RESEARCH ARTICLE

Who knows what school leavers and graduates are doing? Comparing information systems within Europe

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Many current national and institutional education policies address the issue of raising participation amongst young people and enhancing employability after leaving school or university. What sort of information are these policies built on? This paper compares national information systems from the last three decades across Europe that gather information on school leavers’ and graduates’ pathways after compulsory education. Using documentary data collected systematically the paper describes the main focus, the research design and the sampling frame of the school leavers’ and graduates’ information systems (SLGIS) arriving at several different typologies. This paper gives an overall picture of what sort of research is conducted within the area of school leaving and graduation and points out the advantages and disadvantages of the different approaches. Beyond these, the paper gives an indication of how the school leavers’ and graduates’ data are used within the different European contexts and points towards the next steps of this meta-research: case-studies on how the school leavers’ and graduates’ data are applied at the national and the institutional level.

Introduction

Considerable resources are spent on school leavers’ and graduates’ information systems in numerous European countries, but it is not clear what happens to the results. In principle, school leavers’ and graduates’ information systems (SLGIS) promise several benefits. First, they can help governments and researchers to explore the mechanisms of knowledge societies, and yield important and relevant information on the outcomes of education and learning. Second, educational institutions may require information on their former students’ performance in the next educational stage or at their subsequent workplace. Third, they can distribute information about the necessary skills and competencies for the different careers, and prepare current students for the school-to-work transition (EU 2009). Fourth, they may provide information which could be used to strengthen tuition and help the transition of students, particularly those faced by apparent barriers to further participation (Gorard et al. 2007). Through investigating how different European school leavers’ and graduates’ information systems are set up, this paper disentangles the stories that they could tell us. Using a comparative approach between different nation-states the main data gaps are identified in the strand of school leavers’ and graduates’ research.

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What data are collected by the European Union?

Comparison lends itself more easily to national contexts that are closer to each other both culturally and economically, such as those within the European Union. Additionally, there seem to be more and more questions arising within the field of education and its policy areas in relation to which the European Union has something to say. However, this was not always the case. As education in the forming years of the EU was seen as a national responsibility and the ‘construction of the European Union [was] marked by perplexing silence around education policy’ (Dale and Robertson 2009; Lawn and Grek 2012, 13), the only issues that gained attention in the past concerned strong links to the economic agenda like that of vocational education and training, a part of the labour market and social policies (Beukel 2001). In recent years especially, the Education and Training 2010 work programme and the successive Strategic framework for education and training – ET 2020 – drew attention to policy topics like lifelong learning, early school leaving and tertiary attainment (Council 2001, 2002; EU 2009). The role of the EU regarding these agendas is mainly enacted through ‘soft governance’ tools, the unobtrusive powers of best practices and the ‘hidden politics of data and standards’ (Lawn and Grek 2012, 51). To achieve this, indicators and benchmarks are set for the educational policy fields along with the agreement on the ways of monitoring national and supra-national progress (Lange and Alexiadou 2007; EU 2009; Alexiadou, Fink-Hafner, and Lange 2010).

To make monitoring possible, the EU gathers information on several policy topics. The project of informing Europe and the decision making of the Union started with the statistical team set up at the construction of the EU that led to ‘measuring’ Europe and presenting a diverse set of data on the Eurostat website (Michelis and Chantraine 2003). Beyond the statistical data collection, the European Union is also involved in financing different cross-national research projects related to more specific research areas. Halász (2012) argues that the importance of research data gathered from the nation-states is underpinned by two main reasons. First, the European, transnational level has to convince the national level about the significance of the proposed policy change and this can be achieved through providing a solid evidence base. Second, the transnational decision makers are ‘far away’ from the national educational field and this creates an information shortage that can be partly filled through commissioning research projects within education.

What is known about school leaving and graduation?

This paper looks at a specific policy area and whether the EU and the different nation-states of the EU have information about it. The policy area is school leaving and graduation and how this phenomenon is measured within the European context. Note that the existence or the methodologies of research programmes on early school-leavers, or drop-outs, or NEETs are not detailed here.

The immediate and longer-term outcomes of education at the European level are only partly covered by the Eurostat, providing some indication of the outcomes of school leavers and graduates; these data derive from the Labour Force Survey. However, there have been numerous attempts to gain a European picture of school leaving and graduation in the past decades ‘either by organising a further data compilation in the various countries or by combining data that have been collected elsewhere’ (Mainguet 1999, 44). The majority of these cross-national comparative research
projects have been framed as researching ‘school-to-work transitions’. The conventional view of transition from school to work defines it as the period between departing from compulsory education and arriving into a stable work position at the labour market (Müller and Gangl 2003).

A few examples of cross-country analysis of school-to-work transitions are: the Comparative Analysis of Transitions from Education to Work in Europe (CATEWE) project running between 1997 and 2000; the Careers after Higher Education, a European Research Study (CHEERS) project running between 1998 and 2000; The Flexible Professional in the Knowledge Society New Demands on Higher Education (REFLEX) in Europe project running between 2004 and 2007; and the Higher Education as a Generator of Strategic Competences (HEGESCO) project running between 2007 and 2004. These studies use a number of different resources, like cross-national surveys with a more general focus, cross-national transition surveys or, occasionally, comparative qualitative studies on the one hand and national transition research on the other (Raffe 2008).

The comparison of transition systems according to Raffe (2008, 292) suggests ‘the path-dependency of countries and the failure of national transition patterns to converge’, which challenges some of the theories of modernisation and globalisation. Along the persistent divergence of transition systems, there is diversity in the national information systems that measure school leaving and graduation or school-to-work transitions as well. There are numerous national school leavers’ and graduates’ information systems operating with distinct methodologies and timeframes making comparisons problematic and rarely allowing for capturing European mobility (Müller and Gangl 2003).

In an international comparative account on how graduates’ information is collected, Gaebel et al. (2012, 16) suggest that ‘the tracking of students and graduates has so far received little attention, at least at European level’. Their work concerns the methodology and how the data about current and former students are used within higher education in different European countries. The study entitled Tracking Learners’ and Graduates’ Progression Paths (TRACKIT), gathered information on tracking methodologies within and after university (Gaebel et al. 2012). Gaebel et al. (2012) distinguish between student and graduate tracking at the institutional, regional, national and international level through the distinct methodologies of conducting surveys and using administrative data.

This paper concerns a similar topic; it provides a meta-analysis of both secondary and tertiary education as overarching, national-level research programmes gathering information on school leavers and graduates. Within institution tracking methodologies are not analysed here. An account of all school leavers’ and graduates’ information systems within Europe is provided, identifying their main focus points and what research design and methodology they use. Through outlining and describing these, an ‘agreement on a “best practice” template to facilitate the partial harmonisation of existing transition surveys’ could be encouraged as suggested by the CATEWE research team more than ten years ago (Smyth et al. 2001, i).

**What are the underlying ideas of school leavers’ and graduates’ information systems?**

The ways information systems are set up pre-suppose answers to the crucial question of ‘what education is for’. Three possible understandings of this – namely the sociological,
the humanistic and the economic views – are considered here regarding the underpinning ideas of SLGIS. The aim here is to understand how these stances inform the design of different school leavers’ and graduates’ information systems.

The sociological model considers education to be a common good that has a social purpose (Field 2002; Ouane 2009; Schuller 2009). Therefore the focus of the sociological view of education is how the ‘group’ gaining education benefits or deteriorates the wider society. Education is thought of as a possible vehicle for social mobility, but is also often viewed as a vehicle to reproduce social inequalities and the acceptance of the status quo (Macionis and Plummer 2008). A sociological model of a SLGIS would foreground the implications of education and training for social mobility and social stratification.

The second, humanistic model considers education as a means of achieving a fulfilled person through personal development. In a humanistic model the learning needs of the individual person are in focus. In this model the individual is in the centre as opposed to the previous approach and its focus on society. Such a view of education concerns questions of the extent and process of personal fulfilment, identity formation and citizenship.

The third, economic view treats education as an investment that is similar to investing in physical capital (Brown and Sessions 2004; Psacharopoulos and Patrinos 2004). The core idea of human capital theory is that investment in education generates a stream of future benefits for the individual as higher earnings. The outcome for society is a more productive economy (Becker 1993; Cohn 1979). A human capital theory approach prompts questions around the returns to education, how the initial earnings and the earnings over a lifetime compare for the different educational levels and sectors (Mincer 1974; Cohn 1979; Becker 1993; Psacharopoulos and Patrinos 2004).

**Definitions and research questions**

The school leavers’ and graduates’ data collections are referred to throughout as ‘school leavers’ and graduates’ information systems’ or SLGIS to distinguish them from the research that this paper is based on.

The main criteria for a school leavers’ and graduates’ information system to ‘qualify’ as a potential case are set as follows. The aim of this research is to give a picture of the efficiency of national educational and training systems. Thus, the school leavers’ and graduates’ information systems examined collect leavers’ and graduates’ data at the national level and they account for more than one level of the educational and training system, covering both secondary and tertiary levels. As a further aim is to classify school leavers’ and graduates’ information systems that are systematic and account for changes within the educational and training system, they should collect data from more than one cohort of young people or the same cohort should be contacted several times throughout following them up.

Countries with school leavers’ and graduates’ research where the only scope is a certain region or a specific institution are excluded, since the observational unit, which ‘refers to the unit used in data collection and data analysis to address the research questions’ (Ragin 1987, 9), is the nation-state level.

Based on these definitions, this is a descriptive account of the available school leavers’ and graduates’ information systems within Europe, asking the following research questions:
In which European countries do school leavers’ and graduates’ information systems exist? Is it possible to observe any policy-borrowing in relation to SLGIS methodologies between these countries?

What is the focus of the observed school leavers’ and graduates’ information systems?

How are these school leavers’ and graduates’ information systems conducted in the different European countries with regards to the research design, the sampling, the data collection methods, and the time and space they cover?

Research methodology

An international comparative research frame is used to analyse the similarities and differences between school leavers’ and graduates’ information systems that exist in Europe. Using a comparative research frame can help the understanding of a particular educational system through broadening the horizon from the system level to a wider picture (Grant 2000; Phillips and Schweisfurth 2006). This paper provides a snapshot of the ‘current’ versions of the SLGIS. The cross-sectional design helps to find variation among the groups or clusters of school leavers’ and graduates’ information systems without accounting for change over time (de Vaus 2001). SLGIS are analysed within their national education and labour market systems, however, due to a fairly standardised approach here, there is little space to account for the broader national characteristics.

The paper is based on systematic documentary analysis to gain a picture about school leavers’ and graduates’ information systems currently in place in European nation-states. All 27 member states of the European Union are under scrutiny in the beginning of 2013 and additional nation-states that have special relations with the EU are drawn into the analysis, like Iceland, Norway, Liechtenstein and Switzerland. One major drawback is that of language differences: despite the systematic search for school leavers’ and graduates’ information systems the researcher cannot be certain that all existing national information sets are found.

The procedure of finding the relevant documents is built on multiple stages and it is an iterative process. The documents gathered are web-based official documents that provide some detail about the school leavers’ and graduates’ information systems. As the SLGIS in the several national contexts take very different shapes in terms of their institutional setting, a number of steps are taken to find sufficient information on them. First, specific search terms are entered into search engines to map out national SLGIS. In a second step, the educational ministry websites are searched for references on school leavers’ and graduates’ data both in English and in the home language. In a third step the search is extended to other websites, like the labour market ministries, educational research organisations, as well as national statistical organisations. In a fourth step, in order to identify any SLGIS that are not conducted by the national governments, a systematic search is conducted through the Education Resources Information Center (ERIC) for academic articles on school leavers and school-to-work transitions. To cross-check the available information gathered the TRACKIT study is used.

The documentary data gathered are coded and cross-tabulated along the following variables: the focus, the research design, the methodology, the analysed population, the repetition, the age group covered, the time period and the region of the SLGIS.
Description of school leavers’ and graduates’ information systems in Europe

The following sections analyse and compare several aspects of school leavers’ and graduates’ information systems. First, a detailed account is provided about the existence or absence of school leavers’ and graduates’ information systems in different regions of Europe. Second, the regional variation is described in terms of what educational levels are covered by the different school leavers’ and graduates’ information systems. Third, the main focus points of the SLGIS are categorised into four types and a detailed example is provided for each of those categories. Fourth, the research design of the school leavers’ and graduates’ information systems is analysed along the population covered to point out the advantages and disadvantages of the different approaches. And fifth, a short account of the timeframe of the school leavers’ and graduates’ information systems is provided. Table 1 gives an overall picture, covering all the topics mentioned in these sections.

Regions and countries with and without SLGIS

Building on the comparative approach, similarities and differences within regions in terms of research aims and methods of the school leavers’ and graduates’ information systems are identified. Evidence of policy-borrowing between countries in terms of SLGIS methodologies is apparent in the UK and Ireland context where the former joint English and Welsh survey called Youth Cohort Study is originally based on the Scottish experiences of the Scottish School Leavers’ Survey (Howieson and Croxford 2008), as well as between the Nordic countries, where using registry data to compile national information sets is common practice (Myrskylä 2001; United Nations 2007).

In terms of regional differences the majority of the countries in Northern and Western Europe have school leavers’ and graduates’ information systems; there are fewer programmes found in Southern Europe, as suggested in Table 2. It is mainly the Central and Eastern European countries that do not conduct systematic school leavers’ and graduates’ information systems covering more than one level of the education system.

The variance within Europe could yield a number of explanations. The differences between the regions could be attributed to the economic situation, where the countries with higher GDP spend more on educational research, as for instance gathering information on school leaving and graduation. However, some of the SLGIS were initiated in times of economic hardship mainly as an aid for government to plan policies tackling youth unemployment. A further explanation could be policy-borrowing within the European Union with respect to starting SLGIS. As suggested earlier, actual SLGIS methods-borrowing can be found only in closer-knit smaller regions of Europe, rather than within the whole supra-national area. The most plausible explanation seems to be related to the history of Europe, to the existence of communism as opposed to a market economy. In the areas where the communist ideology dictated a planned economy, there was no need to measure school leaving and graduation: everyone was supposed to comply with the labour market planning and take ‘their place’. In the market economy the role of the state is profoundly different. The state provides the structures and the market decides on the ‘value’ of school leavers’ and graduates’ from different institutions. This latter approach might raise the need to measure this ‘value’ and thus the information gathered through SLGIS (Standing 1997).
Table 1. School leavers’ and graduates’ information systems in Europe.

| Country         | Name of research: secondary level                      | Name of research: higher education level | Focus of the school leavers’ and graduates’ information systems                                                                 | Starting year and Repetition | Research Design and Population | Repetition, Age group/Time after leaving |
|-----------------|--------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|----------------------------------------|
| Austria         | Statistics Austria: Education-related employment career monitoring |                                            | First experiences at the labour market and career pathway (Statistics Austria, 2012)                                               | N/A New cohort yearly       | Longitudinal Census              | 1, 12, 18, 24 months after leaving   |
| Belgium         | Flemish Longitudinal Research in Secondary Education   |                                            | Transitions from school to labour market and to further education (KULeuven, 2011)                                               | 1999 3 cohorts between 1999-2006 | Longitudinal Sample              | Contacts made at the ages of 23, 26, and 29 |
| Denmark         | From education to labour market (Fra uddannelse til arbejdsmarked) |                                            | Transitions from school to labour market and to further education (Statistics Denmark, 2012)                                   | 2000 New cohort yearly      | Longitudinal Census              | 2 months after leaving, then yearly from 1 to 10 years |
| (1)             | Graduate employment (Nyuddannedes beskæftigelse)        |                                            | Transitions from school to labour market and to further education (Jensen, 2012)                                               | 2004 New cohort yearly      | Longitudinal Census              | 4 to 19 months after graduation      |
| England and Wales | Youth Cohort Study (YCS)                              |                                            | Life of young people including school leaving and graduating (ESDS, 2009)                                                       | 1995 New cohort biannually  | Longitudinal Sample              | 2, 3, 4 contacts yearly, between the ages 16 and 19 |

(Continued)
| Country | Name of research: secondary level | Name of research: higher education level | Focus of the school leavers’ and graduates’ information systems | Starting year and Repetition | Research Design and Population | Repetition, Age group/Time after leaving |
|---------|----------------------------------|------------------------------------------|---------------------------------------------------------------|----------------------------|--------------------------------|------------------------------------------|
| England | *Longitudinal Study of Young People in England (LSYPE)* | Life of young people including school leaving and graduating (DfE, 2011) | 2004 One cohort | Longitudinal Sample | Yearly from the age 13/14 till 23/24. Terminated 3 years before planned, in 2010 |
| Finland | *Statistics Finland: Transition from school to further education and work* | Transitions from school to labour market and to further education (Statistics Finland, 2012) | 1990 New cohort yearly | Longitudinal Census | One year after leaving secondary or university |
|         | Aarresaari Network First destinations | First destinations of leavers (Saino, 2010) | 2005 New cohort yearly | Cross-sectional Sample | One year after leaving university |
|         | Aarresaari Network Career follow-up | First experiences at the labour market and career pathway (Puhakka and Tuominen, 2011) | 2000s New cohort biannually | Cross-sectional Sample | Five year after leaving university |
| France  | *L’enquête ‘Génération 92, 98, 2001, 2004, 2007, 2010* | Transitions from school to labour market and to further education (Céreq, 2008) | 1992 New cohort every 2-3 years | Longitudinal Sample | 3, 5, 7 and 10 years after leaving |
|         | Les bacheliers | Transitions from school to labour market and to further education (Lemaire, 2010) | Cohorts from 1996, 2002, 2008 | Longitudinal Sample | Yearly after school leaving into university |
Table 1. (Continued).

| Country    | Name of research: secondary level | Name of research: higher education level | Focus of the school leavers’ and graduates’ information systems                                                                 | Starting year And Repetition | Research Design And Population | Repetition, Age group/Time after leaving |
|------------|----------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------|--------------------------------------|
| Germany    |                                  |                                         | Life of young people including school leaving and graduating (Uni Bamberg, 2010b)                                               | 2010 One panel of multiple cohorts | Longitudinal Sample            | For 10 years, contacts yearly; connected to school levels |
| (1)        | Nationale Bildungspanel (NEPS)   |                                         | First experiences at the labour market and career pathway (Rehn et al., 2011)                                                  | 1989, 1993, 1997, 2001, 2005 and 2009 | Longitudinal Sample            | 1, 5 years and for some cohorts 10 years after leaving |
| (2)        | Hochschulabschlüsse              |                                         | Transitions from school to labour market and to further education (ISTAT, 2011, ISTAT, 2012a, ISTAT, 2012b)                      | 1998 New cohort every 3 years | Cross-sectional Sample         | 3 years after leaving secondary school or university |
| Italy      | ISTAT survey on the educational and work experiences of upper secondary school leavers ISTAT Graduate Survey |                                         | First experiences at the labour market and career pathway (Cammelli, 2012)                                                      | 1997 New cohort yearly       | Cross-sectional Sample         | 1, 3, 5 years after leaving university |
| (2)        | Graduates’ employment conditions Survey of 2011 |                                         | Transitions from school to labour market and to further education (ROA, 2009, VSNU, 2007)                                    | 1989 New cohort yearly; biannually for WO level | Cross-sectional Sample         | 1.5 years after leaving secondary school or university |
| Netherlands| ROA School-leaver and graduate surveys VSNU WO-Monitor |                                         | Transitions from school to labour market and to further education (ROA, 2009, VSNU, 2007)                                    | 1989 New cohort yearly; biannually for WO level | Cross-sectional Sample         | 1.5 years after leaving secondary school or university |

(Continued)
| Country          | Name of research: secondary level | Name of research: higher education level | Focus of the school leavers’ and graduates’ information systems | Starting year And Repetition | Research Design And Population | Repetition, Age group/Time after leaving |
|------------------|----------------------------------|------------------------------------------|---------------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------|
| Northern Ireland | School Leavers’ Survey           |                                          | First destinations of leavers (DENI, 2010)                    | 1979 New cohort yearly      | Cross-sectional Census        | At leaving                           |
| Republic of Ireland | (1) School Leavers Survey       |                                          | Transitions from school to labour market and to further education (ISSDA, 2007, Byrne et al., 2008) | 1980 New cohort yearly or biannually | Cross-sectional Sample          | 12-18 months after leaving school |
|                   | (2) What do graduates do?       |                                          | First destinations of leavers (HEA, 2010)                    | 1987, 1992, 1997, 2002, 2006, 2007, 2008 | Cross-sectional Sample        | 9 months after graduating          |
| Spain             | Young people’s entrance to the labour market (Observatorio de Inserción Laboral de los Jóvenes) |                                          | First experiences at the labour market and career pathway (García-Montalvo and María Peiró, 2011) | 1996, 1999, 2002, 2005, 2008 and 2011 | Cross-sectional Sample          | Within 5 years of accessing the labour market after leaving; 16-30 year olds |
|                   | (2) University Observatory for Employment (Observatorio Universitario de Inserción Laboral) |                                          | First experiences at the labour market and career pathway (Gaebel et al., 2012) | N/A                         | Cross-sectional Sample          | N/A                                   |
| Country | Name of research: secondary level | Name of research: higher education level | Focus of the school leavers’ and graduates’ information systems | Starting year And Repetition | Research Design And Population | Repetition, Age group/Time after leaving |
|---------|---------------------------------|------------------------------------------|---------------------------------------------------------------|-----------------------------|--------------------------------|-------------------------------------|
| Scotland (1) | **Scottish School Leaver Survey (SSLS)** | Transitions from school to labour market and to further education (Howieson and Croxford, 2008) | (1970) Recently: 1991; 1993; 2001; 2003 | Longitudinal Sample | At the ages of 16/17, 18/19, 21/22, 23/24 |
| (2) | **Destinations of Leavers from Scottish Schools AND Follow up Survey of Leavers From Scottish Schools** | First destinations of leavers (ScotStat, 2009, ScotStat, 2010) | 2005 New cohort yearly | ‘Longitudinal’ (2 data points) Census | 3 months and 9 months after leaving |
| (3) | **On Track** | First experiences at the labour market and career pathway (SFC, 2010) | 2004 Two cohorts: 2004; 2007 | Longitudinal Sample | For 5 years after leaving, 4 times interviewed |
| Sweden (1) | The transition from upper secondary school to higher education | Transitions from school to labour market and to further education (Statistics Sweden, 2012) | 1989 New cohort yearly | Cross-sectional Census | At leaving |
| (2) | The Entrance to the Labour Market; Upper secondary school leavers | First experiences at the labour market and career pathway (Samuelsson, 2004) | 1996 New cohort yearly (?) | Cross-sectional Sample | 3 years after leaving upper secondary school |
| (3) | The Entrance to the Labour Market; University graduates | First experiences at the labour market and career pathway (Samuelsson, 2004) | 1996 New cohort yearly (?) | Cross-sectional Sample | 3 years after leaving university |

(Continued)
| Country       | Name of research: secondary level | Name of research: higher education level | Focus of the school leavers’ and graduates’ information systems                                                                 | Starting year And Repetition | Research Design And Population | Repetition, Age group/Time after leaving |
|---------------|----------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------|------------------------------------------|
| Switzerland   | Transitions from Education to Employment (TREE) | Transitions from school to labour market and to further education (Bergman et al., 2010)                                      | 2000 One cohort                                                            | Longitudinal Sample          | Between the ages of 16 and 26, contacting them yearly till 2007 then 2010 |
| United Kingdom| Destination of Leavers from Higher Education (DLHE) | First destinations of leavers (HESA, 2007)                                      | 1995 New cohort yearly                                                   | Cross-sectional ‘Census’     | 6 months after graduation     |
| Wales         | Careers Wales Destinations       | First destinations of leavers (CAREERSWALES. 2012)                               | 1995 New cohort yearly                                                   | Cross-sectional Census       | At leaving                    |
Levels of the education system in the SLGIS

There are three main approaches to setting up school leavers’ and graduates’ information systems at the different levels of the educational system. The first two columns of Table 1 contain the titles of the school leavers’ and graduates’ information systems and give an overview of what level they collect data at. Several countries conduct separate school leavers’ and graduates’ information systems for their secondary-level school leavers and a different project for the higher education graduates; these are Denmark, Northern Ireland, Norway, the Republic of Ireland and Spain. A second type is countries using a holistic, overall approach to gain school leavers’ and graduates’ data (Austria, Belgium, the Netherlands and Sweden). A third category is those countries that have a holistic, overall school leavers’ and graduates’ information system and in addition to that they conduct regular data collections within higher education at the level of institutions. These countries are: England, Finland, France, Germany, Italy, Scotland and Switzerland.

Looking at the regional differences, we can see that, with the exception of Denmark, the Nordic countries gather data through overall, comprehensive school leavers’ and graduates’ information systems. The countries of continental Europe all have holistic projects on the whole educational system and, additionally, some conduct additional research projects on their higher education graduates. Whereas Ireland and Northern

Table 2. School leavers’ and graduates’ information systems in different regions.

| Region                      | School leavers’ and graduates’ information systems | Tertiary level surveys only | No regular surveys |
|-----------------------------|---------------------------------------------------|----------------------------|-------------------|
| Continental Europe          | Austria                                           |                           | Luxembourg, Lichtenstein |
|                             | Belgium, France, Germany, Netherlands, Switzerland |                            |                   |
| Nordic Countries            | Denmark, Finland, Sweden                          | Norway, Iceland            |                   |
| UK and Ireland              | England, Ireland, Northern Ireland, Scotland, Wales |                           |                   |
| Southern Europe             | Italy, Spain                                      | Greece, Cyprus, Malta, Portugal |                   |
| Central and Eastern Europe  | Spain, Hungary, Romania, Slovakia                 | Bulgaria, Estonia, Latvia, Lithuania, Poland, Slovenia |                   |

Sources: OKM (2007); Arnesen, Støren, and Wiers-Jenssen (2012); APM (2012); Gaebel et al. (2012).
Ireland have separate school leavers’ and graduates’ information systems for their secondary school leavers and their graduates, England, Scotland and Wales have a graduate survey in addition to a holistic research project.

These differences matter in terms of what picture the SLGIS depict of a national educational system. Whereas the first approach does not allow for a comparison of secondary and tertiary outcomes, a country that has a holistic approach gains comparable data within and between the different educational levels. Comparability within and between the different levels and sectors of the system allows room for calculating the returns of education through applying a cost–benefit analysis, as the economists of the human capital theory set it out (Cohn 1979; Becker 1993; Psacharopoulos and Patrinos 2004). The difference between system-level school leavers’ and graduates’ information and data collected at the institutional level poses two different questions. One is the attention of the central government: what levels and which sectors are ‘important’ enough to conduct school leavers’ and graduates’ information systems on? The second question concerns ‘responsibility’: if the data depict a system-level picture, national policy making could be seen as responsible. If it evaluates a sector at the institutional level, schools and universities could be held accountable for the leavers’ and graduates’ results.

The main focus of SLGIS

The stated focus of the school leavers’ and graduates’ information systems is analysed on the basis of their description in the research reports and on the main websites of the data collections.1

Four main ideal types of the school leavers’ and graduates’ information systems are identified with regards to their stated focus. SLGIS are either: (i) examining the transition process from school-to-school or school-to-work; (ii) analysing young people’s lifespan more generally; (iii) collecting data on the initial destinations of leavers and graduates; or (iv) gathering information on the experiences of the first job and the training they had. These categories, however, are permeable; school leavers’ and graduates’ information systems in some cases set out to give answers to more than one of these interrelated questions. A category was chosen that sums up best the research foci; the categorisation is detailed in Table 1 in the ‘Focus’ column.

The most established and older school leavers’ and graduates’ information systems dating from the 1970–1980s tend to examine the transition period from school to further education or to work, or the first destinations of leavers. School leavers’ and graduates’ information systems that were started in the 1990s were mainly concerned either with the transitions process, or the first experiences of leavers and their initial career pathway. The latest school leavers’ and graduates’ information systems started after 2000 have diverse foci; many deal with the transition process and there are a number of research programmes in the other three categories as well. After this summary, this section details what the different research projects set out as their focus and illustrates the different types with an example.

The first type of school leavers’ and graduates’ information systems is dealing with the transition process from school-to-school or school-to-work. It aims to gather data on the relatively short period of being between schools and the labour market, with an emphasis on how former students assess their progress at a higher education institution or in further training or how they are able to find a workplace. As the already mentioned CATEWE international research project set ‘transition’ in its conceptual framework:
(…) the concept of transition is seen as referring to a sequence of statuses or positions achieved over a period of time from a point in full-time education (…) to a point some years later when the majority of such system leavers have achieved a ‘stable’ adult status. (Hannan et al. 1999, 18)

These research programmes are mostly conducted in Continental Europe; Finland and Sweden represent the Nordic countries and such research programmes are in place in Scotland and in Ireland.

The French study Génération is carried out by the Centre d’études et de recherches sur les qualifications (Céreq). The study is following a number of cohorts of young people for seven years and is described on the Céreq website (2010) as ‘an appropriate statistical tool for monitoring transition-to-work paths and occupational trajectories’. The Génération research gathers data on leavers from schools as well as universities; thus the main criteria to be in the sample is to have left in the given year, not started schools or university again within one year, and not being older than 35 years old (Céreq 2011).

The second main type of school leavers’ and graduates’ information systems analyse the lifespan of young people more generally, concentrating on broader issues beyond the educational experiences and the young person’s progress to further and higher education and the labour market. These sorts of information programmes are conducted in England (two projects) and in Germany.

The English and Welsh Youth Cohort Study (YCS) was designed ‘to monitor the behaviour and decisions of representative samples of young people aged sixteen upwards’ (ESDS 2008). As the Longitudinal Study of Young People in England (LSYPE) was building on the YCS, it has a similar focus according to the website:

The main role of the study is to identify, and enable analysis and understanding of, the key factors affecting young people’s progress in transition from the later years of compulsory education, through any subsequent education or training, to entry into the labour market or other outcomes. (ESDS 2011)

Although the data description of the LSYPE says it is gathering data on ‘the transitions young people make from secondary and tertiary education or training to economic roles in early adulthood’ (ESDS 2012), as a review of this dataset states, it covered several wider issues of young people’s lives:

[The] past Waves of the first LSYPE cohort have focused on the educational experiences of young people, but other issues have also been covered including their views on local areas, community cohesion, participation in social activities, participation in risky behaviours, crime or anti-social behaviours, health, and their aspirations for the future. (Collingwood et al. 2010, 20)

The third type of school leavers’ and graduates’ information systems collect data on the destinations of the leavers or graduates when they leave compulsory schooling or a tertiary level institution. This type of data collection sets out to gather information on the immediate destinations, very soon after leaving school or university. These school leavers’ and graduates’ information systems gather data on the current status of the former student, their first work experiences and, most importantly, their views on their previous education. These data collections can be found in the United Kingdom and Ireland and such projects are conducted in Finland as well.

The main Finnish dataset complied by Statistics Finland using administrative data deals with the transition from schools and universities to higher education or the labour
market (Statistics Finland 2011, 2012). A combination of administrative data, this dataset does not provide in-depth information on the labour market outcomes. There are additional higher education graduates’ surveys by the institutions. One of these projects is referred to as the Aarresaari Network’s (guidance network at university level) ‘first destinations’ or ‘placement follow-up’ (Saino 2010). It gathers data on the initial labour market outcomes, the graduates’ opinions on their recent studies and how the university prepared them to meet the needs of the labour market.

The fourth type of school leavers’ and graduates’ information systems collect data on young people’s first impressions of being on the labour market and their experiences after entering it. These projects – as opposed to the first destinations and the transitions process – set out to gather information on the longer-term career outcomes of leavers and graduates and their experiences in the labour market. The information collected on their experiences within the educational system plays a role only in relation to how applicable their skills and knowledge gained from education are in their labour market positions. The school leavers’ and graduates’ information systems within this category are from Continental Europe, Finland and the Southern European countries.

The Spanish studies on the entrance to the labour market of young people aim to give an idea about how young people cope with the first few years of entering the labour market (García-Montalvo and María Peiró 2011). The school leavers’ and graduates’ information system that deals specifically with Spanish higher education gathers data about the integration of graduates into the labour market (ANECA 2009).

The different foci that the SLGIS could be set up with can tell fairly different stories regarding education. The typology above relates to differences in the timing of the SLGIS as well. Whereas the information systems researching the life of young people and the first impressions of the labour market provide a longer-term picture, the transitions research tends to refer to the first few years after school leaving and graduation. The destinations SLGIS tend to have the shortest timeframes, viewing the immediate outcomes after leaving schools and universities.

The ‘outcomes’ these information systems aim to cover do not show great diversity. The SLGIS focusing on the immediate destinations, the transition from school-to-work and the first impressions of the labour market are all strongly related to the economic outcomes of schools and universities. As opposed to this, the information systems taking a broader view of a young person’s life tend to have a stronger emphasis on the background data of former students. These suggest that the human capital view of school leaving and graduation might be more prevalent than the humanistic or the sociological view.

The school leavers’ and graduates’ information systems having diverse foci allow different perspectives on analysing the returns of education. The analysis of the lifespan more broadly allows claims on the longer-term outcomes; leavers’ and graduates’ information on the transition process or the first experiences in the labour market allow for a shorter timeframe and a more fragmented picture, whereas the first destinations programmes allow little room for drawing conclusions on the ‘returns’ of education. One of these ‘types’ however, seems to be especially important in relation to human capital theory according to Bradley and Nguyen (2004):

Human capital theory is the most widely adopted framework for investigating the school-to-work transition. This is because the transition from school is often conceptualized as an investment decision to be made by young people, although there clearly is an element of consumption in the decision to go to college. (Bradley and Nguyen 2004, 486)
How are these SLGIS set up?

The methodological differences of the SLGIS are outlined in this section, including the research design, the data collection methods and the sampling strategies of the information systems and the time period, the repetition, and the age group covered. School leavers’ and graduates’ information systems have either a longitudinal design, collecting data from one or more cohorts throughout a longer period of time; or they use a cross-sectional design to reach a cohort once, repeated with a subsequent cohort every year, or every few years. With regards to the population covered, two main types of school leavers’ and graduates’ information systems are identified; they are either built on a sample or on a census. Those school leavers’ and graduates’ information systems that gather information from a part of the cohort of leavers or graduates are based on a sample; they collect the information through survey questionnaires.

Along the methodology aspects listed in the column ‘Research design and population’ of Table 1, a typology of four can be identified to classify the SLGIS:

- **Longitudinal designs based on sample survey**: Belgium, England and Wales, England, France (1), France (2), Germany (1), Germany (2), Scotland (1), Scotland (3), Switzerland (1), Switzerland (2);
- **Longitudinal designs based on census**: Austria, Denmark (1), Denmark (2), Finland (1), Scotland (2);
- **Cross-sectional designs based on a sample survey**: Finland (2), Finland (3), Italy (1), Italy (2), Netherlands, Republic of Ireland (1), Republic of Ireland (2), Spain (1), Spain (2), Sweden (1), Sweden (2); and
- **Cross-sectional designs based on census**: United Kingdom, Northern Ireland, Sweden (3), Wales.

The most ‘popular’ methodologies are those being built on a longitudinal or a cross-sectional sample design, the least information programmes can be found in categories relating to census-type approaches. School leavers’ and graduates’ information systems that are based on a census usually collect less detailed information about the individuals’ circumstances, either due to the methodology of linked administrative data or to reduce respondent burden (Ruspini 2002). SLGIS that gather data once or multiple times directly from a sample population usually provide a broader range of information about several topics relating to leaving or graduating.

One example of each type is provided here to indicate how school leavers’ and graduates’ data collections are set up.

There are 11 different school leavers’ and graduates’ information systems that take a longitudinal view on school leaving and they use samples of different cohorts to do so. The Belgian, the English and the Swiss research projects are built on one cohort of young people, all the others started more than one cohort to investigate school leaving and graduation.

The German study entitled National Educational Panel Study (NEPS) aims to analyse ‘how education is acquired, to see how it impacts on individual biographies, and to describe and analyze the major educational processes and trajectories across the life span’, to achieve a ‘successful individual and social life’ (von Maurice, Sixt, and Blossfeld 2011, 2). The research project is built on a panel of multiple cohorts covering different age groups; the stages of sampling signify different phases of the school pathway and the labour market career from early childhood to adult education. In 2010 five cohorts are started; ‘[s]ample selection is oriented toward transitions both within...
the education system and between the education system and the labour market’ (Uni Bamberg 2010b, 20).

The total number of the population to be sampled is 60,000; they will be followed for 10 years. The cohorts sampled in 2010 examine the transitions: (1) from kindergarten to elementary school and then to lower-secondary; (2) from lower-secondary to upper-secondary and then to further or higher education with approximately 6000 respondents; (3) from upper-secondary to further or higher education and then to the job market with an aim to contact 14,000 young people; and (4) from further or higher education to the labour market with approximately 31,000 respondents (Uni Bamberg 2010a). ‘An exception is the fifth starting cohort recruited to study adult education’, as it does not necessarily deal with transitions (Uni Bamberg 2010b, 20; von Maurice, Sixt, and Blossfeld 2011). The research description does not detail attrition for the majority of the cohorts but it adds details of drop-outs from the sample and the ratio of boosting it for the ‘adult’ cohort (Uni Bamberg 2010a). The research is built on questionnaire data combining personal and self-interviewing using paper questionnaires and computer-assisted interviewing methods (Uni Bamber 2010a).

There are five school leavers’ and graduates’ information systems that use a longitudinal design to acquire data on all, or virtually all young people of a given leavers’ or graduates’ cohort. Note, that in Scotland the data collection system entitled Destinations of Leavers from Scottish Schools and Follow up Survey of Leavers from Scottish Schools show leavers’ information three months after leaving compulsory schooling and once more nine months after (ScotStat 2009). The main issue with this research design is that according to some of the literature two measures are not sufficient to make inferences on change over time, because it is not possible to determine the direction of change from two snapshots (Ployhart and Vandenberg 2010).

The Danish data collection on school leavers and graduates entitled Fra uddannelse til arbejdsmarked (From education to labour market) and Nyuddannedes beskæftigelse (Graduate employment) respectively combine data using statistical registers, like student, employment and population registers, as well as taxation and pension registers (Jensen 2012; Statistics Denmark 2012). Acquiring a longitudinal perspective is possible through using ‘flow statistics’ where ‘data on the same individual is chained together for consecutive time periods’ (United Nations 2007, 33). Thus the main information presented about the school leavers and graduates in these two separate accounts is the sort of activity they are undertaking a given period after leaving. Statistics Denmark provides information on the school leavers from general education a year after they have finished; however, the statistical database of the website makes it possible to look at the information over time as well (Statistics Denmark 2012). The Agency for Universities and Internationalisation that provides the data about graduates of universities, gains them from Statistics Denmark as well. The key information is whether former students are employed 4–19 months after graduation. The website provides data on areas of studies and provides a comparison of cross-sectional accounts, and also analyses how the rate of unemployment changed in the first 4–19 months after graduation (Jensen 2012).

The third category of school leavers’ and graduates’ information systems is built on multiple cohorts of cross-sectional accounts based on sample surveys; 11 research projects fall into this group.

The Italian National Institute of Statistics (ISTAT) conducts two research projects that are combined into a national level ‘education-to-work transition’ information. The research programme entitled L’Indagine sui percorsi di studio e di lavoro dei diplomati
delle scuole secondarie di secondo grado (Survey on the educational and work experiences of upper-secondary school leavers) gathers data on the upper-secondary leavers, the other titled Graduate Survey on graduates. The respondents are asked about their educational experiences as well as their labour market experiences, their job status and circumstances, and their social background.

Both of these research projects are based on samples of leavers or graduates, contacting them three years after they have left the institution. These research programmes started in 1998; new cohorts are contacted every three years (ISTAT 2011, 2012b). Data are collected through computer-assisted telephone interviewing for both research programmes. As for the samples, at the upper-secondary level an approximately 10% sample of the population was aimed to be contacted in 2007, the response rate was around 65%; for the university level the sample aimed at was around 20% of the population, and the final response rate was around 70% (ISTAT 2011, 2012a).

The fourth category of school leavers’ and graduates’ information systems is based on cross-sectional designs using data on all leavers – four research projects gather data this way.

One of these research projects is the UK-wide Destinations of Leavers from Higher Education (DLHE); the DLHE is built on asking all undergraduate full-time home students six months after graduation about their initial labour market outcomes through a questionnaire. The DLHE and its previous formats have been around in the UK since 1994/1995. The DLHE is built on offline and online questionnaires and telephone interviewing. All institutions having higher education provision across the United Kingdom have to achieve a very high, 80% response rate (HESA 2007). For part-time students, international and EU students the prescribed response rate is lower. As data are collected from the vast majority of graduates, due to time and financial constraints the questionnaire is relatively short and mainly contains information about the present activity of the graduate. Due to the DLHE being conducted by the institutions according to the guidelines of the Higher Education Statistics Agency (HESA), the national dataset makes it possible to compare institutions; the DLHE features in the university rankings as well (HESA 2007).

Considering the different categories of school leavers’ and graduates’ information systems listed in this section in relation to literature on research design and sampling it is possible to outline the advantages and disadvantages of the different methodologies. Longitudinal designs can provide some causal inferences and analyse change at the individual level, whereas the cross-sectional designs allow aggregate, system-level claims and do not show the ‘developmental patterns’ (Ruspini 2000, 2002; Gorard 2013). Longitudinal designs are costly and the time-lag has to be considered; cross-sectional designs give results more quickly and they are more cost-effective as well (Hakim 2000; de Vaus 2001; Howieson and Croxford 2008; Bryman 2008; Newby 2010).

In terms of the population contacted, a sample survey using questionnaires can gather information about the attitudes and the perceptions of former students and graduates, and their views on their past and plans for the future. A census approach built generally on registry data or very short questionnaires leaves little space for this sort of information. A sample, gathering data on a fraction of the cohort of young people, does not allow institutional- or individual-level claims, whereas the census supports any level of sub-group comparison (Myrskylä 2001; Bryman 2008; Howieson and Croxford 2008; Smith 2008; Gaebel et al. 2012).
The optimal research design and sampling frame of the school leavers’ and graduates’ information systems depend on the main aims set out and the processes they are applied in. An information system that is used in the audit and evaluation process of educational institutions should collect data on virtually every former student or graduate. A data collection that feeds back to the institution the perception of how useful the former education was should use a questionnaire to reach a part of the cohort. An information system serving national policy planning should make causal claims possible through a longitudinal design; a data collection that is used in career guidance should provide longer-term up-to-date information on transitions from school to work. In terms of permitting the analysis of returns of education and training, comparability between the different levels and sectors of the educational system over a longer period of time is desirable, thus longitudinal research programmes are more suited (Cohn 1979).

‘Time’ covered by the SLGIS
Although one of the criteria for the school leavers’ and graduates’ information systems analysed in this paper is that they should be systematic, they are very volatile. The repetition, the number of contacts, as well as the age group covered, are subject to change within many information systems.

As the columns ‘Starting year and repetition’ and the ‘Repetition, age group/time after leaving’ of Table 1 show, the majority of the analysed school leavers’ and graduates’ information systems are built on multiple samples of cohorts. Only a few of them deal with data from a single cohort, like the Swiss Transitions from Education to Employment (TREE) project or the English Longitudinal Study of Young People in England (LSYPE) (Bergman et al. 2010; ESDS 2011). The majority of the cross-sectional information systems are built on annual or biannual samples, whereas the longitudinal sample surveys have bigger gaps between the subsequent cohorts. This latter phenomenon could be due to the costs associated with longitudinal projects compared to cross-sectional accounts (Howieson and Croxford 2008; Collingwood et al. 2010). In relation to the age group and for how long young people are followed, the majority of the information systems analysed in this paper deal with the first one–three years after school leaving and graduation; some longitudinal projects, however, follow the respondents for up to five–ten years after leaving the education system. As the Austrian, Finnish and Danish examples indicate, through the combination of registry data it is possible to follow-up multiple cohorts for a very long time period as well.

Concluding remarks and further steps
This paper gives an extensive account of the main features of the school leavers’ and graduates’ information systems in place within European nation-states. It points out a number of interesting similarities in relation to the focus as well as the methodology of the existing school leavers’ and graduates’ information systems. As suggested in the sections describing the SLGIS within Europe, the majority of these information systems analyse a short timeframe after school leaving and graduation, concentrating on the monetary gains of education rather than a broader view of outcomes. These information systems rarely account for the background characteristics of the former student, or the school or university itself. Seemingly, not many SLGIS seem to draw on the
sociological or humanistic models of education; human capital theory seems to be the most prevalent model.

Cohn (1979) suggests that, in principle, the human capital ‘rate of return’ to education includes non-monetary (e.g. sense of self-esteem and cultural awareness) as well as monetary benefits. In fact, anything that education adds to an individual’s satisfaction should be included. However, in practice, rates of return are usually calculated only through earnings,

This approach [human capital theory] is based upon the premise that education results in direct, measureable returns to the individual and society. Although returns to individuals should be measured according to satisfaction derived now and in the future, data and conceptual problems have forced researchers to define returns in terms of income and earnings alone. (Cohn 1979, 38)

Due to the differences in the main focus and the research design of the existing SLGIS, they seem to allow little room for comparison across Europe. However, this paper might be a good starting point to take steps towards a common European school leavers’ and graduates’ account.

The methodology used here allows some room to explore what the school leavers’ and graduates’ information systems focus on, while it gives little information about how different stakeholders might be using the data. Following on from this meta-analysis the application of the school leavers’ and graduates’ information is analysed.

The next phase of this research, and a fruitful avenue for additional studies, is the exploration of whether and how the methodological characteristics of the described school leavers’ and graduates’ information systems are meaningful to their national contexts. Further comparison of the national contexts could reveal how the comprehensive nature or the absence of an overarching picture relates to responsibility over the SLGIS outcomes. Moreover, a deeper understanding could be gained about the regional diversity within Europe in terms of these information systems and whether they could lead to a European picture of school leaving and graduation.

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Note
1. The questions included in the SLGIS research instruments are not analysed here. Also, this paper does not analyse the intention behind setting up these school leavers’ and graduates’ information systems, nor the way they are used by different stakeholders.

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