

Dima, Alina Mihaela; Vasilache, Simona; Ghinea, Valentina; Agoston, Simona

## Article

# Achievements and perspectives in designing a set of convergence indicators in European higher education

The International Journal of Management Science and Information Technology (IJMSIT)

## Provided in Cooperation with:

North American Institute of Science and Information Technology (NAISIT), Toronto

*Suggested Citation:* Dima, Alina Mihaela; Vasilache, Simona; Ghinea, Valentina; Agoston, Simona (2013) : Achievements and perspectives in designing a set of convergence indicators in European higher education, The International Journal of Management Science and Information Technology (IJMSIT), ISSN 1923-0273, NAISIT Publishers, Toronto, Iss. 9-(Sep), pp. 3-16

This Version is available at:

<https://hdl.handle.net/10419/97856>

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An official publication of The North American  
Institute of Science and Information Technology

ISSN:1923-0265

**INTERNATIONAL JOURNAL OF**

# **Management Science and Information Technology**



NAISIT  
PUBLISHERS **III**

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# **The International Journal of Management Science and Information Technology (IJMSIT)**

NAISIT Publishers

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The International Journal of Management Science and  
Information Technology (IJMSIT)  
Special Issue: knowledge strategies, decision making and  
IT in emergent economies

## **Achievements and perspectives in designing a set of convergence indicators in European higher education**

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### **Abstract**

The paper is discussing the need for convergence in European higher education, as it was claimed and negotiated in the last decade, accompanied by the results and prospects of a research project advancing and testing a credible set of indicators of convergence in the European Higher Education Area. The main limitations and problems are addressed to, together with an overview of the indicators proposed, and of the ways of advancing the research in the field.

**Key words:** convergence indicators, higher education

### **1. Introduction**

Recent studies devoted to economic convergence place emphasis on regional frameworks (Sala-i-Martin, 1996), which may be distinguished from international ones by their sharing of some institutions. The European Union is such a framework, whose economies and societies tend to convergence. There are three paradigms, which appear to dominate current discussions of the role of education in economic growth: the first has stemmed from human capital theory; the second could be classified as catch-up models; and the third important approach has stressed the interactions between education and technological innovation and change (Wolff, 2000).

Within this framework, a European dimension of education has been created by means of a complexity of actions: promotion of citizens' mobility, setting up joint academic programs, creation of networks for the exchange of information and for language teaching, and so forth. Within this process of alignment, the Bologna Declaration, which aimed at the creation of European Higher Education Area by 2010 was signed in 1999. However, the convergence in education is a more complex phenomenon which goes behind economic convergence. Also, the chances that the poor national economies advance towards convergence within an enlarged and highly competitive single market are rather scarce, in a short



period. There are some mechanisms that rather stimulate divergence (Iancu, 2008), because, although broadly speaking, all educational systems are going in the same direction, their starting points, as well as their convergence speeds, differ.

Studies devoted to education in Europe have highlighted several aspects: in Southern Europe, many young people are not included in the school systems (Pastore, 2007); the degree of homogeneity across Europe is still low; theory is not perfectly matched with practice, and quality progresses should be made; the Bologna process relies on qualitative data, while quantitative aspects are difficult to capture. This framework makes European universities unable to reach their full potential. Excessive control, defective governance and lack of appropriate funding are among the reasons. In international tops, they are losing face, as compared with their American and Asian competitors (Veugelers and Van der Ploeg, 2008), a trend needing to be thoroughly analyzed, in order to be reversed. The on-going crisis starting 2008 has a considerable impact on the European higher education arena. This context guides us into researching the factors which influence educational performance and convergence in Europe, for a proper future handling of the transformations in European higher education.

The paper discusses the main limitations in designing a set of convergence indicators for European higher education, and presents the results of the qualitative research performed among educational experts.

The paper is structured in three sections, discussing the types of problems and limitations in choosing convergence indicators, presenting the selected indicators and the arguments for their selection, and the qualitative analysis, based on experts' opinions.

## **2. Types of problems and limitations in designing a set of convergence indicators**

As a preamble of our research, we have identified the main problems and limitations related to designing sets of convergence indicators for European higher education systems, on levels of complexity. The quantitative approach, in a qualitative context, is not easy to take, this is why we assign a particular relevance to these problems, which have to be properly identified and discussed. The categories of problems we set are:

- Strategic problems, which refer to the use of performance indicators as convergence indicators, as a consequence of the Bologna focus on quality management (like in Billing, 2004; Federkeil, 2008; Hazelkorn, 2007; Schwarz and Westerheijden, 2004). This approach acknowledges the idea that performance influences convergence, when it should be the other way around: more convergent national systems lead to a more qualitative European higher education. Thus, performance being an effect, and not a premise, convergence indicators should rather refer to equal/ comparable conditions for performance – financial and non-financial prerequisites for educational excellence. By focusing on performance, rather than on convergence, we find ourselves in the situation of having common strengths, across educational systems, but not common weaknesses, this being a major source of divergence – lessons from one success model are not applicable in another system, in order to correct its weaknesses.

- Classification problems, which refer to properly identifying scales and types of convergence indicators. The premise is that nations are not convergent, economically, as well as culturally. It is also obvious that educational systems are both economically bound, and culturally bound. Some of the indicators used for convergence (see Reichert, 2008) are more economic than cultural, or the other way around. Cultural backgrounds of countries should be, thus, assessed when discussing economic issues (Segal, 2012). Their comparability is, thus, limited. A separation of the more economically bound indicators from the more culturally bound indicators is necessary, and economic indicators should be weighted by an economic convergence coefficient, while cultural indicators should be weighted by a cultural convergence coefficient, in order to become more representative for the respective national systems. For instance, GDP allocation for higher education, generally taken into account in absolute value, is relatively more important in a country where the universities are legally limited in attracting and using other types of grants, than in a country where self-funding and entrepreneurialism are stimulated. The analysis of impact is preferable, in our case, to the analysis of statistical facts, despite its higher difficulty.

- Analytic problems, which refer to time series issues, and longitudinal data analysis. On the one hand, the balance between sensitivity and significance is difficult to achieve, as specific data are not representative, across Europe, while representative data are not specific, being often too general to give a good grasp of what is actually happening in the respective educational system. On the other hand, relatively speaking, years are not equal, across European educational systems. One year in Eastern Europe is not the same measuring unit as one year in Western Europe. Derived measures, as reform speed, or years-reform, should be used instead, in order to assess distances between educational systems. If twenty historical years represent, for one country, two years-reform, while for another country they represent ten years reform, the gap becomes more obvious, and the systems are easier to compare, in terms of opportunities and threats. However, the methodological challenges are not easy to overcome, as clear outcomes of reforms, within a given time frame, are needed, in order to assess the pace of change – then, one year-reform would be the interval in which the educational outcomes indicators of a national system improve by one unit. These outcome indicators usually lack, or are too difficult to identify (Entwistle, 2005; Van Damme, 2004).

### **3. Proposed indicators and discussions**

We have considered four directions of higher education convergence, to be taken into account: policies and structure, funding, internationalization, and quality assurance (Reale et al., 2012). The rationale for choosing these directions is, on the one hand, their internal convergence, or reciprocal influence, as internationalization cannot be assured without quality assurance, quality assurance without funding, funding without proper policies, etc., and, on the other, their hierarchical structure, in terms of levels of action. While state institutions, or supra-national institutions, in the case of the EU, are responsible with policies and structure, universities are more accountable for quality assurance. Thus, we may characterize the system at both the macro and micro level.

The indicators proposed for each of the four directions of higher education convergence resulted from a focus group organized within the Academy of Economic Studies of Bucharest. All participants at the focus group are directly or indirectly related to higher education: they are either professors,

researchers, representatives of the Ministry of Education, managers of various educational structures etc..

As far as policies and structure, as the first direction, is considered, we start from a state of formal convergence, as most of the HE systems in Europe are organized according to the Bologna cycles. However, debates and contestations arise, in a general context of lack of comparable, but particularized first hand data from the universities and from the national systems. Considering this need for quality data, we propose the following possible indicators of convergence on this direction: number of seats in universities/ academic year; number of hires of teaching and research staff/ academic year; number of promotions of teaching and research staff/ academic year. A comparative discussion on promotion criteria, and average number of years passing between career steps would also be salutary. In terms of convergence of structures, we propose as indicators: percentage of first cycle graduates following the second cycle in the same country; percentage of second cycle graduates following the third cycle in the same country; number of new Bologna programs created annually. Academic governance should be also taken into account at this step, by researching the capacity of the universities to appoint their leading structures, or to include external stakeholders in these structures. Thus, the balance between accountability and autonomy is examined, in the framework of the new mission of the university, in the Bologna era.

For funding, we have proposed the following set of indicators: budgetary allocation per student; the percentage of base funding which is performance-based; investment in teaching and research infrastructure (% of GDP); the average amount of a research grant attracted by universities. These indicators should be interpreted in the wider context of GDP allocation for education, and tertiary education in particular, of general living standards and personal investment in education and lifelong learning. Also, prospective studies and data base creation and maintenance should be considered, in the form of new strategic projects dedicated to HE, or of the percentage of strategic projects actually implemented and evaluated, from the total number of projects proposed. As funding is a sensitive issue, especially in developing countries, we place a great emphasis in alternative sources of financing for universities, on their availability and accessibility, as well as on the availability of information regarding these sources and their accessing. Financial indicators are under the pressure of policies and strategies, setting the trend for financial allocation, from budgetary or extra-budgetary sources, this is why they should be understood in parallel with the indicators analysed in the previous category. The degree to which universities are autonomous from the point of view of their board's structure and internal rules and regulations should be correlated with their degree of financial autonomy, in terms of attracting extra funding and being able to allocate these funds according to their own diagnosed financing priorities.

Internationalization measures the degree to which a national higher education system is connected to other European systems, and assures mutual exchanges of students and professors, in order for them to be able to compare structures and practices and thus to speed up the convergence process. Among the indicators we have proposed for internationalization are: out-going to incoming students ratio; out-going to incoming professors ratio; average length of students' mobility; average length of professors' mobility; average amount of financial support for students going abroad; average amount of financial support for professors going abroad; number of joint study programs per year; number of double

diploma programs per year; number of research projects funded by a European entity; number of joint research projects. As it may be seen, our analysis targets micro-indicators, having to be aggregated at the national level, as those concerning fluxes of students and professors, as well as indicators referring to the structure of the study programs and of the research activity. Thus, we cover the main areas of internationalization, giving a comprehensive picture of the place in which Romania stands from the point of view of internationalization, as a driver of convergence. In the context of the recent history, having promoted a closed society, and a closed educational system, we consider this driver to be of key importance for recovering historical gaps and reconnecting, in the frame of convergence, with the rest of Europe.

For quality assurance, the clear definition of the long-term objectives and the action plan for achieving them are of high importance. This is not an easy thing to be done because of the national and international dimensions interplay. However, besides taking into account the requirements of the European Association for Quality Assurance in Higher Education and the European standards for the internal and external quality assurance of higher education institutions (Reichert and Tauch, 2005), a conceptual analysis has to be done in order to assure the relevance of the quality evaluation, regardless of its form and methods.

Another objective of the high quality education should be the assessment of the labour market for perceiving its real trend in evolution. By maintaining a constant connection both with the National Agency for Employment and the employers, a real-time estimation of the labour market necessities and requirements will be set.

However, these actions are useless in the absence of a specialized department sustaining these directions of activity, a hiring holistic view (focused on designing the proper recruitment-selection processes that will thus enhance the chances for employees of great potential and vocation), and of an adequate motivational system (financial and non-financial rewards from within the institutions, and the improvement of the professor's state within the society).

From this perspective, some convergence indicators stand out on the three above mentioned directions. Concerning the quality assurance, the number of analytical programs accomplished with the students involvement is proposed, in the same time with the weight of practical activities (problem-based learning) and Socratic teaching style within the didactic frame; relating the labour market, the number of programs developed with the help of business environment, the number of graduates hired in less than 1 year after graduation, and of those hired in less than 1 year but on a position in accordance with his/her specialization, as well as the average period necessary to a fresh graduate for being hired on a position in line with his/her specialization, are thought of great interest; last but not least important, for considering also the regional development, the involvement of business environment in the higher education and also the outcome of the higher education, the number of research projects funded by private sector, the number of granted patents and licenses, founded start-ups and its average period of activity on the market, are proposed.

#### **4. Qualitative analysis of experts' options for proposed indicators**

In the framework of qualitative research, we have designed a questionnaire whose objective was to prioritize the proposed indicators, through interviews with people having held or holding managerial positions in higher education. Based on the recommendations of a group of 10 experts, selected, as an accessibility sample, from the managers of higher education institutions also involved in educational reforms, programs, and research on the topic, nationally and internationally, we have constructed a sample of 500 potential respondents. The sample was built following the snow-ball principle: each expert recommended five respondents from other universities than theirs, and each of the fifty respondents obtained recommended another ten respondents from their university. We have, then, distributed the questionnaires to the 500 respondents, and obtained 109 valid answers (21.8% response rate, which we consider acceptable, considering the accessibility difficulties).

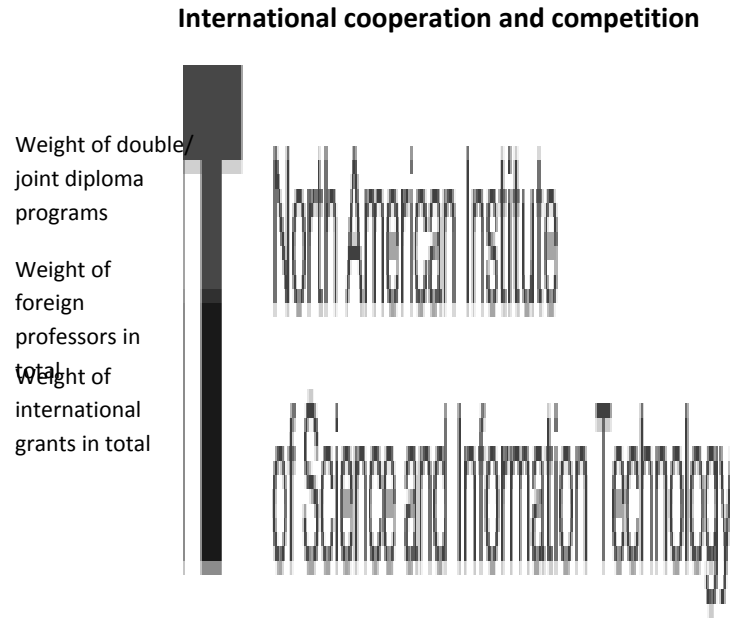
To this question we collected 89 answers, out of 109 respondents to the questionnaire. We notice that the indicator considered being the most relevant is the number of places allocated for admission to universities, corresponding to a topic that is of interest to the academic community. The indicator being least relevant is the percentage of young faculty members, a fact that may be attributed to the large variation of this indicator between universities and fields of study. Also, one of the three open answers draws attention to the fact that the promotion system was severely affected in the last years, which has an impact on indicators. We notice, still, a growing weight of the answers of the type *neither agree nor disagree*, which suggests the relative lack of an option of the respondents, who cannot decide on the relevance of any indicator, in particular. Another open answer insists on the fact that the number of places for the admission should not be imposed but, as in Western universities, the candidates initially admitted should be selected during their study years. Osborne (2003) shows that the mechanisms for admittance to faculties have suffered successive relaxations from the 60s on, in parallel with a diversifying of the institutional offer – there are much more types of higher education institutions, from which the high school graduates may choose.

To the question related to the indicators of funding and evaluation of the higher education system, we collected 92 answers, from the 109 total respondents. The most frequent choice was that of the number of grants obtained through international competition, closely followed by the costs per student equivalent. It's worth noticing that the main indicators target the international competitiveness of the institution, as well as its effectiveness in spending money with each student. The indicators regarding the weight of expenses with modernizing infrastructure and the weight of revenues obtained through national and international competition are not so emphasized.

Estermann and Nokkola (2009) mention as indicators the degree in which the universities can accumulate reserves and keep the surplus from state funding, the possibility of the university to set its fees, to be present on financial markets and to invest in financial products, to issue bonds and shares, to own its buildings and lands. We may notice that, while at the European level, the concern moves towards the financial independence of universities, in Romania the answers target more the competitiveness and the fair administration of funding. The explanation may reside in the history of lack

of transparency and forms without substance, which support the need for a change, by orienting towards performance and by allocating funds based on performance.

The options regarding the indicators of internationalization are presented in **Figure 1** below.



**Figure 1. Options regarding indicators of internationalization**

The analysis of the above illustration shows that in the opinion of the respondents the “Share of teachers who teach as visiting professors” is of great relevance- 44.6% of the respondents totally agree, while 25% partially agree with this statement. 26.1% of the respondents believe that the “Share of students with study experience abroad” represents a very relevant indicator in the field of international mobility, and 39.1% of the respondents partially agree with this indicator. In the case of the third indicator, the “Share of teaching staff of other nationality employed in the university”, 17.4% strongly disagree with this indicator, and 8.7% partially disagree. A very large percentage, namely 31.5% does not have an opinion on this, therefore expressing their neutral perception. The analysis of the open answers reveals that it is very difficult for a foreign professor to obtain a teaching position in a Romanian university due to the extremely restrictive legislation and rules and therefore their number will be very small and irrelevant for the present research. Legal issues hindering the mobility on the labor market for teachers and researchers is not just a specific case for Romania. Marginson and Sawir (2005) identify this problem also in socially and economically more developed states, such as Australia.

Indicators assessing international mobilities are very diverse and are fervently debated by numerous specialists in the field such as Altbach and Knight (2007), Findlay (2011), Tremblay (2005), Staniscia (2012) and others.

In terms of indicators which evaluate international cooperation and competition, as illustrated in figure 3, the 92 respondents to this question consider that the “Number of international research projects/ total number of research projects” represents the most important indicator of this dimension (31.5% consider this indicator important and 30.4% very important). This result is in accordance with Humboldtian vision, according to which universities have to entwine their teaching mission with the research activities (Geuna, 1999). It complies also with Bologna Declaration’s provisions, which state that the creation of the European Research Area- ERA represents a major objective (Berlin Communiqué, 2003; Kettunen and Kantola, 2006; [http://ec.europa.eu/research/era/index\\_en.htm](http://ec.europa.eu/research/era/index_en.htm), 2012; <http://www.ehea.info/>, 2012).

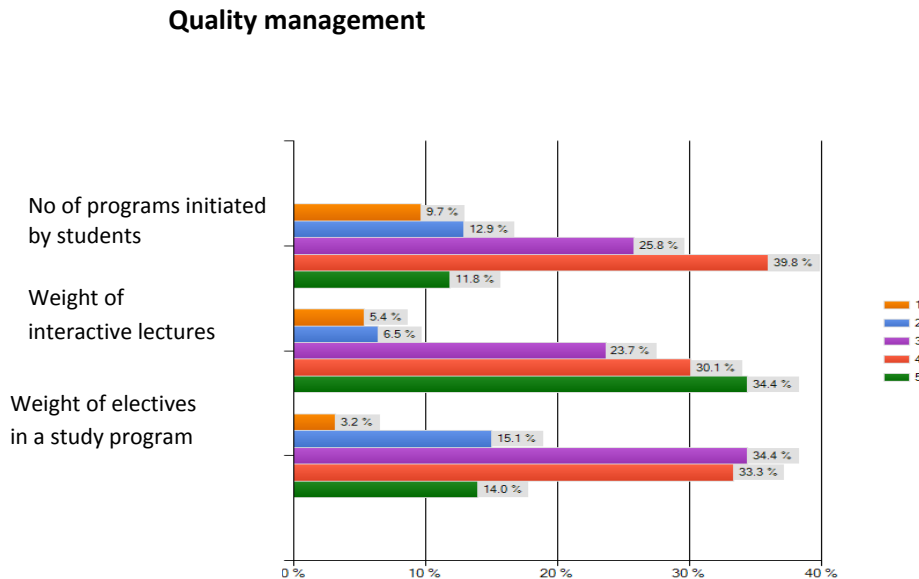
Regarding the second indicator, the “Share of foreign teachers/ total number of teachers”, a large portion of the answers are in the neutral area: approximately 30% of the respondents consider that this indicator is neither relevant, nor irrelevant and just 13% consider it very important. At opposed pole, just 15% of the respondents reckons it as completely irrelevant.

Next indicator, the “Number of joint degree programs” is considered by 27% of the population as very relevant, by 33.7% as relevant, while 16% have a neutral opinion and 23% consider it as rather irrelevant. According to Bologna Follow-Up Group (2009) by 2009 three-quarters of countries have introduced joint degrees into their legislation and more have prepared drafts for new legislation which includes clauses allowing joint degrees. In 2009 there were offered 2500 joint programs in the EHEA, while most of them are in the Bachelor cycle, followed by Masters. The rapid growth of joint degrees was supported by additional funding for universities initiating such programs and for students participating in them.

The three comments received within this section of the questionnaire emphasize the importance of double degree programs in order to foster “the attractiveness of the university on its relevant market” and diminish the danger of “educational neocolonialism”. Therefore it is considered that joint programs stimulate the convergence process between Eastern and Western universities, given the fact that certain importance is place on the degree awarded by the Eastern partner.

Finally, the options for quality management indicators are presented in **Figure 2**:





**Figure 2. Options for quality management indicators**

To this question we have collected 93 answers, of persons holding management positions in Romanian higher education.

From a distance, the highest number of options was obtained by the second indicator, namely the weight of interactive lectures in the total number of lectures, which attracted 34,4% of the answers. (At the European level, Traianou and Hammersley (2008) advocate the need for new teaching methods, which facilitate learning). With much lower scores, on comparable positions (14,0% and 11,8%, respectively) we find the third indicator (*the weight of optional subjects in the total number of subjects of a study programme*) and the first indicator (*the number of projects, curricula, methodologies initiated entirely by students*). This later indicator, although controversial, finds support in the opinions of specialists (Anderson, 2006; Ball and Wilkinson, 1994; Bovill et al., 2009; Carini et al., 2006). We may conclude that the respondents consider the two indicators as being important, but not essential. Also, we may notice the relatively large weight of answers of the type *neither agree nor disagree*, which may lead to the conclusion that respondents have other options, expressed as open answers. In this category, respondents propose to give up the mandatory subjects, in favour of more electives, to

institutionalize students' initiative, and to look at number of internationally accredited study programs, and number of faculty members who are part of prestigious international associations. Students have to be treated as equal partners, to be given the right to govern their university, contributing to the imposing a more comprehensive concept of quality, whose defining is not any more, exclusively, the task of the teaching staff.

## 5. Conclusions

This paper identified the main problems related to designing a set of indicators of convergence in Romanian higher education, on the four directions we have highlighted, starting from literature. Taking into account the problems listed, and trying to find an acceptable compromise between the need to obtain quantitative, comparable data, and the qualitative requirements of studies referring to higher education, we have proposed four sets of indicators, on the four considered directions: policies and structure, funding, internationalization, and quality assurance. The main objectives in designing these indicators were to be able to retrieve good data, for the periods of interest, and to be able to perform the type of analyses that were assumed by the methodology of the project. Indicators should allow for a tracking of the progress in the convergence process, in such a way as to ensure comparability at European level. We have performed some sample analyses, on qualitative data, referring to the prioritization of the proposed indicators by experts in the higher education field.

With this view, indicators for policies and structure refer mainly to the advancements of the Bologna process implementation, referring, as well, to the career management of the staff involved in the higher education field. A more thorough discussion about promotion opportunities and promotion criteria would be salutary, at this step.

Indicators for funding distinguish between state-based funding and funding that universities may attract through research projects or additional sources, and also take into account the way in which funding is efficiently used at the system and university level.

Internationalization indicators regard student and professor movements across Europe, as well as financial support for these exchanges, in the framework of well established programs (e.g. Erasmus) or otherwise. They also measure the degree to which researchers and professors from Romania collaborate with their European peers in institutionalized forms, including research or study structures that function on a joint basis. Thus, we may examine the micro-level of internationalization, considering moving groups of individuals, as well as the structural level, consisting of already established mechanisms which function in the sense of convergence.

In terms of quality assurance, there are institutions debating whether the level of complexity of the current evaluation mechanisms is actually making institutional activities and their results more apparent to HE stakeholders and to society in general. Concerning this issue, Teixeira (2010, p.12) states that *"there are fears that quality systems become entangled in a bureaucratic web of jargon, procedures and indicators that are neither intelligible nor useful for many of those individuals that government and government agencies are supposed to represent"*.

Trying to avoid a high level of complexity that will bring the questionnaire at the above stated opinion, the authors intend to keep it simple, balancing between internal and external QA, minimum standards and innovation and diversity, accountability and autonomy, academic and managerial priorities. Thus,

the questionnaire is intended to be a useful complement to data collected from secondary sources (large surveys and data bases, such as Eurostat or the World Bank), particularizing and giving qualitative insights, from policy makers and administrators in the higher education field, to data retrieved from the aforementioned sources. By combining the two types of approaches, we mitigate the risks associated with the quantitative-qualitative divide in collecting and interpreting higher education-related data.

*This work was supported by CNCSIS-UEFISCSU, project PN II-RU-TE\_351/2010.*

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