevant level of reporting would be the systems level. To our knowledge no study similar to this type exists in the realm of HE, but PIAAC would be an example of a study close to this type in the field of research an competencies of adults.



The "all-in-one-study" (Model E) tries to serve all three stakeholder groups at once. This type would be appropriate if all three stakeholder groups would be highly interested in an EGS and if stakeholders would not only ask for system-level information but also for information at the level of individual institutions. It would provide monitoring and analytic information and would therefore need to be based on micro-level data. For monitoring purposes a relatively high pace of study repetitions would be required. To cover the systems and the institutional level information would need to be broken down to the level of individual HEIs to deliver information on the whereabouts of the graduates of each respective institution. To our knowledge no international study similar to this type exists in the realm of HE. However, many national graduate surveys, e.g. the Dutch ones, are reported to address several stakeholder groups and provide information at the system and HEI level as well as more in-depth analyses.

1.4 Consortium and project bodies

The EUROGRADUATE project consortium integrated the expertise of four partner organisations: The German Centre for Higher Education Research and Science Studies (DZHW, Germany) as coordinator, the Institute for Advanced Studies (IHS, Austria), the Education Policy Centre of the Charles University in Prague (EPC, Czech Republic), and the European Students Union (ESU). The latter directly integrated the students view into the feasibility project, while the former three organisations were in most parts responsible for conducting the research. The project partners were strategically selected to bring together a broad array of skillsets and experiences in the area of comparative higher education research to project's implementation.

The consortium was supported by two project boards: the Stakeholders' Board and the Scientific Board. Members of the Stakeholders' Board were representatives of European level nongovernmental organisations from EUA, EURASHE, ESU, ETUCE, BUSINESSEUROPE, and EUROCHAMBRES. Their input made sure that the view of key stakeholder organisations in HE, business, and the labour market was considered throughout implementing the project and that requirements of these groups were taken into account in drafting recommendations for a European graduate study. The Scientific Board had a most crucial role for the quality assurance of the project. It gave highly valuable advice on the research conducted by the consortium, reviewed intermediate products, and gave feedback on conclusions drawn by the consortium. It was made up of four outstanding researchers in the field of higher education with different and complementary profiles and expertise, namely Cliff Adelman (Institute for Higher Education Policy, US), Fernando Reis (EUROSTAT), Rolf van der Velden (Research Centre for Education and the Labour Market, Maastricht University, the Netherlands), and Pavel Zgaga (Centre for Educational Policy Studies, University of Ljubljana, Slovenia).

1.5 Structure of the report

The report is structured as follows: chapter 2 provides an overview of existing international data sets and investigates their suitability for conducting analyses on European graduates. Chapter 3 presents the results of a survey conducted among national research teams involved in graduate studies, giving an overview of the characteristics of existing national studies. Chapter 4 investigates the interest as well as requirements for a European graduate study, looking into content and design characteristics and is based on surveys conducted among national ministries, national



rector's conferences, national research teams as well as expert interviews among European level decision makers and non-governmental organisations. The fifth chapter deals with organisational aspects of setting up an international survey, drawing on the experiences of existing international projects. Chapter 6 brings together the previously presented findings and derives the options and recommendations for a European graduate study. The feasibility of the proposed design is discussed in chapter 7. Chapter 8 gives an overall assessment of the feasibility and added value of a European graduate study.



2 Suitability of international data sets for graduate research

2.1 Reasons for mapping existing datasets

One task of the EUROGRADUATE feasibility study was to evaluate existing European data sets (including international data sets covering a considerable number of European countries) for their capacity to comparatively analyse relevant indicators with regards to graduates from European higher education institutions. This task was carried out for two main reasons: Firstly, existing capacities needed to be mapped to prevent a future European graduate study from collecting information already available at hand. Secondly, a critical evaluation would reveal the shortcomings of existing datasets and thus help to identify the current data gaps. The evaluation aimed to answer the following questions: Which datasets could provide comparative statistics on European HE graduates? How reliable would these statistics be? To what extent the datasets could be used for a European graduate study (or parts of it)? To what extent could the informational demands of stakeholders be covered by existing data?

The following datasets were covered:

- the European Labour Force Survey (EU-LFS),
- the European Social Survey (ESS),
- the Programme for the International Assessment of Adult Competencies (PIAAC),
- the European Working Conditions Survey (EWCS),
- the International Social Survey Programme (ISSP),
- the Adult Education Survey (AES),
- Eurobarometer,
- the Luxembourg Income Study (LIS)

For each dataset or study, a number of specific pieces of information were collected and analysed. This included the purpose of the project and its general characteristics, project's history and future, target population, the number of respondents by educational attainment for the whole country as well as broken down to national/regional/institutional levels, definition of graduates, as well as other variables of key importance to a graduate study.

On the basis of the knowledge of previous graduate studies such as CHEERS and REFLEX, a detailed analysis of the selected datasets was conducted and later on updated once the perspectives of stakeholders and researchers were gathered and analysed.

Through detailed studies of relevant publicly available datasets and questionnaires as well as applicable methodological guides or technical reports (for example European Social Survey, 2012, European Social Survey, 2014, Eurostat, 2003, Eurostat, 2013, and OECD, 2013), mappings of the international data capacities for monitoring and analysing HE graduates were developed.

2.2 Mapping of existing datasets

The first observation when looking at the international data capacities for monitoring and analysing HE graduates is that there is in fact no recent or ongoing comparative study focussing solely on HE graduates in Europe. The interconnected projects REFLEX (surveys done in 2005) and HEGESCO (surveys done in 2008) represent the most recent HE graduate studies covering a considerable number of European countries. Thus, for mapping current data capacities for studying HE graduates, one needs to turn to international studies that do not exclusively target HE graduates in the first place. All of the eight international studies that were considered (see above for the list of these studies) are based on general population surveys or surveys directed to specific age groups within the general population (e.g. the working age population) and do not focus exclusively on higher education graduates.

Table 2-1 presents an overview of basic characteristics of the mapped datasets.

number of tertiary EU Year Repetition(s) Sample size graduates, age 20countries 34 from 794 1.5 million for all EU-28 (Luxembourg) EU-LFS Yearly all Yearly countries; on average to 28246 0.3% of population (France)^{a)} 2012from 62 (Italy) to ESS (6th round) Biyearly 19 min. 1500 or 800 2013 263 (Ireland) 2011most countries 5000 to from 214 (Italy) to PIAAC Not decided 17 2012 7000 1605 (Poland) most countries 900 to tens, occasionally EWCS 2010 Every 5 years all 1800 over one hundred **ISSP** (Work most countries 1000 to from 4 (Slovenia) to 17^{b)c)} 2015 8 – 10 years **Orientations IV)** 1700^{c)} 130 (Denmark)^{c)} hundreds, most countries 2500 to AES 2011 4 – 5 years all occasionally 15000 over one thousand

Table 2-1: Basic characteristics of mapped datasets

Notes: Eurobarometer and LIS surveys are not included in the table as they are not comparable to the other surveys due to their different organization.

a) Numbers for 2014 survey.

b) All EU countries are members, not all do every survey.

c) Based on data from 2005 survey. Data from 2015 survey were not yet available.

Data sets have been checked on their suitability for monitoring and analysing European HE graduates by investigating the following questions:

- Can higher education graduates be exactly defined and extracted from the dataset?
- Is a sufficient number of cases available for analyses, i.e. are enough graduates part of the sample? Do the case numbers allow in-depth analyses, e.g. with regard to field of study, type of higher education institution, etc.?
- Does the data set provide a broad geographical coverage?
- Which information and possibly key indicators on higher education graduates are the datasets able to deliver?


The EU Labour Force Survey (EU-LFS) is the largest European household sample survey providing quarterly and annual data on labour participation of people aged 15 and over as well as on persons outside the labour force. It covers residents in private households according to labour status. Currently, the survey covers 33 participating countries (including 28 member states of the European Union) providing Eurostat with data from national labour force surveys. In each quarter, approximately 1.8 million interviews are conducted throughout the participating countries to obtain statistical information for around 100 variables. The sampling rates in the various countries vary between 0.2 % and 3.3 %. The basic LFS each year is extended by a specific topic regarding the labour market. For instance, in 2000 it was "Transition from school to working life" while in 2009 "Entry of young people into the labour market" was featured.

Data of the EU-LFS allow a satisfactory definition of HE graduates as it includes variables for the highest level of education or successfully completed training, the year when the highest level of education or training was successfully completed, as well as study status. Additionally, an indicator of age is available so that any age group can be defined. Generally speaking, the definitions used in the EU-LFS constitute the main basis used in many graduate surveys; hence, definitions of education, occupation, or economic activity are utilising classifications that are commonly and preferably used in graduate surveys as well.

Among the mapped datasets, the EU-LFS dataset is the most comprehensive from the point of view of need for graduate studies as it is primarily directed to survey different characteristics of the labour market. Nevertheless, the ad-hoc module is an important supplement for the case of graduate studies as it is helpful to identify the graduates in a more precise manner. However, one of the disadvantages for its public use is that in the basic EU-LFS dataset only five-year age groups are used.

The European Social Survey (ESS) is an academically driven cross-national survey that has been conducted every two years across Europe since 2001. The survey measures the attitudes, beliefs, and behaviour patterns of diverse populations in more than thirty nations. There have been six rounds of the ESS so far. Round seven is now in preparation.

The ESS questionnaire consists of a collection of questions that can be subdivided into two main parts – a core section and a rotating section. In addition to the core section there is a supplementary section, which contains the 21-item human values scale as well as experimental tests. The ESS was primarily designed as a time series that could monitor changing attitudes and values across Europe. For this reason, its core questionnaire comprises a module which consists of the most comprehensive sets of socio-structural ("background") variables of any cross-national survey. For each round there are two additional rotating modules: The most interesting module from the perspective of analysing employability of higher education graduates would be the "Work, Family and Well-being: The Implications of Economic Recession" module from the year 2010. This module focuses on the inter-relations between work, family, and well-being aiming at providing insights into their current issues as well as into the interactions between them. At this moment, 36 European countries have taken part in at least one round of the ESS. 28 countries have taken part in the fifth round of the ESS.

DZHW.

A definition of higher education graduates in the ESS data is possible only to a certain degree. Unfortunately, there is no information on the time of completion of the highest level of education or the time elapsed since successfully completing formal education. However, the level of education is defined with the help of a newly developed ESS-ISCED classification. To identify those who are in education and those who are not, variables of labour force status can be used. Indicator of age is available; hence any age group can be defined.

While the ESS includes a number of interesting indicators on social and the labour force status as well as valuable variables such as the education needed for the current job, a big hurdle here is the number of respondents who are tertiary graduates. For most countries, there are no more than 200 such respondents per one round of ESS even if the broadest definition is used. A possible option is to merge several rounds into one. However, this strategy creates other problems while the numbers of tertiary graduates are not particularly high.

The OECD Programme for the International Assessment of Adult Competencies (PIAAC) is an initiative of the OECD that assists governments in assessing, monitoring, and analysing the level and distribution of skills among their adult populations (age 16 to 65) as well as the extent of skills used in different contexts. A central pillar of PIAAC is The Survey of Adult Skills. It consists of two parts – a direct assessment of skills and a background questionnaire.

The first part of the survey assesses the proficiency of adults from age 16 onwards in literacy, numeracy, and problem solving in technology-rich environments. The background questionnaire includes a range of information regarding the factors which influence the development and maintenance of skills such as education, social background, engagement with literacy and numeracy, ICTs, languages, as well as information on outcomes which may be related to skills. Information is collected on the current activity of respondents, employment status, and income. Respondents are also asked whether their skills and qualifications match their work requirements and whether they have autonomy over key aspects of their work. The background questionnaire also includes a large module on the use of skills which make use of an innovative "job-requirements approach" in order to question employed adults about a number of generic skills they utilise in the workplace.

Around 166,000 adults aged 16 to 65 were surveyed in 24 countries and sub-national regions including 17 EU member countries.

The PIAAC dataset offers very good variables to properly define tertiary graduates. Firstly, there is the variable on the highest completed level of education which clearly identifies those who have a tertiary education degree. Respondents were also asked to report their own self-declared main labour status. The indicator of age is also present. Moreover, the PIAAC dataset includes information on the age of respondents at the time of successfully completing highest qualification as well as age at the time of filling the questionnaire. Thus, the time elapsed since successfully completing the highest qualification can be calculated.

The PIAAC data presents similar challenge as the ESS data which is it includes few number of respondents that are HE graduates. However, the numbers in the PIAAC survey are generally higher than for the ESS. Therefore, it can be concluded that data taken from the PIAAC survey can be quite useful for the comparison of entire populations of higher education graduates in most participating countries. Nevertheless, adding an additional variable to the equation will often yield much less reliable results. In that sense PIAAC data is quite limited for comparisons of HE across countries as well.



Table 2-2 illustrates this issue. While the numbers of respondents with a tertiary degree are relatively solid for each country (see "total" in the far-right column), adding just one additional dimension (here: "field of study") renders the number of cases too low for any profound multi-dimensional analysis.

Country	General program.	Teacher training and educat.	Human., languag. and arts	Social sciences, business and law	Science, math. and comput.	Enginee., manufac. and constr.	Agricult. and veterin.	Health and welfare	Services	Total
Austria	1	39	31	91	25	69	2	32	12	302
Belgium	10	90	67	126	104	61	9	71	14	552
Cyprus	47	145	97	219	122	54	10	76	67	837
Czech Republic	0	67	63	175	58	101	13	61	21	559
Denmark	8	72	70	137	76	72	21	102	26	584
Estonia	7	34	78	275	85	120	15	70	88	772
Finland	0	35	68	139	35	124	15	101	29	546
France	40	34	59	210	117	106	18	91	60	735
Germany	6	36	46	117	52	60	6	85	16	424
Ireland	28	91	108	225	127	62	12	83	44	780
Italy	1	11	52	58	23	31	7	30	1	214
Netherlands	1	43	21	163	38	38	10	83	10	407
Norway	7	83	59	148	60	55	3	112	10	537
Poland	0	242	239	499	194	233	31	105	62	1605
Slovak Republic	4	63	66	107	68	73	13	33	2	429
Spain	10	62	62	139	47	112	11	84	31	558
Sweden	2	55	29	124	49	105	11	61	13	449
United Kingdom	53	73	179	327	142	138	6	123	1	1042

Table 2-2: Number of respondents by	/ country	and	area	of	study	of	highest	qualification	;
tertiary graduates of age 20-3	4								

Source: own calculations using PIAAC public use files.

The European Working Conditions Survey (EWCS) is conducted by the European Foundation for the Improvement of Living and Working Conditions (EFILWC), which is an autonomous agency of the European Union funded from the general budget of the European Commission. The EWCS series began in 1990/1991 and a survey is conducted once every five years (an extra wave was conducted in 2001 to cover recently acceding and candidate EU countries). The survey is based on a questionnaire which is administered face-to-face to a random sample of "persons in employment" (i.e. employees and the self-employed) representative of the working population in each EU country.

The aim of the EWCS is to provide an overview of the state of working conditions in the EU, to identify major issues and changes affecting the workplace, and to contribute to a better monitoring of the quality of work and employment in Europe. The number of questions and issues covered in the EWCS has expanded in each subsequent survey while a core set of key questions has remained unchanged in order to enable the study of trends in working conditions.

The target sample size in most countries was about one thousand. The 2010 questionnaire covered several aspects of working conditions including physical environment, workplace design, working hours, work organisation, well-being, and social/colleague relationships in the workplace. Demographic information was also collected including the level of highest completed education.

The level of usefulness of this approach for a graduate study is quite low as only 16 EU member countries have participated and only a very limited number of cases exist. However, variables collected cover important parts of a graduate study mainly within the area of current employment. The evaluation of completed education in relation to its usefulness at the about market is not included.

The International Social Survey Program (ISSP) is a continuing annual programme of crossnational collaboration. It brings together pre-existing social science projects and coordinates research goals thereby contributing a cross-national perspective to the individual national studies. The ISSP researchers especially concentrate on developing questions that are meaningful and relevant to all countries and can be expressed in an equivalent manner in all relevant languages. Currently, 48 countries are members of the ISSP.

There is a different topic for the survey each year. Those annual topics for the ISSP are developed over several years by a sub-committee and pre-tested in various countries. The annual plenary meeting of the ISSP then adopts the final questionnaire. Data from the modules from 1985 to 2011 are presently available from the GESIS archive and various national archives. Overall, 29 annual surveys focusing on different topics have been conducted. Surveys focusing on the topic "Work Orientations" would be most strongly considered for the assessment of a graduate study

The usefulness of the ISSP data for analysing tertiary graduates is severely hindered by two factors: Firstly, the way how the levels of education in the variable for highest level of education are classified has to be noted. While there are a number of variables of the highest education within national classifications that are quite specific there is only one internationally comparable variable that has only six categories and only two of them can be roughly assigned to tertiary education – "Above higher secondary level" and "University degree completed". The second problem is constituted by the number of respondents that can be considered as tertiary education graduates. If we define tertiary graduates by age group 20 to 34 while their highest level of education is defined by the two above mentioned categories, the numbers of respondent for most countries are in the tens.

The level of usefulness of this approach for a graduate study has to be considered very low as very limited number of cases exists for each country and tertiary graduates cannot be defined in any precise way because of the vague classification of internationally comparable highest level education variables. That being said, some collected variables cover important parts of a graduate study mainly within the area of current employment.

The Adult Education Survey (AES) is a household survey which is part of the EU Statistics on lifelong learning. People living in private households are interviewed on their participation in education and training activities (formal, non-formal, and informal learning). The target population of the survey is composed of people aged 25 to 64. After the first pilot exercise, the Adult Education Survey is run under the legal basis of the Framework Regulation (EC) 452/2008, which makes it a compulsory European survey. The survey takes place every five years and its results are published on the Eurostat website. Furthermore, the micro data that are collected can be used in research projects to study the participation in lifelong learning (among others, analyses using sociodemographic characteristics such as country of residence, individual and household characteristics, or work context are included.



The survey is directed to adult education although data about the current job, the highest level of education, and the year when the highest level of education was completed are at hand. Graduates as group can be defined but the resulting numbers are not particularly large. Moreover, data are aggregated in the case of many indicators such as ISCO at 1st digit level, age to five-year groups, years of highest completed level of education to five-year groups. These factors determine a low level of usefulness of this approach for a graduate study.

The Eurobarometer programme was launched in the early 70s as a bi-annual public opinion survey ("repeated cross-section") in all member states of the European Union on behalf of the European Commission. During the 90s, the program expanded considerably in its topics, frequency, and instruments. Special topical modules enlarged the classic Standard Eurobarometer establishing multi-topical add-on surveys under each wave. The EU Eastern enlargement was anticipated by the Central & Eastern Eurobarometer (1990-1997) and later replaced by the Candidate Countries Eurobarometer (2001-2004). The Flash-Eurobarometer completes the program with small scale ad-hoc surveys.

The way Eurobarometer is directed to measure public opinion also pre-determines the methodology of the survey. This has consequences for the sampling, the number of respondents, or detailed topics that could be covered in relation to tertiary graduates. Its usefulness for a graduate study is very limited.

The Luxembourg Income Study Database (LIS) is a cross-national data centre which serves a global community of researchers, educators, and policy makers. LIS, located in Luxembourg, is home to the Luxembourg Income Study Database and the Luxembourg Wealth Study Database. These databases contain harmonised micro data from high- and middle-income countries around the world. The LIS is organised not as survey itself. It rather compiles datasets with data on income, wealth, employment, and demography from a large number of countries and harmonises them to allow cross-national comparisons. Furthermore, it makes the data available for public use by providing registered users with remote access. The survey is organised in waves but does not include data for each country from the same year. Mainly, the datasets contain data from 20 EU countries only.

The numbers of tertiary graduates in harmonised datasets are very limited and also the methodology of the surveys that produce the original datasets that are later harmonised are not directed to tertiary graduates. Thus, from the point of view of a graduate study, the LIS may be useful for a very limited number of analyses.

From another perspective, this methodology might be an example for surveys conducted in different countries being harmonised and used to compare results in specific areas of interest. The usefulness of this approach in the case of tertiary graduates seems to be quite limited as certain variables are sensitive in relation to the definition of graduates, mainly in regards to the numbers of years after of completion of education, and also the dimension of many questions would need harmonisation before the surveys are conducted.

2.3 Conclusions

In general, none of the mapped studies primarily focuses on HE graduates. Rather, they are devoted to other topics (e.g. skills and competences of the adult population) or cover a wide range of subjects (like the ESS). Thus it is of little surprise that these studies are limited in their usefulness for monitoring and analysing HE graduates. However, no current international study specialized on HE graduates is available. Limitations of the investigated datasets can be categorised into: (1) suboptimal definitions of HE graduates, (2) low numbers of respondents with a HE degree, and (3) a limited number of variables regarding HE. Further limitations are related to the number of countries covered or allowing for a mid- or long-term perspective on graduates careers.

Table 2-3 exemplifies the suitability and shortcomings of the EU-LFS, the EU-LFS ad-hoc module of 2009, PIAAC, and the ESS by using three criteria:

- (1) Is it possible to exactly define HE graduates (i.e. in terms of years since graduation)?
- (2) Are numbers of respondents with a tertiary degree above certain thresholds? The lower threshold of 500 respondents should indicate whether at least some basic monitoring is possible (e.g. employment status of HE graduates). The threshold of 2,000 should indicate whether the data set allows for more differentiated analyses. These thresholds are to some extent discretionary but can in our view be seen as limits one should not go below considerably.
- (3) Is information covered that is seen as crucial for analysing HE graduates? The information listed would be necessary to allow treating the research topics seen as most important by the respondents of the EUROGRADUATE surveys (chapter 4), i.e. (a) transition to employment, (b) employability, (c) quality of HE, skills and competencies acquired in HE, and skills mismatch, and (d) international mobility.

With the exception of PIAAC and the EU-LFS graduates cannot be defined in terms of the time elapsed since their graduation in the examined datasets, thus rendering impossible to identify a certain cohort of graduates. For a satisfactory definition of graduates, new variables would need to be included in most surveys.

The low number of respondents with a HE degree is a problem in all examined data sets, though to a differing degree. The EU-LFS is best equipped in this regard. Using the criteria of above 500 respondents with a tertiary degree or above 2,000 respondents respectively, a considerable number of countries could be covered by the large samples of the EU-LFS. Even for the EU-LFS, possibilities seem quite limited for further breakdowns of the data, to e.g. look at individual cohorts of graduates or the analysis of specific groups of HE graduates such as graduates with a migration background (Mühleck 2013). Numbers of HE graduates are much lower in PIAAC and the ESS. Even if HE graduates are defined in a broad way (e.g. the age group 20 to 34) reliable results could only be obtained for a small or medium number of countries. Options for further differentiation, e.g. by subject, are very limited.

Another problem is that necessary variables are missing for answering key questions regarding HE. While the assessed datasets provide basic information on HE, such as levels of education or fields of study, no detailed information on HE, the institutions visited, or an assessment of HE is available. This it prevents from focussed analyses of the relationship between HE and personal and professional development of graduates, including employment and other labour market outcomes.



Employment status and information on the current occupation is available in all existing international datasets. The EU-LFS ad-hoc module also covers the transition to the labour market as one of the topics seen as particularly relevant for a European graduate study (chapter 4). Other topics perceived as important, such as skills and competences of graduates or mismatch, could hardly be addressed by any of the datasets in question with the notable exception of PIAAC. Assessments of the qualities of studies are not available in any of the studies. International mobility during or after studies is not covered in any of the studies as well.

Survey / Database		EU-LFS	EU-LFS ad- hoc module ¹	PIAAC	ESS
Exact definition of graduates ²		Х	Х	Х	-
Number of EU and EFTA coun-	all grads. aged 20-34	31	31	12	0 ³
tries with >500 HE grads. of respective definition in data set	grads. graduated 1 year ago	21	21	1	(-) ⁴
Number of EU and EFTA coun-	all grads. aged 20-34,	22	22	0	05
tries with >2,000 HE grads. of respective definition in data set	grads. graduated 1 year ago	8	8	0	(-) ⁴
	Levels & fields of study	Х	Х	Х	Х
	HE institution	-	-	-	-
	Assessment of studies	-	-	-	-
	Int. mobility during HE	-	-	-	-
	Employment status	Х	Х	Х	Х
Key information on UE and	Current occupation	Х	Х	Х	Х
Key information on HE and Employment	Transition to employ- ment after HE	-	х	-	-
	Earnings	-	-	Х	-
	Adequacy of job	-	-	Х	Х ⁶
	Skills & competences	-	-	Х	-
	Int. mobility after HE	_7	_7	-	-
	Social background	-	Х	Х	Х

Table 2-3: Definition of graduates, number of cases, and variables covered in EU-LFS, PIAAC, and ESS datasets

Notes: 1) Refers to the ad-hoc module "Entry of young people into the labour market" of 2009. Note that this module or modules with similar topics or repeated at much longer intervals than the other data sets considered.

2) x=possible to define graduates in terms of years since graduation; -=condition not fulfilled.

3) For the current round 6 of the ESS. If the last two rounds are merged one country is above the threshold; if all six rounds are merged 16 countries are above the threshold.

4) Identifying individual cohorts is not possible.

5) If all 6 rounds of the ESS are merged still no country is above the threshold.

6) Relevant questions included only in rounds 2 and 5.

7) Information on recent mobility is available (country/place of living one year before the survey).

Moreover, some of the existing datasets have a limited geographical coverage (Table 2-1). Stakeholders see all EU countries as the minimum geographical scope that a European graduate study should aim to cover and many respondents of the EUROGRADUATE surveys have even suggested going beyond this scope. The EU-LFS, the EWCS, and the AES would mostly comply with this minimum goal. For the ESS this is true to a lesser extent, as not all countries have taken part in all rounds. The data of PIAAC covers 17 EU countries only.

Covering the mid- and long-term careers of graduates would, in the view of the respondents to the EUROGRADUATE surveys, be another important feature of a potential European graduate study (chapter 4). However, none of the analysed datasets is organised in such a way that it would easily meet this aspect.

To summarize: With the exception of the EU-LFS, none of the mapped datasets can be considered a strong source for comparative statistics on European HE graduates mostly due to the limited number of respondents with a HE degree. Even the EU-LFS does not contain enough HE graduates to allow for fine-grained analyses. Moreover, the mapped datasets could treat only few of the topics seen as most relevant for comparative graduate research. Particularly, detailed information on HE is missing in all datasets thus preventing from analysing the relationship between HE and HE graduates' careers.

It should, however, be noted that some datasets also have certain advantages over typical graduate studies. PIAAC includes tests and measures of competencies yielding more valid results than the self-assessments often used in graduate studies. Furthermore, most datasets cover the whole working population. Thus, indicators on HE graduates can be compared to other age groups or to graduates of other types of education. With the given limitations, existing datasets could hardly serve as an alternative to studies specifically designed to monitor and analyse graduates. However, they could be used in a complementary fashion, e.g. for shedding more light on the position of HE graduates within the working population.



3 National-level graduate studies in Europe

3.1 Objective of the chapter

The objective of this chapter is to provide a detailed overview of existing graduate studies in the countries of the EU and the EFTA. All information is based on a survey of higher education researchers who have conducted graduate studies (see chapter 1.3).

Knowing whether and how higher education graduates are studied at the national level is relevant for a potential EGS in several ways. Firstly, existing studies give insight into the capacities available at the national level for studying HE graduates. This is true in two ways: with regard to researcher capacities as well as with regard to the technical possibilities in a country. Secondly, an examination of national studies might lead to a common model emerging that could provide a starting point for the design of a European graduate study. Finally, the survey also asked researchers to indicate how easily certain characteristics could be changed in order to adapt to a potential European graduate study. This information is valuable in identifying potential difficulties for a European graduate study.

3.2 Results

3.2.1 Existence of studies, regularity and future repetitions

Table 3-1 gives an overview of graduate studies in the EEA countries. To our knowledge this is the most comprehensive list of national-level graduate studies in European countries currently available, however the following qualifications must be noted: (1) The table only contains studies that are part of the target group of the EUROGRADUATE surveys (see chapter 1.3). (2) The list may be non-exhaustive; even though considerable efforts have been taken to identify all studies of the target group, certain studies may have been overlooked. (3) Sometimes respondents mentioned studies not belonging to the target group (even though the defining criteria were given in the questionnaire). These studies have not been listed below. In a few cases, it was not possible to get sufficient further information on these studies to determine whether they are part of the target group. In case of doubt, studies were not included in the table.

To our knowledge in nearly all countries at least one graduate study has been conducted at the national level in the last 10 years ago. In most of these countries, much more recent studies exist. For seven countries no graduate study could be identified (BE fr., BG, CY, HR, IS, LI, and MT).

28 studies (more than three quarters of the studies covered in the EUROGRADUATE survey) are expected to be repeated in the future. 23 of these studies have a regular rhythm of repetition, while 3 studies are repeated irregularly. The most common rhythms are yearly (9 studies) and biannual repetitions (10 studies). For 18 of the 22 countries covered we found evidence that they have at least one national level graduate study which is expected to be repeated in the future (see Table 3-1). As we do not have information on all studies, this can be seen as the minimum of countries with ongoing studies. These countries are: AT, CH, CZ, DE, DK, EE, FI, FR, HU, IE, IT, LU, NL, NO, RO (though information on Romania was not unambiguous), SE, SK, and the UK. Based on the reported rhythms projections indicate a minimum of 14 studies can be projected for each year between 2016 and 2019.

3.2.2 Commissioning and funding

Researchers, ministries, and NRCs were asked which organisation(s) have commissioned and funded the studies. The vast majority of the studies are commissioned by other organisations than the conducting research organisation (28 of 34 studies or 82% of studies with available information). Not very surprisingly, for most studies the ministry responsible for HE was the commissioning and funding body of the study, highlighting the key role of national ministries for graduate studies.

3.2.3 Coverage of HEI types, degrees and graduates

Nearly all studies cover research universities, and around a fifth of studies do so exclusively. However, about three quarters of all studies have a broader scope and encompass either universities and professional HEIs or all types of HEIs.

Country	No of studies	Name of study	Contacted research org.	participation ^{a)}	referred	to by	Data source	Reptn. ^{c)}	Rhythm ^{d)}
			8-		ministry	NRC			
AT	2	BibEr - education-related employment career monitoring	Statistical Office	У	n	Ν	admin	У	1
		ARUFA graduate survey	Uni. of Klagenfurt	У	у	Y	survey	n	n/a
BE fl.	1	Belgian REFLEX study	KU Leuven	n	n/a	n/a			
BE fr	0			n/a	n/a	n/a			
BG	0			n/a	n/a	n/a			
СН	1	Graduate Survey	Federal Statistical Office	У	У	Y	combined	У	2
CY	0			n/a	n/a	n/a			
CZ	1	Czech REFLEX study	Charles University	У	n	n/a	survey	У	irreg.
DE	4	DZHW graduate study	DZHW	У	У	Y	survey	У	4
		KOAB graduate study	INCHER	У	n	Y	survey	У	1
		DZHW school leaver study	DZHW	У	n	N	survey	У	2
		National Educational Panel Study	DZHW	n	n	N	survey	У	
DK	1	Eleveregistret - student register	Statistics Denmark	У	У	n/a	admin	У	n/a
EE	1	Estonian graduate study	Uni. of Tartu	У	У	N	combined	У	2
EL	1	Graduate study of network of careers offices	Network of careers offices of Unis.	У	n/a	n/a			
ES	2	Spanish REFLEX study	Tech. Uni. of Valencia	У	n	Ν	survey	n	n/a
		Spanish graduate study with administrative data	Ministry of Educa- tion, Culture and Sport	n	У	n	admin		
FI	5	Kandipaluate - bachelor graduate survey	CHE Consult	У	n	Y	survey	У	0.5
		Uraseuranta maistereille - career follow-up master's degree holders	Aarresaari Network	У	У	Ν	combined	У	2
		Uraseuranta tohtoreille - career follow-up doctor's degree holders	Aarresaari Network	У	У	Ν	combined	У	2
		Finnish REFLEX study	Uni. of Turku	n	n	Ν			
		OTUS graduate Survey	OTUS	n	n	Ν			
FR	3	Employability survey for the master's diploma	Ministry for HE	n	У	n/a	survey	У	1
		"Génération" studies	Céreq	У	n	n/a	survey	У	3
		French REFLEX study	Uni. of Bourgogne	У	n	n/a	survey	n	n/a
HR	0			n/a	n/a	n/a			
HU	2	Graduates' Career Tracking Hungary	Educatio Nonprofit	У	n	Y	survey	У	1
		Hungarian HEGESCO study	TARKI Social Re- search	n	n	N			
IE	1	First Destination of Graduates Survey	Higher Education Authority	У	У	n/a	survey	У	1
IS	0			n/a	n/a	n/a			
IT	2	The employability of the graduates study	Istat	У	n/a	n/a	survey	У	3
		Grad. Profile Study, Employment Sit. Study	AlmaLaurea	У	n/a	n/a	combined	У	1
LI	0			n/a	n/a	n/a			

Table 3-1: Overview of graduate studies in Europe and expected future repetitions

Note: y=yes; n=no; --= no data available; n/a=inapplicable; a) study has been covered by EUROGRADUATE survey of researchers; b) ministry and/or NRC referred to study as a graduate study according to the criteria of the EUROGRADUATE survey, n/a = no national study or organisation has not participated in EUROGRADUATE survey of ministries or NRCs or no NRC is registered as member of either EUA or EURASHE (IS, LI, and MT); c) study is expected to be repeated: y=yes (decision about repetition not yet taken in all cases), n=no, dk=don't know; d) regular repetition of study every "X" years or irregular repetition (irreg.); SOURCE: EUROGRADUATE feasibility study.



Country	No of studies	Name of study	Contacted research org.	participation ^{a)}	referred	to by	Data source	Reptn. ^{c)}	Rhythm ^{d,} e)
			0		ministry	NRC			
LV	1	Professional Activities of Graduates	Uni. of Latvia	У	n/a	n/a	survey	n	n/a
LT	4	The quality of study results	Pub. Pol. & Man. Inst.	У	n	Ν	survey	n	n/a
		Lithuanian HEGESCO study	Vytautas Magnus Uni.	n	n	N			
		Lithuanian graduate study	Inst. of Labour & Soc. Res.	n	n	N			
		Longitudinal study of graduates' career monitoring	Research and Higher Education Monitor- ing and Analysis Centre (MOSTA)	у	n	N	survey	dk	n/a
LU	1	Graduation and now	Uni. of Luxembourg	n	n/a	Y		У	1
MT	0			У	n	n/a			
NL	3	WO Monitor – Monitor of academic higher education	Assoc. of Uni.	У	n/a	n/a	combined	У	2
		HBO Monitor – Monitor of professional higher education	Uni. of Maastricht	У	n/a	n/a	survey	У	1
		Dutch REFLEX study	Uni. of Maastricht	у	n/a	n/a	survey	dk	n/a
NO	2	Norwegian graduate study (regular)	NIFU	у	у	n/a	survey	У	2
		Norwegian graduate study (special)	NIFU	У	У	n/a	survey	У	2
PL	2	Polish HEGESCO study	Cracow Uni. of Tech.	n	n/a	n/a			
		Polish graduate tracking system	Uni. of Warsaw	n	n/a	n/a	admin		
PT	1	Portuguese REFLEX study	CIPES	У	n	n/a	survey	n	n/a
RO	1	University Grads. and Labour Market	ARACIS	У	У	n/a	survey	У	irreg.
SE	1	Establishment on the Labour Market	Higher Ed. Authority	У	у	Y	admin	У	2
SI	1	Slovenian HEGESCO study	Uni. of Ljubljana	У	у	n/a	survey	n	n/a
SK	1	Graduates in the Labour Market	CVTI SR	У	у	Y	combined	У	irreg.
UK	4	Destination of Leavers from HE (DLHE)	HESA	у	у	n/a	combined	У	1
		Longitudinal DLHE	HESA	y	y	n/a	combined	y	2
		Futuretrack	Uni. of Warwick	У	n	n/a	combined	n	n/a
		High Fliers graduate study	High Fliers Res.	n	n	n/a			
UK sco.	1	On Track	IFF Research	n	n/a	n/a			
Total No.	50			37 [of 50]	18	9	-		

Table 3-2 (ctd.): Overview of graduate studies in Europe and expected future repetitions

Note: y=yes; n=no; --= no data available; n/a=inapplicable; a) study has been covered by EUROGRADUATE survey of researchers; b) ministry and/or NRC referred to study as a graduate study according to the criteria of the EUROGRADUATE survey, n/a = no national study or organisation has not participated in EUROGRADUATE survey of ministries or NRCs or no NRC is registered as member of either EUA or EURASHE (IS, LI, and MT); c) study is expected to be repeated: y=yes (decision about repetition not yet taken in all cases), n=no, dk=don't know; d) regular repetition of study every "X" years or irregular repetition (irreg.); e) grey = expected/projected repetitions, black = no rep. exp., exp.=expected studies as indicated by respondents (already decided repetitions as well as expected repetitions; pro.=projections of future studies according to regular rhythm of studies, if applicable.

SOURCE: EUROGRADUATE feasibility study.

Which degrees are covered by national graduate studies is another key issue for comparing their scope. Most studies have information on graduates with degrees of ISCED levels 6 (Bachelors, 88%) and 7 (Masters, 79%). Some studies go beyond that scope by including either PhD graduates (55 %) or graduates holding short-cycle HE degrees (36 %). Four studies cover graduates below the level of HE.

As Figure 3-1 shows, studies vary considerably in the combinations of degrees they cover. Besides different foci of studies, this presumably indicates the varying importance of degrees in the different HE systems, which poses a problem for comparability. The most common type of study covers ISCED levels 6, 7, and 8 (8 studies, 24 %). A large share of studies (about 70%) has both most frequent ISCED levels (levels 6 and 7).



Figure 3-1 Degree combinations covered in national studies

Source: EUROGRADUATE feasibility study

It is often reported that covering international graduates is a problem for graduate studies. Still, nearly all graduate studies (88 %) are reported to have information on graduates regardless of their citizenship. Only four studies restrict the population they cover as regards the origin of the graduates.

Increasing the target population is regarded as relatively unproblematic: only five research teams (18%) indicated that such a change would pose a problem for them (note that respondents were instructed to assume that the resources necessary for each respective change would be granted). At the same time, almost half of respondents (46%) indicate that this would be relatively unproblematic.

3.2.4 Numbers of cases, response rate, and sampling

The numbers of cases and response rates give some indication on the quality and the analytical possibilities of the data, especially with regard to describing and analysing specific social groups or smaller entities than the nation state. Table 3-3 documents a large range of numbers of cases of national graduate studies, ranging from 645 respondents to about 500.000. The median number of respondents is 10.000. As can be expected, studies addressing the entire target population tend to have more respondents (median 22.250) than studies using a sample (median 4.123). Four of the five largest studies with numbers of cases of above 100.000 are surveys of the former kind, one is a study using administrative data. Only three studies have less than 2.000 cases.



Valid cases					
	n	Mean	Median	min	max
all studies	31	63.352	10.000	645	500.000
studies drawing a sample	13	11.702	4.123	645	34.305
studies addressing the					
entire target population	16	94.487	22.250	1.400	500.000
Panel studies					
1st wave	9	107.924	34.294	4.123	500.000
2nd wave	7	46.619	19.000	835	189.000
3rd wave	4	24.125	17.250	5.000	57.000
4th wave	2	28.750	28.750	17.000	40.500
Panel studies drawing a					
sample					
1st wave	4	16.831	14.453	4.123	34.294
2nd wave	3	6.112	6.500	835	11.000
3rd wave	2	6.250	6.250	5.000	7.500
4th wave	0	n/a	n/a	n/a	n/a
Panel studies addressing					
the entire target population					
1st wave	5	180.800	130.000	29.000	500.000
2nd wave	4	77.000	50.000	19.000	189.000
3rd wave	2	42.000	42.000	27.000	57.000
4th wave	2	28.750	28.750	17.000	40.500

Table 3-3: Valid cases by type of study (mean, median, minimum, maximum)

Source: EUROGRADUATE feasibility study

Response rates again differ largely between studies (see Table 3-4) with a range from 11% to 92%. Response rates have a median of 38%, with sample studies (median 34%) having somewhat lower rates than studies addressing the entire population (46%). Among all survey studies, about 45% use a sample, while 55% address all graduates of their target population. Five studies have response rates of 70% and above. Six studies report response rates of 20% and below. A further five studies have response rates between 25% and 20%. Interestingly, panel studies report slightly higher response rates than studies which are not a panel.

These data illustrate that gaining an adequate response rate among respondents may be a challenge a European graduate study would face in some countries.

Response rate					
	n	Mean	Median	min	max
all studies	28	41	38	11	92
studies drawing a sample	12	34	30	10	70
studies addressing the					
entire target population	16	46	45	16	92
Panel studies					
1st wave	9	47	40	20	92
2nd wave	6	48	40	20	86
3rd wave	3	79	80	66	90
4th wave	1	75	75	75	75
			6		e Colore de la colore de

Table 3-4: Response rate in % of contacted participants by type of study

Source: EUROGRADUATE feasibility study

3.2.5 Breakdowns

The great majority of studies is able to provide statistics on graduates at the national level (91 %). In fact, this number is likely to be even higher (possibly 100%), as a look at the specific studies that indicated that they were not able to provide national statistics suggests that the researchers may have misunderstood the question and have indicated the smallest unit for which they are able to provide statistics. About two thirds of studies are able to provide regional and HEI-specific statistics, respectively. The level of individual faculties/departments is covered by less than half of the studies (42%).

3.2.6 Source of data

Graduate studies can be based on either survey or administrative data or a combination of both kinds of data. Previous studies have already shown that survey data is the most prevalent source for graduate studies in Europe (Gaebel et al. 2012) and the EUROGRADUATE survey confirms this finding: 62% of all studies (i.e. 21 studies) have surveys as their source of data. Another 29% (10 studies) use surveys besides administrative data. 9% of all studies (3 studies) are solely based on administrative data. This finding needs to be qualified to some extent as the category "a combination of survey data and administrative data source(s)" may not have been entirely clear to all respondents. At the moment, it is not known what role administrative data plays in the studies that have been categorised as "combined" studies by the respondents, but from what we know about these studies, all of them have surveys as their main source of data and quite a few of them may have fitted in the category "survey data" as well. Administrative data may, in these cases, be used mainly for sampling and weighting and to add some additional background information not covered in the questionnaire itself. In any case, 91% of all studies rely at least partially on survey data.



3.2.7 Contacting graduates

In about half of the cases (45%), graduates were contacted directly by HEIs (Table 3-5). HEIs appear generally cooperative with a participation rate of contacted HEIs between 75% and 100% in more than three quarters of cases (80%). HEIs provided researchers directly with graduates' contact information in a further 7 cases (23%). Graduates were then contacted by the researchers themselves, as was the case in about a third of studies (35%). In 19% of cases, other organisations (schools, statistical offices, research companies) approached graduates. Providing the survey openly accessible on a website, making contacting the respondents unnecessary, was an option chosen by only one research team (3%).

One reason for the reliance of research teams on HEIs as partners is that graduates' contact details are not widely available from other sources. Not in all countries are contact details collected in the first place – 10% of respondents reported that no contact information at all was available, a further 14% indicated that graduates' contact information was only partially available. The remaining three quarters (76%) indicated that all graduates' contact details were available in their respective countries, with the main collector being the HEIs (45%).

Table 3-5: Contact method of national studies

	n	%
contact directly by organisation	11	35
Contact info attained		
from HEIs*	7	23
from national/regional		
address registers	3	10
no contact info		
necessary**	1	3
contact by HEIs***	14	45
contact by (an)other		
organisation(s)	6	19

Contact method

Note: other organisations were research companies, statistical office, schools

* Participation rate of HEIs: 86% between 75% and 100% of contacted HEIs, 14% between 25% and 50% of the contacted higher education institutions.

** Participants accessed the survey by link

 $on \ the \ webpage \ of \ the \ organisation$

*** Participation rate of HEIs: 77% between 75% and 100% of contacted HEIs, 23% between 50% and 75% of contacted HEIs

Source: EUROGRADUATE feasibility study

3.2.8 Survey method

Online surveying proves to be the most popular method employed by the surveyed researchers, with 71% of studies offering online questionnaires. Half of the studies (48%) (also) offer paper questionnaires per post. Around a quarter of the studies (26%) contact respondents by phone. Most of the telephone surveys also employ other methods, so telephone contact is probably a



follow-up method rather than the first method of contact. Only 6% of respondents reported using face-to-face interviews. 16% reported that they used other methods (which, as the text answers indicated, mostly meant that the respondents used a mix of methods). Table 3-6 shows that about half of the studies rely exclusively on one method (51%, only online: 29%, only postal: 10%, only telephone: 6%, only face-to-face: 3%, only other: 3%). The other studies combine methods in order to contact respondents, the single most popular combination being that of online and postal (23%).

The surveys typically take about half an hour for graduates to complete (M = 29 minutes, Md = 30 minutes).

Changing the survey method is judged to be problematic by about a third of respondents (34%), while a quarter (24%) would not see large difficulties in doing this.

	n	%
only online	9	29
online & postal	7	23
only postal	3	10
online, postal, & telephone	2	6
postal, telephone, & other	2	6
only telephone	2	6
postal, telephone, online, & other	1	3
online & telephone	1	3
online & face-to-face interview	1	3
online & other	1	3
only face-to-face interview	1	3
only other	1	3

Table 3-6: Survey method

Source: EUROGRADUATE feasibility study

3.2.9 Point of time of (first) survey and panel design

Graduate studies typically survey respondents for the first time after graduation (see Table 3-7). 6% of researchers indicated that they surveyed respondents before graduation – these two cases are, in fact, not graduate studies in a strict sense but rather panel studies of HE applicants or even pupils which start before entering HE and end after graduation. A further 10% of researchers indicated that their studies began around the time of graduation. The remaining majority of studies (83%) surveyed graduates after graduation: either one cohort at a specific time after graduation (61%), several specific cohorts at once (6%), or all graduates of a certain period before (16%). The time lag between graduation and first survey ranged from about 6 months after graduation (10%) to around 5 years after graduation (16%). Overall, almost half of the studies after graduation waited for more than two years after students had graduated. Further popular points in time were 6, 12, and 18 months after graduation (each 10% of all studies).

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Only few of the surveyed studies are panel studies, i.e. contact the same respondents repeatedly. 24% of studies reportedly do this, with 3 of the seven studies contacting the respondents twice, two studies three times, one study four times, and one study five times. Table 3-8 shows the seven panel studies and their pattern of surveys (pure student panels, i.e. studies starting before or at about entrance to HE, were excluded). All of them except one survey respondents between 0.5-1.5 years after graduation, and six of the seven gather information around 4-5 years after graduation. The longest survey contacts respondents for the final time 10 years after graduation from HE, the second longest 7 years after graduation.

An EGS requiring the national research teams to make major changes¹ to the timing of their first survey would pose problems for the majority of researchers. 60% indicate that this would be problematic. At the same, only 20% of respondents see this as (relatively) unproblematic. Between 40% and 50% of researchers would see problems if an EGS were to require a change of cohorts targeted, call for applying a panel design², or necessitate minor changes³ to the timing of the first survey. Changing the time lag between panel waves is seen as problematic by 29% of respondents⁴. The most readiness for change can only be found with regard to making minor changes to the timing of the first survey: 40% indicate that they would be flexible with regard to changing this. As indicated above, however, this point is controversial, with the same number of respondents opposing change in this matter.

(First) survey	n	%
before entering HE	2	6
around the time of graduation	3	10
after graduation	19	61
~6 months after graduation	3	10
~9 months after graduation	1	3
~12 months after graduation	3	10
~18 months after graduation	3	10
~2-4 years after graduation	4	13
~5 years after graduation	5	16
several cohorts defined in relation to graduation	2	6
all graduates of a certain period before*	5	16

Table 3-7: Timing of first survey (national studies)

* typically meaning that graduates of several previous years are surveyed at one point in time, e.g. survey of graduates of the years 2005-2008 in 2009

Source: EUROGRADUATE feasibility study

¹ "Major changes to timing" have been defined as "move (first) survey from before HE graduation to after HE graduation or from after HE graduation to before HE graduation or by more than 12 months as compared to your current design".

² 14 respondents did not answer the question regarding implementation of panel design

³ "Minor changes to timing" have been defined as "survey respondents 6-12 months earlier or later compared to your current design, without moving it from before to after HE graduation or vice versa".

⁴ 16 respondents did not answer the question regarding the time lag between waves.

Table 3-8: Timing of survey waves - only panel studies

	no. waves	1st wave	2nd wave	3rd wave	4th wave	5th wave
CH_bef	2	1	5	n/a	n/a	n/a
DE_abs	3	1	5	10	n/a	n/a
DE_koa	2	1,5	4	n/a	n/a	n/a
FR_gen	3	3	5	7	n/a	n/a
IT_alm	4	0*	1	3	5	n/a
LT_lon	5	0*	0,5	1	3	5
UK_dlo	2	0,5	3	n/a	n/a	n/a

Timing of survey waves in years after graduation (without student panels)

*) First survey at about graduation

Source: EUROGRADUATE feasibility study

3.2.10 Contents and research questions

Researchers were asked about the contents and research questions of their study. Figure 3-2 and Figure 3-3 below show the proportion of national graduate studies covering a certain variable or indicator with their data. The focus of the studies is clearly on HE and employment. Almost all studies cover at least one aspect of these content dimensions (along with socio-demographic aspects). Two thirds (67%) of the studies cover some aspect with regard to "competencies and skills", with a focus on skills gained during studies and current skills. Information on secondary and other types of education are also each covered by about two thirds of the studies. About half of the studies (52%) collect information on graduates' values, beliefs and dispositions, most of them focusing on professional goals/values (45%).

When taking into account differences in topics between studies drawing on different data sources, it becomes apparent that studies drawing exclusively on administrative data have the smallest range of topics (Figure 3-4 and Figure 3-5). No administrative study, for example, covers any topic from the areas of "competencies and skills" or "values, beliefs and disposition", which require tests or subjective assessments which respondents can only give in surveys. The coverage in the thematic areas "higher education" and "socio-demographic characteristics" is also limited for studies employing administrative data.

Overall, there is relatively little variation. All research teams seem to be investigating roughly the same questions. Apparently there are few studies focusing on aspects of the HE system, teaching & learning, or graduates' individual circumstances. Also, it is surprising that not all studies collect information on secondary educational attainment (which is an important control variable).

As mentioned above, survey studies or studies using a combination of survey and administrative clearly cover more indicators than administrative studies. Looking at the former only, contents are relatively homogenous. Besides the large overlap in core areas such as HE and employment, some studies have a larger scope of contents and also encompass skills and competences or beliefs and values.



The open descriptions of research question provided by researchers highlight the same thematic focus of the graduate studies in question that became apparent when looking at the contents. The areas most often named in conjunction with relevant research questions by the researchers were "transition into employment" and "employment" itself. Questions in this area range from basic employment rates (e.g.," labour market status within 2 years after graduation") over more differentiated analyses (e.g., "how labour market integration of the universities' graduates is influenced by higher educational attainment, work experience, social background, sociodemographic characteristics") to quite specific analyses (e.g., "graduates' problems in entering labour market and how they manage [them]"). Specific aspects of employment that were named with some frequency include graduates' income and the adequacy of the attained position (skills mismatch). Another important topic seems to be mobility of graduates. Several studies named this as one of their research questions, "Mobility" here can refer to mobility during studies as well as regional, national, and international mobility after graduation. Competencies (e.g. "Which competencies [do] graduates acquire (and are they used and useful) and which competencies are missing?") have been investigated by several research groups. Overall, what becomes apparent when looking the research questions is that in general, the link between higher education and employment?

	%
Socio-demographic characteristics	94
Basic socdem. characteristics	94
Ethnicity/immigration background	67
Socio-economic origin	67
Family status	58
Social status of partner	27
Family life	12
Other socdem. Information	18
Educational information	0
Secondary education	67
Graduates' secondary educational attainment	64
Graduates' secondary school	42
Higher education	100
Information on HE attainment	97
Practical experience during studies	91
Subjective assessment of studies	76
Basic information on HEI	76
Course of studies	70
Mobility during studies	64
HE teaching and learning	36
Time budget during studies	33
Other information on HEI	12
Qualitative information on HEI	6
Other types of education	64
Further education (after HE)	61
Non-tertiary vocational education	30
Other information on other education	6
	n =33

Figure 3-2: Contents of national studies: socio-demographic characteristics and education

n = 33

Source: EUROGRADUATE feasibility study



	%
ccupation and employment	94
Employment status	94
Kind of employment	91
Income	91
Basic information abtout employer/company	91
Position	88
Kind of occupation	79
Ways into the labour market	82
Horizontal/vertical adequacy of job	76
Subjective assessment of current job	76
Mobility after graduation	67
Employment history	64
Self-rated performance in current job	45
Qualitative information about employer/compared	ny <mark>21</mark>
Other information on employment	9
ompetencies and skills	67
Skills gained during studies	58
Current skills	48
Skills development during employment	12
Other information on competencies and skills	12
alues, beliefs and dispositions	52
Professional goals/values	45
Life goals/values	27
Social and/or political activities	21
Political beliefs and attitudes	6
Other information on values and beliefs	3

Figure 3-3: Contents of national studies: Occupation and employment, competencies, and values

n = 33

Source: EUROGRADUATE feasibility study

.

	survey	adn	nin c	ombined
	%	%	6	%
Socio-demographic characteristics	95	67	100	
Basic socdem. characteristics	95	67	100	
Ethnicity/ immigration background	70	67	60	
Socio-economic origin	85	0	50	
Family status	75	0	40	
Social status of partner	35	33	10	
Family life	10	0	20	
Other socdem. Information	15	0	30	
Educational information				
Secondary education	75	67	50	
Graduates' secondary educational attainment	70	67	50	
Graduates' secondary school	45	33	40	
Higher education	100	100	100	
Information on HE attainment	100	100	90	
Practical experience during studies	95	33	100	
Subjective assessment of studies	85	0	80	
Basic information on HEI	75	67	80	
Course of studies	80	67	50	
Mobility during studies	80	0	50	
HE teaching and learning	60	0	0	
Time budget during studies	50	0	10	
Other information on HEI	20	0	0	
Qualitative information on HEI	10	0	0	
Other types of education	70	67	50	
Further education (after HE)	65	67	50	
Non-tertiary vocational education	35	67	10	
Other information on other education	0	33	10	
	n	=20	<i>n</i> = 3	n = 2

Figure 3-4: Contents of national studies: Socio-demographic characteristics and Education (by source of data)



	survey	adm	nin combined
	%	%	%
Occupation and employment	95	67	100
Employment status	95	67	100
Kind of employment	90	67	100
Income	90	67	100
Basic information abtout employer/company	90	67	100
Position	90	33	100
Kind of occupation	80	33	90
Ways into the labour market	90	0	90
Horizontal/vertical adequacy of job	90	33	60
Subjective assessment of current job	90	0	70
Mobility after graduation	75	33	60
Employment history	65	67	60
Self-rated performance in current job	60	0	30
Qualitative information about employer/company	30	0	10
Other information on employment	15	0	0
Competencies and skills	70	0	80
Skills gained during studies	55	0	80
Current skills	50	0	60
Skills development during employment	10	0	20
Other information on competencies and skills	20	0	0
Values, beliefs and dispositions	60	0	50
Professional goals/values	55	0	40
Life goals/values	35	0	20
Social and/or political activities	25	0	20
Political beliefs and attitudes	5	0	10
Other information on values and beliefs	5	0	0
		<i>n</i> = 20	n = 3 n =

Figure 3-5: Contents of national studies: Occupation and employment, competencies, and values (by source of data)

Source: EUROGRADUATE feasibility study

When asked to indicate the purpose of their studies, according to the researchers, the most important purposes of their studies are describing and monitoring the HE system and supporting the management of HEIs by statistics and information. Around 90% of researchers agree that their study serves these purposes (91% and 88%, respectively). Theory-driven research appears to be less common, but is still - at least partially - a purpose of more than two thirds of the studies (72%). Only every fourth researcher, however, strongly agrees with this purpose. Helping graduates find jobs or companies find candidates is not a common purpose, half of the researchers (52%) disagree to some extent with this notion and only 9% agree strongly.

3.2.11 Involvement in international studies

European graduate researchers' experience with international (graduate) studies varies. More than half of them have not taken part in international studies; others have led internationally



comparative graduate studies (INCHER-Kassel, Technical University of Valencia, University of Ljubljana, and University of Maastricht). 8 researchers reported that the study was part of either the REFLEX study or the HEGESCO study. No national graduate was part of another international graduate study than REFLEX or HEGESCO, but another 6 research organisations have been involved in further international graduate projects, such as CHEERS, PROFLEX, or the Nordic graduate survey. All in all 14 research organisations reported to have participated in an international graduate study. However, this information might not be exhaustive for some organisations, and we noted that respondents have used different criteria when reporting studies (e.g. some have restricted themselves to projects after 2004, some have not).

Asked about the strengths of the international studies they had taken part in, researchers referred to international comparisons, standardisation/quality, and content aspects. A study enabling international comparisons therefore seems to be a plus per se. Achieving the advantages of an international project can be difficult, however: Weaknesses of international studies that were named highlighted problems regarding breakdowns and sampling as well as target group aspects. Respondents were also asked whether they could give any recommendations regarding international studies based on their experience. Only few respondents made use of this option. The responses were to include HEIs, to ensure international comparability by paying attention to linguistic aspects and cultural references, to strive for a high degree of standardization/ centralisation, and to take notice of specific sampling aspects (e.g. large enough sample size).

3.3 Key findings and conclusions

Existence of studies, regularity and future repetitions

In 26 of the 33 EU and EFTA countries (counting the French and Flemish community of Belgium separately) at least one graduate study has been conducted in the last 10 years. For seven countries no such study could be identified (Belgium/fr., Bulgaria, Cyprus, Croatia, Iceland, Liechtenstein, and Malta). In most countries, fairly recent studies exist and three quarters of the 37 studies covered in the EUROGRADUATE surveys are expected to be repeated in the future. Repetitions of 23 studies follow a regular rhythm, with yearly (9 studies) or biannual studies (10 studies) being the most frequent forms. Overall, 18 countries covered by the EUROGRADUATE surveys have at least one national-level graduate study which is expected to be repeated in the future. No repeated studies were reported for three countries (Latvia, Portugal, and Slovenia); three countries are planning repetitions without a regular rhythm (Czech Republic, Romania, and Slovakia). Two countries have recently developed new studies based on administrative data that are planned for regular monitoring but where not definite information on continuation was yet available (Poland and Spain). No (definite) information was available for Belgium/fl., Greece, and Lithuania.

The number of countries without ongoing studies cannot be determined with absolute certainty due to missing data and as studies may have been overlooked, despite considerable efforts to identify all studies. No evidence for ongoing studies was found for a total of 10 countries (including the seven countries without any national level graduate study). At least 13 EU and EFTA countries do not regularly conduct national-level graduate studies according to the information gathered in the EUROGRADUATE project. Although graduate studies can be said to be common in European countries, this is a noticeable lack of information at the national level.



The vast majority of the studies are commissioned by other organisations than the conducting research institution. Not very surprisingly, for most studies the ministry responsible for HE was the commissioning and funding body of the study.

For a European graduate study, these finding points towards the relevance of ministries as possible funding sources.

Coverage of HEI types, degrees and graduates

Nearly all studies cover research universities. However, about three quarters of all studies have a broader scope and encompass either both universities and professional HEIs or all types of HEIs.

Regarding degree coverage, studies vary considerably. Presumably, this indicates the varying importance of different degree types in the different HE systems, which poses a problem for comparability. Despite this apparently large variation, there is considerable homogeneity in the coverage of ISCED levels 6 and 7. About 70% of all studies cover these two levels. Almost all graduate studies are reported to have information on graduates regardless of their citizenship.

For a European graduate study, this shows that a study covering ISCED levels 6 and 7 would probably be in line with judgements of what is relevant in many countries as well as technically possible. This is supported by the fact that making changes to the target population, e.g. by addressing different ISCED levels, appears to be doable in many countries.

Data source and contacting graduates

Currently, only three studies use purely administrative information for their graduate studies -91% of all studies rely at least partially on survey data. Among the studies employing surveys, online surveying proves to be the most popular method employed by the surveyed researchers, with 71% of studies offering online questionnaires. Half of the studies (48%) (also) offer paper questionnaires per post. Phone and face-to-face interviews are less common. Changing the survey method is judged to be problematic by about a third of respondents (34%), while (17%) would not see large difficulties in doing this.

In contacting graduates, many researchers relied on the help of higher education institutions, with HEIs either contacting graduates directly or by providing researchers with graduates' contact information. For a European graduate study, this highlights the fact that in many countries, graduate data are likely not freely available, but that graduates need to be contacted via the HEIs. Should HEIs be involved in an EGS, it would be worthwhile considering how they could be engaged and motivated to support it.

Numbers of cases, response rates, sampling and breakdowns

Studies varied a lot in their numbers of respondents, response rates, use of samples and most likely also in their sampling strategies (few respondents gave detailed information on the latter). Case numbers are large enough in the great majority of studies for them to be able to provide statistics on graduates at the national level, and about two thirds of studies provide regional and HEI-specific statistics, respectively. The level of individual faculties/departments is covered by slightly less than half of the studies.

The fact that several studies have relatively low response rates points towards possible difficulties a European graduate study would likely also face. Also, it can be assumed that in countries where HEIs are used to receiving data on their graduates, this might be an expectation a European graduate study would also need to fulfil. Collecting institutional-level data in conjunction with an EGS would also provide the opportunity for HEIs to use such data for QA purposes. While this is overall not at the core of an EGS, it could be organised in addition with the national-level data collection.

Survey timing

Studies are very diverse in the timing of their first survey. Five studies do not define their target group in relation to year of graduation, two studies survey cohorts defined in relation to graduation but more than one. The vast majority of studies surveys one defined cohort but the points of time of the first survey differ a lot among studies with no more than five studies having the same point in time. Four studies of this latter group are one-time studies that were part of the REFLEX project or its successor HEGESCO. Despite this heterogeneity, for a group of 10 studies (about a third of all studies) the first survey is within the period of 6-18 months after graduation.

Panel studies are rare among the surveyed studies – only seven studies contact respondent more than once.

Survey timing (both first survey and waves) is one of the more rigid features of existing graduate studies. Minor changes seem to be less of a problem for about 40% of the researchers; major changes are a problem for most (60%). Implementing a panel design is judged to be difficult by almost half of respondents (44%)⁵. These results indicate that finding a common timeframe might be the largest challenge in designing an EGS, especially if an EGS were to build upon existing studies.

Contents and research questions

The core contents and research questions of almost all studies are related to graduates' transition into employment and how it is related to HE. This is a research area all studies contribute to in one way or another. Results also clearly show that survey studies are able to cover a much broader range of topics than studies done with administrative data.

Involvement in international studies

Several of the studies covered by the survey were part of either the REFLEX study or the HEGESCO study, and the participating research organisation additionally have experience with further international graduate studies such as CHEERS, PROFLEX, or the Nordic graduate survey – in some cases in a leading capacity. On the other hand, more than half of the surveyed researchers have no experience in international studies.

Conclusion

The purpose of this chapter was threefold:

1) Gaining insight into the capacities available at the national level for studying HE graduates, both with regard to researcher capacities as well as with regard to the technical possibilities in a country:



⁵ with many respondents indicating the question was not applicable

- Of the EU and EFTA countries, slightly more than half (18) covered by the EUROGRADUATE surveys have at least one national-level graduate study which is expected to be repeated in the future. Several researchers also reported having experience in taking part or leading international (graduate or other) studies. At the same time, in 10 countries, no existing graduate study could be identified.
- For a European graduate study, this means that an EGS would therefore be able to build on existing expertise and at the same time would likely serve a capacity-building function in many countries.

2) Analyse whether examination of national studies might lead to a common model emerging that could provide a starting point for the design of a European graduate study:

- Similar approaches exist among graduate studies conducted in Europe with regard to
 - Coverage of HEIs, degrees and graduates:
 - 88% of studies examined cover BA graduates (ISCED 6), and 70% of studies cover both ISCED degree levels 6 and 7. With regard to HEIs, almost all studies cover research universities, and about three quarters of all studies encompass universities and professional HEIs. Almost every study addresses graduates of all citizenships.
 - Data source and method:
 - 91% of all studies rely at least partially on survey data, and of these 71% employ online questionnaires (in some cases besides other methods).
 - Contacting graduates:
 - The exact methods of contacting graduates and attaining their contact information differed between studies. However, it became apparent that many researchers relied on the help of higher education institutions, with HEIs either contacting graduates directly or by providing researchers with graduates' contact information.
 - Breakdowns:
 - Almost all studies provide statistics on graduates at the national level, and about two thirds of studies provide regional and HEI-specific statistics, respectively.
 - Core contents and research questions:
 - Almost all studies investigate questions related to graduates' transition into employment and how it is related to HE. However, it should be noted that while the overarching question may be the same, the actual questions and methods used to examine it may still differ markedly.
- The largest variety among studies could be identified with regard to the following aspects:
 - Survey timing:
 - No more than five studies have the same exact point in time for the first survey. However, about a third of all studies gathers data on graduates for the



first time their respondents for the first time within a period of 6-18 months after graduation.

The panel studies that were found also followed different patterns of timing.

3) Gather information on which characteristics might prove difficult to change in order to adapt to a potential European graduate study:

- It emerged that the aspects where the most variety could be found are also the ones which pose the greatest difficulty in changing them, according to the researchers.
 - The largest difficulties are seen with regard to changing the timing, addressing different cohorts or applying a panel design. More than 40% of respondents judge this to be difficult, and no more than 28% deem this to be unproblematic.
 - Minor changes to the timing would be slightly less of a problem 40% see difficulties, while 40% indicate that this could be done.
- The greatest possibilities for harmonisation present themselves with regard to the target population, an aspect where relatively large overlap already exists.
 - Changing the target population, e.g. by adding ISCED levels or types of HEIs is the least problematic aspect of change. Only about a fifth of all respondents would see larger problems here, and almost half are optimistic that this would not incur problems.



4 Interest in a European graduate study and requirements

4.1 Objective of the chapter

In order to maximise the impact and usability of a European graduate study (EGS) and also to ensure its sustainability the Eurograduate feasibility study systematically explored the interests in and the requirements of a European graduate study according to national and international stakeholders, potential users and beneficiaries of a European graduate study. The results will be shown in the following chapter. The first part will assess the interest of the stakeholders in internationally comparable data, the second part will focus on the identification of the type of information the stakeholders need to be able to retrieve from a European graduate study and under which conditions they would be willing and able to participate.

4.2 Importance of/ interest in participating in European graduate study

The national ministries responsible for higher education and national rectors conferences were asked about the importance they attach to a participation of the country they represent in a European graduate study. One objective behind this question was to get a first impression on how many countries would possibly be willing to cooperate if an EGS was conducted. What is more, an EGS could most probably only be sustainably established if there are research partners at national level which take the responsibility to organise and facilitate such a project at the national level. Without a critical mass of countries actively participating an EGS would not be possible at all. The information provided by the various stakeholders in the surveys suggests, however, that a European graduate study is considered to be of (high) importance for a majority of countries (Figure 4-1).

When asked how important it would be for the ministries responsible for higher education that their country is covered in a European graduate study, around one fourth of national and regional ministries indicate the participation of their country or region in an EGS as very important (an-swers were given on a scale from 1 "not important at all" to 5 "very important"), a further 54 % said it would be important for them. Only one national ministry states that coverage in an EGS would be of no importance for them, three do not attach particular importance to an EGS, as all of these countries indicate to already have quite extensive ways of tracking their graduates and one national ministry sees their interest heavily dependent upon the design of the study.

According to the statements of the national rectors' conferences (NRCs), about two thirds deem it as important that their country is covered in a potential European graduate study, over 40 % even assess it as very important. However, 17 % or two NRCs state that coverage in an EGS would be not important for them. Thus, the average importance attached to coverage in an EGS is lower compared to the ministries, although a much higher percentage of NRCs attaches high importance to an EGS (42 % vs. 25 %). The NRCs which attach no importance to their country being covered in an EGS are representing countries with extensive national graduate monitoring systems already existing (see also chapter 3), which might be the reason for their scepticism about value added by an EGS. Besides assessing the participation in an EGS from the view of their organisation, NRCs were also asked to evaluate how important participation would be for the individual higher education institutions. Almost 50 % of the NRCs, indicate that their country's

coverage in a European graduate study is of (high) importance for the higher education institutions. In nearly all cases NRCs gave identical evaluations, be it from their own point of view or from the point of view of the HEIs. They only exception were two NRCs who indicated that an EGS might be of lower importance for the HEIs as compared to their own organisation.

Support for an EGS is considerably high among the surveyed research groups: About 88 % of the researchers expressed their willingness to participate in a potential EGS. Of the 13 %, i.e. four research groups, which are not particularly interested, one group states to be not interested at all. Three research groups indicate three on a five degree scale from 1 "not interested at all" to 5"very much interested".



Figure 4-1: Importance of/interest in participation in an EGS

Data source: EUROGRADUATE feasibility study. n=28 (regional and national ministries), n=12 (NRCs, first question), n=11 (NRCs, second question); researchers n=32;

Notes: Ministries, NRCs: assessment from 1 "not important at all" to 5 "very important"; researchers: assessment from 1 "not at all" to 5 "very much";

The national and regional ministries where asked in which ways they would be willing to support a possible European graduate study (Figure 4-2): Overall, almost half of the ministries (i.e. 13 ministries) indicate that they are willing to generally endorse an EGS. Many of these would also be willing to provide other forms of support. 29 % (i.e. eight ministries) indicate that they could provide financial support at the national level, 29 % state that they could provide organizational and logistical support, and 26 % are willing to take an advisory role in a potential EGS, respectively. One national ministry responsible for higher education states not to be willing or able to get involved in an EGS at all. All in all these seems to be a moderate level of support only. Still, the



actual level of support may be higher, as ministries may have been afraid of giving commitments in a questionnaire and for a study with yet unclear characteristics. Thus, ten national ministries indicate not to be able to say anything about potential support (yet). Some ministries pointed out that that there are certain conditions they require to participate in an EGS. These are concerned with the design of an EGS: Amongst other things national ministries claimed to have the right to co-determinate the project implementation at the national level. It was further mentioned that it should be ensured that all national specifics are properly taken into account, and that all stakeholders (including statisticians, HEIs) are involved in the process. In one case it was suggested that an EGS should build on existing national data, so that no further data collection would be necessary. The scope and objectives of an EGS should be clearly defined and communicated beforehand. An issue was also the provision of financial support: As some countries declare not to have the means to contribute any financial support, the hope for financial assistance by the European Union was expressed.

Figure 4-2: Involvement of ministries in an EGS

Involvement of (national and regional) ministries in an EGS

Do you, generally speaking, see the possibility that your ministry would become involved in a European graduate study? (in %)



Data source: EUROGRADUATE feasibility study. n=28 (regional and national ministries) Notes: -

4.3 Requirements, design, and contents of a European graduate study

The stakeholders were requested to give recommendations on the design of a European graduate study. This includes the coverage (Type of HEIs, degrees, citizenship) as well as time of observation and type of observation (cross sectional vs. longitudinal observation). Respondents were



asked to take into account the two possibly contradicting objectives of international comparability as well as proper representation of their national system.

4.3.1 Coverage of graduates by type of higher education institution, citizenship, ISCED level

Regarding the coverage according to the type of higher education institutions, there was unanimous consent among the stakeholders that (research) universities should be covered in an EGS (Figure 4-3). A clear majority of the stakeholders (82 % of 28 ministries, 75 % of 12 NRCs, 90 % of 29 research groups) also recommend including professional higher education institutions in a European graduate study.

Around a third of the ministries and NRCs and a fourth of the researchers used the possibility to specify other types of higher education institutions which should be covered: Usually, the stakeholders refer in this context to specific higher education institutions in their countries which are not called "university". They specify, amongst others, university colleges, colleges of various kinds such as music and art colleges, institutes for teacher education or technology and polytechnics. Some stakeholders (at least 8 do so explicitly) also point out that all private or independent higher education institutions in general should be included in a European graduate study.

As mentioned above, the opinions on whether to include professional HEIs in the study are less homogenous than on the inclusion of research universities. In detail, five ministries responsible for higher education do not regard the coverage of professional higher education institutions (such as e.g., universities of applied sciences, polytechnics, colleges) in a potential European graduate study as necessary. In some of these countries the assessment regarding the inclusion of the professional higher education institution also differs among the various stakeholder groups.

As far as the coverage of graduates by citizenships (national vs. foreign) is concerned, a broad majority of all stakeholders (ministries: 86 %, national rectors' conferences: 83 %, researchers: 92 %) recommends the inclusion of all graduates regardless of their citizenship in an EGS. One ministry, one research group and two national rectors' conferences share the opinion that only national graduates and foreign citizens who graduated in the country of study should be covered. Three ministries and one research group recommend including national graduates only.

When asked to specify the target population in terms of ISCED 2011 categories, i.e. which levels and orientations of higher education should be covered by a European graduate study, the stakeholders indicate almost unanimously that ISCED levels 6 (Bachelor or equivalent) and 7 (Master or equivalent) should be covered by an EGS (Figure 4-4).

On whether more than these ISCED levels should be covered, there were no such unanimous opinions: A majority, namely 82 % of ministries, 91 % of NRCs and 70 % of researchers want to include ISCED 8 (Doctoral or equivalent) level as well. But less than 50 % of each stakeholder group wants a European graduate study to include programs on the level of ISCED 5 (short-cycle higher education), too. At last, only one ministry and one research group indicate that education-al attainments below the level of ISCED 5 should be covered by a European graduate study. Like the stakeholders at national level, the stakeholders at international level consider ISCED level 6 (Bachelor or equivalent) and level 7 (Master or equivalent) as relevant to be covered in a European



an graduate study. Bachelor and Master graduates are regarded as most relevant groups to be covered in an EGS. Less homogenous are the recommendations of the international stakeholders on the inclusion of PhD graduates (ISCED level 8) and short cycles (ISCED level 5) in an EGS. While some argue HE graduates of all ISCED levels should be covered (including short cycles and PhD students), others state that students at PhD level should not be seen as students but as researchers who already entered the labour market. Another recommendation was also to narrow the focus on levels and degrees which exist in all countries participating in a future EGS.

Figure 4-3: Institutional coverage of an EGS



Data source: EUROGRADUATE feasibility study. n=28 (Regional and national ministries), n= 12 (NRCs), n=29 (researchers) Notes: -

But this does not mean that a majority wants only ISCED 6 and 7 to be included in a European graduate study. In fact, only very few stakeholders indicate such a preference (Figure 4-5). When looking at combinations of ISCED classifications which should be covered in a potential European graduate study, the most "popular" selection among the stakeholders are ISCED 6, 7 and 8 as well as all ISCED levels from 5 till 8. 46 % of the ministries, 55 % of the NRCs and 38 % of the researchers would recommend the first combination; around a third would prefer the second combination. Other combinations which exclude ISCED 8 represent the opinion of only a small percentage of stakeholders.



Figure 4-4: Coverage of an EGS – Degrees

Degree coverage of an EGS

Data source: EUROGRADUATE feasibility study. *n*=28 (regional and national ministries), *n*= 11 (NRCs), *n*=29 (researchers) Notes: -

Figure 4-5: Coverage of an EGS - Degrees

					Ministries		NRCs		Researchers	
< ISCED 5	ISCED 5	ISCED 6	ISCED 7	ISCED 8	n	%	n	%	n	%
					0	0%	0	0%	1	3%
					9	32%	4	36%	8	28%
					13	46%	6	55%	11	38%
					2	7%	1	9%	4	14%
					3	11%	0	0%	3	10%
					0	0%	0	0%	1	3%
					0	0%	0	0%	1	3%

(researchers) Notes: -

The stakeholders had also the possibility to specify which orientations of a particular ISCED level they would like to include in a European graduate study. 81 % of the NRCs, 87 % of the ministries



and 85 % of the researchers used this opportunity. A clear majority of these national ministries and researchers prefer the inclusion of all orientations of a particular ISCED level (if it is recommended to cover the particular ISCED level at all). NRCs, however, tend to have a stronger preference to include academic tracks only which could be due to the fact that professional tracks might not exist in the respective countries.

4.3.2 Recommended design and time of observation

Overall, a relative majority of the national stakeholders recommended using a panel design. However, there is a caveat to this finding: many national stakeholders, around 40 % of ministries and NRCs and 17 % of the researchers indicated to have no clear opinion on this issue.

As the researchers are the group where the smallest percentage indicates to not be sure about this issue, and because they already worked in one or the other graduate study, it could be assumed that they know better about technical implementations of surveys than the other stakeholders. 84 % of the researchers who indicate to have a clear opinion recommend using a panel design. Of the ministries and NRCs, among those who declare themselves pro or contra a panel design, a clear majority of more than two-thirds, respectively, recommends using a panel design as well. Thus, although many stakeholders have no clear preference on this issue, the majority of those who indicated an opinion are favouring a panel design over the alternative: a cross sectional study. As the national stakeholders, most of the stakeholders at international level see a panel design as most appropriate for an EGS as well. This is in line with the preferred topics and questions voiced by the international stakeholders of which some in fact require a longitudinal observation perspective. In the view of some stakeholders, a cross-sectional observation would also be a satisfying (but nevertheless second best) option, taking into account panel mortality and the necessarily larger sample sizes of panel studies.

The national stakeholders who indicated a preference for a panel design were further asked to give certain specifications on how such a panel study should be designed for an EGS. The stakeholders were asked to define the point in time of the first observation and whether this should take place before, around or after the time of graduation or if this should not be defined in relation to the graduation date: most stakeholders deem it sufficient to observe the graduates for the first time after their graduation in HE. Merely around 30 % of the ministries and researchers, respectively, recommend observing the graduates for the first time before or at the time of graduation. Among the four national rectors' conferences who would recommend a panel design, all indicate a first observation of the graduate should take place after graduation.

The recommendations of the stakeholders on the exact time after graduation when the first survey should take place are depicted in Figure 4-6 and Table 4-1. The researchers show a large variety of opinions on when the first observation (after graduation) should be conducted, with an average of 22 months after graduation. The national ministries and NRCs on the other hand, indicate quite homogenously that the time of first observation should be within the first 12 months after graduation, thus earlier than the researchers suggest. The views at international level regarding the recommendation on when to observe higher education graduates are – like at national level – heterogeneous and most of the stakeholders at this level see this question as very sensitive and difficult to answer since this decision depends on various factors like research questions, quality of address material etc. When looking at career development, the recom-

mended time frame for the first observation ranges from one or two years after graduation to two or three years and up to five years.

Figure 4-6: Recommendations on time of first and last survey

Recommendations on time of first and last survey

At what point in time should respondents be surveyed for the first time? (in month) At what point in time after graduation from HE should respondents be surveyed for the last time? (in years)

At what point in time after graduation from HE should respondents be surveyed? (in month)



Data source: EUROGRADUATE feasibility study. **Notes:** The length of the lines signifies the respective standard deviation.

Researchers, ministries, and NRCs also differ in their view on the preferred last time of observation for a panel study. Taking all the answers into account, the ministries and NRCs recommend the last round of observation to take place around five to seven years after graduation. There is, however, quite some variation in the suggested timing: Some deem it sufficient to survey the graduates until the second year after graduation, whereas others want to follow the respondents until the 10th year after their graduation from higher education. The researchers, on the other hand, indicate that the last observation should be on average 11 years after graduation, thus they want to follow the respondents for a much longer time after their graduation from higher education. But also among researchers, there is a large variety of opinions. It seems like the researchers want to either observe the respondents for a much longer time horizon or want to look at later stages in life as compared to the other stakeholders.

At the international stakeholder level, the recommended time frame for the last observation ranges from five years up to ten years after graduation. Those favouring shorter time spans con-


sider methodical difficulties, the limited correlation between higher education and e.g. labour market performance as arguments against a longer observation period.

Those who did not recommend using a panel design were also asked to specify their preferred time of survey in relation to graduation. The answers show a similar pattern as above: The recommendations of the ministries and the NRCs are on average quite similar, suggesting an observation of the graduates on average 11 to 17 months after graduation. However, within both groups there is a large variation, with the minimum lying at 6 and the maximum at 60 months after graduation. The researchers, on the other hand, indicate very different preferences on the time of survey of an EGS. On average, they want the respondents to be surveyed 28 months, i.e. more than two years after their graduation. But again, there is a large heterogeneity of opinions within the group of researchers alone, which is shown by the relatively large standard deviation.

Table 4-1: Timing of first survey

Timing of first observation (if a panel design is suggested)

Ministries, NRCs, researchers (in %)

	Ministries		NRCs		Researchers	
	n	%	n	%	n	%
before graduation (total)	5	27 %	0	0 %	4	19 %
~4-6 months before graduation	1	20 %	0	0 %	2	50 %
~9 months before graduation	1	20 %	0	0 %	1	25 %
~12 months before graduation	2	40 %	0	0 %	1	25 %
~36 months before graduation	1	20 %	0	0 %	0	0 %
around the time of graduation (total)	0	0 %	0	0 %	2	10 %
after graduation (total)	8	73 %	5	100	15	71 %
~6 months after graduation	3	38 %	1	20 %	2	15 %
~12 months after graduation	4	50 %	4	80 %	6	46 %
~18 months after graduation	1	13 %	0	0 %	1	8 %
~2-4 years after graduation	0	0 %	0	0 %	3	23 %
~5 years after graduation	0	0 %	0	0 %	1	8 %
not defined in relation to graduation	0	0 %	0	0 %	0	0 %

Data source: EUROGRADUATE feasibility stud Notes:-

4.3.3 Recommended survey method

Regarding the survey method, a vast majority of researchers (87%) would recommend an online questionnaire. Alternatively, only a third respectively a quarter of the researcher would see telephone surveys or postal surveys as an adequate way to collect data. Only few, namely 7% or two researchers or research teams recommended face-to-face interviews or indicated that they had no preferred survey methods. 17% however suggested other ways of data collection, which, as the text answers indicated, mostly meant that the respondents used a mix of methods. Exclusively online survey was suggested by 37% of the researchers, 17% suggested that the survey could be done online as well as postal or online as well as via telephone.

Table 4-2: Recommended survey method

Recommended survey method					
Researchers (n=30)					
	п	%			
Online survey	26	87%			
Telephone survey	9	30%			
Postal survey	7	23%			
Other	5	17%			
Face-to-face interview	2	7%			
No preference	2	7%			
Data source: EUROGRADUATE feasibility study.					
Notes:-					

4.3.4 Geographical scope of a European graduate study

Regarding the question which geographical scope a European graduate study should have, the national stakeholder almost unanimously agreed that all or most EU member states should be included (Figure 4-7). Besides covering the EU, the suggestion to cover all or most EHEA countries⁶ gained most approval, with about two thirds of ministries and NRCs and half of the researchers agreeing on it (answer categories "somewhat agree" and "strongly agree"). Ministries should similar support for including "all or most EHEA countries" as for including "at least some EHEA countries". NRCs somewhat more strongly supported covering most of the EHEA, while researchers slightly preferred covering at least some EHEA countries. The suggestion to cover non-European countries was the least popular among all stakeholders even though it was moderately supported as well: About half of the ministries and researchers expressed their wish to include non-EHEA economies, and about one third of the NRCs.

The international stakeholders agree with the recommendation of the national stakeholders that in the long run, an EGS should cover at least all EU (and EFTA) countries. Depending on the geographical scope of the respective member organisations (i.e. if their members organisations represent EHEA-countries) international stakeholders would, like most of the national ministries, also include EHEA countries in an EGS. Some international stakeholders would see covering large non-European economies like the USA as specifically interesting for means of comparing them with EU countries.



⁶ The European Higher Education Area includes all signatories of the Bologna declaration (47 countries as of October 2014)



Figure 4-7: Geographical coverage of an EGS

Geographical coverage of a EGS Which geographical scope should a European graduate study have? (mean)

Data source: EUROGRADUATE feasibility study. **Notes:** Assessment from 1 "strongly disagree" to 5"strongly agree".

4.3.5 Content of a European graduate study

Existing international data on HE graduates (e.g. provided by Eurostat or the OECD) are seen as neither exhaustive nor comprehensive enough for the needs of the international stakeholders interviewed in the course of this project. Also data quality of existing data, the definitions and the operationalization of certain indicators respectively topics were sometimes criticized as unclear or of limited usefulness. This chapter takes a closer look at the preferred topics and characteristics of a European graduate study in the view of the stakeholders at national and international level.

4.3.6 Topics

Researchers, ministries and national rectors' conferences were asked which topics they classify as relevant to be covered in a potential European graduate study.



The topics which on average were rated most relevant for the ministries are the graduates' transition into the labour market and their employability (Figure 4-8). Not a single ministry saw these issues as being of low relevance. Around three quarters of the ministries who provided a filled in questionnaire felt the transition to the labour market as of highest relevance to them. Only three ministries attribute medium relevance to this topic. Employability was classified as of medium relevance by one ministry. Competences and skills acquired during HE and skills mismatch is the subject area which received the on average second highest rating from the national ministries regarding its relevance for an EGS.

Other topics, such as the quality of HE, the returns on education, equity regarding employment and careers of different social groups, the international mobility of graduates and the skills acquired after graduation were also classified as highly relevant, but on average weren't considered as important as the aforementioned topics. Mobility during studies and especially the comparison of individual HEIs are the issues which were considered to be of lowest relevance compared to other suggested items.

Figure 4-8 Importance of topics in an EGS

Importance of topics in a EGS

From the point of view of your ministry, which topics or political issues should a European graduate study contribute to with information and research? (in %)



Data source: EUROGRADUATE feasibility study.

Notes: Assessment from 1 "lowest relevance" to 5 "highest relevance". Topics ordered from highest to lowest mean



Like the ministries, the NRCs assess the topics "transition into the labour market" and "employability of graduates" as the most relevant issues to be covered by an EGS (Figure 4-9). And again in accordance with the ministries' indications, the comparison of individual HEI is deemed of lowest relative relevance on average. The relevance NRCs attach to other topics, though, differs from the ministries' rating: Most topics are considered to be of lower relevance to the NRCs than to the ministries, although most of the expected topics are still rated as highly relevant on average. The biggest difference is however, the NRCs' low evaluation regarding the relevance of skills-mismatch compared to the ministries' (a mean value of 3.5 as compared to a mean of 4.3 by the ministries).

Figure 4-9: Importance of topics in an EGS

Importance of topics in a EGS

From the point of view of your NRC, which topics or political issues should a European graduate study contribute to with information and research? (in %)



Data source: EUROGRADUATE feasibility study.

Notes: Assessment from 1 "lowest relevance" to 5 "highest relevance". Topics ordered from highest to lowest mean.

The researchers' rating on the relevance of topics (Figure 4-10) is similar to the ministries' and NRCs' assessments: they also see the transition into the labour market and issue of employability as the most important topics. Their answers also imply that the comparison of individual HEIs is of low relevance for an EGS. Also the topic of mobility (during studies as well as after graduation) seems to be less important for researchers.

Like the ministries, the researchers assess the skills acquired during studies, the quality of HE and skills mismatch as highly relevant in general. Further on, the researchers rate the topic of equity regarding career and employment of different social groups more often as very relevant than ministries and NRCs.

Figure 4-10: Importance of topics in an EGS

Importance of topics in a EGS

From your point of view as a researcher, which topics or political issues should a European graduate study contribute to? (in %)



Data source: EUROGRADUATE feasibility study.

Notes: Assessment from 1 "lowest relevance" to 5 "highest relevance". Topics ordered from highest to lowest mean.

Comparing the assessment of topics by the different stakeholders, it becomes apparent that the transition into the labour market and the issue of employability are the most important topics, with an average relevance of 4.7/ 4.4 for the researchers, 4.6/ 4.5 for the ministries and 4.4/4.0 for the NRCs. The comparison of individual HEIs, on the other hand, is of lowest relevance for all the stakeholders. Also, the issue of international mobility during studies seems of rather low relevance, maybe also because other data sources (focusing primarily on students) offer more suitable data. Skills mismatch and competences acquired during studies are still mostly considered as highly relevant. NRCs rate the issues of skills mismatch less, the topic of quality and international mobility of graduates however on average higher as the other stakeholders. The issue of equity regarding career and employment was ranked rather low by the ministries in opposite to researchers and NRCs. International mobility of graduates is still ranked an important but not exceptionally important topic.



In accordance with the assessment of the national stakeholders and the stakeholders at the international level, the transition of HE graduates and the employability of graduates can be seen as common core topics of a potential European graduate study. "Skills mismatch" as well as the "skills acquired during higher education" are also seen as relevant topics to be covered in a European graduate study. These topics gained of importance in the course of the expansion of higher education over the past years, as larger shares of young people obtain a higher education degree. In the course of this development pathways and careers of higher education graduates became in the point of view of the international stakeholders less stringent, potential labour market segments less obvious. Higher numbers of students and graduates also led (or should lead) to a change in teaching and pedagogical structure putting more emphasis on the transmission of skills and competences. Quality of higher education is not only seen as currently one of the main political issues in European higher education by the international stakeholders, the definition of quality varies also strongly among them. More business-oriented international stakeholders see the employability, transition into the labour market and the skills mismatch as the most important yardstick for measuring the quality of higher education. Others see the skills and competences acquired during studies, research output and innovation as more relevant in this context and see a danger in reducing the quality dimension to employability and skills mismatch, which could lead to a (further) commodification of higher education (offered study programs, curricula, funding etc.)

Mobility of graduates (brain drain, brain gain, or brain circulation) was rated a very relevant topic for at least some of the international stakeholders, slightly in contrast to the assessment of the national level stakeholders, which could be explained by its high place value on the international political agenda. Social background (and social dimension) which is seen predominately as relevant for NRCs and researchers was also mentioned by some international stakeholders but is (like student mobility and to some extent quality of HE) more relevant as explanatory factor for the graduates' performance/ transition on the labour market, career choices and steps etc. . It was also noted that in addition to more "traditional" indicators related to HE outcomes, such as returns on education, *social* outcomes of higher education, e.g. health, interpersonal trust etc., would be interesting to investigate in an EGS.

International stakeholders have very much emphasised that results of a graduate study would need to be related to the institutional context: Teaching structures, funding, degree of HEI-business cooperation, but also field, level and orientation of studies are important indicators which are needed to put the results of an EGS into perspective. Clear definitions of concepts (e.g. what is a graduate, what could be seen as employment) and considering the institutional and also national (e.g. economic and labour market structures, recent changes) context are seen as minimum requirements for the usefulness of an EGS.

DZHW.

Table 4-3: Relative relevance of topics by stakeholder groups

Relative relevance of topics by stakeholder groups *Ministries, NRCs, researchers (in %)*

	Ministries	NRCs	Researchers
Transition into labour market	1	1	1
Employability	2	2	2
Skills mismatch	3	8	3
Competencies during studies	4	4	5
Quality of HE	5	3	5
Returns on education	6	7	7
Mobility of graduates	6	4	9
Equity	8	4	4
Competencies after graduation	8	10	7
Mobility during studies	10	9	10
Comparison of individual HEI	11	11	11

Data source: EUROGRADUATE feasibility study.

Notes: Topics ordered from highest to lowest mean for every stakeholder, where 1 means "highest relative relevance" and 11 "lowest relative relevance".

This section presents stakeholders' assessments of characteristics a European graduate study could have. To look at the assessments of the ministries first (Figure 4-11): The two characteristics most important to the ministries are that (1) an EGS would be done regularly and not only once, and (2) that it "provides insights which are directly relevant for developing policy measures and steering HE". About 90 % have expressed their support for these items. Again about 90 % (strongly) agreed that it would very much increase the value of an EGS if it would cover mid- and long-term developments of graduates. In line with that just over 30 % of the ministries agree that a short-term observation would be sufficient for an EGS – which is the item least agreed on. Ministries also largely agree that an EGS would need to provide in-depth analysis. The majority also agrees that providing aggregate level indicators would be the main purpose of an EGS though this statement is more controversial. The provision of micro-level data set or the possibility of comparing individual regions or HEIs received only moderate support.





Figure 4-11: Characteristics of an EGS (ministry)

Characteristics of an EGS

From the point of view of your ministry, to what extent do you agree or disagree with these statements? (in %)

Data source: EUROGRADUATE feasibility study.

Notes: Assessment from 1 "strongly disagree" to 5 "strongly agree". Topics ordered from highest to lowest mean.

Like the ministries, the NRCs indicate that the most important characteristic of an EGS would be to conduct it on a regular basis, and not as a one-time-project (Figure 4-12). The NRCs further state that it is the second most important thing to look at graduates' long-term developments. Merely 40 %, on the other hand, state that it is sufficient to analyse the labour market entry only. Aggregate level indicators are seen and providing in-depth analyses are seen as equally important tasks for an EGS. Provision of micro-level data and policy-relevant results are seen as moderately important features by the NRCs. The comparison of individual regions and higher education institutions are the least agreed on characteristics. Specifically the comparison of HEIs is only agreed on by 25 % and an equally large proportion of the NRCs see this not as task of an EGS.

Figure 4-12: Characteristics of an EGS (NRC)

Characteristics of an EGS

From the point of view of your NRC, to what extent do you agree or disagree with these statements? (in %)



Data source: EUROGRADUATE feasibility study.

Notes: Assessment from 1 "strongly disagree" to 5 "strongly agree". Topics ordered from highest to lowest mean.

From the researchers' point of view, the most valuable quality of an EGS would be to design it in such a way as to enable the analysis of graduates' long-term-developments (Figure 4-13). Not one researcher deems this aspect as not important. In line with this almost 50 % clearly disagree with the statement that it is sufficient to look at short-term developments only. As shown above researchers also recommended surveying the graduates over a relatively long time after graduation (Figure 4-6).

In line with the ministries and NRCs, it is indicated as important that an EGS is done on a regular basis, and not as a one-time project. Almost 80 % of researchers agree on this. Further agreeing with the ministries, over 80 % of the researchers stated their approval to the idea that a prime objective of an EGS would be to provide results directly relevant to HE policies and steering of HE. Compared to the other stakeholders, the researchers saw the provision of micro-level data more often as a quality raising the usefulness of an EGS.

In-depth analysis and macro-level indicators are assessed as equally important features. The possibility of comparing individual regions received moderate support. In contrast to that, researchers tend to disagree with the comparison of individual HEIs in the framework of an EGS.





Figure 4-13: Characteristics of an EGS (researchers)

Characteristics of an EGS

From the point of view of as a researcher, to what extent do you agree or disagree with these statements? (in %)

Data source: EUROGRADUATE feasibility study.

Notes: Assessment from 1 "strongly disagree" to 5 "strongly agree". Topics ordered from highest to lowest mean.

Taking the assessments of ministries, NRCs, and researchers together gives a quite clear picture of the most and least preferred characteristics of an EGS (Table 4-3). All three stakeholder groups agree that an EGS should be done on a regular basis and not as one-time project. In accordance with this international stakeholders strongly emphasised that an EGS should be built to be a lasting project. At the same time, international stakeholders preferred different time spans between subsequent rounds of an EGS. Some stakeholders considered every four to five as sufficient. Others recommended two to three years as the appropriate rhythm.

We find further consensus among all stakeholders that an EGS should cover the mid- and long-term and that the focussing on labour-market entrance only is seen as insufficient. Even tough stakeholders may have different time spans in mind when talking about mid- and long-term developments (chapter 4.3.2) this is a remarkably consistent picture which gains additional support by the international stakeholders. International stakeholders saw the mid- to long-term perspective as more interesting than an observation of short-term developments. An EGS should look at the pathways and careers of HE graduates including at least "second destinations", since the first job after graduation especially for certain groups of HE graduates (e.g. humanities) is not as conclusive and might signify a platform for further career steps. Recalling that stakeholders saw the transition to the labour market as the most important topics of an EGS suggests, that they are in fact interested in both, the transition paths directly after graduation *and* the mid- and long-term career prospects of graduates. Although a mid- to long-term perspective is considered to increase the value of a potential EGS, concerns about the impact of higher education (institutions) were raised.

From the results of the EUROGRADUATE surveys one cannot clearly detect whether an EGS should rather focus on in-depth analysis than on monitoring by aggregate level indicators. Both tasks gained similarly high levels of support among all national-level stakeholder groups. In fact they are not mutually exclusive and stakeholders may see both tasks as important. Generally, international stakeholders would see both, aggregate level indicators and additionally in-depth analysis as helpful. However, some international stakeholders have been very clear in emphasising that additional macro-level indicators would be nice to have, but that it is in-depth analysis what is really needed. Other international stakeholders have highlighted the necessity of embedding results and indicators in the respective institutional and national context and have voiced concerns over the comparability of results keeping in mind the vast differences between educational systems.

Furthermore, national and international stakeholders seem to agree by and large on the qualities and EGS should *not* have: The comparison of regions and even more so of individual HEIs is not seen as a primary task of an EGS, even though it was noted by interviewees that regional as well as institutional effects may be quite pronounced and thus should at least be taken into account. Stakeholder organisations and scientific experts largely agreed that the comparison of labour market outcomes of graduates at the level of individual HEIs bears the risk of false interpretation.



Table 4-4: Relative assessment of characteristics

Relative assessment of characteristics

To what extent do you agree or disagree with these statements?

	Ministries	NRCs	Researchers
For the usefulness of a European graduate study it would be of key importance that it is done on a regular basis, not as a one-time project.	1	1	2
A European graduate study must provide results and in- sights directly relevant to developing policy measures and steering HE.	2	6	3
Gathering information on the mid- and long-term develop- ments of graduates would very much increase the value of a potential European graduate study.	3	2	1
A European graduate study must go beyond mere descrip- tion by providing in-depth analyses	4	3	5
The main purpose of a European graduate study should be to provide aggregate-level indicators (e.g. for comparing countries).	5	3	5
It would add a lot to the usefulness of a European graduate study if it provided micro (individual) level data to interested researchers.	6	5	4
The design of a European graduate study should allow the comparison of individual regions.	7	8	7
The design of a European graduate study should allow the comparison of individual higher education institutions.	8	9	8
It would be sufficient if a European graduate study fo- cussed on short-term developments after graduation, e.g. labour market entrance.	9	7	9

Data source: EUROGRADUATE feasibility study.

Notes: Characteristics ordered from highest to lowest average agreement by every stakeholder, where 1 means "highest relative level of agreement" and 9 "lowest relative level of agreement".

4.4 Key findings

One of the purposes of this chapter was to assess the level of interest international and national stakeholders attach to a European graduate study. Taking into account the results presented in chapter 4.2, stakeholders at national and international level see a European graduate study as a very relevant project. More than two thirds of each stakeholder group show high levels of interest in comparative data on higher education graduates in their countries and most of them would support the project in some way.

4.4.1 Common views of the stakeholders on a potential European graduate study

Recommendations of the stakeholders on the **design** of a European graduate study cover the following six dimensions: Institutional coverage, degree coverage, coverage regarding the graduates' citizenships, study design, time of observation and geographical scope of a European graduate study.

Institutional coverage:

The stakeholders unanimously agree to the coverage of graduates from (research) universities in an EGS. All stakeholders at international level and most (but not all) at national level would also recommend the inclusion of professional higher education institutions.

Degree coverage:

According to the stakeholders, graduates from ISCED level 6 (Bachelor or equivalent) and ISCED level 7 (Master or equivalent) form the core group of graduates to be covered in a potential EGS. When looking at the ISCED orientations, a clear majority of stakeholders recommends the inclusion of all orientations in an EGS.

Coverage regarding the graduates' citizenships:

Most of the national stakeholders would include all graduates regardless of their citizenship in an EGS.

Time of observation:

The time of (first) observation according to the stakeholders should be after graduation. In case of a panel design, a majority of national stakeholders would recommend the first observation approximately 12 month after graduation. Some of the stakeholders at international level would agree to this timeframe, others would recommend a greater time span after graduation. The point in time of the last observation should be between 5 and 11 years after graduation according to the different national and international stakeholders.

Geographical scope of a European graduate study:

Most national and international stakeholders would like to see an EGS carried out at least among all EU (+EFTA) countries.

Regarding the **content** of a European graduate study stakeholders were asked about their preferred topics to be covered as well as their recommendations on several possible characteristics of an EGS.

Topics to be covered in a European graduate study

From a national and international point of view the topics "transition to the labour market" and "employability" are seen as highly relevant to be covered in an EGS. "Competences acquired during studies", "quality of higher education" and "skills mismatch" are also important topics for an EGS. International stakeholders stress the importance of definitions of these concepts as well as the contextual embedding of the results. Comparisons of individual HEIs is of relatively low relevance for the national stakeholders. Also international stakeholders see this aspect as a very sensitive topic.

Characteristics of an European graduate study

National and international stakeholders voice their interest in a sustainable, regular European graduate study, not in an EGS as a one-time project. A mid- and long-term perspective on the development of graduates can be seen as more important than the observation of short-term developments. Descriptive aggregate-level analysis should be complemented by in-depth analysis. In both cases contextual embedding and clear definitions are crucial for the usefulness of an EGS according to international stakeholders.



4.4.2 Diverging views of the stakeholders on a potential European graduate study

Degree coverage:

While the majority of the stakeholders agree that Bachelor and Master graduates should be included in a potential EGS, the opinions on the integration of ISCED level 5 and 8 graduates differ among the stakeholders. At national level, less than half of the stakeholders recommend the consideration of ISCED level 5 (short cycle) graduates. For ISCED level 8 holders (PhD or equivalent), a majority of the national stakeholders (especially researchers) would support the inclusion in a European graduate study, however concerns were raised if PhD graduates have not already made their labour market entrance with their PhD studies.

Study design:

A relatively high share of national stakeholders could not indicate if they would recommend a panel design for a European graduate study. However, most of the national stakeholders, who could make a statement on the design, would recommend a panel design. Stakeholders at international level would also prefer this design over a cross sectional study.

Geographical scope of an EGS:

Although the core geographical scope of an EGS covers EU (+EFTA) countries, a relatively high share of national and most international stakeholders would also include (some) EHEA

5 Setting up and conducting international survey studies – the experience of previous and existing projects

5.1 Objective of the chapter

In order to learn from the experiences of other international large-scale comparative studies, the EUROGRADUATE feasibility study interviewed several project leaders and administrators with considerable experience in managing and implementing international comparative studies. Eleven project leaders representing seven different studies (EUROSTUDENT, REFLEX, and U-Multirank, PIAAC, PISA, TIMSS, and ESS) were interviewed to learn about their experiences of initiating and managing international comparative studies.

The focus of the interviews was on how these projects were developed and how they are organised. The objective of the interviews was to learn about the experiences of these large scale international comparative surveys and to apply them towards setting up a European graduate survey. This chapter presents the key findings of the expert interviews and discusses how these studies were initiated, key stakeholders involved in initiating the studies, participating countries, organisation of the project, funding and project partners as well as key challenges and recommendations. This chapter has been organised into two sections. The first section provides a brief overview of how the projects were initiated and developed. This section lays the foundation for section two which discusses the organisational and managerial aspects of the projects.

5.2 How other international survey studies were initiated

5.2.1 Initiating the study and steps in developing the study

The manner in which other international studies were initiated and developed varies from project to project, but can be generally grouped into two broad categories – newly developed projects (i.e. U-Multirank, REFLEX, ESS, and EUROSTUDENT) and projects already embedded in an international organisation (i.e. PIAAC, PISA, TIMSS).

5.3 Newly developed projects

The majority of studies in this category, with the exception of EUROSTUDENT, for example, were initiated by higher education researchers who identified the need and spotted the chance to bring together international comparative data. This was driven either by a complete absence of international comparative data, such as U-Multirank and REFLEX or because of difficulties in merging and comparing already existing national level data for lack of methodological standardisations e.g. ESS.



The project U-Multirank was Initiated by the Centre for Higher Education Development (CHE) in Germany in collaboration with the French Ministry. The initial idea was to develop a system of national ranking of higher education institutions which further evolved into a European wide ranking system. The idea of developing a European ranking system was also supported by the European Commission. Based on a workshop in France, the French ministry, the CHE and the European Commission developed a call for tenders for a feasibility study on developing a European ranking system. CHEPS joined the project based on their involvement with U-Map, which develops the system for classification of European higher education institutions. The two-year feasibility study, including 160 higher education institutions, came to the conclusion that a European ranking system is realistic. After the feasibility study, the European Commission released a call for tenders. The call for tender was released a year after the feasibility study, it took two months to prepare an application and further three months for the application to be accepted.

In the same way, a consortium led by the Research Centre for Education and the Labour Market (ROA) prepared an application for the REFLEX project under the sixth framework programme (FP6) of the European Commission. The application was written in three months fulltime work. At the time of REFLEX international research was still something rare and thus an international research application was very attractive to the scientific community.

The idea for ESS originated out of the Beliefs in Government Project. The researchers working on this project made an attempt to merge already existing national level datasets.. Towards the end of the project it was realised that making comparisons between countries by using existing datasets was difficult, mainly because of lack of standardisation among the existing surveys, e.g. sampling was done in different ways, inadequate translation, different modes of questionnaire administration, and no documentation. The researcher working on the project along with a British social statistician contacted the European Science Foundation and made the case for a European Social Survey. The initial application was submitted and a core scientific team established. Funding was granted on the condition that at least 12 countries were prepared to pay their own national fee. In the end there were around 20 countries who agreed to pay their national fees. While the original idea was developed in the late 1990s, the first round of the survey only happened in September 2002.

While the majority of studies in this category were initiated through a national level research organisation, the EUROSTUDENT project was initiated as a joint European project at the Conference of Directors General for Higher Education in the EU Member States held in Weimar, Germany, in 1999. The conference recommended that a European survey be carried out among students enrolled in tertiary education. A feasibility study carried out in response to a suggestion made by the European Council for Student Affairs (ECStA) formed the basis for this recommendation. Implementation of the project then began. As a first step, the project was organised as a self-steering network. Each participating country was itself responsible for carrying out and funding its own national survey. Hochschul-Informations-System (HIS), Hannover, Germany was commissioned with managing the project and producing the final report. During the implementation stage of the project, HIS together with German Student Services (Deutsche Studentenwerk) played a leading role in convincing the countries to participate in the project and in expanding and pushing the survey further.

5.4 Embedded studies

Three (PIAAC, PISA and TIMSS) of the seven studies were embedded in an international organisation from the very beginning.

The initiative for PIAAC was driven by the OECD from the start and it played a very active role in the development and expansion of the project. OECD representatives themselves laid the groundwork for the project. They travelled to different OECD countries and worked intensively on convincing the ministries to participate in the project. The project development phase was very long- almost three to four years. In these three to four years, the basic set up for PIAAC was developed which finally resulted in a call for tenders. The PISA study was also set up on initiative of the OECD as a response to a growing interest in what students are actually able to do. Previous studies had started compiling indicators on the outputs of education, and PISA was designed to provide insights into competencies, attitudes and motivations, strategies for learning, and student engagement. Experts from different countries developed the design for the PISA study. Countries were not only interested in learning about students, but were also looking for insights into the efficacy and efficiency of their systems as well as learning about other systems and what they were doing. Before the first launch of the PISA study, a field trial with a smaller sample was conducted (something which is still done today for every round).

The TIMSS study which simultaneously investigates math and science scores was launched by the International Association for the Evaluation of Educational Achievement (IEA). The proposal for the study was presented to the General Assembly of IEA. The General Assembly, which reviews all IEA projects, is the central decision making body of IEA and consists of representatives appointed by the IEA member institutions who represent the educational researcher, policy, and practitioner interests of their country. The General Assembly was specifically interested in TIMSS to address issues such as student-teacher linkages.

To conclude, most of the newly formed projects were initiated by individual researchers in national-level research organisations. For most of these studies the researchers needed to find multiple partners in the initial stages of the study to get the project moving, e.g. U-Multirank, Reflex, ESS, and EUROSTUDENT. On the other hand, studies embedded in international organisations from the beginning did not involve multiple actors in the initial stages of the study. For instance, in the case of PIAAC and PISA, OECD played a leading role in the initial stages of the study and no other organisations were involved. Similarly for TIMSS, IEA was principal in developing the study. Being embedded in an international organisation does not make any difference with regard to the number of years required in setting up these studies; however studies that are set up within an international organisation were able to cover more countries from the start. Newly developed studies, with the exception of ESS, started with a small number of participating countries and gradually over the years increased the number of participating countries.

5.4.1 Involvement of decision makers and other (international) stakeholders

In addition to the question of who initiates the study, it is also important to look at who were the main advocates of the project. It was again found that the advocates of the projects varied from one project to another but mostly they were policy makers or research organisations. For example as in the case of EUROSTUDENT, participation in the Bologna Process Working Group turned



out to be an effective factor that helped in the recognition of the project. The real big change came for the project when the Bologna Process gained interest in the monitoring of social dimension. The project leaders were invited to the BFUG working group meeting and EUROSTUDENT together with Eurydice and Eurostat became the main data provider for the Bologna implementation report. Likewise, for U-Multirank, the French Ministry and the European Commission were the main external drivers of the project.

For ESS, the Economic and Social Research Council in the United Kingdom were the main advocates of the project. The project was supported by UK-ESRC not only initially but also during the later stages especially when ESS was applying for the status of a European Research Infrastructure Consortium (ERIC). In the year 2013, ESS became an ERIC. ESS is now an independent legal entity owned by 15 member countries. In ERIC there are 15 members and 6 guest countries.

External advocates were not involved to such an extent in studies such as PIAAC, PISA and-TIMSS which were already embedded in an organisation. In both PIAAC and PISA, however, the European Commission has been involved in an observing or supporting role, often (co-) funding countries' participation fees or additional working groups or analyses.

On the other hand all of the other studies received either a strong political backing (e.g., U-Multirank, EUROSTUDENT) or a strong support from a research organisation (e.g. ESS). These external advocates played a major role in not only in initiating the studies but also helped the projects in making major leaps (e.g. Including EUROSTUDENT data in the Bologna implementation report and in supporting ESS in applying for the ERIC status).

5.4.2 General organisational set-up/ Governance structure of the project

Of the projects in question, three are carried out within a consortium structure: EUROSTUDENT, REFLEX, and U-Multirank. In these projects, central project coordinators lead a consortium of partners who all work on the project, often in the form of working groups. In EUROSTUDENT and REFLEX, the actual survey work is carried out by additional national research teams who subsequently deliver the data to the central coordination team or special unit (DESAN in REFLEX). In U-Multirank, the field work is organised and carried out centrally by the consortium. The consortium may be supported by additional Boards: in EUROSTUDENT, a Steering Board meeting once a year has a strategic function which relates to the progress of the project and general project recommendations. In U-Multirank, an Advisory Board implemented by the EC with stakeholders, including EUA, EURASHE, OECD, employers, and students which meets 3-4 times a year serves a similar function.

The ESS is set up in the form of a European Research Infrastructure Centre, i.e. it represents its own entity. The ESS ERIC is owned by the member countries, and the ultimate decision making authority lies with the General Assembly of the member country representatives. Typically, these are ministry delegates; however, in some countries the ministry has delegated its role to a research organisation. According to the statutes of the ESS ERIC the General Assembly meets at least twice a year. Amongst others the General Assembly agrees upon the budget and the work programme for the ESS and appoints the director. The director appoints the core scientific team. The core scientific team, currently consisting of six organisations, works together on sampling designs, questionnaire, oversees translation, monitors field work, conducts academic and non-academic outreach activities, and runs the website. Additionally, a Scientific Advisory board and a Methods advisory board serve to give input on matters of content (selection of new question modules) and survey execution (weighting, mode of data collection, translation etc.), respectively. At the national level, each country appoints a national coordinator and a survey agent. These have to run the surveys in line with the central specifications. The core scientific team works with them in developing surveys and coordinating and overseeing field work.

The PIAAC study is carried out by the OECD together with a research consortium. PIAAC is special in that both the Directorate for employment, Labour and Social Affairs (ELS) as well as the Directorate for Education and Skills (EDU) at OECD are involved in the study, with the project management and administration being carried out by the EDU Directorate, but the analytical work shared between the two according to the respective areas of responsibility. The research consortium is chosen through a call for tenders, which is developed with the help of experts who are consulted during the preparation phase of the call for tenders on what should be analysed. In the project phase, all participating countries are represented in the board of participating countries, which is the main governing body and meets twice a year. Members are usually ministries, either education or employment/labour ministries (seldom both). The BPC decides, for example, on topics to be covered and the work programme. Decisions of the BPC are prepared by the OECD, which takes on the role of a secretariat, and the research consortium, sometimes in conjunction with expert groups on specific tasks/questions (e.g. questionnaire development, test development). A bureau of the PIAAC BPC, consisting of two chairs from the BPC and 3-4 member country representatives, serves a consultative function and is involved in meeting planning. No technical advisory board as such exists in the PIAAC structure, but external expert groups serve to input scientific expertise.

The PISA study is governed by a governing board meeting twice yearly, which is part of the OECD bodies. The board is composed of countries participating in PISA. Typically, the member countries are represented by senior decision-makers in the respective governments. The OECD plays the role of a secretariat to the governing board (around 15 people are involved in this). The board is the main decision-making body. The PISA governing board is supported by different expert groups: a technical advisory board monitoring the technical standard of PISA as well as several topic-specific expert groups, e.g. on reading, math and science, questionnaire design. These groups are composed of international experts suggested by contractors. A strategic development group made up of around 10 persons and the OECD Secretariat discusses which direction PISA might take and prepares decisions for the governing board. At the national level, PISA is executed by national centres, headed by project members with expertise in the area of assessment and survey operations.



TIMSS is a special case in that it is one study of several conducted in the same way by the International Association for the Evaluation of Educational Achievement (IEA), an organisation with the explicit purpose of conducting educational studies. IEA is an independent, international cooperative of national research institutions and governmental research agencies which conducts large-scale comparative studies of educational achievement and other aspects of education. Within IEA, two main organisations can be distinguished: The IEA Secretariat and the Data processing centre (DPC).

The IEA headquarters/Secretariat in Amsterdam is responsible for the administration of the organisation IEA, whereas the main governing bodies of the IEA are the General Assembly and the Standing Committee. The General Assembly, the central decision making body of IEA, consists of representatives appointed by the IEA member institutions, who attend yearly General Assembly meetings as voting delegates and represent the educational research, policy, and practitioner interests of their country.

The General Assembly determines the general policy of the association and controls the implementation of IEA policy. The assembly also admits new members to the association, and approves the annual budget. The General Assembly meets to review IEA projects and receives reports on various aspects of the association, including current and future studies, membership, and finance. Country representatives are invited to share their experiences with the dissemination of IEA study results and the impact of these results on national educational reforms. Purely scientific questions are dealt with in the Technical Executive Group and the Publications and Editorial Committee, which are responsible for specific aspects related to quality of the studies.

The Standing Committee, which meets twice a year, consists of the IEA Chair and six General Assembly representatives (elected for a three-year term). The committee serves as a supervisory board for both IEA and the IEA Secretariat. The Executive Director is responsible for day-to-day management and decision making.

The IEA Data Processing Centre in Hamburg is the data processing centre for all IEA studies, regardless of where the study leadership is located. At the national level, national study coordinators are responsible for executing the surveys.

All in all, the experts interviewed expressed satisfaction with the way their projects were set up. Several coordinators of more informally organised "consortium"-type project noted that more explicit rules regarding decision making and responsibilities would facilitate the project work, and in some cases, a more formalised set-up is intended for upcoming rounds. A further issue mentioned by an interviewee from a project in which the field work was carried out by relatively autonomous national teams was that the coordinator had little power to enforce the same quality standards for all participating countries.

5.4.2.1 Involvement of decision makers and (international) stakeholders

Stakeholders are assigned explicit roles in almost all projects.

In the ESS, the funders, i.e. the ministries of the owner countries, are represented in the General Assembly. Here they decide on issues pertaining to the budget and key reports of the project.

In EUROSTUDENT, the Steering Board serves to formally integrate stakeholders' opinions. One representative each of the Bologna Follow-Up group, the European Students' Union, three elected national representatives collectively representing all participating countries, and representatives of the main funders European Commission, German Ministry of Science and Research, and the Dutch Ministry for Education, Culture and Science meet at least once yearly. In EUROSTUDENT, the Steering Board has a strategic function which relates to the progress of the project and general project recommendations. In addition, the Steering Board has two official functions, i.e. to accept the annual report as well as to accept the report of the project's financial auditor.

In PIAAC, participating countries are represented in a separate board (board of participating countries, BPC). Decisions of the BPC are prepared by the OECD and the research consortium, sometimes in conjunction with expert groups on specific tasks/questions (e.g. questionnaire development, test development). No other stakeholders are formally involved. The set-up in PISA is similar, with countries represented in the board of participating countries. The European Commission is involved as an observer, taking part in discussions, but not decisions.

As in other projects, the IEA involves stakeholders in TIMSS through its General Assembly. It consists of representatives appointed by the IEA member institutions, who attend General Assembly meetings as voting delegates and represent the educational research, policy, and practitioner interests of their country. In addition to the voting General Assembly representatives, the annual meeting is also attended and observed by IEA officers, international study coordinators, committee members, observers from key international organizations (e.g. World Bank, UNESCO, and European Commission) and funding agencies, and experts in the field of research and evaluation.

In the U-Multirank project, the European Commission has installed an Advisory Board, which includes EUA, EURASHE, OECD, employers, and students. The board meets 3-4 times a year.

In the REFLEX project, stakeholders were involved through the project's advisory board in order to enhance the relevance of the project's results for international policy. Also, key findings were presented at meetings of relevant networks, such as the OECD, the European Universities Association, or the meeting of the Joint Quality Initiative network.

Overall, the stakeholder involvement is seen as positive by the coordinators. The involvement of political actors is seen to provide helpful orientation with regard to designing a relevant study of interest to stakeholders. For this reason, one interviewee explicitly recommended to nurture and support discussions between researchers and political actors. Others noted that political actors also serve a supportive and disseminative function, which benefits the project.

It was noted by the respondents that not all stakeholders were engaged in the project to the same degree. The level of influence single stakeholders have may depend on the amount of funding they provide, the experience they have with conducting similar studies, or simply their level of engagement. In some cases, single institutions were reported to have a relatively large influence. This was seen to enhance the above-mentioned benefits, but at the same time bring with it new challenges regarding the coordinators' role.

5.4.2.2 Funding

When looking at the studies under investigation, two main sources of funding emerge: the European-level funds and countries taking part in the studies.



For U-Multirank and REFLEX, European-level funds represented the main source of external income. REFLEX was funded through the Framework Programme 6, while U-Multirank received seed funding from the European Commission. In the other projects, participation fees by the countries covered in the survey are the main funding sources. Still, European-level funds are – through reimbursement or co-funding of participant countries – also involved in EUROSTUDENT, PIAAC, PISA and TIMSS. In several cases, certain ministries – often host countries of the consortium leader or members – made larger contributions (EUROSTUDENT, ESS, REFLEX).

For the OECD projects PIAAC and PISA, which are established as so-called Part II programmes, and thus do not receive any financing from the OECD Part I budget, unlike, for example, the OECD's Economic Surveys, contributions by the participating countries are due according to a scale which is typically established when the programme is set up. Typically, this is a mix of flat-fee and contributions relative to economic size, although specific parameters vary.

In all projects, the funding goes only towards central coordination of the surveys. Costs at the national or institutional level are not covered, but must be financed additionally.

In several projects, finding and securing funding was and remains one of the main challenges. Few funding opportunities for regular, long-term studies exist. Many European-level funds are explicitly designated forone-time studies or are restricted to contributions to seed funding for legal or other reasons. This makes it difficult for projects to be planned on a secure, long-term basis.

Setting up the project as its own entity, as the ESS has achieved with its ERIC status, is seen as a good way to ensure long-term commitment. At the same time, such a status is the result of several decades of work and as such a symbol of success of the survey. Besides the ESS, however, none of the investigated projects represents its only entity, although several coordinators reported searching for possibilities to achieve this.

With regard to participation fees by countries involved in the survey, it was noted that they could serve to increase commitment and interest in the study. Depending on the model used, i.e. factoring in economic strength or similar or not and charging the same fees for all, fees may also increase or decrease countries' amount of influence on the study. It should also be kept in mind, however, that in particular for countries with limited funds available, participation fees may lead to competition between different similar surveys. PISA offers different modules of the study in order to enable a minimal participation at a lower cost than the "full" PISA programme.

5.4.2.3 Organisation of surveys, assurance of identical quality standards, and comparable data

The degree of standardisation in methods employed by the different studies varies.

A typical set-up that emerged is as follows: the central survey coordination team provides appointed national teams with more or less strict specifications regarding certain survey characteristics to be standardised, e.g. the questionnaire, the timing of the survey, sampling, data cleaning, etc. With regard to the appointment of national teams/survey coordinators, the central coordination team has been reported to assist, e.g. by providing a specification of requirements regarding capacities, timeline, or competencies. In some cases, the wording of the questionnaire is strictly prescribed, with translations into national languages either being done or checked centrally. In other studies, a limited number of translations is provided from the start or explanations of the goal and background of the questions are provided to facilitate translations. Surveys also differ in whether they allow additions or changes to the questions/items or not. PISA is currently working on a flexible testing which would allow a closer adaptation of the study to country needs by offering optional tests and questionnaires to countries, choices about the level of support needed, or a choice between more or less complicated types of testing.

The procedure for sampling also varies. From listing strict requirements for sampling to doing the sampling centrally to leaving the sampling up to the national team and only providing assistance when needed, different approaches exist. The TIMSS study/IEA has one of the most standardised approaches of the studies covered: after an initial sample of schools is drawn centrally, specialised software and seminars are offered to national research coordinators and data managers to draw within-school samples. This software has quality checks build in to make sure that sampling standards are met. The coordination teams of the studies accompany the national teams more or less closely during the survey implementation phase. While the actual test administration is done by national test administrators IEA/TIMSS employs "International quality control monitors" at the national level, who are trained and then randomly visits test sessions to ensure adherence to conventions. Other studies check compliance with the central conventions (e.g. regarding method of survey) retrospectively through items in the questionnaire or rely on field reports delivered by the national teams. With regard to data cleaning, the reported procedures also range from high standardisation with software support to provision of guidelines with retroactive checks. In all cases, it was reported that the data delivered by national teams is checked for completeness and plausibility once it has been delivered. However, the extent of this checking varies. Deviations from the common standards were reported to have led to a country's data not being included in the international data set, although this has been a rare occurrence. PISA and PIAAC have guite strict technical standards which are continuously checked, and offer training on the implementation. Both projects also conduct field tests in advance to check item quality.

For some studies it was reported that the countries are presented with the tables/data for the final report at a further meeting. This provides the last chance to make any changes to the data. The international perspective may lead to recognition of coding errors or similar.

Throughout the projects, the coordinators tried to support and stay in contact with national teams in many different ways: by providing an online coordination area/website, through seminars and workshops, by providing more or less detailed instructions/handbooks/documentation or specialised software, and through individual national level contact.

What also became apparent during the interviews is that the amount of time needed for international coordination before, during, and after the national surveys is not to be underestimated. It was reported by one study that the questionnaire development, including pre-testing, took two years. A different study estimated the time needed after the survey phase (i.e. for data cleaning, coding, weighting, scaling, etc.) to be around one year.



Overall, almost all interviewees highlighted that the integration of the separate national surveys is one of the main challenges of the respective projects. The question of how to assure the same conditions is of high relevance in many surveys. Several coordinators indicated that the issue has become more important over the years, with increasing monitoring and checks being done.

The interviewees identified several factors that in their view contributed to a wellcoordinated international survey. One is the availability and existence of adequate infrastructure in the countries. Several interviewees highlighted the importance of constant communication with the countries in the data delivery phase. Especially personal contact, e.g. at workshops (as opposed to video conference or phone) was deemed to be especially important by several respondents.

Several interviewees suggested that the coordinator or coordinating team needs a very strong position and has as much control over the technical work as possible. Having national level teams signing an agreement on the methodological standards before the actual study starts was one way of improving adherence with standards. One coordinator recommended to additionally have external agents checking on the quality of the data collection procedure and adherence with standards. It was also mentioned that the coordination effort increases if partners are inexperienced. Therefore, continuity of staff at the national level was seen to increase both data quality and commitment to the study.

One coordinator cautioned that, despite all efforts at centralised coordination, totally identical surveys would be hard to achieve, as each country has its own way of conducting surveys and it is very often difficult to change this. It was also noted that the costs of a central coordination would be much higher than for a more decentralised set-up.

Finally, it was noted that participation in an international comparative study often led to increased capacities at the national level, as staff gained experience. Countries were reported to have taken participation in an international study as a starting point to develop their own studies. At the same time, it was noted that countries with less experience in international studies may have difficulties in complying with set standards from the start and may thus require a lot of assistance.

5.4.2.4 Relation to national studies (complement or integrate)

Except for EUROSTUDENT and U-Multirank, none of the studies in question integrates existing national studies. Of the 29 countries in the fifth round of EUROSTUDENT, a quarter already had social surveys. The way these questions are adopted varies based on whether countries have previously conducted their own social survey or not. In general, one can conclude that the EUROSTUDENT countries have, in the course of several rounds, adapted their surveys more and more to the EUROSTUDENT core questionnaire.

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When U-Multirank was started, the student surveys found themselves in some countries in competition with already existing student surveys at either the HEI or national level. Especially HEIs in countries which have national student surveys which have financial consequences were reported to have been concerned about negative effects on the return rates. For these reasons, the participation in the U-Multirank student survey is optional for HEIs (around 2/3rds participate). Some national studies have been successfully integrated into the U-Multirank survey. For the U-Multirank student survey, cooperation with and further integration of national studies is expected to be a focal issue in the coming years. The integration of institutional-level studies has also been discussed, especially as some HEIs have asked about this, but it was deemed to not be feasible.

The ESS and TIMSS are not based on existing studies in a country. For TIMSS, special national research centres are installed in each country, headed by national research coordinators. The ESS is based on the experience that it was difficult to make comparisons between countries using existing datasets because of the methodological deficiencies in the existing surveys due to methodological differences and weaknesses. Therefore, already existing national studies are not integrated into the ESS. National surveys are however still performed and seen as useful to understand the national situation in detail.

5.4.2.5 Considering the national, regional, or institutional context

In internationally comparative studies, additional information is often needed to understand the results. The investigated studies dealt with this in different ways.

The TIMSS study tries to understand a students' environment by using several separate instruments that link back to the single student: besides student achievement tests, parents, teachers (math and science), and school principals are asked to complete questionnaires.

In PISA, in addition to competence testing, a student questionnaire collects information on the students' environment, school, and family background. PIAAC also collects information beyond competencies through its "background questionnaire".

In REFLEX, data on the institutions has been collected in conjunction with surveying the graduates. This data provided important context information.

In EUROSTUDENT, no additional data about the national, regional, or institutional context is collected. However, national researchers were asked to comment on the data they delivered from a national perspective, thus giving the opportunity to put results into context. Additionally, national profiles providing background information on the different higher education systems are prepared centrally and made publically available.



5.5 Recommendations of interviewees for a potential European graduate study

Interviewees were asked explicitly about recommendation for a possible European graduate study. Their responses can be grouped into three main topic areas: setting up the study, coordinating a European graduate study, and methods. With regard to setting up a European graduate study, one interviewee pointed out that a main challenge would be considering and trying to integrate existing studies. Figuring out how to deal with this issue should be done from the beginning. It was strongly advised that the reasons for conducting the study need to be clearly conveyed – why is comparative data needed and how can countries benefit from participating? It was highlighted that it is important to reflect how a study can bring together the needs of different countries, including a wide range of countries with different policy and financial needs and a wide range of backgrounds. One interviewee suggested to clearly focusing the study on one or two policy topics currently of interest in order to gain political support. Especially European-level political support was highlighted by several interviewees as a crucial factor for the success of a European graduate study. One interviewee suggested that national co-funding could also be an asset from the point of view of the European Commission, increasing the interest in the study. The importance of national ministries was also mentioned, arguing that finding support for a study would be stronger if countries felt that they were sufficiently involved in the development of the survey.

While stakeholder involvement was generally seen as positive, it was suggested that it should be made sure to keep the final decision-making power with the research organisation in order to avoid stakeholders and policy-makers having to make decisions about question closely related to methodological issues.

With a view to actually conducting a study, most recommendations pertained to the relationship between a central coordination team and the teams responsible for conducting surveys at the national level. It was highlighted by several respondents that the central coordination for a European graduate study would need to be strong. The responsibilities should be clearly divided, with transparent deadlines, communicated to the national teams. The standards to be met should be clearly communicated beforehand and it was recommended to have signed agreements on adherence with common standards. The central coordinator should have some authority to enforce quality standards. As an ultimate option the coordinator should be free to exclude studies that considerably deviate from quality standards. A relevant issue that was mentioned related to the division of tasks: no single institution should be responsible for everything, but at the same, too many partners or contractors were not seen to be beneficial either.

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At the same time, it was suggested that countries and national teams should be involved in the development of the study in order to gain their support for the study and create a truly joint research project. A clear framework of the study and especially precisely formulated and communicated goals could subsequently serve to guide the study progress. All deadlines and requirements should be transparently communicated ahead of time. The issue of how to ensure international comparability was seen to be one of the greatest challenges by many. With regard to specific methods employed in a potential European graduate study, several interviewees highlighted the importance of translation procedures for an internationally comparative study. It was also suggested to ensure questionnaire quality by pre-testing it extensively before going into the field. For these issues, several respondents advised to involve experts in technical matters, either for dealing with specific questions or more generally in the form of an external technical advisory group checking and approving the quality of the national surveys. Such a group would ease the work of the coordinator very much, as an external body would be freer in evaluating and judging national surveys than an international coordinator who is dependent on good relations with the national teams.



6 Options and recommendations for a European graduate study

Bringing together the results of the EUROGRADUATE feasibility study this chapter describes the options for a European graduate study under three main headings: (1) the general orientation of the study (chapter 6.1), (2) the design (chapter 6.2), and (3) the organisation of the study (chapter 6.3). To improve readability chapters 6.2 and 6.3 have been structured in the same way. Firstly, relevant findings are reiterated for clarity, Followed by a discussion of pros, cons, and feasibility issues of the various options. Conclusions and recommendations on the options discussed close the chapter.

6.1 A suitable model for a European graduate study

The first step in discussing the options for an EGS is to look at the general orientation such a study could or should have. The term 'general orientation' is used here in the sense of the overall purpose of the study, i.e. the general orientation specifies at a quite general level what the study aims for – and what not.

Deciding on the general orientation frames subsequent decisions on the design, contents, and organisation of the study and should therefore be done first. We see this as a necessary step for two reasons. Firstly, choice of a certain general model gives orientation to the recommendations for an EGS. Options can be assessed against the goal of setting-up the best study with regard to one specific model. Secondly, explicitly referring to a certain model makes the choice of options more transparent to the reader. Even when no model is explicitly mentioned, recommendations may be made with a certain model in mind, but the readers would not be aware of this implicit assumption.

In the introduction to this report three dimensions of the use of an EGS have been applied to differentiate between the various models of an EGS: (a) the main user an EGS would address (policy makers, HEIs, or HE researchers) (b) the general purpose the EGS would be used for (monitoring or analyses), and (c) the main level of observation (institutional level or systems level). Five hypothetical models of an EGS have been sketched based on these dimensions (chapter 1.3.6):

Models	Main and a	dditional users	Uses			Main level of observation		
	decision	HEIS/HE	researchers	monitoring	analyses	institutional	system	
	makers	system orgs.				level	level	
Model A: 'The policy driven monitoring study'								
	main	add.	add.	Х			Х	
Model B:	Model B: 'The QA study'							
	add.	main	add.	Х		Х		
Model C:	Model C: 'The research driven study'							
	add.	add.	main		Х		Х	
Model D: 'The policy-driven monitoring and analyses study'								
	main	add.	add.	Х	Х		Х	
Model E:	'The all-in-o	ne study'						
	main	main	main	Х	Х	Х	Х	

Table 6-1: Hypothetical models of an EGS

Based on the outcomes of the EUROGRADUATE feasibility study it is now possible to decide which model(s) would be most appropriate to meet the interests and requirements of the various stakeholder groups.

The first criterion for making a choice between the models was the degree of interest among the three main stakeholder groups, decision makers, HEIs, and HE researchers. The vast majority of national-level decision makers have attributed (high) importance to their country being covered in a potential EGS. European policy makers have very much welcomed the initiative for an EGS. Nearly all surveyed HE researchers have expressed (high) interests in participating in a potential EGS. NRCs have expressed considerable interest as well, though to a somewhat smaller degree in comparison to the other two groups. The 'QA study', primarily directed at HEIs would have been a suitable option if NRCs had expressed high interest and the other two groups not. The 'research driven study' would have been the appropriate choice if only HE researchers were interested in an EGS. Thus the pattern of interest of these three stakeholder groups excludes Model B (the 'QA study') and Model C (the 'research driven study').

The second criterion is the general use of an EGS, in terms of monitoring vs. analyses. In the EUROGRADUATE surveys in-depth analyses as well as monitoring were rated as important uses at a very similar level by all three groups. Additionally, several European and international level stakeholders have made a strong case for empirical analyses (chapter 4). In their view an EGS would need to deepen the understanding of the interrelations between HE and it's outcomes to help improve HE policies. As a consequence, an EGS would need to allow for both, monitoring HE systems and/or institutions, and analysing them. The second criterion excludes Model A (the "policy-driven monitoring study') which is focussed on monitoring only and leaves us with Models D and E.

The level of observation is the last criterion. Here results of the EUROGRADUATE surveys have been very clear and similar across all stakeholder groups: none of them saw the comparison of individual HEIs as an important task for an EGS. Though views of European level stakeholders were quite different at the start, the stakeholders and experts on EUROGRADUATE's project boards finally agreed that a European graduate study should not aim at comparing individual HEIs. This excludes Model E (the 'all-in-one study') and is an additional argument against Model B (the 'QA study'). This does not mean that an EGS would not allow for collection of data at the institutional level if individual HEIs interested in using it for their own purposes. The goal of an EGS should, however, clearly not be to provide such data to the public.

Looking at the three dimensions, the results are very clear. Model D, the 'policy driven monitoring and analyses study', is the only type of study fitting the results in all three criteria. This model has policy makers as the main users and would need to provide both, monitoring and analytic information. As a consequence, an EGS would need to provide a micro-level data set enabling descriptive and analytic research. The study would need to be regularly repeated at a medium to high pace to allow for effectively monitoring developments in HE systems. The main level of observation is the systems level. Note that information on HEIs is by no means irrelevant to this type of study. In contrast, information on the institutions visited by graduates is of crucial importance for learning more on the relationship between HE and the life course of graduates. Characteristics such as type, profile, or resources of HEIs are very likely to have an impact and are either important explanatory factors or relevant context variables to be controlled for when analysing the influence of other factors. But an EGS of this type would not require participating countries to collect data allowing for breakdowns to the level of institutions and would not engage in comparing individual HEIs. Still participating countries could collect data allowing for institutional level breakdowns in conjunction with data collections of an EGS, for example in order to use such data for QA purposes.

Even though policy makers are regarded as the main users, HEIs (and this always includes HE managers, HE professionals, and stakeholder organisations of HEIs) and HE researchers are important user groups as well and so are HE students, employers, and employees. It should be noted that the 'policy driven monitoring and analyses study' has considerable advantages for these stakeholder groups as well. HEIs would benefit from the analytic potential of such a study. The relationship of HE and the career prospects of graduates could be investigated comparatively and in more depth than possible today. This would generate useful insights for HE managers and professionals and help them in improving HE. For HE research a comparative micro-level data on HE graduates would be a very important resource filling a major lack of European research data (chapter 2). It could facilitate numerous research activities and allow addressing a large range of research questions. More information and transparency on the whereabouts of European HE graduates could be highly interesting for (potential) students as well as for employers, and employees and their stakeholder organisations.

In the next steps this general model of an EGS will be detailed further by looking at more specific design characteristics and the organisation of an EGS.

6.2 A suitable design for a European graduate study

The design of an EGS will be discussed with regard to (1) the contents and research questions, (2) the scope of the study (e.g. which parts of the HE system to cover), and (3) data collection process (e.g. survey method or sampling). For each characteristic in question the findings of surveys, interviews, and other research activities will be recapitulated in brief. A discussion covers controversial issues, alternative options, and feasibility aspects to be considered. Feasibility aspects are categorized as technical, economic, legal, operational, or schedule feasibility. Not all feasibility categories will be explicitly treated for each respective characteristic as sometimes none or only minor repercussions are to be expected. A concluding paragraph summarizes the outcomes, gives, if applicable, recommendations for an EGS, and hints to the remaining issues and risk factors especially regarding the feasibility of the study.



6.2.1 Main contents and research questions of an EGS

Findings:

The topics of "transition into the labour market" and "generating and sustaining employability" were rated as most important topics to be covered by an EGS by the national level stakeholders who participated in the EUROGRADUATE surveys. These topics, specifically the first one, also reflect the main contents and research questions of current national level studies.

Skills mismatch" and "competencies acquired during studies" were rated to be of somewhat lower relevance by the NRCs, but rated as highly important among decision makers and HE researchers. In contrast, the NRCs indicated a strong priority for the topic of "quality of HE".

International stakeholders have highlighted similar topics to be of relevance to them. Employability, acquired competencies, skills mismatch, and quality of HE are seen as highly relevant and interrelated topics. Last but not least, in contrast to the national level stakeholders, international stakeholders and scientific experts assessed mobility as especially important to an EGS.

Similar topics are stressed by European agendas for HE policies in the EU as well as the EHEA. Fighting (youth) unemployment and increasing the employability of HE graduates is seen as closely connected to improving the quality of HE, and improving the match between skills and competencies acquired in HE and labour market needs. Mobility is seen as relevant for a variety of reasons, amongst others for employability and the allocation of highly skilled labour.

Several experts of international survey projects have argued that an EGS should clearly address one main research question to be attractive to decision makers.

Discussion and feasibility aspects:

The EUROGRADUATE feasibility study has identified the following topics as being specifically useful to the stakeholders of an EGS:

- transition into the labour market
- generating and sustaining employability
- quality of HE, skills and competencies acquired in HE, and skills mismatch
- mobility of graduates

These topics could form the core issues to be covered by an EGS. One could argue that this list misses out on other topics which are seen as important by stakeholders, such as the social dimension or returns to HE and it could be an option to enlarge the list to serve these requirements. Similarly, this list could also be seen as already too long to cover all topics comprehensively and that it should be reduced by one or two topics, e.g. focussing on labour market transition and employability as most popular topics.

The technical feasibility of treating these topics by an EGS is another important question. For collecting data on the transition to the labour market established instruments are available and this should not be a problem for neither survey research nor research based on administrative data (see chap. 6.2.2 on the type of data for an EGS).



Even though the question of how employability should be defined and measured is controversial and both objective and subjective approaches of measurement coexist (e.g. Bridgstock 2009; Fugate et al. 2004; Harvey 2001; Rothwell et al. 2009; Van der Heijde/Van der Heijden 2006; Yorke 2006) a number of tested instruments exists for measuring employability with surveys. An administrative data study would, however, be restricted to objective approaches. Also for a survey study not all approaches might work, e.g. because complex instruments might require more survey time than available or because cognitive tests are involved. But generally a survey should be open to a larger variety and more complex concepts of employability than administrative studies. Last not least, the question of how employability can be sustained could only be tackled with data covering the mid- and long-term developments of graduates.

Quality in HE has been defined in a number of ways; however what quality in HE actually means is a controversial matter (Harvey and Green 1993; Nicholson 2011; Tam 2001). Accordingly, a large number of instruments exist for measuring quality in HE (Borden and Owens 2001; Luo 2015; Tam 2001). Quality of HE can be measured by either using indicators on the HEIs, measuring learning outcomes, or by subjective assessments by students. Administrative data sources are restricted to indicators while surveys allow for subjective measurements. In a survey based EGS this information could be supplemented by objective indicators on characteristics of HEIs. Surveys are used very frequently for measuring quality in HE (Borden and Owens 2001) and even though the validity of some subjective assessments can be questioned (Shevlin et al. 2000), it would clearly be feasible to deal with quality in HE in an EGS. This means that an EGS could also play a role for QA at institutional level, even if this is not its primary use. Data on quality of HE collected through an EGS could provide HEIs with highly relevant information, additionally giving them the opportunity to benchmark themselves against international-level indicators. Especially in countries in which at the moment no regular national-level graduate studies are collected, an EGS could therefore be an important vehicle for providing such information that is in high demand by HEIs.

For measuring skills and skills mismatch the question of adequate measurements is less clear. An EGS based on administrative data could not treat questions related to skills. In surveys, skills and skills mismatch are typically measured by self-assessments. These are relatively easy to apply but self-reported measurements can be prone to bias and may be misleading (Perry et al. 2014). An innovative approach for measuring skills in surveys is by asking for skills actually used (on the job or in everyday life). The British Skills Survey uses this method and supplements this information by further asking the respondents about how efficient they are on the tasks under consideration (Tomlinson 2002). Building on the experience of the British Skills Survey as well as various other studies (skills surveys in Italy and Spain, the US O*NET survey, CHEERS, or REFLEX) PIAAC has developed the Job Requirements Approach (JRA) for measuring skills and skills use (Allen et al. 2013). In PIAAC information gathered by surveys can be complemented with skills tests. This would not be possible in an EGS unless it would use skills tests as well. However, using the JRA in conjunction with self-assessments is a cost-effective way of measuring of skills in a survey study and could be advantageous to self-assessments only, as it is assumed that respondents report actual skills use in a less biased way than if asked for the levels of skills they hold (Allen et al. 2013).



Skills measurements based on tests are seen as more reliable than self-assessments (e.g. Gulikers and Mulder 2013). At the same time tests are very costly and thus rarely done in comparative projects (PISA, TIMSS, or PIAAC are examples of such studies). For measuring skills and competencies an EGS could either stick to the survey approach, with the caveat of a second-best measurement, or it could supplement surveys with skills tests. The latter would imply a much larger complexity of the study and considerably higher costs. This is specifically true for skills tests among adults or graduates. Within an institutionalized framework such as schools or HEIs tests are easier to conduct than without such a framework. E.g. the adult participants of PIAAC are tested by individual face-to-face interviews in a household survey. This yields much higher costs then tests in schools. International experts stated that the high costs of PIAAC are among the main reasons why the study will presumably be repeated at a relatively low frequency (every 10 years expectedly). Furthermore no established instruments exist for testing transversal skills or skills related to subjects studied in comparative HE research. OECD's AHELO project may lead to the development of such methods but the AHELO feasibility study has also shown that comparative testing of skills in HE is a highly challenging endeavour.

For measuring geographical mobility of graduates established instruments exist and it is covered in most survey national level graduate survey projects. Mobility could also be measured by administrative data, if this information is collected. An issue with monitoring and analysing mobility is that mobile graduates are harder to get hold on than immobile graduates. This is specifically true for graduates that have moved abroad permanently as postal addresses may not be available. The trend to online surveys and HEIs collecting private e-mail addresses of graduates mitigates this difference because private e-mail addresses do not necessarily change with geographical mobility.

Conclusions and recommendations:

A list of four key topics has resulted from the EUROGRADUATE surveys and interviews. Clearly, one could think of other important topics but evidence strongly supports that these topics need to be covered in an EGS to be as useful as possible for national and international stakeholders. Dispensing one or more topics therefore seems problematic: all of them are seen as (very) relevant by at least one stakeholder group. Furthermore, European decision makers and international experts see these topics as being interrelated.

Accordingly, the four topics should form the core to be covered in each repetition of an EGS. For each round of the EGS one of these topics could be tackled in more depth or modules for additional topics could be added. This would keep the range of topics flexible and would also allow for country-specific modules. Topics should be chosen in close collaboration with the stakeholders. The organisational setting of the EGS should make sure that stakeholders' informational demands are considered. Additional modules could enter the survey by issuing "calls for questions". This would also increase awareness and usefulness of the EGS for the HE research community.

Generally the richness of information gathered in a European graduate survey would allow for tackling a much wide range of research questions also beyond the four focus topics, e.g. the social dimension of HE and the labour market outcomes of graduates of different social origin, gender differences in returns to HE, or careers of graduates with or without a migration background, to just give a few examples.



For the measurement of skills the option of skills tests has been discussed. At the background of the much higher cost and practical and methodological problems of testing skills among HE graduates EUROGRADUATE recommends to not using skills tests for a European graduate study. Rather it is recommended to use state-of-the-art innovative measurements for surveys such as skills use instruments.

6.2.2 Type of data for an EGS

Findings

The study has shown that a great majority of existing national studies draw (at least partly) on survey data. Only three national studies are based solely on administrative data, while about a third of the studies indicated to use a combination of survey and administrative data. Administrative data studies had a much smaller bandwidth of information as compared to survey studies.

Another possibility, to be considered only in any future rounds of a European graduate survey, is using "big data", i.e. digital traces accumulated through the use of electronic systems (internet, smartphones, but also credit cards, etc.,) for complementing information collected through surveys. Due to the growing popularity of internet and social networking sites, increasing use of smart phones and other electronic devices, it is imperative that the role of big data in the future rounds of EUROGRADUATE be discussed. Several leading international bodies are working on devising strategies for integrating big data into their official statistics (Karlberg & Skaliotis, 2015; UNECE, 2013). Big data, defined as "data mining and predictive analytics" (Johnson, 2014, p.3), are also increasingly used to shape students higher education experiences by recommending courses, suggesting networks, and in monitoring progress (Johnson, 2014). This type of information is definitely relevant for an international comparative project on higher education graduates such as the EUROGRADUATE. However, using big data also poses certain ethical and legal challenges (Johnson, 2014) that would need to be addressed in the future. Even if big data were used it is somewhat clear that they cannot completely replace existing sources of data but would rather complement survey data with additional information and different perspectives.

Discussion and feasibility aspects:

The main advantages of administrative data are that data collection is cheaper, data is often more reliable, and breakdowns to institutional level is easier. Administrative data studies are, however, quite restricted regarding the range of information they are able to cover.

Surveys, on the other hand, are able to cover a much broader scope of contents. Variables such as motivations, attitudes, and also important topics such as mobility, competences can hardly be investigated in-depth based solely on administrative data.

In addition, administrative data which are used for graduate studies often do not include all graduates. Surveys are possibly better suited to identify and access certain groups of graduates, e.g. those going abroad, or self-employed

Feasibility considerations also clearly favour surveys as the main source of data for an EGS. The technical feasibility for a study based on administrative data would be low. It would not allow treating skills related questions which has been one of the top ranked topics of stakeholders. The heterogeneity of administrative data collection systems in the different countries would be a major problem for merging data. It is unclear whether this would be possible at all and in any case it would only come at high costs.

Administrative data studies on graduates are based on combining data collected by HEIs with data on employment of graduates, e.g. social security data. This is not possible for all European countries. 10 European countries reported that they would not be able to combine administrative data and social security data. Hence for these countries, among them for three larger countries, i.e. France, Germany, and the UK, participating in an EGS based on administrative data would not be feasible due to legal and technical reasons. At the same, it must be noted that four countries only use graduate studies based on administrative data or are about to build such a system, i.e. DK, ES, PL, SE. It is still unclear whether these countries would additionally participate in a survey-based EGS.

Conclusions and recommendation:

The findings of the EUROGRADUATE feasibility study clearly indicate that an EGS needs to be based on survey data. In the light of the technical and legal restrictions and the desired topics of an EGS this is the only feasible option. At a later stage an EGS could consider integrating a restricted number of factual data from administrative data sources for countries that are not willing to participate in a survey based EGS. However, it is recommended to focus on establishing a survey based EGS in the first place.

6.2.3 Scope of an EGS

6.2.3.1 Types of higher education institutions

Findings:

All national ministries, NRCs, and researchers that participated in the EUROGRADUATE surveys recommended covering (research) universities in an EGS and the vast majority of them recommended covering professional HEIs as well. Among international stakeholders and consulted experts coverage of professional HEIs was not controversial either.

About one third of the national-level stakeholders hinted to other types of HEIs that should be covered in their view. Mostly these are HEIs with a strong vocational orientation and/or focussing on specific subject areas, e.g. music and arts colleges or teacher training colleges. Some national level stakeholder recommended including private HEIs.

One international stakeholder organisation of EUROGRADUATE has strongly argued for being as inclusive as possible.

Discussion and feasibility aspects:

Professional HEIs form a substantial part of the HE system in many countries and excluding them would result in a skewed picture of these systems.

In many countries other types of HEIs exist. Often for this kind of HEIs it is not fully clear whether they belong to HE or to vocational education. Generally it seems advisable to rather include all types of HEIs than excluding them a priori. The same is true for private HEIs. There seems to be no strong reason in favour of not including private HEIs. In some countries they cover a considerable proportion of the HE sector. For reasons of comparability it seems advisable to therefore cover private HEIs in all countries.


The inclusion of private HEIs and other types of HEIs, however, cause problems regarding the operational feasibility of an EGS. Public HEIs may be more motivated to participate in an EGS than private institutions, given that the data collection for an EGS would be commissioned by the national ministries. Furthermore, private HEIs and other types of HEIs are sometimes very small which may be a problem for attaining adequate sample sizes but also for adequate support of data collections by the institute's administration.

Conclusions and recommendations:

Research universities and professional HEIs should be considered as the minimum to be covered for an EGS in all participating countries. Other types of HEIs, including private HEIs, should be covered if they are considered to be a part of the HE system in the national context. As a general rule, types of HEIs should rather be included than excluded a priori. For comparative statistics certain types of HEIs could be excluded as seen appropriate. Experience of national level research on the readiness and capacity of private and other types of HEIs should be taken into account when deciding on which types of HEIs to address.

Type of HEI must be considered in the sampling method, e.g. as one stratum in a stratified probability sample. This would allow for international comparisons using different sets of types of HEIs in the analyses (e.g. without 'other HEIs' or only '(research) universities').

6.2.3.2 Types of higher education degrees

Findings: Nearly all national ministries, NRCs, and researchers recommended covering BA and MA degrees in an EGS. A vast majority of national ministries, NRCs, and researchers also recommended covering PhD graduates. Less than half of the national ministries, NRCs, and researchers have recommended including short-cycle tertiary degrees.

International stakeholders and experts consider it necessary to cover BA and MA graduates. For PhD graduates and short-cycle degrees discussions were more controversial. Some experts argued for covering both kinds of degrees. Comparative data on PhD graduates is lacking as well and short-cycle degrees form an important part of HE system in many countries. Other experts argued that PhD graduates should rather be seen as young researchers than HE graduates. Furthermore, it is often harder to get hold of them compared to BA and MA graduates. Some international stakeholders recommended to focus on the core groups of HE and thus exclude shortcycle degrees while others had a priority for being as inclusive as possible.

Discussion and feasibility aspects: PhD graduates could be a very interesting group for an EGS as they form the best educated strand of a countries workforce. The international mobility patterns of this group or their innovation potential seem to be questions of high political relevance. Still, they are no doubt a very different group compared to BA and MA graduates. During their studies many of them are already employed or work as researchers. A questionnaire for PhD graduates would need to differ from a questionnaire focussing on BA and MA graduates in contents, phrasing, and answer categories. This could be accounted for, but would complicate the overall questionnaire design and survey implementation. Another problem related to the operational feasibility is that PhD graduates are often hard to get hold of. Requiring countries to cover this group and attain response rates matching high quality standards would thus come at a relatively high cost.



Covering short-cycle tertiary education has only been recommended by a minority of national level stakeholders. This may however reflect the differences in the prevalence of ISCED 5 degrees between countries. While ISCED 5 degrees do not exist in some countries, they are considered to be an important part of HE in others. Excluding them from an EGS could therefore result in a skewed picture of the HE systems for some countries. Regarding the operational feasibility of the study it should be noted that short-cycle tertiary education is not always offered by HEIs which may pose problems in running the data collection as this presupposes professional support by the educational institutions.

An additional difficulty in some countries is that not all students "formally" end their education, but rather gradually enter the labour market after having collected a sufficient number of credit points. Whether such students should be considered to be graduates, and if yes, how to contact them, are issues that would need to be resolved.

Conclusions and recommendations: Graduates with BA (ISCED 6) and MA (ISCED 7) degrees should be considered as the minimum to be covered in all participating countries. Within these main levels, academic orientations of ISCED 6/7 must be covered in all countries. However, it is not useful to generally include or exclude vocational or 'unspecified' orientations of ISCED 6/7 for all countries. In some countries they may be considered to be part of HE in others not (e.g. the German "Meister" is a vocational degree at ISCED 6 level but clearly not part of HE). Thus a general guideline could be to include degrees that are considered HE in the context of the country or that or offered by institutions considered to be part of the HE system. Obviously this guideline gives a lot of leeway for interpretation and it needs to be sorted out when setting up an EGS on which degrees to include in each respective country.

Short-cycle tertiary degrees (ISCED 5) should be covered if they are considered to be HE in the national context and represent a significant part of the HE system, as marked by their share exceeding a certain set threshold, e.g. 5%.

To avoid problems in operating the data collection it should be considered to generally exclude tertiary degrees that are not offered by any of the types of HEIs.

Concerns have been voiced regarding the technical and operational feasibility of additionally covering PhD graduates. It is therefore recommended to focus on BA and MA graduates for the first round of an EGS. At later stages the question of whether to generally include PhD graduates could be discussed again.

Type of degree must be considered in the sampling method, e.g. as one stratum in a stratified probability sample, to allow for international comparisons using different types of degrees in the analyses (e.g. without 'ISCED 5').

6.2.3.3 Geographical scope

Findings: National-level stakeholders have expressed that an EGS should cover all or most EU countries. The suggestions of additionally covering all or most EHEA countries or at least some EHEA countries were both supported, though to a somewhat lesser extent.

International stakeholder organisations agreed with the goal of covering all EU countries. Whether they supported to additionally cover the EHEA depended on whether they had member organisations outside the EU. Other stakeholders expressed a preference for comparing EU countries with larger non-European economies.



Discussion and feasibility aspects: A drawback of the findings on the geographical scope is that there is no information on the temporal dimension of the geographical scope, i.e. whether respondents referred to geographical scope to be aimed at in the long run or to start with or which they would want an EGS to reach this target size. As it is quite unlikely that an EGS would initially cover all EU countries let alone the total EHEA we assume that people have referred to the scope an EGS should aim for in the long run.

At least regarding two feasibility aspects concerns are raised about trying to cover all EU or EHEA countries right from the start. Economically this may well be unfeasible as a number of countries may simply not be ready to fund participation in an EGS. Operationally a very large scope could pose problems in coordinating the study especially if one refers to all EHEA countries.

Another caveat is that the geographical scope of an EGS also depends on the funding organisation and on the organisational set-up of an EGS. The EC as funding organisation might want an EGS to focus on EU countries or at least prioritise covering EU countries. If the project would be run by organisations crossing European boarders, such as the OECD or IEA, restricting the study to Europe might not be appropriate.

Several experts of large-scale international projects have emphasised that they had faced problems in countries with research teams with little experience in running empirical survey projects. This is important for the operational feasibility of an EGS. An EGS would need to build research capacities in some countries but at the same time it should avoid having large numbers of countries with no experience research teams.

One international expert has stated that comparative projects can be scaled relatively easy, ones the project coordination is established. In fact all continuing international projects looked at by the EUROGRADUATE feasibility have shown some kind of growth though some already started quite big while others were of lower size initially.

Conclusions and recommendations: At the beginning, an EGS should aim at covering the EU. However, a long-term goal of covering the entire EHEA should be pursued and therefore an EGS should be open to EHEA countries, given this is supported by the funding agency. To not overstretch the capacities of the coordinating organisations countries willing to participate in an EGS would need to prove their operational capacity to run the national data collection in their country (in collaboration with the coordinating team).

Given that an EGS would not initially cover all EU or EHEA countries, it should aim for having a set of countries securing the relevance of its results. This set should have (a) countries from the major regions of (at least) the EU, e.g. Southern Europe, Nordic countries, South-Eastern Europe etc., (b) small and large countries, and (c) most of the larger HE systems.

The funding model of the EGS would need to be adaptable to varying numbers of countries.

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6.2.4 Timing of an EGS

6.2.4.1 Time of observation and panel design

Findings: The majority of researchers and ministries recommended a panel design for an EGS. For the NRCs the picture was less clear and it should also be noted that a large part of the ministries were also undecided on this matter. The relatively large fractions of undecided respondents among NRCs and ministries may be due to a lack of clarity on the qualities and implications of a panel design among these two groups as compared to the researchers.

Similarly, most of the international stakeholders expressed a strong preference for a panel design than a cross-sectional design.

The two topics seen as most important for an EGS ("transition into the labour market" and "generating and sustaining employability") suggest that an EGS would need to cover both: the short-term and the long-term development of graduates. Gathering information on the mid- and long-term developments has been seen as one of the most important features for a potential EGS while focussing on the short-term development only has been clearly declined. In line with that, international stakeholders have emphasised that for being useful to decision makers an EGS would need to give up-to-date information on recent cohorts of graduates as well as on long-term developments.

One international expert also emphasised that a panel design would be very advantageous for all skills related topics, and highlighted that very little comparative data exists on the development of skills over time.

Recommendations on the time of the first and the last survey varied among and within groups of national level stakeholders. Most national level stakeholders (independent of the group) recommended having the first survey after graduation in combination with using a panel design. Within this group most stakeholders recommended about 12 months after graduation for the first observation, though other recommendations have been made as well.

For the last observation stakeholders' preferences again varied within and across groups, with average recommendations of five (ministries), seven (NRCs), and 11 (researchers) years. Similarly, recommendations of international stakeholders ranged from 5 to 10 years.

For reasons of comparability data collections in all countries must be at the same time after graduation.

International experts have argued that it would be advantageous to start with surveying two cohorts in parallel. E.g. the first EGS survey could at the same time target the cohort of graduates one year after graduation and the cohort of graduates five years after graduation. Thus the shortand mid-term prospects of European HE graduates would initially be covered. Going beyond the first transition after graduation has been seen as highly desirable by all stakeholders and would be possible from the start of the EGS with such a design.

Discussion and feasibility aspects: A panel study would be the most suitable design for combining a short- and a long-term perspective on HE graduates as required by stakeholders. Some of the topics seen as most important for an EGS would also require panel data or panel data would at least be clearly advantageous.

It should be noted that a panel design would increase the costs and complexity of an EGS. Technically it would, however, be feasible.



Conclusions and recommendations: All results are supportive of a panel study design which is thus recommended for an EGS.

Results for the timing of observations are less clear but it is possible to derive guidelines that can be used in designing an EGS: The first observation should be after graduation and should be about 12 months after graduation. It needs to be assured that the time of observation for all national data collections falls into the same period as this is a prerequisite for comparable data. In order to deliver data on short- and mid-term developments after graduation from the start, an EGS should cover two cohorts in its first round. The first round should address recent graduates (12 months after graduation) as well as the cohort of graduates who left HE five years ago. Results for the timing of the last observation varied. It is recommended to go clearly beyond five years and thus allow for observing the development of graduates after their most early career phase and/or after the phase of starting a family. Therefore a survey nine years after graduation, addressing those graduates which have responded to the first and second survey, is recommended. In order to address concerns regarding costs of the overall study, this last survey should however be made optional for participating countries. The timing of surveys at one, five, and nine years after graduation in combination repeating the study every four years (chapter 6.2.4.2) has another advantage: it allows comparing different cohorts at the same time, i.e. in the same historical situation (see appendix 4).

Certain research topics are best analysed at different points in time and/or by combining information from different points in time. To give a few examples: (1) The transition into the labour market, strategies in finding the first job and problems encountered hereby could best be analysed with data of the first wave, 12 months after graduation. (2) Examples of focus topics of the second wave would be: labour market outcomes, match of skills & competences with labour market needs, or to what extend HE graduates perform tasks involving creativity, innovation, or entrepreneurship. A measurement at five years after graduation when graduates have to started to establish themselves in the labour market seems suitable for such questions. (3) For monitoring and analysing the mid- and long-term career trajectories of HE graduates the last wave at nine years is especially useful. Questions related to that would be the effects of the type of HEI or field of study, work-life balance, labour market integration and family responsibilities, or gender differences in income and position. (4) The effect of skills and competences acquired in HE on future careers would best be analysed by combining information of the first wave and subsequent waves. The level of skills and competences should be measured close to graduation. In later measurements the effect of HE is (more) confounded with training on the job and other learning experiences. In a later panel wave the effect of this primary level of skills and competences on career trajectories can be analysed.

6.2.4.2 Rhythm of study repetitions

Findings: The EUROGRADUATE feasibility study has in the outset set to goal of establishing a sustainable study. This goal has clearly been confirmed by the national level stakeholders as well as by international stakeholders. This raises the question at which rhythm an EGS should be repeated.

As an orientation: most regularly repeated national level studies are done biannually (10 studies) or even annually (nine studies). Three studies are done every three years and one study every four years. International studies tend to be done at somewhat lower pace. Of the studies looked at in this report: the ESS is done every two years, EUROSTUDENT, PISA, and U-Multirank are done every three years, TIMSS is done every four years, and PIAAC is planned to repeated ten years after its first round. Thus one could roughly distinguish between repetitions of high frequency (every 1 or 2 years), medium frequency (e.g. 3-4 years), or low frequency (5 years or more).

Discussion and feasibility aspects: The choice of a suitable rhythm depends to a large extent on the purpose of the study. At the start of this chapter it was argued that an EGS should be conceptualized as a policy driven study for monitoring and analyses of HE systems. Giving an up-to-date picture of HE and monitoring developments, which is relevant for policy makers, presupposes at least a medium frequency of repetitions. The usefulness to policy makers could presumably be further increased if the rhythm would be adapted to the Bologna cycle and thus repeated every three years.

Another issue important for the operational feasibility of an EGS is that its field time should not conflict with the existing national studies and that the same cohort of graduates should not be surveyed twice in short time as this would very likely affect response rates and the readiness of HEIs to help in conducting the study. This criterion would exclude an annual rhythm for an EGS. Generally, an even rhythm, i.e. of every two or four years, could be aligned more easily with the rhythm of existing studies as many of them are done biannually (the EGS could be done in the years between to avoid surveying same cohort twice). However, all in all the rhythm of repetitions is quite heterogeneous (9 annual, 10 biannual, 3 every three years, 1 every four years).

For the issue of operational feasibility it should also be noted that every two years might overburden the capacities of the conducting research organisations and seems a quite high pace to start with.

Other arguments would be cost-efficiency: Every four years would be the least costly option, every two years the most costly option.

Recommendations and conclusions: A first general conclusion is that an EGS should be set-up as a sustainable study with regular repetitions. A recommendation on the exact rhythm of repetitions is hard to determine from the findings. Extreme values can be excluded: longer intervals than every four years do not go together with the study's goal of serving the informational demands of policy makers. Annual repetitions would very much conflict with existing studies in the participating countries. A rhythm of every four years seems to be preferable over a biannual rhythm. The former would yield more up-to-date data but operationally it seems hard to keep. Thus rhythms of every 3 or every 4 years remain as suitable options. The former might be more attractive to policy makers, while the latter would ease the problem of conflict with existing national level studies.



6.2.5 Data collection

6.2.5.1 Survey method

Findings: The most common method employed by national studies is that of online surveying. Other methods, such as paper-and-pencil questionnaires, are also used by less than half of the respondents. The clear dominance of online surveying in graduate research in Europe is also apparent when looking at the recommendations for a European graduate survey: 87% of researchers recommended using online surveys. However, only slightly more than a third (37%) recommends relying exclusively on online surveys. Changing the survey method of existing studies is judged to be problematic by about a third of respondents (34%), while 17% would not see large difficulties in doing this.

Experts' recommendations are also in line with the recommendations of the researchers. During the expert interviews and in the discussions with the project boards, it became clear that a centrally hosted online survey is the easiest way to ensure a standardised and comparable method of data collection. Generally, it was also recommended by experts that usage of different methods should be avoided as far as possible (except for contacting people).

Discussion and feasibility aspects: All survey methods seem in principle appropriate for designing a study of the type C, the 'policy driven monitoring and analyses study'. However, online surveys have several advantages: they are cost effective, relatively easy to implement and they greatly facilitate data processing if a central template is used which results in data sets with the same naming and coding conventions.

An EGS should avoid using different methods in different countries, as this may bring about method effects which are hard to control and can distort results. This point has also been made by one expert of the international survey projects interviewed by EUROGRADUATE who strongly recommended using the same method in all countries.

From a feasibility point of view, based on the above information, it can be assumed that online surveys are technically feasible in most or all EU-EFTA countries, as they are already being done. Many researchers have reported that (additionally) contacting or reminding graduates by post or telephone has proven advantageous in their studies. With regard to the operational feasibility, an EGS would need to solve the issue of whether graduates could be contacted in the same way in all countries. While contact details are collected (centrally or locally) in many countries, it is unclear how up-to-date these contact details are. Therefore, in some countries it might be better to invite graduates per regular mail to an online survey in order to reach more of them, while in others current and active electronic mail addresses are available.

With regard to legal feasibility, an EGS would need to ensure that the survey method complies with national data protection regulations, e.g. whether it is a problem for specific countries or organisations if the online survey is hosted centrally, i.e. in another country

Conclusions and recommendations: Online surveys are recommended as the survey method to be used by all participating countries of an EGS. Heterogeneity of survey methods needs to be avoided. Letters and telephone calls can be used as additional means of contacting and reminding graduates.



It is recommended to host the online survey centrally. The survey will use an online core questionnaire to be developed by the coordinating research consortium in collaboration with the member organisations of the EGS and the national-level research teams. National-level teams should be given the opportunity to add a section of additional questions at the end of the core questionnaire. Data processing should be done by a central data processing unit in collaboration with the national-level teams.

6.2.5.2 Breakdowns of data and level or reporting

Findings: Regarding breakdowns, national studies are at the same time very similar and very different. A great majority of studies, quite possibly all of them, are able to provide statistics on graduates at the national level. About two thirds of studies are able to provide regional and HEI-specific statistics, respectively. The level of individual faculties/departments is covered by less than half of the studies.

This latter comparison between individual HEIs is of the least interest to ministries, NRCs, and researchers. International stakeholders also expressed concerns about an EGS collecting information at the institutional level and providing international comparisons of HEIs, citing that this could deter HEIs from supporting and participating in an EGS. Stakeholders also did not express a great interest in possible comparisons of regions.

Discussion and feasibility aspects: The findings indicate that the interest is greatest in obtaining national-level data. Therefore, a study of the type "D", the 'policy-driven monitoring and analyses study', would mainly require national-level data.

The relatively high proportion of studies being able to provide breakdowns at HEI level presumably is due to many studies having QA measures as one of their main uses. It could be that stakeholders in some countries (ministries and/or HEIs) may be interested in receiving data pertaining to individual regions or institutions for similar reasons. The technical feasibility of providing breakdowns to such a level depends on the size of the sample drawn, and to some degree also on the size of the unit in question. If the sample drawn for a region or the number of students in a specific faculty is too small to ensure anonymity or reliable results, no breakdowns to this level can be performed. Operationally, providing statistics for levels below the national level would significantly increase the workload of an EGS, possibly impacting the schedule and thus making its feasibility questionable.

Conclusions and recommendations: For an EGS, results on individual HEIs or departments would be of little interest. An EGS should therefore focus on collecting and providing national-level data.

However, an EGS should allow for optional additional data collections to enable regional or institutional comparisons if the additional data collection can be combined with the sampling method of the EGS (see below) and countries or institutions bear all additional costs. Such data could be of interest, for example, for institutions interested in using data on graduates for QA purposes. However, no statistics or interpretation on institution/departments should be provided by an EGS as this is not in line with the research questions of interest.



6.2.5.3 Sampling

Findings:

The results show a large variation in the sampling procedures reported by national researchers. Several national level studies conduct full-population surveys at the level of institutions or department, reportedly often in order to be able to provide HEI-level or faculty/department-level statistics (43% of studies are able to provide statistics at this level).

The experts interviewed on comparative international projects also described quite different sampling procedures. The least strict sampling method left the specifics mostly up to the national teams, only prescribing the target group, whereas the most standardised multi-level sampling procedure is software-assisted and subjected to several checks. The experts highlighted some factors as being of crucial importance in making sure that national data collections are in line with the central standards. These factors include agreement on common quality standards before joining the study, intensive communication before and during data collection, clear guide-lines and handbooks, and a cooperative spirit. Similar factors can be found in the literature (Lynn et al. 2007).

Discussion and feasibility aspects:

Several aspects are important with regard to sampling in a possible EGS. In order to achieve a high-quality study of the Model D-type, the 'policy driven monitoring and analyses study', state-of-the-art sampling methods must be employed. This means that a random sample is needed to allow for statistical testing. Furthermore, stratification of the sample by e.g. type of HEI or type of degree is needed to allow for comparative statistics with different subsets of HEIs and/or degrees. 83% of researchers reported that the population data needed for weighting a sample is available, and only 13% have declined this

Besides statistical testing, a further advantage of a sample is that it is relatively less costly to attain high response rates. High response rates are crucial for the quality of statistics and reasonably high rates are a precondition for reliable statistics. Measures to increase participation, such as pre-notification of respondents, invitation to surveys by postal mail or phone, personalized reminders etc. are less expensive for a sample than for the relatively larger population of all graduates. The size of any savings does depend on the kind of measure taken, e.g. the number of contacts is not very relevant for the costs of e-mail reminders but a lot more for telephone reminders. Further, in smaller countries reasonably sized samples will not be much smaller than the full population of graduates and in fact full-population surveys may be necessary in smaller countries (see below)

For achieving comparable statistics across countries the sampling design does not need to be identical in each country. Heeringa and O'Muircheartaigh (2010) recommend strict standardization in the definition of the target population and in using a probability sampling design. At the same time the sampling procedure used in the participating countries may differ in the number of sampling stages, stratification, and clustering to account for differences in survey conditions and infrastructure. Rather than ignoring these differences the strategy employed by studies such as the World Fertility Survey, the World Mental Health Initiative, or the ESS is to optimize the sampling procedure in the respective country while at the same time keeping quality standards defined by a central coordination team.

It is clear, that the target population of an EGS needs to be defined identically for all countries. Still, for an EGS such a definition must give leeway to decide on border cases to take into account the heterogeneity of European HE systems and due to the fact that a grey area between vocational education and higher education exists in most systems. Applying the EUROGRADUATE recommendations the true population of an EGS to be represented by samples could be defined as:

- graduates of a given year of
- universities, universities of applied sciences, and other HEIs, to the extent they are seen as part of the higher education system of the respective country with
- degrees of ISCED levels 5, 6, and 7 to the extend these degrees are seen as higher education in the respective country and if ISCED 5 graduates make for a considerable proportion of all higher education graduates, e.g. 5%.

While probability sampling seems recommendable and would at best be used for all participating countries (Heeringa and O'Muircheartaigh 2010) it may not be useful for smaller countries for the simple reason of too small cohorts of graduates. Table 6-2 indicates the magnitude of minimum sample sizes needed for an EGS. Figures are based on the following assumptions:

- a three wave panel design
- number of cases in the 3rd wave should not go below 2,000 cases (1,000 cases for small countries) to still allow for differentiated analyses
- a minimum response rate of 40%

The suggested minimum response rate is roughly at the level of the mean response rate observed for national level graduate studies (chapter 3.2.4). The level of 40% seeks to combine ambition with being realistic. Response rates of national level studies are very heterogeneous ranging from 11% to 92%. A minimum response rate of 40% would mean a considerable improvement as more than half of the studies reported lower response rates and 11 studies have response rates of 25% or below. Obviously, it would be no harm if studies are going beyond the minimum response rate.

Two models are shown in Table 6-2: In *model 1* all graduates of the initial sample are contacted again for wave 2. Graduates having responded to either wave 1 or wave 2 will be contacted again for the wave 3. In *model 2* only graduates having participated in the preceding wave will be contacted.

	Model	1	Model 2	2
	Contact all grads.	for wave 2	Only contact partcpt. of w	ave 1 for wave 2
	medium/large	small	medium/large	small
	countries	countries	countries	countries
respondents wave 3	2,000	1,000	2,000	1,000
respondents wave 2	5,000	2,500	5,000	2,500
respondents wave 1	5,000	2,500	12,500	6,125
initial sample	12,500	6,125	31,250	15,313

Table 6-2: Examples of minimum sample sizes and numbers of respondents for national-level data collections of an EGS (minimum response rate 40%)



Model 1 would require initial samples of 12,500 graduates for medium and large countries and about 6,000 graduates for small countries. It is assumed that for waves 1 and 2 equivalent minimum response rates of 40% of the *initial* sample are set (and can be achieved). Even though achieving this response rate in wave 2 maybe overly optimistic it is clear that initial samples in model 1 do not need to be as large as in model 2. For model 2 only the participants of the preceding wave are contacted. This approach has several advantages but would require initial samples of over 31,000 graduates (medium and large countries) or over 15,000 graduates respectively (small countries).

How do these figures relate to the size of actual graduate cohorts of the EU and EFTA countries? As no absolute numbers of graduate cohorts were available in recent OECD or Eurostat sources, cohort sizes were roughly estimated by downloadable population data of Eurostat⁷ (number of persons aged 30 in 2014) and the proportion of persons age 30-34 with tertiary degree of type A in the respective country as provided by the OECD (2013).⁸ We define countries as 'small' if they have three million inhabitants or less, which applies to nine EU-EFTA countries. Estimated graduate cohorts of six countries categorised as small are below the initial sample size of 6,125 graduates (Cyprus, Estonia, Iceland, Lichtenstein, Luxembourg, and Malta). For three small countries (Latvia, Lithuania, and Slovenia) estimates are larger but with 7000-9000 graduates not considerably. These results question whether sampling should in fact be applied for an EGS in small countries. In small countries, working without refreshed samples, as Model 2 suggests, would presumably result in numbers of respondents not allowing any differentiated analyses in waves 2 or 3. In contrast, all medium and large countries exceed the initial sample size of model 1 of 12,500 and most countries do so very clearly with a mean estimated cohort size of over 90,000 graduates. In the case of model 2 estimated cohorts would be below the initial sample size of 31,250 for nine countries (Austria, Bulgaria, Croatia, Denmark, Ireland, Finland, Greece, Hungary, and Slovakia). For a further five countries the estimated cohort size was between 31,250 and 40,000 (Belgium, Czech Republic, Portugal, Norway, and Switzerland). Even though these results are based on rough estimates and should be taken with care they indicate that no refreshing of samples would not work well for a number of countries. A couple of drawbacks of Model 1 should be noted: Firstly, for contacting all graduates in wave 2 one needs the support of HEIs again unless it is possible to keep the addresses of graduates sampled for wave 1 even though they did not respond. This will presumably not be the case for all countries. In some countries, HEIs are not allowed to give away address information in the first place. Secondly, contact information for graduates that have not participated in wave 1 will be outdated to a certain proportion and updating is costly and not always successful. Thirdly, the model of refreshed samples will yield more incomplete data, as not all respondents will have participated in all waves. To some extend this can be solved by imputing missing data.

⁸ Education at a glance 2013 did not report the proportion of graduates with tertiary degrees of type A for nine EU+EFTA countries (Croatia, Cyprus, Hungary, Latvia, Lichtenstein, Lithuania, Malta, and Romania). For these countries a prudent proxy proportion of 25% was used (the OECD average is at 30%).



⁷ http://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-data/database (last access 26/11/2016).

Heterogeneity of national sampling designs may also result from differences in the structure of HE systems. E.g. binary HE systems should use the type of HEI as stratification criterion while this would not apply to unitary systems. Generally, different sampling procedures affect the 'efficiency' of the sample. While stratification increases the efficiency of the sample, clustering (like in multi-stage sampling), and disproportionate sampling decreases efficiency (Heeringa and O'Muircheartaigh 2010). To account for such design effects the ESS uses the concept of an 'effective sample size' (Lynn et al. 2007). The effective sample size of a national-level survey may be smaller than the actual sample size due to diverging from the general sampling design. This is accounted for by adjusting the actual sample size a country needs to provide, at best resulting in equal effective sample sizes across countries.

Differences in how sampling proceeds in practice may also be necessary due to the availability of addresses of graduates. One-stage sampling could be pursued if a central register of graduates exists or can be established (e.g. by the ministry, some author public authority, or an entrusted research organisation collecting the addresses of graduates from HEIs). If this is not the case, e.g. because of data protection legislation, multi-stage sampling would need to be applied (e.g. sampling HEIs (or faculties or departments) in the first stage and then sampling and/or contacting graduates within the sampled entities). The results of the EUROGRADUATE surveys revealed very different practice in how addresses are obtained for national-level studies: Only three graduate studies reported to contact graduates directly using address registers. Six studies received contact information from other organisations. 14 studies contacted graduates via the HEIs, and another seven studies received contact information from the HEIs. Even though an EGS would need to allow for differences in sampling practice and the organisations involved it is necessary to standardize the way probability samples are drawn, e.g. by providing a sampling software.

Technically an EGS based on national-level samples is feasible. But not all national-level data collectors will be experienced in drawing a sample and it is a highly demanding task for both, national data collectors and a coordinating team, to assure that centrally defined quality standards are met. It should be noted that all international projects have described this as a key challenge that requires a lot of communication and capacity building. At the same time existing international studies exemplify that there are strategies to assure that common standards are met and an EGS should build on this experience. For a study of the Model D-type, the 'policy driven monitoring and analyses study', highest quality standards in sampling are to be met. These can either be achieved by highly standardized procedures, as described for some international projects, or by cooperatively developing sampling procedures in line with centrally defined quality standards but adjusted to the conditions and infrastructure of the respective country (as described for the ESS; Lynn et al. 2007).





Recommendations: Generally, sampling is a complex matter and even more so for cross-national surveys. Thus a group of international experts should be involved in defining a sampling design suitable for an EGS. Designing the sampling procedure in detail goes beyond the scope and mandate of the EUROGRADUATE feasibility study, but it is possible to describe key characteristics of such a design: Clearly, national-level data collections for an EGS should be based on probability sampling if cohort sizes allow so. In accordance with each respective HE system, samples would need to be stratified by the main types of HEIs and HE degrees. If possible one-stage sampling should be used as this yields more efficient samples. If no central register of graduates exists and can neither be established two-stage sampling procedures would need to be applied, with faculties or departments as primary sampling unit (PSU). Larger entities (i.e. HEIs) should not be used as PSU, as small numbers of PSUs result in inefficient samples. A minimum response rate and a minimum sample size need to be defined.

For the data quality of an EGS it is of paramount importance that sampling procedures of national-level data collections adhere to centrally defined quality requirements. To ensure this a couple of measures are recommended: A sampling experts group of high scientific authority should define the central quality standards. Participating countries or research groups need to agree on these standards before joining the study. The target population of the study needs to be defined centrally. Decisions on border cases of degrees or types of HEIs should be subjected to external approval. Sampling procedures in the respective country need to reflect the country's specific sampling frame (e.g. availability and storage of addresses) and the characteristics of the national HE system. Thus the sampling design for the national-level data collection should be developed cooperatively between a central coordination team and national-level data collectors, involving statistical and subject matter experts of the respective country. Before coming into effect each national-level sampling plan needs the approval of the sampling experts group or an external quality assurance body appointed by the sampling experts group which checks whether quality requirements are met.

6.2.5.4 Considering the national, regional, or institutional context

Findings: In the course of the feasibility study, it became clear that an EGS would need to consider institutional and national contexts in order to provide relevant information to stakeholders. Taking into account information on, for example, economic and labour market structures, or recent changes to the higher education system, were seen as context as very important for the usefulness of an EGS. Information on the institutional context, e.g. on teaching structures, funding, degree of business cooperation of HEIs, but also field, level and orientation of studies was named as important for putting the results of an EGS into perspective by international stakeholders.

Currently, around three quarters of studies are reported by national researchers to collect basic information on HEIs (e.g. type or size). Only few (12% at most) collect information beyond what respondents considered to be "basic", e.g. qualitative information on HEI such as facilities or social structure.

Studies conducted by expert interviewees either collected additional information (with separate instruments linking back to the single student or collecting additional institutional data) or by incorporating comments from national research teams in to the reporting or providing background information on the different HE system.

Discussion and feasibility aspects:

A study of the Model D-type, the 'policy driven monitoring and analyses study', would need to answer stakeholders' and researchers' questions about the interrelations between HE and its outcomes to really help improving HE policies. Understanding the national, regional, and/or institutional context would serve to make the possible analyses conducted with the data collected by an EGS even more helpful in this regard.

Such additional data could be either collected specifically for use in an EGS, or already existing data sets could be drawn on. Integrating already available data sets, especially at the regional/national level, could bring the advantages of administrative data (e.g. reliability) at a relatively low cost. However, the comparability of this data and its suitability for the intended purpose need to be scrutinised (technical/operational feasibility), as the analysis of existing data sets covering European HE graduates did not reveal readily usable data that could be used for this purpose. This issue relates also to schedule feasibility of an EGS in that any external data would need to be in line time-wise with the schedule of an EGS.

Collecting additional data (e.g. per questionnaire from HEIs directly) would increase the costs of an EGS as well as increase the workload for HEIs, which might impact negatively on their willingness to participate. Furthermore, choosing and contacting appropriate respondents at the institutions might prove difficult, calling into question the operational feasibility.

Recommendations:

Information on the HEIs graduates have studied in would be important covariates and could considerably add to the usefulness of an EGS specifically for HEIs and HEI organisations. It should therefore be an integral part of the micro data set of an EGS.

- For reasons of cost-efficiency existing collections of institutional data should be checked for suitability and compatibility with an EGS, e.g. ETER. U-Multirank is another possible source but presumably would produce a considerable amount of missing values.
- If existing data sources turn out to not have sufficient data information on HEIs should be collected by a brief questionnaire among HEIs.

Information on the national and regional context, e.g. labour market data, would be of high relevance for comparative analyses of labour market prospects of graduates. An EGS should aim at integrating national and regional data on the overall economic situation, labour market and other important covariates.

6.3 A suitable organisation of a European graduate study

The organisation of an EGS will be discussed regarding (1) funding, (2) the general organisational set-up of the study, (3) involvement of decision makers and stakeholders, (4) organisation of surveys, (5) relation to national studies, and (6) Outputs and products of the study. Again, for each characteristic in question the findings of surveys, interviews, and other research activities will be recapitulated in brief. A discussion covers controversial issues, alternative options, and feasibility aspects to be considered. A concluding paragraph summarizes the outcomes, gives, if applicable, recommendations for an EGS, and hints to remaining issues and risk factors especially regarding the feasibility of the study.



6.3.1 Funding

Findings: Overall, finding and securing funding was and remains one of the main challenges for international projects as few funding opportunities for regular, long-term studies exist. This makes planning for the project activities difficult. For international projects that are run by international organisations, such as the OECD or the IEA, or that are an entity of their own, like the ESS, stability of funding seems to be less of a question.

Several investigated projects charge participation fees from countries taking part in the study. This was seen to increase commitment and interest in the study, but at the same time it was cautioned that these fees may deter some countries from participating.

One main source of funding for several international projects is the European funding, especially for seed-funding. It was highlighted by the coordinators on international projects that European funds are not necessarily stable and that a joint funding by national level sources could be a more sustainable option. European co-funding for national level data collections, especially for less affluent countries, was mentioned as a way of facilitating participation in an EGS for such countries. In fact, several coordinators posited that raising international funds would be of crucial importance for motivating national ministries to participate and support an EGS. Similarly, international stakeholders said that co-funding of an EGS by national level sources, be it for national level data collections or for international coordination, would be very important for raising international funds. In the ministry survey, only few national ministries have expressed readiness to support an EGS financially, however many have said that it is too early/vague to tell.

With regard to funding, the results show that in all investigated international projects, the coordinating organisation does not raise funds for data collections at national level. National level data collections are almost fully funded by either national ministries or HEIs. Costs for work done by HEIs or schools are typically covered by the institutions themselves. European level decision makers have also expressed that they would see national co-funding as necessary for an EGS.

Discussion and feasibility aspects: The question of funding is related directly to the economic feasibility of an EGS. A couple of features of an EGS hint to public money as the most appropriate source of funding, e.g. decision makers are the main addressees, research should apply to highest scientific quality standards, and it should be a sustainable study. It is hard to imagine that a study of this kind would be funded by private sources.

But public funding is not easy to attain either. The findings of the feasibility study show that finding a stable source of funding may well be a crucial problem for the sustainability of an EGS. Even though nearly all ministries have expressed that they would see the participation of their country as (very) important, it is unclear how many national ministries would in fact be willing to fund an EGS. In the EUROGRADUATE survey most of them have expressed to not be able to tell yet. This is hardly surprising, but as a result the economic feasibility of an EGS cannot be taken for granted. This also applies to European funds, which, in any case, are typically not designed to fund projects continuously.

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Conclusions and recommendations: Despite these caveats, the most promising option for initially funding an EGS seems to be a joint funding by the European (mainly for international coordination) and national level sources (mainly for national level data collection). This kind of shared funding has been described for the first round of nearly all international projects investigated. International experts felt that neither a full European funding nor a full national-level funding would be very likely to start with.

An EGS should therefore seek to raise European funds and convince national ministries to fund national level data collections. An EGS should try to raise sustainable funds as soon as possible and examine the possibility of becoming a European Research Infrastructure Consortium (ERIC) in the long run. The option of running the project within an existing organisation should be examined in order to streamline and stabilise funding decisions.

The recommendations of the EUROGRADUATE aim for a survey study at highest scientific quality and with a panel design. Such a study does not come at little cost. Thus a team conducting an EGS will need to make sure that it deals with resources economically and delivers value for money. Certain recommendations improve the cost efficiency of an EGS, such as using online surveys, repetitions at a modest pace of four years, or focussing on national level information. A centralised survey is economically beneficial as compared to individual national-level surveys and in fact participating in an EGS could yield savings for countries currently conducting national level studies.

6.3.2 General organisational set-up and governance structure of the project

Findings: In looking at the international studies, no common organisational model emerged: three studies are built around a consortium, two studies are conducted in the framework of an international (research) organisation, and one study is an entity in its own right.

Despite these differences, several elements of the governance structures could be identified as typical, even though not each element can be found in each project: most projects consist of a consortium/team of researchers at the core. Stakeholders are often involved in an advisory function through an advisory boards. (Fee-paying) participant countries are often represented on Steering Boards or take part in General assemblies. For advice on specific technical matters, an (additional) advisory board is often set up. By and large, experts expressed satisfaction with setups. What was noted by several coordinators of more informally organised "consortium"-type projects was that more explicit rules regarding decision making and responsibilities would facilitate the project work, and in some cases, a more formalised set-up is intended for upcoming rounds, also to ensure that coordinator has power to enforce standards.

Discussion and feasibility aspects: An EGS could be set up within the framework of an existing organisation, such as the OECD or the IEA, it could try to set up its own organisation, or it could be organised in a project consortium. The funding scheme sketched above, with shared funding by European and national public resources, would be compatible with each of these options.



Conducting an EGS within an international research organisation could be advantageous as the study could then draw on well-established structures and would not need to build a new organisational structure. Furthermore, being incorporated in an existing structure could facilitate fund raising and add to the sustainability of the project. Projects of the OECD or the IEA are typically not focussing on Europe, however. Whether such a specific regional focus would be accepted is unclear. To our knowledge no organisation conducting educational research exists that focusses on Europe.

Building an organisation around an EGS, i.e. setting up an independent organisation from the start, appears limited with regard to its operational feasibility. The advantages of doing this are also unclear. The status of a European Research Infrastructure Consortium (ERIC), like the ESS, could be a long-term goal but is no option to start with.

The third option, i.e. combining the expertise of several existing organisations in a consortium, seems most operationally feasible to initiate the project.

Conclusions and recommendations: It is recommended to organise an EGS as a consortium. The option of integrating the project into an existing organisation could be considered. In any case, the general organisational set-up may well be prescribed by funding agencies.

6.3.3 Involvement of decision makers and (international) stakeholders

Findings: The interviews have demonstrated that stakeholder involvement plays an explicit role in almost all studies. Stakeholders may have explicit decision-making powers (e.g. in a general assembly, steering board) or take on an advisory function. Overall, the stakeholder involvement is seen as positive by project coordinators because it helps ensure the project's relevance. Political actors are also seen to serve a supportive and disseminative function benefitting the project. Experts however, recommended that e.g. decisions on methodological questions should be left to the research organisations involved in the project.

Discussion and feasibility aspects: For a policy-driven study, close involvement of decisions makers and key stakeholder groups is obviously of high importance. Involvement of decision makers is also crucial to the goal of sustainability: A project reflecting the goals of decision makers and seen as useful by them is obviously more likely to receive continuous funding. Thus decision makers and stakeholders need to be considered in key decisions on the projects and setting priorities for topics to be covered.

At the same time, to assure highest scientific quality standards, researchers need to be free to decide on how topics and research questions are tackled and in the interpretation of results.

Conclusions and recommendations: All national and European decision makers providing funding to the project should be represented in a body deciding on key questions of the project, such as the overall strategy, funding, research topics, or new members to the project. This decision making body, could meet at intervals of about one year. Meetings would be prepared by the central coordination team and/or the consortium of running the project. Decision making powers on how to conduct the study should remain with the research consortium.

6.3.4 Organisation of surveys, assurance of identical quality standards, and comparable data

Findings: The degree of standardisation in methods employed by the different studies varies. What became very clear is that the international coordination before, during, and after the national surveys is one of the most important issues that need to be considered, with considerable effort involved. Coordinators of international projects have strongly stressed the importance of a centralised set-up and many interviewees reported to have gradually increased central coordination and efforts to standardise national level data collections in the past (although there were opinions that total standardisation could hardly ever be achieved, and most coordinators reported of problems to keep standards among national teams collecting the data). International experts also strongly recommended a strong central coordination of studies.

From the experts' point-of-view, factors that contributed to a well-coordinated international survey were:

- availability and existence of adequate infrastructure in the countries.
- constant communication with the countries in the data delivery phase, especially personal contact
- elaborated and detailed material for how to conduct all steps in the national data collection (handbooks)
- strong position of the central coordinating team with as much control over the technical work as possible

Concrete measures that were suggested were to involve external agents for QA purposes and signing agreements on the standards of the national level data collection beforehand.

Discussion and feasibility aspects: The findings show that the development and enforcement of common standards is a crucial challenge for conducting an EGS, as in all international projects. However, this does not call into question the operational feasibility of an EGS. Many international projects have exemplified that this problem is manageable.

Conclusions and recommendations: An EGS would need a strong central coordination team with the ability and power to closely monitor and enforce common standards of data collection, cleaning and delivery. This is of crucial importance to the data quality and the success of the project. At the same time it has been highlighted that national-level teams are a strong asset for conducting the study in each respective country and are a hardly dispensable source of expertise on the respective HE system. Thus it is recommended to coordinate the study by a central consortium of research organisations that closely cooperates with national project teams in each participating country. Sampling procedures should be designed collaboratively by the coordinating team and the national-level team to guarantee for both, common standards and considering the specific situation in the respective country. For data collection it is recommended to host the online survey centrally. Data processing should be done collaboratively by a central data processing unit and the national-level teams. Guidance in designing sampling procedures as well as centralised data collection and processing also serve to unburden national teams.



The organisational structure of the EGS should reflect the strong centrality by including a technical advisory group and an external body checking and approving on the quality of the plans for the national-level sampling design, and data collection procedures (to the extent they deviate from the standard design) before they are implemented. Further factors shown to contribute to a well-coordinated international survey should be checked for adequacy for an EGS and taken into account accordingly.

6.3.5 Relation to national level studies

Findings: National level graduate studies are quite frequent in the countries covered by the EUROGRADUATE feasibility study. In 18 countries of the 33 EU and EFTA countries studies exist that are expected to be repeated in the future.

With one exception all national level researchers taking part in the survey have stated that adapting their design to an EGS would cause minor to larger problems, mostly regarding keeping intertemporal comparability.

Most international studies have been built from scratch and have not integrated existing national level studies. Those that did cautioned that this is relatively difficult and that adaptation is a process which takes time. One coordinator stated that having existing studies may hinder HEIs to take part in additional studies. This coordinator recommended to take into account existing studies before starting an EGS.

Discussion and feasibility aspects: The relation an EGS would have to existing national level studies is important for two reasons:

- (1) Existing studies could become part of an EGS, if researchers would be ready to adapt their study to a common design. Thus these studies would be a resource an EGS could draw on. Especially important in this regard is a study rhythm that is in line with that of a possible EGS.
- (2) If ongoing national level studies are not integrated into an EGS, they might compete with an EGS for financial and other resources. Experience of graduate studies in Germany but also of student surveys done by U-Multirank strongly suggest that this would affect the readiness of HEIs to participate in studies and the motivation of graduates to respond to a survey. Besides field resources (HEIS support, responses), an EGS would also compete with ongoing national level studies for funding. This is especially true of the national level study or studies serve similar purposes than an EGS. However, some national level studies have a design quite different from EGS and seem to be mainly designed for QA purposes. Still, the existence of ongoing national level studies may affect the economic feasibility of an EGS in some countries as ministries may not be ready to additionally fund a European project. It should be noted, however, that, while possibly problematic, parallel surveys are not impossible per se and take place regularly in some countries.

The situation in the different countries presents itself as follows:

For 12 countries no competition between national level studies and an EGS would need to be expected as these countries do not have ongoing studies (BE fl., BE fr., BG, CY, EL, HR, IS, LI, LV, MT, PT, and SI).



- For a further five countries an EGS would come as an additional study as these countries only use administrative data (AT, DK, ES, and SE) or are about to develop an administrative study (PL)
- Six countries employ ongoing survey studies that are repeated annually or at even more frequent rhythm, and researchers of the respective study have not yet signalled to be willing to adapt to a common design (FI, HU, IE, IT, NL, and UK). In Hungary and Italy the recommended time of data collection (12 months after graduation) of the EGS is identical with the timing of the survey of the respective study. For the studies in the other countries, graduates would be surveyed within three months (Ireland) or six months twice (NL and UK). It seems very likely that the motivation of graduates to respond to both surveys would be clearly affected. For Ireland the two field phases would presumably overlap. For Finnland the problem seems to be less severe (graduates are surveyed only once at the time of graduation.
- For the remaining 10 countries studies are repeated at a lower pace or irregularly. Such studies could be more easily coordinated with the data collection of an EGS.
- For six countries of the sixteen countries with ongoing survey studies researchers have already signalled some flexibility in the design of their study (CH, DE, FR, LT, NO, and RO)

Conclusions and recommendations:

All in all, for most countries of the EU and EFTA, the problem of competition appears to be avoidable by either integrating the existing national study into an EGS (assuming the design of the national-level study is adapted accordingly) or by an EGS targeting cohorts not surveyed by national-level studies, thus taking place in years where no national level study is conducted. Typically this would require that national-level researchers coordinate their efforts with an EGS team. For six countries, the problem of competition is hard to solve as annual graduate studies are being conducted in these countries, among them two of the larger EU countries (IT and UK).

It is strongly recommended that a team building an EGS seeks to coordinate with existing national-level studies to avoid competing for HEIs and respondents to support the study. A complementary strategy is to integrate existing national-level studies. Some projects have already signalled willingness to adapt to a common design but presumably this not an option for all studies. Many existing studies serve a variety of purposes, e.g. providing information to policy makers and for institutional QA measures. This may additionally restrict flexibility. Another open question is whether national ministries would be ready to fund national level studies as well as a complementary EGS.

The EUROGRADUATE feasibility study does not give a general recommendation for either integrating existing studies or trying to set up complementary studies. Rather, the form of coordination and cooperation between a potential EGS and existing national-level studies needs to reflect the specific situation in the respective country. A preparatory study seems a promising way to explore what would work and is therefore suggested as next step (chapter 6.3.7).

6.3.6 Outputs and products of a European graduate study

A future European graduate study should deliver a variety of outputs and products to encourage intensive exploitation of project data and results by a wide range of users (policy makers, researchers, higher education institutions, students, and young academics). It is recommended that



the outputs of the project include, among other things, a monitoring report, focus reports, scientific use files, public use files, and scientific articles. These project outputs were identified as relevant by national and international level policy makers, researchers and stakeholders.

In the EUROGRADUATE feasibility study, monitoring as well as in-depth analyses were rated as important by all three groups. Therefore, a *monitoring report* providing a comprehensive overview on the key indicators should be made available short-term after the completion of data collection. This monitoring report will primarily target policy makers, who were also identified as the main users of the project. It is expected that this report would serve the general purpose of monitoring higher education systems as well as outcomes on higher education graduates.

For detailed analyses, these monitoring reports will be supplemented by a series of *focussed reports*, analysing certain topics and research questions in depth. The European and international level stakeholders who were interviewed as a part of the EUROGRADUATE feasibility study have made a strong case for empirical analyses. Empirical analyses are necessary for thoroughly understanding the interrelations between higher education systems and outcomes, thus contributing towards informed and evidence-based higher education policies.

The project's micro data will be made available to external researchers and research institutions by means of *scientific* and possibly *public use files* to promote data use by an even broader audience. By including the project's data, questionnaires, technical manuals, handbooks, and other relevant documents necessary for processing, analysing and interpreting data, in-depth analyses will be made possible. For a wider dissemination, the Consortium members as well as external researchers will be encouraged to prepare manuscripts for publication in *peer-reviewed journals* based on project's findings and data.

Through an effective exploitation and dissemination strategy, the project will be able to achieve its goal of reaching different user groups and actors at institutional, national and international levels.

6.3.7 Schedule for a European graduate study

Figure 6-1 shows a provisional schedule for an EGS. The schedule is based on the experience of the researchers involved in the EUROGRADUATE feasibility study as well as schedules of existing large-scale comparative survey projects.

The schedule starts with a preparatory project of about 18 months duration. This preparatory study is suggested for two reasons: (1) international experts involved in the EUROGRADUATE feasibility study have advised to structure the transition from the feasibility study towards a potential full study as clearly as possible. Experts from international projects have reported that the process of setting up the project, including convincing countries to participate, has lasted several years. A preparatory study could be a way to structure and shorten this process and thus to not lose momentum. (2) A preparatory study seems very useful in managing some of the remaining risks and uncertainties with regard to the feasibility of an EGS (chapter 7.6), particularly with regard to incomplete information on the country-specific conditions of data collection, the potential conflict with existing graduate studies, and convincing decision makers at national and European level to participate in and fund an EGS.



Tasks of the preparatory study would be: (1) to further develop tools and processes for the central data collection of an EGS, (2) to set up detailed plans on how to implement the data collection in each participating country, (3) to explore ways of cooperation and coordination with existing graduate studies in the country, and (4) to give opportunity to decision-makers to co-determine the contents of the full study. The preparatory project should already include the majority of countries who would want to join the full study. Insights gained in the preparatory study are likely to prove advantageous for implementing an EGS in additional countries as well and the full study should be open to add countries. By accomplishing the above-mentioned tasks, a preparatory study is expected to considerably help to ensure a smooth start of the full study and is therefore seen as the most promising option of moving towards an EGS.

The preparatory study should directly evolve into the full study. For the first round of the EGS as well as for all subsequent repetitions, a period of four years is planned.

Preparatory project 2017⁹ - 2018

An estimated period of 18 months is needed to sufficiently develop the design and the tools for an EGS, thus providing a profound basis for the decision of a large number of countries to participate in the project. During this period, the consortium:

- Further develops the questionnaires for the first round
- Defines and develops the organisational set-up and the tools needed on central level for the implementation of an EGS (e.g. online survey tool, the online questionnaire, translation procedures, data preparation, production of a merged data set)
- Explores for each respective country the practical conditions for running the survey, such as availability of contact information, as well as data protection regulations relevant for all steps of the project. This should be done in close collaboration with national experts and ministries and aims at elaborated plans on how to implement the data collection in the respective country (e.g. how to obtain contact information, sampling of graduates, contacting of graduates and sending reminders, potential problems and obstacles with regards to the participation in a centralized study, coordination with existing national studies, preparations for subsequent panel waves, data protection and privacy issues throughout all phases of the project implementation).
- Presents the results of the preparatory study to participating countries and to additional European countries. The preparatory study will bring more clarity on what to expect and how to implement the first round of the full study in various contexts. Hence, policy makers can decide upon their participation based on already elaborated tools and concepts. The full study would still be open to countries that have not participated in the preparatory study. It is assumed that insights gained in the preparatory study would help implementing the study in these additional countries as well.

Four-year period for the 1st round of a full study:

The tasks of the **first 18 months** (2nd half of 2018 and 2019) of the full study focus on:

 Confirmation of countries to participate in the full study (general meeting of country representatives, funding issues, contractual issues)



⁹ The proposed timing of activities in this paragraph is based on the assumption that the preparatory study would start at the beginning of 2017. In case the actual start takes place earlier or later, the schedule shifts accordingly.

- Set-up of the governance structure (such as general assembly, research consortium, project boards, and technical advisory group)
- Translation and adaption of the national questionnaires
- Implementation of national sampling designs
- Organisation of national data collection
- Field test at national level with smaller samples in order to test the chosen sampling procedures, modes of contact, validity of survey instruments, the centralised online survey, and data delivery processes
- Revision of the survey instruments, sampling, and survey organisation as necessary based on the results of the field test

In months 19-31 (year 2020) the actual field phase takes place:

- Complete preparation of full surveys
- Autumn: Survey and data collection
- Starting in winter: Beginning of data cleaning, processing, and preparation of dataset

Months 32-48 (year 2021 and 1st half of 2022) are mainly devoted to analysis and reporting:

- Finalise data cleaning and preparation of dataset
- Data analysis
- International report and further publications
- Prepare scientific use file and make it accessible to external users

Following the recommendations of the EUROGRADUATE feasibility study, the first round of an EGS would target two cohorts of graduates (12 months after graduation and 5 years after graduation) to provide information on the short- and mid-term careers of graduates from the start.

Figure 6-1: A provisional schedule for a European graduate study



Subsequent rounds:

Like the first round, any subsequent round would last four years with field phases taking place every fourth year (e.g. 2024, 2028, 2032, etc.). From the second round on, three cohorts of graduates would be covered, if reasonably large numbers of countries choose the option of additionally surveying graduates nine years after their graduation (see appendix 4). With few exceptions, the schedule of subsequent rounds would resemble that of round 1. Unlike the 1st round, the governance structure would already exist in subsequent rounds. Each repetition of the EGS would start with a meeting of the general assembly which would, amongst other things, decide on the topics to be covered and discuss the previous round possible lessons to be learned.



7 Feasibility assessment of the proposed study design

The general question the EUROGRADUATE feasibility study aims to answer is whether and how a European graduate study could be set up. Chapter 6 has given recommendations on the design and organisation of European graduate study which were derived from the views and preferences of stakeholders, looking at examples of international studies, and consultation with experts. Feasibility aspects have already been considered in discussing the options for an EGS. To arrive at an overall assessment these aspects will be taken up again in this chapter discussing the feasibility of the proposed design and organisation using the TELOS format, i.e. regarding technical, economical, legal, operational, and schedule feasibility. The chapter concludes with an overall assessment of the feasibility of an EGS, remaining risk factors, and strategies for dealing with these.

7.1 Technical feasibility

A technical feasibility assessment considers "the availability of the necessary technology" (Hall, 2011, p.17). For setting up and running an EGS, the technical requirements would mainly pertain to data collection and data processing. This includes the availability of standardised survey instruments, sampling techniques, and the technical capacity to set up and run online surveys. As discussed above, standardised instruments to measure students' transition to labour market, employability and mobility of graduates are already available. Surveys have also been used frequently to collect information on the quality of higher education. For skills and competencies state-of-the-art innovative measurements for surveys such as the skills use instruments are available, though they still have limitations. Skills tests have not been recommended for an EGS to start with due to concerns on their technical and operational feasibility. The EUROGRADUATE feasibility study recommends a centrally hosted online survey but online surveys hosted within participating countries should yield no technical problems either in nearly all EU-EFTA countries. More than 90 % of the studies already use online survey methods to collect data on higher education graduates. The prevalence of online surveys suggests that valid e-mail addresses of graduates are available in most countries. Creating the quality standards for sampling as well as designing and conducting the national-level samples are complex task. To assure compliance with joint standards intensive communication between central coordination and national-level teams is required. It seems likely that not all national-level research teams will be familiar with complex sampling techniques and the central coordination team will need to assist and engage in capacity building. Previous international projects show that this is feasible. Thus, it is fair to conclude that the majority of the technical requirements for setting up a European graduate study are available and are technically feasible in most European countries.



7.2 Economic feasibility

An economic feasibility assessment helps in identifying potential funders and in determining the cost effectiveness of the proposed model and to ensure that the benefits outweigh the costs (Taylor, 2007). The EUROGRADUATE feasibility study was able to show that the major stakeholder groups see an EGS as highly beneficial to them. This is a necessary condition for the economic feasibility of an EGS. However, it still remains unclear how many national ministries would in fact be willing to fund an EGS. This also applies to European funds. Thus the economic feasibility cannot be taken for granted and setting up an EGS will involve considerable efforts to convince a critical mass of policy makers to support such a study. Also, finding a stable source of funding may well be a crucial problem for the sustainability of an EGS.

A survey study at highest scientific quality with a panel design would not come at little cost. However, participating in an EGS could in fact yield savings for countries currently conducting national level studies as a lot of the data collection work would be done centrally thus unburdening national level teams. In any case, a team conducting an EGS will need to make sure that it deals with resources economically and delivers value for money. Several recommendations have been taken to improve the cost-effectiveness of an EGS: Skills test would have increased costs considerably and are not recommended. It has been recommended to not prescribe institutionallevel break downs of information as this would require much larger samples. More frequent repetitions of the study than every four years have also not been recommended due to, e.g. cost arguments. Online surveys are recommended as the most economic method of data collection. Furthermore a centralised survey brings about considerable economic benefits as compared to a large number of individual national-level surveys. Certain tasks need to be done only ones and can then be scaled and adapted for country-specific needs.

7.3 Legal feasibility

A legal feasibility assessment analyses whether the proposed model ``falls within legal boundaries'' (Hall, 2011, p.17). For a European graduate study national data protection laws have major implications for contacting, recruiting, and surveying higher education graduates in various countries as well as for analysing and storing data on higher education graduates. In general, it is certain that there are ways for ensuring that the data collection and analysis procedures comply with the national data protection legislations as in most countries, after all, data have been collected on higher education graduates and as a number of European countries have participated in previous cross-country graduate studies. Still, for a European graduate study, the point of data protection and the surrounding legal issues are highly important. In light of the planned study design, i.e. a centralised online survey and a panel design (implying contacting respondents several times), issues of data acquisition, and storage are highly relevant. Questions are related to the following areas

- Contacting graduates
 - How will graduates be contacted for the first time?
 - How will graduates be contacted for the second wave? Is explicit consent needed?
 - Can graduates be contacted for later waves without having taken part in previous ones? By whom?



- The centralised data collection
 - Is it a problem that information given by respondents is saved at servers in another country?
- The storage of contact data over time
 - Who will store graduates' contact data?
 - Is there a time limit for storage of data, e.g. prescribed by national laws?
 - Who will have access to the contact data?
- Linkage of graduate data to other sources
 - By which means can graduate data be linked to other sources, e.g. HEI data?
 - Is explicit consent needed for this?

Providing detailed answers to these questions would have gone beyond the scope of this feasibility study. To avoid running into unforeseen legal problems, it is recommended to investigate the above mentioned questions within a preparatory study preceding a potential full study (chapter 6.3.7). In this study a team preparing the full study should consider data protection issues in close collaboration with researchers and ministries of interested countries and set up a plan on how to implement the data collection for an EGS in accordance with the data protection legislation of the respective country.

Generally, to ensure compliance with data protection laws an EGS will need to produce a professional data management plan outlining procedures for data collection, processing, analysis, storage, and data sharing. A detailed data management plan can prove to be a valuable tool not only in ensuring compliance with the legal procedures but also in collecting and processing data efficiently and systematically, thereby improving the overall quality of the study. Furthermore, an EGS will need to work closely with national researchers, data protection specialists and possibly legal consultants in order to determine feasible procedures for all countries.

7.4 Operational feasibility

Notions of operational feasibility are heterogeneous and often somewhat vague. In our understanding operational feasibility relates to the question whether the processes for conducting the study would work and to the operational capacities of the organisations involved (similarly: Taylor 2007).



It is a highly complex project to set up and conduct a European graduate study. The organisations entrusted with such a study need to have considerable experience in running HE graduate studies as well as in large scale comparative research projects to ensure that the operational capacity required is met. It is strongly recommended to involve national-level teams in data collection and data processing tasks, such as translation and adaption of the questionnaire, communication with HEIs and respondents, designing and conducting the sampling, or transferring national categories into international categories and classifications. The EUROGRADUATE feasibility study has shown that experienced research groups exist in most EU and EFTA countries. As outlined above a central coordination team will be needed to support national-level teams in these tasks. To not overstretch the capacities of the central coordination team an unduly high number of inexperienced national-level team must be avoided. To make sure that data collection and data processing works a field test is indispensable. At best it should cover all participating countries to test-run and revise testing data collection as well as to test the various language versions of the questionnaire.

Further, with regard to the geographical coverage, it has been recommended to aim for covering all EHEA countries in the long run. However, the number of participating countries should be limited in the beginning to not overburden the project. Too many countries from the start could mean that a European graduate survey would need to support inexperienced teams in the administration and analyses of the surveys, thus posing additional challenges for the central coordination team. At the same time an EGS should not start with too few countries as this would question its usefulness and the continuation of the project beyond the first round. Achieving this balance between too many and too few countries is important especially during the initial rounds of the graduate surveys.

One of the points to be considered in proposing a rhythm for study repetitions is that a European graduate survey should ideally not conflict with the timing of existing national surveys. An even rhythm at not too short intervals eases aligning international and national-level data collections. In this sense a rhythm of four years adds to the operational feasibility of an EGS. Operational capacities of the central coordination team as well as the national-level teams should allow for repetitions every four years.

Possible conflict with existing national level studies is an issue of high importance as conflict for survey participants, support by HEIs, as well as funding may harm both, a potential EGS as well as national level studies. Therefore competition should be avoided as far as possible. Several national level researcher have already expressed their willingness to take part in an EGS and seek for common design standards, however this will presumably not be a solution to all studies. The findings of the EUROGRADUATE feasibility and communication with national level researchers show that there is no strategy fitting all countries. Thus the EUROGRADUATE feasibility study does not generally recommend to either integrating existing studies or to setting up a complementary study. Rather, the relationship to a potential EGS needs to reflect the specific situation in the respective country. A preparatory study seems a promising way to explore options and identify the best solution for the respective country (chapters 6.3.5, 6.3.7, and 7.6).

Another important point relevant for operational feasibility is that common quality standards are set up for recruiting study participants, implementing the surveys, and coding, processing and analysing data. Setting up common quality standards was emphasised repeatedly by the experts who were interviewed as a part of the feasibility study. Common quality standards are necessary to ensure and improve comparability of data across countries.

7.5 Schedule feasibility

Schedule feasibility refers to the question ``whether the project can be completed within an acceptable time period'' (Hall, 2011, p.17) and whether the proposed schedule is realistic .The provisional time table of an EGS foresees a time of four years per round (Figure 6-1). This is based on the experience in previous projects¹⁰ as well as schedules of large-scale international survey projects and there is no reason to believe that the proposed schedule is not feasible. Still, measures should be taken to avoid unforeseen problems in delivering the project. As a first measure field test precede the full survey in every repetition of the EGS are strongly recommended. Field tests are important for ensuring high quality of questionnaires and their translations but also for testing whether data collection procedures work smoothly.

A second measure suggested by the EUROGRADUATE feasibility study is a preparatory study preceding the full study. This study should encompass setting-up a detailed methodology for the central data collection (including sampling, contacting of graduates, processing, storing, and distributing the data), developing the questionnaire for the full study, exploring how the data collection would be implemented in interested countries (taking into account the availability of contact information and national data protection laws), aligning the European survey with existing graduate surveys in the respective country, as well as getting the consent of a certain number of countries to participate in the full study.

Such a study would add to schedule feasibility in two ways: (1) It would clarify in detail how the data collection could be implemented in the majority of countries participating in the full study. This would help to avoid running into unforeseen problems causing delays. (2) A danger to schedule feasibility is losing momentum after the EUROGRADUATE feasibility is finished. Most international projects reported that the process of setting up the funding for the project and convincing countries to participate took several years. A preparatory study could save time and help structuring the transition towards the full study as a larger number of countries would have already been involved in preparing the full study and as ministries could take their decision based on already developed tools and concepts.

A provisional estimate for the length of a preparatory study would be 18 months which is considerably less than the preparatory period reported for most international projects. The full study could directly follow the preparatory study in case of success.

7.6 Remaining risk factors and measures to cope with them

In drafting the recommendations for a potential EGS the feasibility of propositions has already been considered for choosing among alternatives (chapter 6). In this chapter, the proposed design and organisation has again been discussed against the criteria of technical, economical, legal, operational, and schedule feasibility. In summary, no insurmountable problems were identified and we may well conclude that a European graduate study would be feasible. Still, not all problems could be solved and four main risk factors remain. These risk factors and measures to cope with them are discussed below:



¹⁰ The organisations represented in the consortium and the project's Scientific Board regularly conduct national-level graduates studies in their countries and have coordinated or have been involved in a number of international projects in the field of HE, such as EUROSTUDENT or REFLEX.

5. Country-specific conditions for data collection not yet fully known

Data protection laws vary from one country to another and have implications for contacting, recruiting, and surveying higher education graduates in the respective country. Countries differ also in the storage and availability of graduates' contact information, e.g. in some countries central address registers can be used, and in others such registers do not exist. The EUROGRADUATE feasibility study has collected information on the storage of address data and how graduates are contacted but not all country-specific conditions for data collection are yet known in detail.

Recommended measures:

- A preparatory study seems a useful next step to avoid unforeseen problems and delays in delivering the project due to legal or practical problems in running the data collection in the various countries. A preparatory study should, in collaboration with national experts and ministries, explore the data protection regulations relevant for all steps of the project (sampling, contacting of graduates, processing, storing, and distributing the data). Practical conditions for running the survey, such as the availability of contact information of graduates would need to be investigated as well. For each participating country, the study should prepare clear-cut plans on how to implement data collection.
- A field test preceding each survey is indispensable, i.e. a test run should be done with a limited number of respondents duly before the full survey. The field test serves to test all procedures necessary to conduct the survey, identify problems, and adapt procedures of data collection and the questionnaire. This includes contacting, recruiting, and sampling graduates, as well as testing of any translated versions of the questionnaire. The field test will thus help manage risks related to project implementation at the national level.

6. Potential conflict with existing national-level studies

An EGS could conflict with existing graduate studies at the national level or institutional level and compete with them for participation of HEIs and graduates as well as for funding. Such competition should be avoided as far as possible in order to not harm existing research capacities or hinder conducting the EGS successfully.

Existing studies could be integrated in an EGS. This would however require a high degree of flexibility of these studies in adapting to a common design. It should be noted that several national-level researchers have already expressed their readiness to strive for common design standards. Due to the variety of designs and purposes of national-level studies, however, integration of national-level studies will presumably not be an option for all studies or countries. Alternatively, an EGS could complement existing national level studies. In this case, the timing of the EGS and national-level surveys would need to be coordinated to avoid competition. Readiness of national-level projects to do so is not yet clear.

Recommended measures:

In order to minimise the risks for a potential conflict with existing graduate studies, it is recommended to start cooperation with national-level researchers as early as possible, integrate their views and expertise in developing an EGS, and seek to develop tailor-made strategies considering each country's specific situation. Two workshops have been conducted to this end by the EUROGRADUATE feasibility



study. These events provided opportunities for national-level researchers to present their studies and discuss the possible relationship to an EGS. While participants generally showed strong interest in collaboration, the workshop corroborated that country-specific solutions are needed: Some teams aim for fully integrating their study, some saw it is an option to replace certain repetitions of their study following the rhythm of an EGS, and others signalled that an EGS could come as a complementary study. It is recommended to continue such forms of exchange in preparing a full study.

- One way to maintain contact with national-level researchers and other stakeholders is a **network**. Within the framework of the EUROGRADUATE feasibility study, a network has been founded to keep interested individuals and organisations updated and to provide an opportunity for exchange beyond the duration of the feasibility study.
- It is suggested to treat the question of collaboration and coordination of an EGS with existing national-level studies in the **preparatory study** mentioned above. By directly communicating with national ministries and researchers, it could be explored whether an EGS would rather complement or integrate (certain repetitions of) existing studies.

7. Balance between too few and too many participating countries

Specifically, for the first round, an EGS needs to find a balance between covering too few and too many countries. Too few countries would put into question the relevance of the study and thus its continuation. Starting with too many countries may overburden the operational capacities of the central coordination team, particularly if a larger number of the national-level research teams have little experience.

Recommended measures:

- It is recommended to focus on covering the EU in the first round of an EGS, while being open to additionally covering a growing number of EHEA countries.
- Besides striving for a large number of countries, an EGS should aim for having a set of countries securing relevance of its results. This set should have (a) countries from the major regions of (at least) the EU, e.g. Southern Europe, Nordic countries, South-Eastern Europe etc., (b) small and large countries, and (c) most of the larger European HE systems.
- To not overtax the capacities of the coordinating organisations, national-level research teams would need to prove their operational capacity to run the national data collection in their country in order to be eligible for participation. The coordinating research consortium should be prepared to assist and support national-level teams and help build capacities, but it is advisable to define minimum technical capacities for national-level research teams and limit the number of inexperienced teams.
- The EUROGRADUATE feasibility study shows that an EGS would be feasible and provides detailed recommendations for a coherent design and organisation of such a study. These results should be disseminated intensively to convince a larger number of European countries to participate.



8. Uncertain funding prospects

Even though national-level decision makers as well as European decision makers have shown strong interest in an EGS, it is not clear whether they would be ready to effectively support and fund such a study. In this sense, the economic feasibility of an EGS cannot be taken for granted. Furthermore, finding a sustainable funding model is a problem encountered by many international research projects, and ensuring sustainable funds will presumably be one of the major challenges for an EGS once it has successfully been set up.

Recommended measures:

In order to successfully raise funds, the proposed study will need to prove to be cost-effective and provide value for money. Several features of the design and or-ganisation recommended by the EUROGRADUATE feasibility study help to improve cost-effectiveness of an EGS: (1) online surveys are the most economic method of data collection; (2) a centralised online survey is more cost-effective than individual online surveys in the participating countries, as tools and procedures need to be done once only and can then be scaled and adapted to country-specific needs; (3) the rhythm of study repetitions at the moderate pace of every four years is, among other things, the result of weighing cost considerations against the need for up-to-date data.

In addition, considerations of cost effectiveness have played an important role in refraining from recommending some features: skills tests and mandatory break down of data to the institutional level; both of which would have brought about considerable cost increases. For national ministries in countries with a graduate study in place, participating in an EGS might actually result in savings, as a lot of the data collection work would be done centrally.

- A preparatory study seems advantageous for securing funds for a first round of an EGS. In clarifying in detail how the study could be implemented in each respective country, remaining risks would be reduced and the hurdle for national as well European decision-makers to fund an EGS would be lowered.
- For the sustainability of the project, the question of continuation of funding should be tackled actively and at an early stage. Thus it is recommended to make **funding** of subsequent round(s) an explicit task of each round of an EGS. In the long run, the project could seek to attain the status of an ERIC.
- An EGS will only manage to be sustainable if it is highly relevant to its stakeholders. Thus the project must be directed towards the needs of stakeholders in order to convince them that the continuation of the project is desirable. Consequently, the EUROGRADUATE feasibility study has used stakeholders' requirements as a main source of information for conceptualising the design and organisation of an EGS. Furthermore, it is strongly advised to make sure that the view of stakeholders and decision makers is accounted throughout the project, e.g. by integrating them into the organisational structure. It is recommended that funding organisations as well as other important stakeholder organisations are represented in the main decision-making body of the project, e.g. a general assembly. This body would give overall orientation to the project and take strategic decisions, such as setting the topics to be focussed on.



8 Overall assessment, added value, and next steps

A primary outcome of the EUROGRADUATE feasibility study is that the demand for an EGS is high. A necessary condition for the feasibility of an EGS is thus fulfilled (chapter 4).

Furthermore, it was possible to project a coherent design of an EGS addressing the requirements of national-level and international stakeholders. These requirements are remarkably consistent across groups and lead to the suggestions of implementing a survey study, using a panel design, and providing micro level data, to name some of the key features (chapter 6.2). Recommendations for the research design were complemented by suggestions for a suitable organisational structure for an EGS (chapter 6.3).

The proposed design and organisation were discussed against the criteria of technical, economical, legal, operational, and schedule feasibility (chapter 6.3.7). This discussion revealed remaining risk factors, but did not identify any insurmountable problems. The EUROGRADUATE feasibility study suggests a range of measures to deal with the risk factors (chapter 7.6). All in all, we may well conclude that a European graduate study is feasible.

What would be the added value of a European graduate study? The strong demand for an EGS reflects the importance that issues related to higher education and its graduates have gained on the European agenda, as evidenced by a large number of political goals focussing on HE graduates (chapter 1.1). In the current Bologna agenda, the Yerevan Communiqué of 2015, for example, the following goals are particularly strongly related to the outcomes of HE and thus to graduate data:

- (1) HE should foster creativity, innovation, and entrepreneurship among graduates.
- (2) HE should promote intercultural understanding, critical thinking, tolerance, gender equality, as well as democratic and civic values to strengthen European citizenship.
- (3) HE should provide graduates with the competences to successfully enter the labour market at the end of each cycle and to develop new competences for their employability throughout their working lives.

How can an EGS support these goals? In order to monitor progress towards these goals, regular data is needed on innovative and entrepreneurial activities, on political values and political participation of graduates, as well as on the short- and long-term progression of HE graduates in the labour market. The data currently available on HE graduates is however not well suited to support decision-makers and HE stakeholders in pursuing these goals. Existing international data cannot give a satisfactory account of many of these variables (chapter 2). The EU-LFS allows the monitoring of labour market entrance and progression in the labour market for a considerable number of European countries, but it has little or no information on skills and competences, innovative and entrepreneurial activities, or political values and activities. Data sets richer on variables, like PIAAC or the ESS, cover too few HE graduates to give reliable results for a larger number of countries.



Moreover, in order to effectively support HE policies, research needs to go beyond merely monitoring HE outcomes – the outcomes should be connected back to what actually happens within HE. Bologna ministers express expectations that measures within HE, such as appropriate teaching and assessment methods, practical and research components in studying, incentives for quality teaching, dialogue with employers, flexible learning paths, or international mobility can improve HE outcomes and help reach the goals outlined in the Yerevan Communiqué. Research should be prepared to test which measures in HE are in fact most suitable to enhance HE outcomes. The EUROGRADUATE feasibility study has shown that existing international data cannot relate HE outcomes back to comprehensive information on the education received by graduates. The EU-LFS and the ESS hold only basic information on HE. PIAAC is more comprehensive regarding education, but would not allow analyses for individual countries due to the limited number of HE graduates in the data set. To summarise: With the existing international data sets, progress towards several of the main goals of European HE policies cannot be monitored. For more detailed analyses of the relationship between HE and labour market outcomes, currently available international data is even more limited. A sustainable EGS would regularly provide up-to-date information for monitoring developments relevant to the agenda of European HE policies. High quality micro-level data would allow in-depth analyses focussing on issues relevant to HE policies.

National-level studies on HE graduates often provide more detailed information on the education received as well as on the career trajectories of graduates. Most EU and EFTA countries conduct graduate studies, even though in 12 countries, no ongoing graduate study could be identified. Many national-level studies do not cover the mid- or long-term development of graduates and are thus neither able to analyse employability nor whether graduates sustainably engage in innovative, creative or entrepreneurial activities (chapter 3). Moreover, the EUROGRADUATE feasibility study documents that national-level studies in Europe are very heterogeneous in their design and do not render comparative results.

Again it is reasonable to ask whether comparative data is really needed and what its added value would be. The development of European HE is primarily influenced by national policies, but is also embedded in international processes such as the Bologna process and EU policy cooperation. To steer and monitor these processes, identify convergence or divergence of countries, and assess performance against goals and benchmarks decision makers need information that is comparable across countries. Additionally, cross-country comparisons allow putting a country's respective HE system into a wider context. Do national-level results reflect the European average? What are the specific strengths of the country's system and where are possibilities for improvement and development? An EGS would allow answering such questions. A particular advantage of an EGS as recommended by the EUROGRADUATE feasibility study would be its ability to go beyond mere description and investigate the reasons for the observed country differences. For example, how are differences in employment outcomes related to characteristics of the higher education system or to the structure of the labour market? Cross-country comparisons and analyses of cross-country differences also provide opportunities for peer-learning. Monitoring at the international level, contextualising national-level results, analysing country differences and peer learning provide added value for stakeholders and decision-makers at the national level as well as the European level. A reliance only on national-level studies would forgo these opportunities.



Stakeholders within the HE system as well as employers and employee organisations would be able to use the results for a more well-informed debate about improving European HE. An EGS would also yield added value for HEIs, as it would shed more light on the relationship between HE and employment outcomes of graduates. The opportunity of comparing one's own institution with international results might be interesting as well for HE professionals. Therefore it has been recommended to allow for collecting institutional-level data in conjunction with an EGS and provide it to HEIs for non-public use.

A specific European added value lies in the capacity-building function of a European study. According to the EUROGRADUATE feasibility study, about one third of all EU and EFTA countries have no current national-level graduate study. For these countries, participating in a European initiative would clearly improve transparency regarding graduate's career development. The EUROGRADUATE feasibility study has indicated that the data quality of existing national-level studies is heterogeneous. It proposes using the highest existing standards for a European study. **Participating in an EGS, mutual exchange, and peer-learning are likely to considerable improve the availability and quality of data on HE graduates in a number of European countries.**

Is a European initiative needed? Most EU and EFTA countries have developed their own graduate studies resulting in disparate data sets not well suited for international comparisons. Without a European initiative, convergence of these studies is not expected. Many ministries have expressed their interest in a European graduate project. Despite the costs for such a study, a European initiative seems money well invested. European funds are expected to develop leverage effects with regard to national-level investments in countries previously without a graduate study. For countries with already existing graduate studies, they could bring about considerable synergy effects and even save costs as many tasks would be done centrally. Thus, looking at the overall costs of graduate tracking in Europe, an EGS might in fact need less public money than a large number of national-level graduate studies being conducted independently.

As a way forward, and in order not to lose momentum, three measures are seen as useful:

- (1) The results of the EUROGRADUATE feasibility should be disseminated intensively by making them broadly and freely available and promoting them amongst decision-makers and other stakeholders.
- (2) In conducting the project, the team of the EUROGRADUATE feasibility study has contacted decision-makers at the national and European level, NRCs, national research organisations, as well as European stakeholder organisations. These relationships should be kept active beyond the duration of the feasibility study. Against this background, the EUROGRADUATE Info Network is founded as a platform for the exchange of individuals and organisations interested in a European graduate study.
- (3) A preparatory study is suggested as the next step towards an EGS (chapter 6.3.7). Among the tasks of such a study should be to further develop tools and processes of central data collection, explore – in direct collaboration with ministries and researchers of interested countries – how the study could be implemented in the different countries taking into account data protection laws, availability and storage of addresses, and the coordination with existing graduate studies. A preparatory study could help to considerably mitigate several of the identified risk factors. It could directly evolve into the full study and thus contribute to structuring the path towards an EGS more clearly.



The EUROGRADUATE feasibility study has shown ways to set up a European graduate study regularly providing high-quality comparative data with a focus on HE and the labour market and being able to flexibly adapt to further informational needs of decision-makers and stakeholders. It has also pointed out many of the complexities and challenges in setting up a large-scale European graduate study. These findings will certainly be helpful in designing and implementing a future European graduate study. The EUROGRADUATE feasibility study was a successful beginning, paving the way for the future work necessary towards making a European graduate survey a reality.

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Appendices

Appendix 1 – List of abbreviations

AES	Adult Education Survey
CEPS	Centre for Educational Policy Studies of the University of Ljubljana
CHE	Centrum für Hochschulentwicklung (Centre for Higher Education)
CHEPS	Center for Higher Education Policy Studies at the University of Twente
DG EAC	Directorate-General Education and Culture
DG Empl	Directorate-General Employment
DZHW	Deutsches Zentrum für Hochschul- und Wissenschaftsforschung (German Centre for
	Higher Education Research and Science Studies)
EACEA	Education, Audiovisual and Culture Executive Agency
EC	European Commission
ECStA	European Council for Student Affairs
EFILWC	European Foundation for the Improvement of Living and Working Conditions
EFTA	European Free Trade Association
EGS	European graduate study
EHEA	European Higher Education Area
ENQA	European Association for Quality Assurance in Higher Education
EPC	Education Policy Centre of the Charles University in Prague
EQAR	European Quality Assurance Register for Higher Education
ERIC	European Research Infrastructure Consortium
ESS	European Social Survey
ESU	European Students' Union
ETUCE	European Trade Union Committee for Education
EU	European Union
EUA	European University Association
EU-LFS	European Labour Force Survey
EURASHE	European Association of Institutions in Higher Education
EWCS	European Working Conditions Survey
HE	Higher education
HEGESCO	Higher Education as a Generator of Strategic Competences
HEI	Higher education institution
HIS	Hochschul-Informations-System
IEA	International Association for the Evaluation of Educational Achievement
IHS	Institut für Höhere Studien (Institute for Advanced Studies)
INCHER	International Centre for Higher Education Research of the University of Kassel
ISSP	International Social Survey Programme
LIS	Luxembourg Income Study
NRC	National Rectors' Conferences
OECD	Organisation for Economic Co-operation and Development
PIAAC	OECD Survey of Adult Skills
PISA	Programme for International Student Assessment
REFLEX	Research Into Employment and Professional Flexibility



ROAResearch Centre for Education and the Labour Market at the University of MaastrichtTIMSSTrends in International Mathematics and Science Study



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Appendix 4 – Potential sequence of surveys of a European graduate panel study