

MANUAL

Job condition Survey Design *Evaluation Manual of Graduates' Employment Survey*



Tempus



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**HIGHER EDUCATION NETWORK FOR HUMAN CAPITAL
ASSESSMENT AND GRADUATES EMPLOYABILITY IN
ARMENIA**

Job condition Survey Design Evaluation Manual of Graduates' Employment Survey D.4.3. (July 2015)



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¹ The present manual is based on previous studies carried out in the framework of EU funded programs, here developed by the project consortium and adapted to the HEN-GEAR project.

² The HEN-GEAR platform is available online at <http://international.almalaurea.it/armenia/>.

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Introduction

Since the middle of the 90's universities and higher education institutions from all over the world have started to focus on quality assurance to meet the needs of their students as well as those of the society together with labour market' needs. Therefore quality management needs an assessment of the strengths and weaknesses of universities and higher education institutions' study programs. At the same time, while higher education institutions are increasingly required to be accountable, the success of universities is to a high degree measured by the outcome of their students, in terms of employment outcomes and social commitment. Graduate follow-up studies are one of the possible means to achieve this goal.

Such studies collect information about the transition from the University to the labor market. They aim to investigate the following three areas:

- the higher education background
- the labor market
- the employment situation

Thus follow-up surveys should be the final output of an integrated system capable of guaranteeing documentation which is complete, periodic (the surveys are taken at regular intervals), well-timed (issued every year) and updated.

This report is conceived as a manual having the purpose to provide a better understanding of the relevance of follow-up surveys and of the related design issues: whether how to structure them and how to implement them. In the next chapters the following topics will be treated:

- main purposes of graduates' employment surveys
- how to implement different types of surveys: qualitative or quantitative research, census or samples, the time variable, etc.
- data collection procedures: advantages and disadvantages
- graduates database design: administrative records and CVs
- questionnaire design: questions, cover letter and pre-test phase

- data cleaning and representativeness
- statistical analysis and graphic representation of results

1. Theory and purpose of Graduates' employment survey

The rapid expansion of higher education in many countries as well as the concerns about the changing demand of labor market, especially for highly qualified people, explains why graduates job prospects, their employment and professional status became one of the key issues of higher education policies. However, although universities strive to meet the requirements of the labor market, they should focus also continuing education.

Graduate surveys (also called follow-up studies or tracer studies) have a very broad range of purposes. They can be targeted to collect data on the labor market or employment situation of graduates in order to obtain indicators for their professional *performance*. Furthermore they could be designed in order to contribute to causal explanations of the relevance of the study conditions and provisions of higher education institutions to the various indicators of professional success and graduates' career development.

In order to do so, these surveys must broaden their scope because the relationship between the degree attained and professional performance can be influenced not only by the labor market variables but also by the social, family and educational variables that characterize each graduate. The basic topics that are normally included in a graduate follow-up survey are:

- the *graduate's profile*: main characteristics (socio economic and demographic data, academic history, etc.) and studies completed;
- the *graduate's relationship with the labor market*;
- the *graduate's assessment of his/ her University experience*.

Job experiences and the competencies gained during the course of study are also included as well as job history, job motivation and family background. In a basic approach, graduates are interviewed on the following points:

- *transition from higher education to employment*
- *employment and work performance*
- links between the *competences* acquired and *current job tasks*

- impact of their *motivations, expectations* and *orientations* on the subsequent decisions and *career paths*.

There are other additional features that make follow-up studies effective evaluation instruments. Investment in education, both on the supply and the demand sides, encompasses some requirements and consequences:

- Future students have to choose between different higher education institutions regarding their future prospects. They should receive assurances and guarantees on the quality of education and on the value of the degrees awarded at different institutions.
- Institutions are often forced to seek accreditation both to gain credibility in the education market and to benefit from public or private subsidies (trusts).
- For employers, accreditation is a guarantee of individuals' professional competences and of the quality of graduates according to belonging institutions.

Therefore information on the professional success (career, status, income) of graduates is needed for curricular development, as well as information on the relevance of knowledge and skills (relationship between knowledge and skills and work requirements, area of employment, professional position).

In general, graduate follow-up studies and surveys provide information for students and parents who care about perspective employment opportunities following certain level of education. As access to universities becomes more and more diversified and democratic, young people coming from lower-middle and working classes progressively have less information on the different universities and jobs prospects. Therefore, guidance issues and lack of information on the labor market make these kind of surveys particularly useful. Employers are also interested in knowing the results of graduate follow-up studies: to establish links with external entities and to know the university assessment.

Another objective of the graduate follow-up surveys might also be the collection of information aimed to renew, promote, and strengthen the ties between graduates and the university. This can be achieved and sustained through communication and databases updating in order to carry on such relations after graduation.

However, follow-up surveys can be also a means for addressing and for trying to reduce social inequalities. These social inequalities generally include ethnic inequalities as minorities are rarely represented in higher education or not at all. University authorities and society could endeavor



to correct or compensate such inequalities and thus sustain the establishment of equality for female/minority groups, an essential condition for correcting the effects of previous discriminations.

Graduate follow-up studies can be conducted at different levels depending on the graduates' type and quantity. On the other hand, other decisions have to be made before starting a tracer study:

- What generation would you like to study/observe? (one or various cohorts)
- Do you want to consider the whole population or just a sample?
- Do you want to ask the graduates at one point after graduation or frequently (panel studies)?
- When do you want to send the questionnaire to graduates: one, two, three or more years after graduation?
- Do you want to focus on university leavers or on degree holders?

2. Kind of survey

This section presents the main content to planning a follow-up study. In particular, it shows how to select beforehand: the best type of survey depending e.g. from the purpose of the study, the target population, and so on.

2.1. Qualitative or quantitative studies? How to choose ...

It is often difficult to choose between quantitative and qualitative research design. As well described by Lowhorn, a researcher may choose a design because he or she is more familiar with one method or because the choice is influenced by others, for instance by a colleague recommendation. However, a research will be more helpful if the decision is based on a well-considered, suitable design rather than on the simple choice of the design that is more familiar or comfortable to the researcher.

Quantitative Research establishes (see *Tab. 1* for the main assumptions) statistically significant conclusions about a population by studying a representative sample of it. The population consists of the entire group being studied. It does not matter if the population is broad or narrow, but each individual fitting the description of the group being studied must be included.

Quantitative research can be usually of two types: experimental or descriptive. *Experimental research* tests the accuracy of a theory by determining if the independent variable(s) (controlled by the researcher) causes an effect on the dependent variable. Often, surveys, correlation studies, and measures of experimental outcomes are used to establish causality within a credible confidence range.

Descriptive research measures the sample at a moment in time and simply describes the sample's structure. Although this is not seen as a statistically robust or difficult exercise, a good description of the variables helps the researcher evaluate the statistical output in the proper context.

Within quantitative methods, one of the tools used is the **survey**, that includes cross-sectional and longitudinal studies using questionnaires or interviews for data collection with the intent of estimating the characteristics of a large population of interest based on a smaller sample of that population.

Qualitative Research describes an event in its natural setting. It is a subjective way to look at life as it is lived and an attempt to explain the studied behavior. Rather than design an experiment and artificially control the variables, qualitative researchers use anthropological and ethnographic methods to study the participants.

Instead of providing a broad view of a phenomenon that can be generalized to the population, qualitative research seeks to explain a current situation and only describes that situation for the chosen group. Since only a current situation is observed, all qualitative research is done on the field.

Case studies are types of qualitative methods: the researcher explores a single entity or phenomenon ('the case') bounded by time and activity (e.g., a program, event, institution, or social group) and collects detailed information through a variety of data collection procedures over a sustained period of time.

Tab.1 –Quantitative and qualitative methods: summary of main assumptions

Quantitative Method	Qualitative Method
Reality is something that can be studied objectively.	Multiple realities exist in any given situation: these multiple perspectives, or voices, of informants (i.e., subjects) are included in the study.
The researcher should remain distant and independent from what he researches	The researcher interacts with those he/she studies and actively works to minimize the distance between the researcher and those being researched.
The research is based primarily on deductive forms of logic and theories and hypotheses are tested in a cause-effect order.	The research is based on inductive forms of logic; categories of interest emerge from informants (subjects), rather than being identified a priori by the researcher.
The goal is to develop generalizations that contribute to theory that enable the researcher to predict, explain, and understand some phenomenon.	The goal is to uncover and discover patterns or theories that help explain a phenomenon of interest.

In conclusion whereas **quantitative** research seeks to validate a theory by conducting an experiment and by numerically analyzing the results, **qualitative** research seeks to reach a theory capable of explaining the observed behavior. In this way, it can be said that quantitative research is more deductive and qualitative research is more inductive. The selection of the appropriate research approach in a given study should be based upon the problem of interest, the available resources, the skills and training of the researcher, and the addressees of the research.

Concerning the AlmaLaurea surveys, inferred to Italian graduates' population, quantitative research is the best choice: such approach in fact reflects the need of a statistically and solid base of results. Therefore in the following sections the contents will be refer to this kind of procedure.

2.2. Census or sample

Once the target population for a graduate follow-up study has been established, for various reasons, mainly economic, a sampling procedure is often necessary. Sampling consists of selecting a part of the population so that the information provided by the members of the sample can be extended to the study's target population. Two related aspects are taken into consideration in the sampling procedure:

- The number of units in the sample, which provides a level of statistical error.
- The representativeness of the sample in relation to the population through the use of sample segmentation variables.

Upon designing the study, the error selection significantly affects the sampling volume.

Segmentation variables can be used to guarantee representativeness. The variables make it possible to define groups of similar individuals with similar behaviors. Segmentation variables are also chosen according to the objectives of the study. They define the strata within the sample, which must be complete to make the sample representative.

The research team should define the variables to be represented in the sample. Possible variables in a Graduate Survey could be:

- Field of study
- Gender
- Home town
- Year of graduation

The need to have reliable data down to degree-course level, led AlmaLaurea to systematically extend its employment conditions survey to all post-reform graduates from the whole calendar year. So, sampling procedure is the more often used one.

2.3. Spot or longitudinal studies

In a spot study, the target population is interviewed only once during the placement process.

In longitudinal study, the target population is interviewed several times during the placement process. The advantage of this kind of studies is that they offer a more complete vision of the phenomenon, e.g. job placement process. Conversely, the main disadvantage is the high cost of the procedure.

Finally in continuous longitudinal study, each cohort of graduates is interviewed at different times during their job placement process, thus providing a full and updated view of graduates' employment condition.

2.4. Time variable

The time variable represents the length of time that has passed since graduation of the graduates, target of the study. Periods are often established between completion of the degree and five years after completion of the degree.

The choice of the time variable also depends on the characteristics of the labor market and on the field of study; some graduates enter the labor market rapidly, even before completing their schooling, while for others the process is less rapid (often due to post-graduate training periods).

If just one cohort is analyzed, a possible choice, in terms of time variable, is three years after graduation. On the one hand, a large number of graduates has already started its career and has professional experience, and, on the other, while it is easier to locate graduates, the memory of the transition to the labor market is still quite clear.

In the 17th AlmaLaurea survey on graduates' employment conditions, for instance, the graduates' generation of 2013, 2011, 2009 were interviewed, respectively at one, three and five years after graduation. In order to guarantee the fundamental time gap between the achievement of the degree and the interview, the graduates have been contacted in two different periods.

In the same year, on an experimental basis, AlmaLaurea also conducted a survey ten year after graduation (see AlmaLaurea website for more information).

3. Data collection procedures

This section describes the methods most commonly used to carry on these studies, also pointing advantages and disadvantages of each method. The aim is to provide the readers with a sufficiently large range of tools to enable them to select the most appropriate method consistent with their institution's characteristics and the objectives of their investigation.

The data collection methods generally used for graduate follow-up studies include:

- Personal interview
- Mail survey
- On-line survey (CAWI - *Computer Assisted Web Interview*)
- Telephone survey (CATI – *Computer Assisted Telephone Interview*)

Other techniques employed in market research, such as the *focus group* or expert judgment, are not normally applied to graduate follow-up studies, except for the support tools in the questionnaire design phase.

3.1. Personal interview

The personal interview is undoubtedly the ideal technique for obtaining information from an interviewee, regardless of the objective of the investigation. In graduate follow-up studies, the personal interview makes it possible to obtain not only quantitative information resulting from the participant's responses, but also qualitative ones inferred from the interviewee's answers.

Tab.2 - Personal interview	
<p>Advantages:</p> <p>High response rate.</p> <p>Knowledge of the respondent</p> <p>Avoid third-party influence.</p> <p>Obtainment of secondary data.</p>	<p>Disadvantages:</p> <p>Expensive.</p> <p>Possible interviewer bias.</p> <p>Interviewer training required.</p>

The personal interview (see *Tab.2*) has a high response rate. It is more difficult to refuse to be interviewed. Moreover, when a person is contacted for an interview, the result is normally successful. Furthermore, personal interviews are a very reliable form of obtaining information, since

we know who the interviewees are and that they are providing information without the influence of third parties. Nevertheless, this technique is costly, so it can be ruled out for very large samples. Interviewees have also to be trained so that, on the one hand, they can infer any qualitative information from the interview and, on the other, they will be sufficiently neutral in the way they ask the questions so as not to bias the interviewee's responses in any way. Furthermore when answering questions during an interview, the interviewee is influenced by a series of factors that, consciously or unconsciously, might affect his or her answers. The physical appearance of the interviewer or even the intonation he or she uses when asking the questions might influence the interviewee's responses.

We must establish a comprehensive protocol for conducting the interview: from the initial phases (in which the interviewee is identified and approached) to the final phase of the interview, also including the interview itself. Interviewers must receive technical training regarding the questions, type of responses, possible explanations for certain questions, etc.

3.2. Mail survey

When the graduate sample is very large, the mail survey is one of the most popular data collection methods for graduate follow-up studies, mainly because they are less expensive than personal interview. Table 3 shows the advantages and disadvantages of this technique.

The mail survey consists of sending a questionnaire to the graduates by email, to be sent back before the established deadline. Its low cost is one of the benefits of the technique. In addition, the respondent can answer the survey at his or her own pace, at any time or even in stages. Furthermore, the absence of an interviewer avoids the possibility of influencing the respondent; on the other hand, the interviewer does not allow any support. Flexibility in time allows the interviewee to reflect more on the responses and even look up additional data in order to specify, for instance, the salary earned in his or her first job or the type of contract. One of the main disadvantages of this method is the low response rate, which might affect the sample's representativeness. Nevertheless, telephone follow-ups and repeat mailings can increase the response rate. This technique is ideal for institutions with a large number of graduates per year.

<i>Tab.3 - Mail Survey</i>	
<p>Advantages:</p> <p>Less expensive.</p> <p>Time flexibility for the interviewee.</p> <p>Greater reflection on responses.</p> <p>Elimination of interviewer bias.</p>	<p>Disadvantages:</p> <p>Low response rate.</p> <p>Telephone follow-ups or repeat mailing required.</p> <p>Need of not too long questionnaire.</p> <p>No support from the interviewer.</p>

Including an attractive, motivating cover letter which explains the importance of the information requested, as well as instructions for answering the survey, will increase the number of questionnaires returned. The inclusion of a stamped addressed envelope makes it easier for graduates to return the completed questionnaire and they will not have to pay for postage.

3.3 Online survey (CAWI - *Computer Assisted Web Interview*)

The online survey (see *Tab. 4*) is another data collection method used more recently for graduate follow-up studies. An online survey is very similar to a mail survey regarding its procedure and advantages, since the graduates can answer at their own pace, reflect more on their responses, and interviewer bias is eliminated. It consists of sending an email to the person to be surveyed through a link on a webpage or URL address where they can answer the survey directly by checking the different boxes for the formulated questions. For this technique, the alumni's email addresses have to be known in order to contact them.

The text of the email serves as a cover letter by which the institution presents itself and explain how to answer the survey. It should also be written in such a way as to motivate the graduate to reply.

<i>Tab.4 - Online Survey</i>	
<p>Advantages:</p> <p>No cost except for the programming procedure.</p> <p>Time flexibility for the interviewee.</p> <p>Greater reflection on responses.</p> <p>Elimination of interviewer bias.</p> <p>Data automatically tabulated.</p>	<p>Disadvantages:</p> <p>Low response rate.</p> <p>Specific software required.</p> <p>Difficulties in collecting graduates' email: not all the graduates have email or the institution does not have their email address.</p>

One of the advantages of this technique is that data are tabulated automatically as the respondents complete the questionnaires. The collaboration of the institution's informatics departments is essential in this case, although specialized companies can also be used to help the process.

The main disadvantage of this technique is the high level of volatility of many of the graduates' email addresses. While students are at university they are often provided with an email address; such email is no longer used when they start to work or when they use a free email (such as Yahoo, Hotmail, Gmail, etc.) instead of the work email. Free emails often expire or graduates just stop using them, making it difficult to be contacted. On the other hand, although the Internet use is becoming increasingly generalized, in certain contexts, not all graduates have an email account or access to the Internet.

What is more, the sent email should not be seen as spam by the graduates as they will delete it without opening the message. Therefore, it is essential for the institution to show itself in the message's subject and sender's name.

In any case, the low cost of this technique makes it possible to send reminders and continuous follow-up emails.

3.4. Telephone survey (CATI – *Computer Assisted Telephone Interview*)

The telephone survey is, no doubt, the most popular technique for graduate follow-up studies. Its high response rate makes it the ideal method, especially when conducting degree-significant investigations. The following table shows the main characteristics of the technique:

<i>Tab.5 - Telephone Survey</i>	
<p>Advantages:</p> <ul style="list-style-type: none"> Results rapidly available. High response rate. Data automatically tabulated. 	<p>Disadvantages:</p> <ul style="list-style-type: none"> More expensive than mail surveys. Specific software required (CATI). The questionnaire must be brief. Responses might be unclear or evasive.

The rapid availability of the results and the possibility of achieving percentages close to the entire population have made this one of the most popular techniques for graduate follow-up studies. Main disadvantage is that, despite country variability, the survey is very expensive.

Sometimes, this type of survey is outsourced to specialized companies that have their own call-center. Even though outsourcing can be useful for the institution in presence of lack of means or inexperience, it is very important to follow-up on the way by which the interviews are conducted. This monitoring activity avoids biases or distortions of the university's or educational center's image.

Contrary to other techniques, telephone surveys should be more concise; this has to be taken into account when designing the questionnaire in order to avoid long conversations that may result in the interviewee's hanging up or in the provision of evasive responses.

The CATI systems let the interviewer tabulate the data while conducting the telephone interview, thus reducing the time spent. Whereas the interviewee is not immediately available for interview, the interviewer has the opportunity to reschedule the interview.

In a preparatory stage, or briefing, the research team, the supervisors (i.e. the coordinators of the interviewers) and the interviewers meet with the aim of presenting the research and its specific goals, describing its design and illustrating in detail the tool of investigation. During the meeting an effort should be made to identify all the possible problems that may arise in the course of the interview to ensure that a common line of conduct is followed. An handbook should be prepared to provide: a definition of the specific terms used in the questionnaire, a detailed explanation of the way by which the questions should be asked; guidelines for the interviewer to be followed when the interviewee does not answer in a desirable way.

If the interviews are not conducted by the interviewers themselves, it is important to conduct running checks for quality reasons e.g. by listening-in point. This makes it possible to monitor the situation and to make a note of special cases that need to be further investigated by follow-up procedures. The researchers can also monitor the interviewer's tone of voice from their listening-in points and check whether it is faithful to the text, if it puts undue pressure on the respondent to answer, and so on.

The databases are periodically analysed to check for systematic errors in the survey, and to ensure, for instance, that there are no inconsistencies between the answers given by the respondents, that all the possible interview paths have been correctly followed and that the answering category of "other" has not been overused.

3.5 The AlmaLaurea experience

When the number of graduates is wide, in particular it is the case of AlmaLaurea' surveys (for instance, the 2010 survey of employment conditions involved nearly 400,000 graduates), it is necessary not only a severe reduction of the survey questionnaire, but also a meaningful review of the survey methods. This objective has been achieved by combining two survey methods: CAWI and CATI; in this way survey costs and time have been considerably reduced. In particular, all graduates having an email address have been contacted via email and asked to answer to a questionnaire which has been entirely programmed by AlmaLaurea staff and which is located on its website. This procedure also included three reminders at the most. Afterwards, all graduates who had not answered to the online questionnaire – together with those who don't have an email address- have been contacted by phone, in order to achieve high response rate that are generally are very high: 90% among graduates interviewed one year at graduation, 80% at three years, and 75% at five years.

4. Techniques for identifying graduates

One of the most important elements for conducting a graduate follow-up study is to have a good, up-to-date database with the alumni's addresses, telephone numbers and email addresses.

The greater or lesser reliability of the institution's database depends on several factors, such as the degree of the graduates' geographic and employment mobility, their place of origin, etc. It also depends, for example, on the type of address supplied by the students. The parents' address is normally more reliable than the students' while they are at university.

Following a list of some of the techniques used to refine and improve the database of our alumni's addresses.

4.1. Administrative archives

Databases at the university's career and employment centers. The graduates' address database should be generated by adding and combining all the databases that the institution has at its disposal. As a result of the decentralization of the enrolment process or other types of circumstances, sometimes several student databases are distributed throughout the university's different offices. Before looking externally for other sources of information that would help us to complete and update our graduates' database, we must check whether there are other internal bases that have been inadvertently overlooked. In this sense, the institutions that have career and employment centers or other similar services for new graduates should start with these services' databases, since they are normally kept up to date.

Databases at public administration offices. In some countries, the public administration's databases can be used to obtain information. However, in others, data protection laws prohibit the transmitting of information without the explicit consent of the person concerned.

Professional associations. For some degrees, graduates must become a member of the corresponding professional association. Yet, graduates normally join an association although it is not compulsory. These professional associations have updated databases and their collaboration in graduate follow-up studies can be crucial.

Student and alumni associations. In some cases, graduates form alumni associations, usually based on student associations. These associations' databases are normally more up to date than the institutions'. The patronage and promotion of this type of associations by the institution will facilitate their collaboration in our graduate follow-up study.

Acts and ceremonies. In relation to the aforementioned points, we can take advantage of anniversaries or any type of acts, ceremonies or celebrations to ask the attendees to update the information available in our database. Likewise, these types of acts can be used, where necessary, to ask the attendees directly for the information we require for our graduate follow-up study or we can conduct a small validation test of the data collection instrument – the questionnaire.

Snowball technique. The Snowball technique starts with a small number of subjects to obtain information on a much larger group thanks to contacts and data provided by each member of the small group. When contacting graduates after graduation, they usually feel grateful and willing to collaborate by providing addresses, telephone numbers and/or email addresses of their old classmates. The technique thus allow to add our database with up-to-date addresses.

Other techniques. Other methods for obtaining information on graduates include Internet search engines; the reliance on specialized companies; contacting employers; advertise the study in the media.

These techniques present a range of possibilities for the institution or the service in charge of conducting the graduate follow-up study. The ideal situation would be to have a good internal database and not rely on external sources and other types of techniques to complete this information.

4.2. AlmaLaurea and CVs databank

AlmaLaurea offers a wide databank of curriculum vitae that collects information both on graduates having a long work experience and on newly graduated students. This is a unique databank, since it collects data that have been certified by the different universities taking part to the consortium³. This databank, available on-line since 1996, enriches every year of at least 150.000 new curricula (both in Italian and in English) and on June 2015 the total number of curricula amounted to more than 2,150,000 units.

The AlmaLaurea databank, result of the combination of different kinds of data, acquired at different stages, is the tool used by AlmaLaurea. The data collected can be divided into the following categories.

Official data: they are provided by the graduate's university. They regard faculty, degree course, expected graduation mark, duration of the degree course.

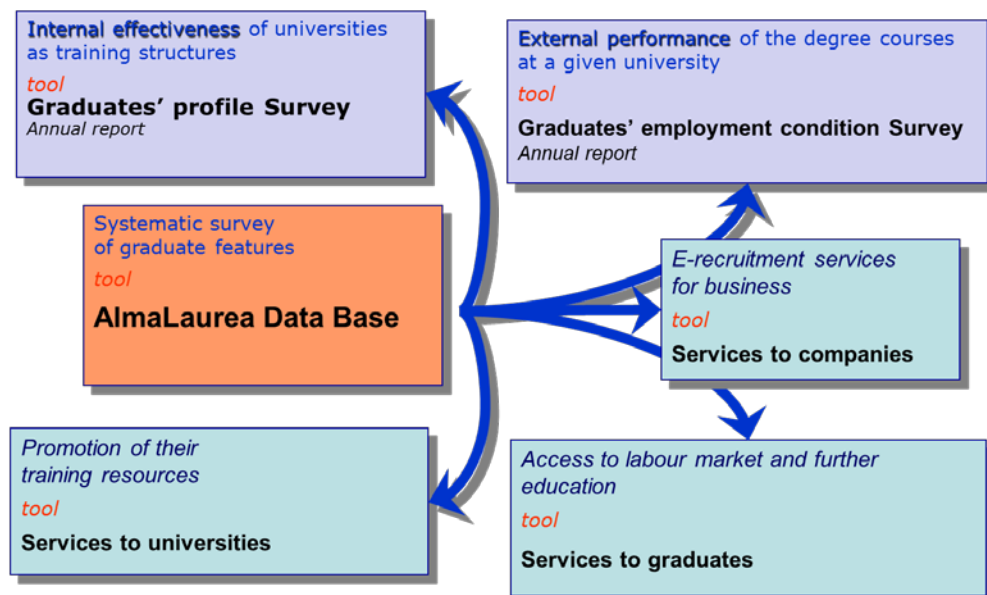
³AlmaLaurea represents 72 Italian universities and 90% of the Italian Graduates

Data provided by the graduand: self-certification containing information about course attended abroad, work experiences and training made while studying ; languages studied, IT skills and the availability to move abroad (Figure 1.) .

Data are used only as aggregate for the production of (anonymous) statistics at disposal of the Ministry to assess universities and of AlmaLaurea to implement the surveys. A part of this documentation feeds the CVs of each graduated, that are included in the databank of AlmaLaurea, upon agreement. At any time graduates can modify their curricula directly on-line. These modifications mainly regard postgraduate work and training experiences.

For several years AlmaLaurea has provided a number of services to its graduates. Among them: checking and updating of official curricula; possibility to browse and reply to job offers; job offers alert service; notice board for postgraduate training offers; certification of graduates' achievements for public competitions purposes and/or scholarships abroad; availability of their CVs in English. The provision of wide services to graduates is central for graduate retention, which in turn is essential for constant database updating.

Figure 1. The AL database: documentation collection method and use



5. Questionnaire development: planning, design and running

The development of questionnaires for conducting the graduates' survey always run the risk of ask too many questions and too many topics of interest. This leads to a long, non-linear and confusing questionnaire, in which the central topics can be somehow disadvantaged.

Therefore, the first question to be asked before planning and conducting a tracer study should be – *What is the purpose of this study? What is the objective and target of the study? Why are you planning it on the first hand?*

Based on this questions, a main research focus has to be decided, as a guideline for the following decision about the survey design. Based on the stated research interest, basis hypothesis for the questionnaire development can be developed. Each questionnaire must be build up on one or several hypotheses. The hypotheses are broken down into theoretical concepts which are measured by indicators. The indicators are transferred into questions. Accordingly, each question needs to be transferred back into: which indicator it measures, for which concept and based on which hypothesis. Independently of the method, questions need to be formulated beforehand. The questionnaire design has to combine two aspects, i.e. the questions have to accurately measure the topics of investigation and the sample group has to respond appropriately. The term relevance here refers to three different issues:

- The relevance of the survey's goals, which the respondent has to perceive as important and convincing;
- The relevance of the questions in relation to the survey's goals, i.e. avoiding the inclusion of items when there is no clear idea of how to use the answers;
- The relevance of the questions for the respondent, which should always be given due consideration and, if necessary, may mean introducing filter-questions in the questionnaire.

Drafting a good questionnaire normally requires the following conditions: a) an experienced researcher, b) knowledge of the population to which the questionnaire is addressed, and c) a clear research hypothesis.

Tab.6 - The AlmaLaurea's questionnaire.

Sections of the questionnaire	Topics
1a. University enrolment	<ul style="list-style-type: none"> - university's course enrolment after first level degree - reason for or not enrolment - match between second degree course and first degree course - enrolment condition at the time of interviewing - university - field of study
1. Graduate training activities	<ul style="list-style-type: none"> - activities completed, in progress or abandoned - income received for training activities
FILTER QUESTION	<p>occupational condition at the time of interview: A. if the respondent is working, he/she will follow track A; B. if the respondent has worked since graduating but is not working at the time of the interview, he/she will follow track B; C. if the respondent has never worked since graduating, he/she will follow track C</p>
2. Section A	<ul style="list-style-type: none"> - occupational condition at the time of graduation - match between current job and job held at the time of graduation - improvement in employment situation as a consequence of having the degree - number of months elapsed between obtaining the degree and seeking the first job - number of months elapsed between obtaining the degree and finding the first job - legal and contractual characteristics - full-time or part-time employment - sector and field of economic activity - province where job is located - extent to which university-acquired skills are used - requirement of the degree for performing the job - satisfaction felt for various aspects of the job - net monthly income
3. Section B	<ul style="list-style-type: none"> - occupational condition at the time of graduation - match between the latest job and job held at the time of graduation - number of months elapsed between obtaining the degree and seeking the first job - number of months elapsed between obtaining the degree and finding the first job
4. Section C	<ul style="list-style-type: none"> - occupational condition at the time of graduation - availability to start a new job within two weeks of the interview - reason for not seeking a job - time elapsed since the last tangible job-seeking effort
5. Section D Personal details	<ul style="list-style-type: none"> - civil status - number of children - update of addresses

If we are planning a follow-up survey of the graduates for the first time, the first condition can be substituted by a careful consultation of the investigation tools used previously by other researchers studying similar topics.

By formulating questions there are two possible formats to be used: **open** and **closed** questions. Both type of questions have advantages and disadvantages.

Open questions do not give pre-defined answers. The respondent can answer freely. They are used when investigating complex issues which require a more detailed and elaborated answer and for which a structured response would not make any sense. They are also particularly useful in preliminary investigations when the researcher has still not established the relevant characteristics and dimensions of the phenomenon, and needs to have a comprehensive overview of all the potentially relevant aspects. The disadvantages are that these questions can lead to the collection of useless or irrelevant data, making comparisons and statistical analyses difficult and the process of codification both painstaking and conditioned by highly subjective decisions.

Closed questions contain pre-defined answers of which the respondent can choose one or several ones. These types of question should be used when the ways of responding are discrete rather than open, when they are clearly differentiated and relatively limited in number, or set at variable intervals, and aggregated and reduced to a relatively limited number of ordinal categories. The categories used for closed questions should be exhaustive and mutually exclusive. There are considerable advantages to using questions with set alternative answers: the standardised answers allow comparisons to be made between the different subjects; the answers are much easier to codify and analyse, even to the extent that codification can often be planned at the drafting stage of the questionnaire, with a resulting saving in time and money; the respondent can often get a clearer idea of the meaning of the question, which consequently reduces the number of “don’t know” or blank answers; the answers are relatively complete and the number of irrelevant answers is minimal. Some of the disadvantages of closed questions include the following: the respondent who does not have a personal opinion may be encouraged to answer casually; in some cases, there may be too many ways of answering the question and some may be forgotten or overlooked; there is no way of knowing whether the respondent has answered with a full understanding of the meaning of the question; the respondent may not find an appropriate way to answer the question and has no opportunity to express the answer he/she would like to give. The presence of the open category “other” can limit this kind of problem.

Questionnaires generally include both types of questions, unless the type of survey and the costs involved require a well-defined choice to be made. Questionnaires that include almost exclusively

questions with pre-set alternatives should also include at least one open question at the end, to find out whether any details relevant for the respondent were omitted.

It seems almost trivial to state that *formulating the questions* is also extremely important, since different formulations can lead the same subject to give different answers. While it is difficult to establish precise rules in this regard, we need to be particularly careful to ensure that we use simple language, that the questions are not too long and that we do not use definitions that are ambiguous or insufficiently detailed (such as for example, asking a young person “Do you work?”, without specifying when, whether we mean a job that lasts the whole year-round, or a temporary or part-time job, etc.).

We should also keep an eye on the *acquiescence factor*, i.e. the tendency on the part of respondents to choose answers that express agreement and are therefore affirmative rather than negative. Response set is a similar kind of distortion, whereby when faced with a batch of questions with the same choice of alternative answers there may be respondents who always choose the same answer, regardless of the content of the questions. The problem can be detected with by alternating the polarity of the answer so that the same response (such as “yes”, for example) will have an affirmative meaning in one case and a negative meaning in another.

As far as the order of the questions is concerned, it is advisable to start with *easy questions* that are not too invasive. In order to keep the interest of the interviewee alive, the most demanding questions should be asked half-way through the interview, leaving to the end the questions which do not require a great deal of attention, such as those dealing with social background and personal details. The topics dealt with by the questionnaire should unfold according to a logical sequence and without any abrupt changes.

Furthermore, a section entitled “*Notes*” should be available to the interviewed for making notes of any possible classification errors and inconsistencies as well as of anything else of significance that may have emerged from the questionnaire.

5.1 COVER LETTER

If the questionnaire is delivered on a non-personal way (post, internet) it is important that it is accompanied by a charming, short letter which addresses the respondent directly. In this letter the survey and the research objective should be highlighted. The respondents need to be felt well informed and addressed as a valuable element in the survey. For further information a project flyer or other information material could be enclosed and the responsible institute should be named. A

contact address must be stated clearly, so that the respondent can easily contact the research institute if there are questions or misunderstandings.

Another vital point is to state the estimated duration for filling the questionnaire. In particular if the questionnaire has many pages due to design considerations this duration statements reduce the aversion. The cover letter as well as a training of the initial phase should be part of the pre-test.

5.2 PRE-TEST OF THE SURVEY INSTRUMENT

Once the questionnaire has reached its more-or-less definitive version, the testing stage starts to take place through what is commonly called a pre-test. This is a necessary process to identify any changes that need to be made to the questionnaire before the survey is actually conducted and to check the actual amount time it takes to hold the interview.

The sample group for a pre-test is normally an audience chosen *ad hoc*, with the same characteristics as the population to be investigated by the survey. For this purpose, often alumni or students in their last year will be used. The pre-test carries out a critical analysis of all the aspects of the questionnaire, including question formulation, the order of the questions, superfluous and missing questions, and ways of responding that may be inappropriate, redundant or sources of confusion. The participants of the pre-test are asked to try to answer each question and to state their problems loudly. They will also be interviewed about their opinion about the survey and if and why they are motivated to answer.

5.3 Privacy Policy

The most delicate part of the interview is adequately the initial approach to the interviewee, when the selected subject has to decide whether to agree to be interviewed or not. When introducing the study, the researcher will have to explain to the person concerned who the research is commissioned by, what the research goals are and why he/she has been specifically chosen to participate. The researcher will also have to stress the importance of this person's collaboration and reassure him/her about the anonymity of his/her answers. So the presence of a Privacy Policy information above questionnaire become fundamental.

6. Cleaning data and check for representativeness

The following checking list (Schomburg, 2003, p. 172) can be useful to check the consistency of the questionnaire:

Has the questionnaire been completed by a member of the target group? This check is especially important as it is easily possible that the addresses you received are not the ones you actually wanted. During this period of the implementation of the survey you have the opportunity to correct these mistakes. Questionnaires which were not completed by members of the target group are left out of the survey (no data entry), but they are counted for the proportion of results.

Is the questionnaire answered completely? In some cases, you will receive questionnaires which were not completed properly without being given a good reason for this (e.g. unemployment). These questionnaires were generally left out of the survey, too, but are counted for the proportion of returns.

Check if the questionnaire has been filled seriously! It is not easy to describe how to check whether the completion of the questionnaire has been done seriously. If, for example, you take the responses/the long list items for the question with a five point scale you may suppose a lack of seriousness if a plausible pattern for the ticked responses cannot be seen. This check can be very time-consuming if it is done systematically. Besides, it is not very plausible why many interviewees should bother to purposely give foolish answers. Therefore, we recommend, that you only casually look for signs of lack of seriousness while doing the general check. However, only during the process of data analysis it is possible to do this kind of check more systematically.

Check the questionnaires for clearness and consistency! It is the most costly phase within the check of the questionnaires to check the clearness and consistency of the answers. It will happen more often that the interviewees do not keep to the formulated rules given in the questionnaire:

- even though they are asked to tick one time only, you will find two items being marked
- some interviewees may tick "other" without ticking the corresponding box;
- for a five point scale, you may find two ticks in one line or a tick between two boxes
- you can find invalid response code
- incoherence of responses

Obviously, these problems depend on the type of data collection method adopted.

6.1. Sample representativeness and the AlmaLaurea's re-proportioning procedure

After the data cleaning you should check if the collected sample is *representative* for the target population. Complete representativeness can never be reached as not all possible characteristics of human beings can be covered. Essential for data analysing is that the relevant characteristics for the graduate survey are covered.

What does AlmaLaurea do? The graduates involved in its survey accounted for almost 70% of all Italian graduates from that calendar year. It is nevertheless true that graduates involved in the AlmaLaurea surveys, albeit coming from an increasingly higher number of Italian universities, cannot yet represent the entire graduate population. Furthermore, with the yearly increase of the number of universities becoming involved in the survey, problems arise regarding comparability over time of the cohorts investigated.

In order to obtain representative estimates of all Italian graduates that take these two considerations into account, the results of the AlmaLaurea surveys on graduates' employment conditions underwent a dedicated re-proportioning statistical procedure.

This iterative procedure is a modified version of the RAS method whereby every graduate interviewed is given a "weight" so that the breakdowns related to the variables undergoing the re-proportioning process are as close as possible to those found in the overall population of Italian graduates. The variables under consideration in the AlmaLaurea's re-proportioning process are: type of degree course, gender, field of study, geographical area of the university, and area of residence at graduation. To obtain even more accurate estimates, the interplay between the gender variable and all the others above was considered. Intuitively, if a graduate presents socio-geographical characteristics that are largely widespread among the overall population, but not in the AlmaLaurea sample, he/she will be granted a proportionately higher weight. Conversely, a graduate with characteristics that are widely found in the AlmaLaurea sample but not in the overall population will receive a proportionately lower weight.

7. Statistical procedures and graphic representation of results

Once the database has been cleaned up, and the information is more reliable, the data has to be analysed. It is recommended to use an appropriate statistical programme for this task (e.g. R, Stata, SAS, SPSS). Procedures will be not further described here but it is advised to read the relevant literature or to let the work done by a statistical expert.

As part of the processing procedure, it is necessary to generate **frequency** and **percentage tables** according to the variables and to produce tables in which independent and dependent variables are cross correlated. Simple statistical operations are useful for data analysis. For quantitative variables measures of the central tendency such as mean, median or mode contribute a great deal to data interpretation. In a similar way, measures of dispersion such as range or standard deviation or variance are useful for determining the behavior of the variables.

Finally in order to know the weight some variables have on others, it could be important to determine the **correlations** between the variables and to measure their influence by the means of a multivariate analysis. Interpretation of multivariate analysis should be done carefully and with help of expert knowledge.

The effective representation and dissemination of the results of statistical analyses are as important as correctly conducting the analysis itself. An incomplete, ambiguous table or the ineffective communication of results can compromise the whole research effort.

This section will therefore deal with the main theoretical aspects to be taken into consideration when **drawing up** the tables on completion of research analysis. We will focus especially on the presentation of results coming from descriptive (monivariate, bivariate or multivariate) analyses.

Descriptive results may be represented in **table** or **graphic** form. Although the graphic format does not generally add any further information compared to a table – indeed graphs usually contain less information – the graph doubtless has great communicative impact, and is easily understood by readers with little knowledge of statistics.

Regardless of the data presentation method adopted, the *title* of the table or graph must be such as to communicate the subject matter of the analysis, the variables considered, and the type of statistical analysis carried out (e.g. if it is a frequency distribution or the calculation of an average). The table (and its title) must be “self-explanatory”, in other words, contain all the elements necessary to enable its interpretation without the reader having to refer back to the text of which it is part.

Of no little importance are the cases of *no response* (i.e. when individual interviewees fail to answer a specific question) or *missing information* (i.e. unavailable data). The researcher may

decide to include this annotation or not, depending whether he/she considers this important for the correct interpretation of the table as a whole.

Presenting results in Table Form. A well presented table must be *efficient* (i.e. cost as little as possible), *complete* (i.e. contain all the information required for correct understanding) and *appropriate* (i.e. be in line with the research aims). The right balance is given by the so-called *parsimonious principle*: the table should provide only information that is useful for the understanding of that particular table – too many numbers risk confusing the reader.

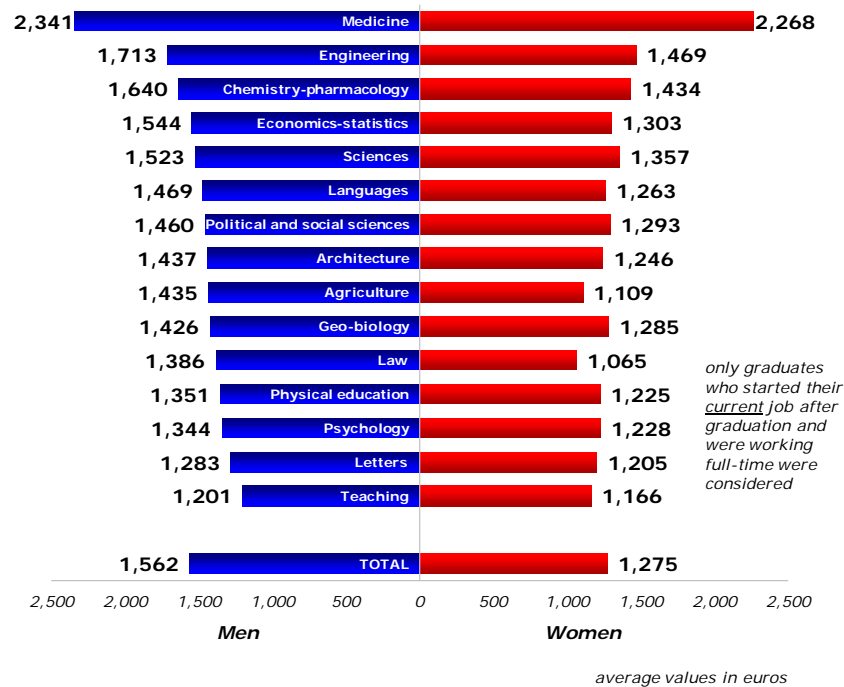
Presenting results in Graphic Form. As mentioned, graphic presentation is very effective and considerably helps reader comprehension of the data proposed. In order to construct a graph correctly, care must be taken with the *reference scale* of the axes. Any variation in scale will considerably alter the visual perception of the reader, minimising or enhancing the value differences reported.

Showing data in graphic form has the great advantage of selecting and evidencing the *key information* presented in a table. As all the figures contained in a table cannot be transferred, for legibility's sake, to the simpler graphic format, care must be taken to retain the most important values.

Monivariate, bivariate or multivariate analyses have different presentation tools and techniques. Given their easy readability, **graphs** are used to highlight the main characteristics of the population observed. The most widely used graphic formats are *bar diagrams* (with *columns* or *bars*), the *histogram*, the *pie chart* (or *aerogram*), the *frequency curve* and the *broken-line diagram*.

Diagrams are mainly used to present absolute or relative frequency distributions. *Bar* or *column diagrams* are frequently used to compare distributions of the same variable in two different populations; paired or opposing bar diagrams are especially used to compare male and female populations.

Example 1 - Pre-reform graduates from the class of 2005 in employment at five years after graduation: net monthly earnings by gender and subject grouping



The **opposing bar diagram** shown in *example 1* very effectively highlights the differences between two different groups – here men and women. The title tells the reader immediately that the subject is the net monthly earnings at five years after graduating. The researcher has chosen to order the bars in descending order of male earnings, a method that immediately shows the different net monthly earnings distribution among men and women in each discipline: for example, the men in the medicine grouping earn much more than their women colleague in the same group.

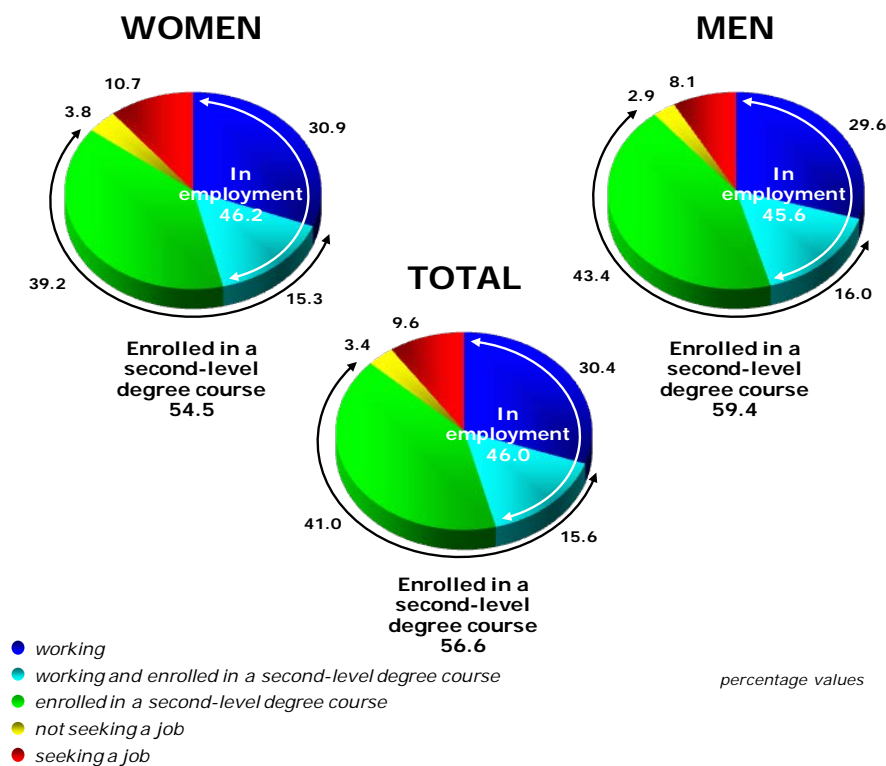
The scale of reference is given on the x-axis making the variation span immediately clear to the reader.

Pie charts or aerograms are used to give a clear picture of the whole situation. Aerograms can be either split bar diagrams or pie charts.

Example 2 gives three pie charts showing the frequency of employment and further training conditions at one year by gender. The title again immediately evidences the object of the analysis (work and training experiences).

Each graph has a separate heading that clearly indicates the graduate populations considered (here women, men and total). In addition, the graphs are set side by side allowing the reader to make easy comparisons. As the graphs refer to the relative distribution of the same variable, the legend at the foot of the charts refers to all.

Example 2 - First-level graduates from the class of 2009: employment and further training conditions at one year after graduation by gender

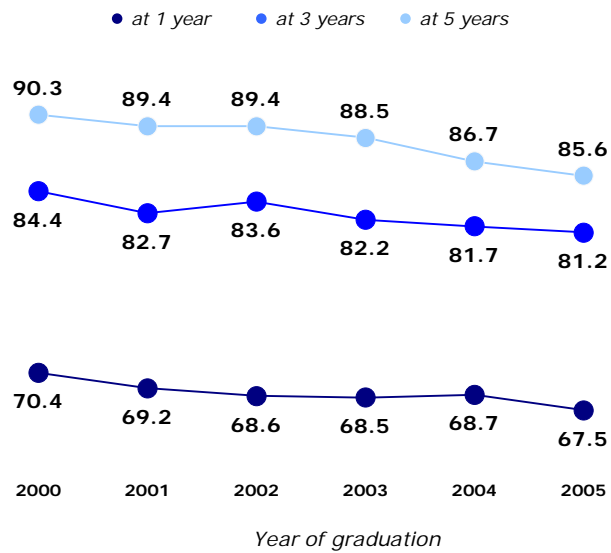


Broken-line diagrams are also used to indicate the employment situation since this type of data representation effectively illustrates progression over time.

The graph given in *Example 3* compares a series of historical data showing employment rate at one, three and five years after graduation. The title clearly anticipates the sort of information

to be found in the subsequent graph. The dots are joined by a line that gives an immediate visual picture of the employment trend in recent years.

Example 3 - Pre-reform graduates from the 2000-2005 classes: employment rate at one, three and five years after graduation (percentages value)



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ANNEX I-Experimental Survey run by AlmaLaurea in Morocco and Tunisia

The survey on Graduates Job Condition is part of the activities carried out under the EU financed Tempus Programme ISLAH: *Instrument at support of Labour Market and Higher Education*. Main contents and results are detailed in the present Annex.

The TEMPUS ISLAH project

Instruments at Support of Labour Market and Higher Education (ISLAH)

Programme: **TEMPUS IV**

Duration: **3 years** (Oct 2012 – Oct 2015)

Beneficiary countries: **Morocco and Tunisia**



- **General objectives:**

To promote the reform and modernization of the higher education systems

To contribute to improve quality assurance and relevancy of HE in line with the requirements of the world of work

To foster graduates' employability

- **Specific objectives – Knowledge transfer with a view to:**

Create a Moroccan and Tunisian graduates' database

Carry out graduates' profil and job condition surveys

Create local and national observatories for graduates' guidance on labour market

Assess skills needs of firms

Promote collaboration between Universities and alumni associations

ISLAH partnership

- ✓ U. of Jendouba
- ✓ U. of Monastir
- ✓ U. of Gafsa
- ✓ U. of Gabes
- ✓ Ministry of Higher Education - MESRSTIC
- ✓ Ministry of Employment and Vocational Training - MFPE/ONEQ
- ✓ Tunisian Union of Industry, Commerce and Handcrafts - UTICA



- ✓ AlmaLaurea - coordinator (IT)
- ✓ French Centre for Research on Qualifications- CEREQ (FR)
- ✓ Agència per a la Qualitat del Sistema Universitari de Catalunya - AQU (SP)
- ✓ U. Rovira i Virgini, Tarragona (SP)
- ✓ U. Aix-Marseille (FR)

- ✓ U. Ibn Zohr, Agadir
- ✓ U. Chouaïb Doukkali, El Jadida
- ✓ U. Sidi Mohamed Ben Abdellah, Fes
- ✓ U. Cadi Ayyad, Marrakech
- ✓ U. Moulay Ismaïl, Meknes
- ✓ U. Mohamed Premier, Oujda
- ✓ U. Abdelmalek Essaâdi, Tetouan-Tanger
- ✓ Ministry of Higher Education - MESRSFC
- ✓ General Confederation of Moroccan firms – CGEM

ISLAH: Graduates' job condition survey

Development of the survey

- **Definition of the survey outlines** according to main project constraints (general objectives, partners expertise, available budget)
- Définition of the survey scope and **modalities of implementation:**
 - 2010/2011 first level degree graduates
 - Representative random sample according to 4 stratification variables: gender, institute, sector and specialty
 - Data collection method: CATI, with an experimental CAWI

ISLAH: Graduates' job condition survey

- **Review of the main surveys** on graduates' job condition carried out in the partner countries
- **Creation of indicators**

Questionnaire Module	Indicators
<p>Personal information</p>	<p>Indicator on family and location situation Indicators on type, specialty and level of secondary school Fellows rate Honours degree rate Trainees rate Indicators on social background Subjective indicators on training assessment</p>
<p>Indicators at T+3 situation</p>	<p>Share of working graduates Share of unemployed graduates Share of graduates returned to university</p>

ISLAH: Graduates' job condition survey

<p>For graduates working at T+3</p>	<p>Multivariate indicator on job quality, share of precarious employment, share of state-subsidised employment, share of formal employment, average income at 3 years from graduation, share of part-time employment Share of public employment, weight of sectors to employment, weight of handicraft to employment, weight of huge firms in employment, indicator on geographical mobility Indicator on training/employment match, job satisfaction rate</p>
<p>For job-seekers graduates</p>	<p>Active job search rate, discouraged job-seekers rate, indicator on job search modalities, indicator on refusal to work</p>
<p>For inactive graduates</p>	<p>Voluntary inactivity rate</p>
<p>Trajectories</p>	<p>Average time spent to find a first job, unemployment during the 3 years after graduation, number of jobs and average duration during the 3 years after graduation Subjective indicator on professional path after graduation Post-secondary studies rate, reorientation rate, change of institute rate</p>

ISLAH: Graduates' job condition survey

- **Build-up of the survey questionnaire** according to three main goals:
 - To be consistent with the issues faced by young graduates in Morocco and Tunisia
 - To consider all the aspects of the graduates' entry into the labour market
 - To obtain an understandable and short enough questionnaire as to maximize the response rate and to respect the budgetary constraints

ISLAH: Graduates' job condition survey

- **Definition of the necessary steps for a smooth run of the survey:**
 - Preparation of files for the administrative authorization to run the survey
 - Analysis of administrative data and available contacts
 - Build-up of survey sample
 - Consolidation of available data
 - Implementation of the software architecture
 - Implementation of the survey platform
 - Data mining
 - Identification of shortcomings and lessons learned

ISLAH: Graduates' job condition survey

Survey administration – CAWI phase

- Editing and codification of the questionnaire
- Preparation of data matching tables
- Preparation and dispatch of invitations to join the survey
- Follow-up of response rates
- CAWI phase duration: Octobre 2014 – Novembre 2014

ISLAH: Graduates' job condition survey

Achieved results:

University	Available e-mail contacts	Filled-in questionnaires	Response rate
Gabès	74	31	41,8 %
Gafsa	156	34	21,8 %
Sidi Mohamed Ben Abdellah Fes	123	8	6,5 %
Ibn Zhor Agadir	419	26	6,2 %

ISLAH: Graduates' job condition survey

Preliminary considerations on the different response rates – CAWI

- **Tunisia:**

- Organization of promotional seminars
- Dissemination of project brochures highlighting the benefits to join the survey
- Frequent and targeted use of social networks
- Press releases

- **Morocco:**

- Frequent e-mail renewal
- External adverse conditions (university staff turnover, students strikes)

ISLAH: Graduates' job condition survey

Survey administration – CATI phase

- Preparation of technical specifications and identification of subcontractors
- Editing of the questionnaire according to subcontractors assessment
- Test of the sample programme and carrying out of test interviews
- Elaboration of the interview guide
- Training of the interviewers
- Start of the interviews phase
- Weekly monitoring of the response rates and the fulfilment of stratification breakdowns

ISLAH: Graduates' job condition survey

Achieved results in Tunisia:

CATI interviews duration: February – March 2015

University	Number of graduates	Available phone contacts	Sample	Filled-in questionnaires	Response rates
Gabès	4.210	4.038	1.031	415	40,25 %
Gafsa	3.329	3.294	1.006	408	40,55 %
Jendouba	2.921	2.823	1.020	407	39,9 %
Monastir	3.841	3.259	906	400	44,1 %

ISLAH: Graduates' job condition survey

Achieved results in Morocco:

- CATI interviews duration: April – May 2015

University	Number of graduates	Available phone contacts	Filled-in questionnaires	Response rates
Agadir	3154	2742	930	34 %
Tetouan	5002	1101	421	38 %
Fes	5104	877	336	38 %
Marrakech	2131	675	321	48 %
Oujda	2922	437	131	30 %
El Jadida	998	580	580	36 %
Meknès	2108	263	128	49 %

Shortcomings and lessons learned

	Positive	Negative
Internal	<p>Partner Universities fully understood the benefits related to an integrated model in favour of graduates' employability and internal and external quality assurance</p> <p>The administrative documentation gathered before graduation (profil survey) allows to achieve economies of scale with respect to the job condition survey, by reducing the duration of the questionnaire and so far maximizing the response rate</p> <p>The implementation of career services (observatories) facilitates the gathering of mail and phone contacts, with a positive impact in terms of graduates' loyalty and expected raise of surveys' response rates</p>	<p>Lack of contact data at administrative level</p> <p>Lack of standardization procedures for the graduates' data gathering among university institutes</p> <p>Frequent change of graduates' phone numbers and e-mail addresses</p> <p>Weak web communication between Universities and graduates</p>
External	<p>The CAWI and CATI methods have obtained encouraging response rates from Moroccan and Tunisian graduates, showing that it is possible to carry out less expensive and more sustainable alternatives than the most fairly generalized face-to-face interviews</p>	<p>Risk for survey representativeness</p> <p>Difficulty to raise the response rates</p>

Conclusion

- **The model developed by AlmaLaurea in Italy is applicable to third contexts as well as the annual surveys based on it.**
- **The raise of the representativeness of the survey results and the response rate implies to:**
 - Implement a standardized system for the gathering of graduates' contact data since their enrollment at University
 - Set-up a reinforced coordination among the students office at institute level as to generalized the data gathering
 - Regularly disseminate to graduates the benefits of their involvement in job condition surveys with a view to enhance the academic supply and *in fine* their employability