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UNIVERSITIES PROJECT PERFORMANCE - REALITY AND TRENDS

Case Study

Keywords
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M10

Abstract

The article reveals data about the managerial performance of Universitaria Consortium; as subjects for national and international funding, the four universities have large numbers of finalized and ongoing educational and research projects, their deliverables affecting the institutional international ranking. The article tries to reveal if there is any connection between the number of nationally and internationally funded projects specific for each of the four institutions considered, and their international metaranking. The empirical study used an extensive analysis of a series of factors important for universities performance. Data was available on institutions websites, projects paperwork and relevant ministries reports. The conclusions of the article show that there is not a strong connection between the number of projects developed by universities and their academic performance, since subjects with lower educational route have some of the highest numbers of developed projects. The results are relevant not only for the institutional management of the four universities, but also for governmental and non-governmental funding programs managers, and the decisions they make for raising the competitiveness among applicants.

FOREWORD

The article underlines the Universitaria Consortium project performance, by assessing the four Universities evolution in terms of acquiring national and international funding. Results will show a decrease of the number of students that do not show any dependence on the value or number of projects developed by each university, but follow a national pattern, specific for the entire university environment in Romania.

The article makes a distinction between the performance measurement for the projects developed by the four Universities and the project management performance. The article will answer the question of how to measure the performance of a university, in terms of developed projects, but will also take into consideration the performance of projects management, measured as international rankings, no. of citations and importance of the projects deliverables.

At first, it is necessary to make a clear difference between university performance and productivity that only shows the efficient and effective use of resources (Salapatas, 1985), in our case, the funding and no. of projects developed. Performance is a term that includes besides productivity, dimensions like work quality, working life quality and innovation, described within the context of each studied institution.

For the use of the research article, the institutional performance will be measured as a cumulus of the following factors: number of projects with a completed deadline and the ongoing ones, the diversity of resources used for funding the Universities specific performance. The article will reveal if there is a connection between the route of the funding across institutions and the evolution of the number of students – bachelor, masters and PhD. As an addition to the research, the Universities evolution will be studied in terms of scientific publication and research, as a result of acquiring external funding and implementing specific programs and projects.

LITERATURE REVIEW - STATE OF ART

Universities are government-funded institutions that work under the supervision of a Ministry of Science and Education. Their income streams cover the basic research funding, funding for education, an income stream based on performance, but it also includes the competitive research funding, coming from advisory/research councils.

Since the universities have subsidies, income and capital on their disposal, they have the authority of disposing freely of it, within acquiring their goal –

education and/or research. These provisions do not apply to the competitive research funding, since it is usually granted to competing researchers that ear-mark the specific budgets for designated projects, acting in the benefit of the university and/or research center. It is important to mention that from an accounting point of view, the specific grants are included within the universities accounts and are administrated by it.

When measuring the universities performance, there are no particular mechanisms that may be used, the difficulty arising from the fact that there is no mean to isolate the importance of specific factors and compare particular cases; another factor to consider is the importance of causality of university performance, without achieving related cross-country studies, including large scale and time-series (European Commission, 2018).

As for the Universities in Romania, performance is mainly understood as a number of international – institutional agreements (partnerships, consortium), number of scholarships and grants for students and researchers, no. of organized scientific conferences, workshops, summer schools, that are expected to result into higher effective student groups, both on bachelor and masters, an increased no. of PhD. Students and Thesis, but also an increased visibility on the international level, for each university.

The Increase seen as a cumulus of value and performance of universities, was suggested by William Balzer (2010) to be initiated with an approval of a new o modified content for the academic courses, a standardized process that only falls under the unique authority of each university. Since the educational environment is subject to the economic globalization, there is no common framework for guiding how this process could be studied, diagnosed and improved, since each university environment is subject to unique, intrinsic factors.

Universities performance may only be achieved through organizational change and effectiveness (London, 1995), a feature specific for universities management positions, staff functions and processes. It is common for universities practice to have designated departments that review performance management functions and administrative operations, suggesting a continuous institutional performance improvement.

Except for the private return on education, specific for each institution, an aspect that will not be developed within this research is the social return on education. This aspect was analyzed by Marcel Herbst (2007), an author that takes into consideration the productivity as a result of all sources of investment, coming from any actors and stakeholders. This view does not only take into consideration the social benefits (from a non-

economic perspective – better health, social cohesion) but also the benefits specific to agglomeration economies, a dimension measured through innovation, business cultures and also legal structures, specific to each nation and nationality.

For the purpose of the research, it is to be emphasized that the relationship between funding and performance for the universities is not part of a simple theory, literature nor practice being able to offer a clear picture, a model or a methodological approach that would catch the relevant aspects for the investigation.

Romanian higher education is no exception from this regard, both public and private universities, subject for various funding (re)sources, value results by using a wide range of instruments, a higher performance and life-long learning (Herbst, 2007) being counted only with a broad sense. As the main subjects of a continuous process of transformation, the higher education institutions bring into light the need for their performance to be reassessed, as Jongbloed *et. al.* (2008) state, by emphasizing their contribution to the welfare of the local and/or regional environment. Defining priorities and making relational strategies with stakeholders (Mainardes *et al.*, 2010) are actions that may bring for the universities higher rankings based on performance, a concept whose components will be a subject for analysis for the case study of the four Universities in Romania: "Alexandru Ioan Cuza University of Iasi", "Babes-Bolyai" University from Cluj-Napoca, West University from Timisoara and the State University from Bucharest.

AVAILABLE RESEARCH PROGRAMS AND PROJECTS

Raising competitions for funding and having Universities as actual candidates, gives to the Romanian responsible institutions the opportunity for taking the necessary actions in order to reach a higher performance. As the reports coming from the Romania's Ministry of Education show, the low quality of the Romanian high education is a consequence of underfunding (National Higher Education Funding Council, 2014), which added to the lack of competitiveness on medium and long terms, aggravates the negative social effects and create confusion in regard with the sustainable development of the society.

On a brief description in regard with the number of students enrolled in the four universities, data shows that each year Universities suffer from a decrease in the number of students (both tuition-paying and state-sponsored), for all the three levels: bachelor, master and doctoral.

For the Bachelor, as calculated for a period from 2012 until 2016 for the Universities from Cluj, Iasi and Timisoara, the number of students decreased

with no more than 20%, while the University from Bucharest is the only which registered a slight increase for the number of the enrolled students. For the Masters the situation is not showing the same trend, but all the four universities suffered from an acute decrease of students number; as an example, this cause was a constant dispute subject for the Alexandru Ioan Cuza University from Iasi, since in 2016 it was registering with 1000 students less than in 2012. For the PhD. students the situation did not visibly change; the University with the highest number of PhD. Students is Babes-Bolyai, its evolution counting 35 more students in 2016 compared with 2012. University of Bucharest on the other side was subject to a great loss, from 1942 students in 2012 to just 1476 in 2016 (see Graph 1). Except for the number of enrolled students, an important feature that refers to the Universities performance is their pass rate (seen as students that reached the ECTS points necessary for graduation, by passing all the necessary exams). But the most important is the graduation rate, meaning the number of students with a Bachelor Degree. When researching about the two aspects, Babes-Bolyai University from Cluj-Napoca does not reveal any data for any of the academic years (2012-2018); West University of Timisoara only shows data about the publicly-presented thesis whose numbers show a great decrease: from 717 Thesis in 2012 to no more than 200 in 2016. Altogether, this University had less Bachelor and Master Thesis during the five years covered by the present research. Alexandru Ioan Cuza University from Iasi is the most transparent from this point of view, data showing that for the PhD. the number of Thesis decreased from 349 in 2012, to 185 in 2015; the graduation rate for both Master and Bachelor is beyond 96% (the lowest, in 2013) for all of the four years covered by the research, and reaching 99% in 2015 (see Graph no. 2).

Under a preliminary conclusion, despite the fact that Bucharest State University does not have the largest amount of enrolled students as compared with its consortium partners, its education and management system delivers the largest amount of PhD. Thesis, steadily improving academic quality in Romania.

EXTERNAL FUNDING METHODS

Except from the core funding, Universities in Romania started being beneficiary of external grants, as additional funding of public higher education institutions; the main income sources are partner contracts for scientific research, EU funding, provision for services in a variety of scientific fields and other extra-budgetary sources. A Report of National Higher Education Funding Council (2014) reveals the fact that in Romania (when taking into consideration both public and private Universities),

in some cases the amount coming from non-state budget allocation account for almost 10% of the total income for the higher education.

The Universitaria consortium is subject to such funding methods, in fact, as a total, in the period 2012-2017 the four subjects were granted with some of the largest amounts in Romania.

In Romania, the funding methods used for the higher education institutions increase in importance due to the share of public funding specific for each institution considered.

A study performed by OECD on tertiary education (Santiago *et. al.*, 2008) stated that all around the world there was a shift to allocation mechanisms, since they are more performance based.

Setting a portion of the base for fund performance

Establishing performance contracts between government and institutions

Creating competitive funds to stimulate greater innovation, quality, improved management systems

Implementing processes where institutions are paid on the basis of results, not inputs

Research shows that there are three formula options for the public funding – formula-based, contracts and projects.

Funding models for budget allocation (see Table 1) for each university include: formula-based funding, performance-based funding, objective-based funding and competitive funding.

According to a series of studies performed on European level, there are two types of formula-based funding models – input-oriented and output-oriented. The first model uses as indicators number of employees or salaries, PhD. titles, number of bachelor/master/PhD. students. Also explored in Romania, the performance is measured by considering the most important indicator – number of teaching staff, which has been replaced with number of enrolled students.

The second model (the output oriented funding) considers the ECTS credits for students, number of Bachelor, Masters, PhD. graduates, graduate students employment, or graduates working within their specialization; within the new public management trend, it seems that there is a better correlation between these indicators and the universities performance.

When about performance-based funding, the formula takes into consideration the specific performance of each university; the design of the formula helps universities with a better performance to stand out, compared with the less performing universities; this formula encourages competitiveness, in order to stimulate universities performance, and funding is generally perceived as a reward.

Objective-based funding mainly refers to projects of national importance, meaning that universities must accomplish their institutional scope and set objectives. This type of funding primarily regards scientific research, funding investment and developing institutional objectives.

Romanian higher education system uses all the funding types described, although performance seems to follow a downward pattern for each year. The system motivates the decline of student numbers not as a consequence of the relative performance the universities target; it seems that the cause is extrinsic and counts the number of national tests absolvents which is increasingly lower.

For the last part of the research it will be analyzed each of the Universitaria Consortium performance, where the values considered are not only the enrolled student numbers, graduates and granted PhD. titles, but also the capability of the four subjects of competing and being granted with scientific and/or research funding.

UNIVERSITARIA CONSORTIUM FUNDING ALLEYS – CASE STUDY

Following no specific order, the first university seen as subject of the analysis is Alexandru Ioan Cuza University of Iasi. It was previously revealed that despite the large variety of academic programs of the 15 Faculties included, the performance of this University is dropping steadily, starting with the number of enrolled students.

Grouped into national and international research projects, UAIC reached 72 projects financed from structural funds, where for 19 it had the quality of a Leader while in the case of 53 of them, it was a partner.

In the case of the Finalized International Projects, this institution's performance counted for the period 2010-2018 a total of 96 projects, out of which the majority was financed through IUCN-DUBNA, followed by FP7 and HORIZON 2020 (see Graph no. 3). It is important to also mention the presence of one international project accomplished with the help of SEE and Norway Grants in 2016.

The ongoing international projects count a sum of 28 titles, out of which two represent collaborations with other beneficiaries. The main financing lines for the grants received by this university are COST (21 ongoing international projects), FP7 and HORIZON 2020 (counting 4 financed ongoing projects) and DG Employment line which financed one UAIC project. For the period 2010-2018, Alexandru Ioan Cuza University of Iasi counted 259 finalized national research projects; the peak was reached in 2011 when there were 77 completed projects financed through PN II, followed by 39 successfully completed projects in 2017.

As a total, UAIC used more than 9 national research financing lines, out of which we recall PN II and PN III (see Graph no. 4).

When about ongoing national projects, UAIC counts a total of 96, having as main research financing lines PNIII (RU, Bridge Grant, PED, H2020, PCE, EURATOM/CERN, STAR). We highlight the fact that the highest amount of grants, namely 55, subscribe to PNIII research mobility.

For the period 2014-2020, Alexandru Ioan Cuza University of Iasi used four priority financing lines _ Priority axis 6, 1, 5, 10 and 4, while the most resourceful financing lines were POCU (11 grants), POR, and POC and POIM (see Graph No. 5).

As for the second subject analyzed, Bucharest State University shows a total of 29 finalized international projects (period 2011-2016), where DUBNA-IUCN financed the largest amount of international projects, counting a total of 12. Following the same pattern, for the ongoing international projects, this institution ended its collaboration within LIFE and Joint Research Projects, and added 11 more by using H2020 (for 10 ongoing projects) and one European Research Council collaboration.

As a total number of grant collaboration, this university counts more than 13 institutional alliances as a consequence of joining international collaboration through research and education (see Graph no. 6).

When researching about the national financing lines for this institution, it appears that the Bucharest State University is part of 115 national projects, financed with the help of 13 national financing lines, both as coordinator and partner. The most resourceful financing line is PNCDI II Parteneriate PCCA, helping the development of 38 national research and education projects.

As for the finalized projects, this University counts a total number of 29 international projects, while the national oriented exceed this number, counting 83 more.

The Babes-Bolyai University from Cluj-Napoca is one of the Universities with the greatest prestige in terms of educational and research performance in Romania. When taking into consideration the international financed projects, starting with 2011 this institution counted a total number of 9 financing resources, where the most productive in terms of finalized projects number is PNCD II and Framework Program 7, with 30 and respectively 22 developed projects. As for the total number of completed internationally financed projects, this institution counts no more than 77 initiatives in 2017. As is it easily to see, the numbers of accessed projects did not increase constantly over the years, from 64 in 2014, reaching 52 in 2015 and raising again the numbers to 62 in 2016 (see Graph no. 7).

The ongoing internationally financed projects count only six financing lines (H2020, Framework Program 7, POC, 3rd Health Program, International Cooperation Projects) and reach a number of only 19 projects, where they can be added 10 more transnational projects, but with a national financing source.

When about projects with national funding, this University counts only 6 financing lines, with a total of 280 projects, the highest performance compared with the ones of the other three research subjects. When considering the ongoing nationally founded projects, by the instrumentality of PNCDI II and III, the management of this institution covers a number of 54 projects, also exceeding the average for any Romanian University.

West University from Timisoara is not an exception from the rule of reaching academic and research performance as a result of competing for nationally and internationally financed projects. The research shows that this university managed to accomplish the work for 28 projects (nationally and internationally financed) within the last two years; 20 projects were directly coordinated by the West University, and within only 8 cases it had the quality of a partner. It is important to see that this institution does not reach the highest peaks in terms of projects numbers, but its management has another view – it keeps the number of ongoing projects steady, as for 2017, they had a total of 24 ongoing projects, where four a half the institution is a leader, and for the other half, it has the quality of partner (see Graph no. 8).

It seems that the funding perspective seen as an institutional performance indicator is relatively related with the academic and institutional performance (see Table 2).

As it is easily to see, the institution with the highest indicator value in terms of no. of enrolled students for the 2016-2017 academic year is Babes-Bolyai University, which also has the highest number of completed national and international financed projects.

Closely related to its performance is Alexandru Ioan Cuza University from Iasi, which despite the fact that it has with almost ten thousand more enrolled Bachelor students, it has a similar number of completed projects, and even overcoming the University from Cluj from the ongoing nationally-financed point of view.

Still far from this performance in terms of founded projects is the State University from Bucharest, despite the fact that it exceeds the previous analyzed subject with more than 5 thousand bachelor students enrolled.

Even it is the smallest in terms of performance, academic performance and student numbers, West University from Timisoara performance shows the smallest data amounts in terms of Bachelor/Masters and PhD. enrolled students within the studied time frame, as well as number of educational and research projects developed, recalling their unique management perspective that values the most, steadiness.

INTERNATIONAL INSTITUTIONAL RANKING AND PERFORMANCE

The research tries to see if there is any connection between the number of institutional projects, nationally and internationally financed, and the four universities metaranking (David *et. al.*, 2017).

But at first, it is important to mention that out of the four institutional research subjects, only three use a transparent manner for data display. West University from Timisoara is the only University from this case study that does not make any data available in regard with the number of publications and international ranking.

For the clarification of this aspect, it was used the same time interval, as for the entire research, 2012-2016. The considered variables were articles published within national and international magazines and also Web of Science database, conference volumes indexed ISI and WoS; studies, book chapters or books published within international and/or national publishing houses.

Data shows that in the case of Babes-Bolyai University, the number of scientific articles published followed an increasing trajectory ever since 2012, the deliverables counting more than 260 research articles published. The same pattern can be observed for the other variables considered (see Graph no. 9).

Alexandru Ioan Cuza University from Iasi does not follow the same trajectory, data showing that the research deliverables slowly increased within 2012-2015, only reaching a number of 669 articles published within national and international magazines (see Graph no. 10).

The State University from Bucharest is also showing small amounts of research articles and published books; as a plus we mention the exceeding number of WoS published articles, compared with the one of national and international databases, suggesting the preference for quality and not quantity of research (see Graph No. 11).

As for the international ranking of the four universities deliverables, UBB is the only institution that accounts for all the seven international rankings considered (CWTS, CWUR, QS, SCIMAGO, THE, US NEWS and URAP), reaching a score of 4.14.

The metaranking also considers the other three universities: State Bucharest University only checking 6/7 of the considered rankings, while Alexandru Ioan Cuza University from Iasi only checks 5/7 rankings, with a score of 3.28 (see Graph no. 12).

If it is not to consider the number of students enrolled and graduates for each university, and only take into account the number of nationally and internationally founded research and educational projects, as well as the number of projects deliverables counted as number of research articles,

books and book chapters and their quality (indexing), UBB reaches the highest scores for all the considered items.

Despite the fact that UAIC acquired a larger number of project resources and developed far more projects that Bucharest University, it seems that in terms of deliverables, it does not respect the same trajectory; this University occupies the third place within the international metaranking, despite the fact that it reported more than five times the number of ISI WoS indexed articles.

West University is a particular case for this research, since it has a small number of projects developed, and its management is not as transparent in order to deliver institutional data from which its performance may be analyzed.

FINAL REMARKS

As a general rule, higher education institutions from Romania do not necessarily take full advantage from European Union funding opportunities that arise. Results show that none of the subjects from the Universitaria consortium do not show a correlation between the number nationally and internationally founded projects and the academic performance indicators considered.

Considering the difficulty of measuring performance indicators, this study only took in consideration projects deliverables, and trying to measure their impact on student numbers disposal across the period 2012-2017, number of Bachelor/Masters/PhD. public thesis performed, as well as ISI WoS, BDI and books/studies published by the four universities considered.

Despite the wide number of partnerships developed, the four research subjects do not manifest any tendency of increasing the student performance, but follow the general national pattern of decreasing university general performance, despite the visible efforts of increasing student numbers.
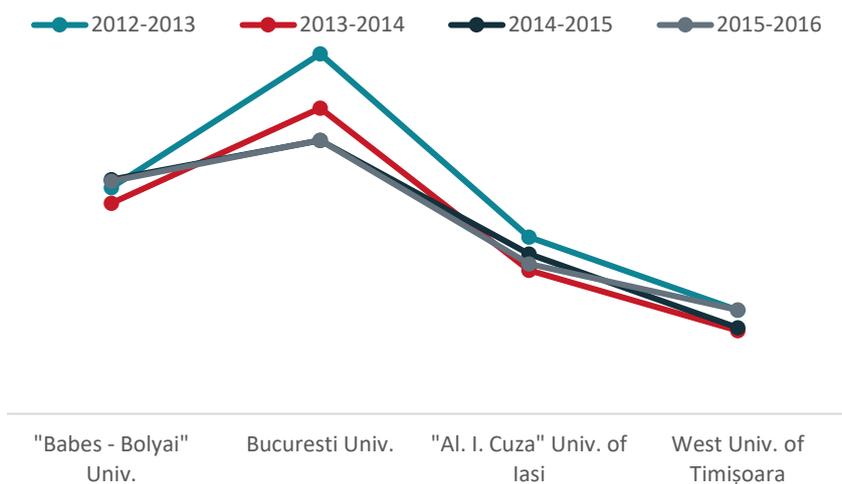
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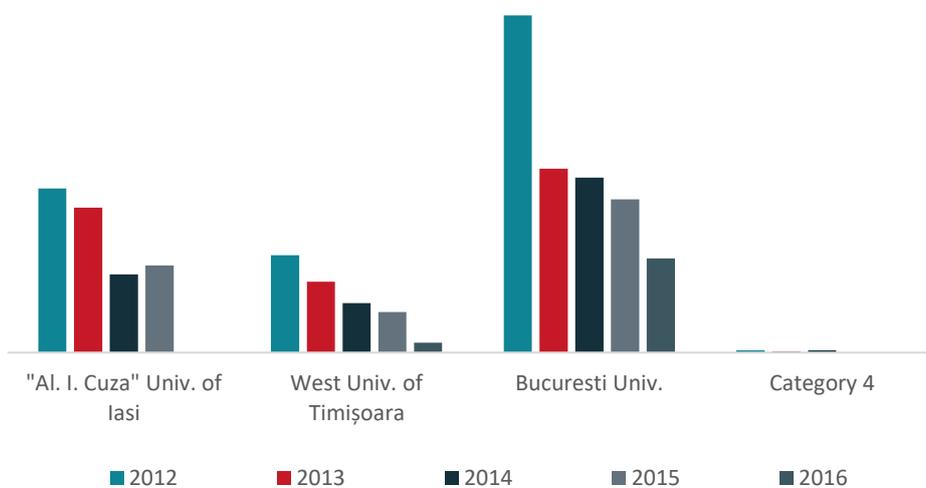
ANNEXES

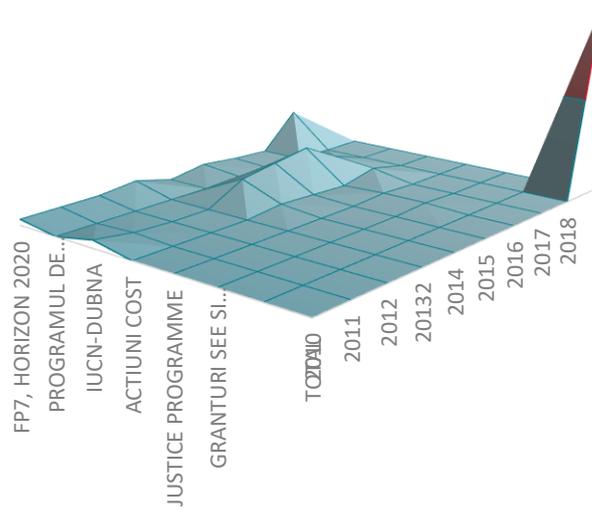Graph. No. 1. No. of PhD. Students

Source: own calculus

Graph No. 2. No. Of the Public PhD. Thesis

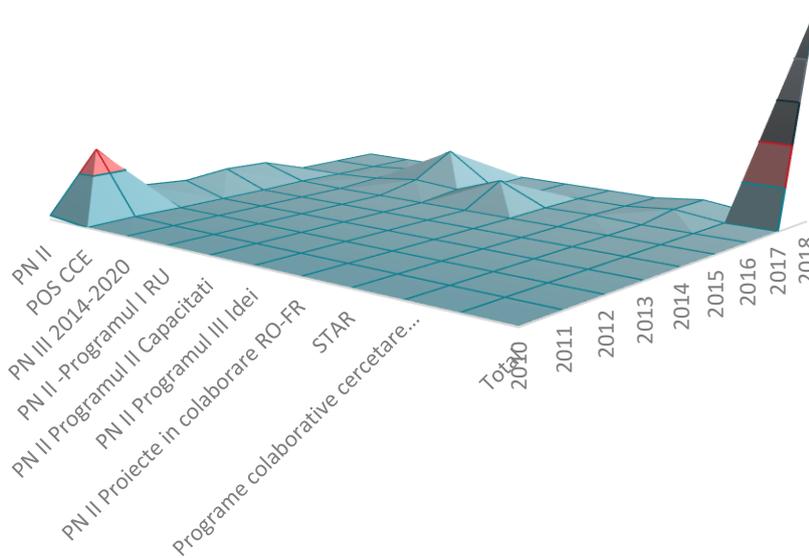*Source: own calculus*

Graph No. 3. UAIC Internationally Funded finalized Research Projects

Source: own calculus based on Agentia pentru Dezvoltare Regionala Centru. (2018). Catalogul surselor de finantare. Programe destinate universitatilor.

Graph. No. 4 UAIC Finalized Nationally-founded research projects

Source: Universitatea Alexandru Ioan Cuza din Iasi, Proiecte de cercetare Nationale

Graph No. 5. 2014-2020 UAIC
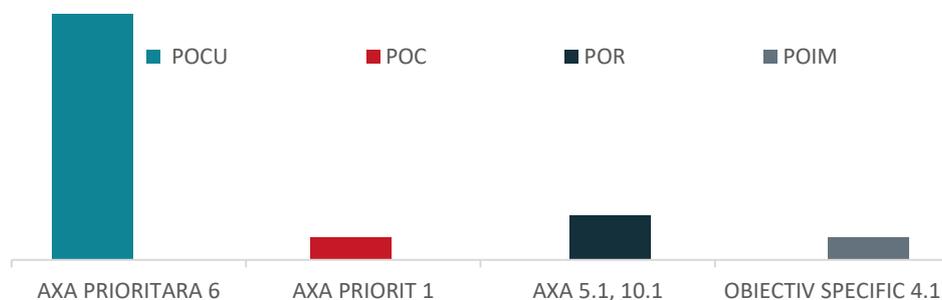
Source: own calculus based on Universitatea Alexandru Ioan Vuza din Iasi. (2018). Proiecte UAIC

Graph. No. 6. UAIC International Projects

Source: own calculus based on Universitatea din Bucuresti. (2018). Promovarea rezultatelor cercetarii.

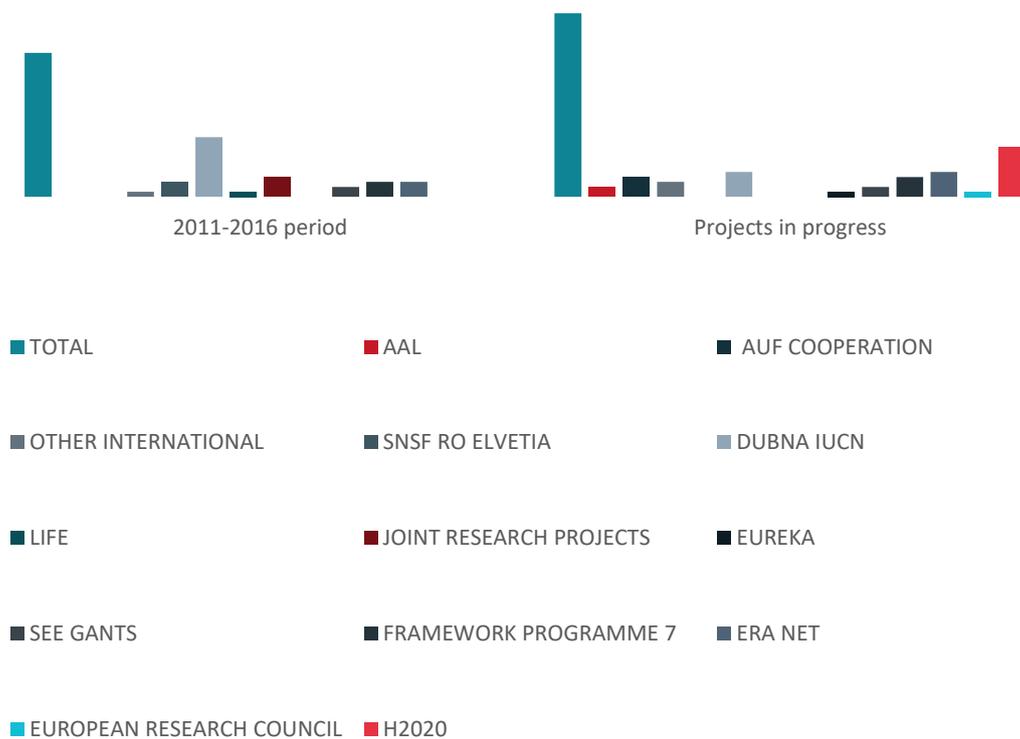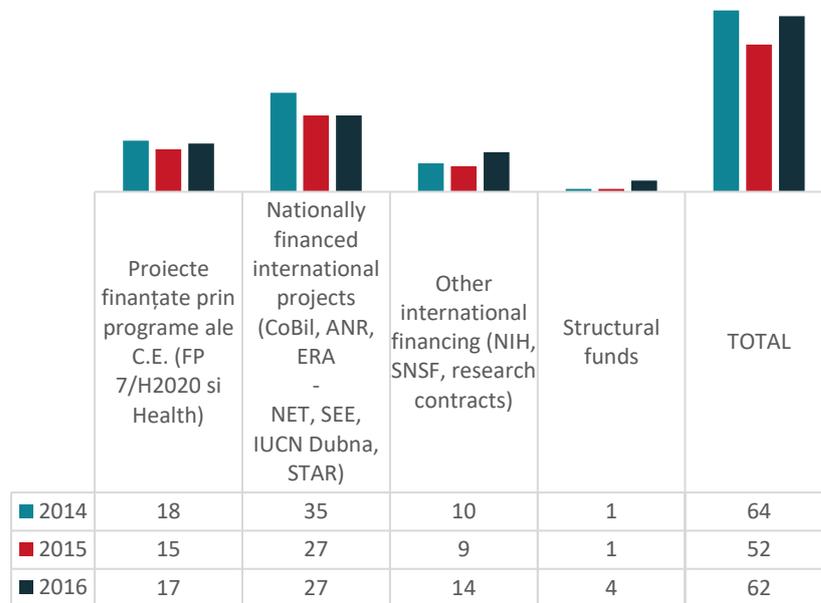Graph no. 7 Babes Bolyai Internationally financed projects

INTERNATIONAL FINANCING

	Proiecte finanțate prin programe ale C.E. (FP 7/H2020 si Health)	Nationally financed international projects (CoBil, ANR, ERA - NET, SEE, IUCN Dubna, STAR)	Other international financing (NIH, SNSF, research contracts)	Structural funds	TOTAL
2014	18	35	10	1	64
2015	15	27	9	1	52
2016	17	27	14	4	62

Source: own calculus based on Universitatea Babes Bolyai. (2018). Centrul pentru Manangementul Cercetarii Stiintifice

Graph no. 8. West University national and international projects

- TOTAL
- UEFSCIDI
- ROSA
- START DANUBE REGION
- H2020
- SEE
- LLP
- SNSF, ELVETIA
- INTERREG EUROPA
- ESA
- MCI
- INEA
- JUSTICE 2015 JCOO
- AS LEADER
- AS PARTNER

Graph no. 9 Babes Bolyai University Publication Number

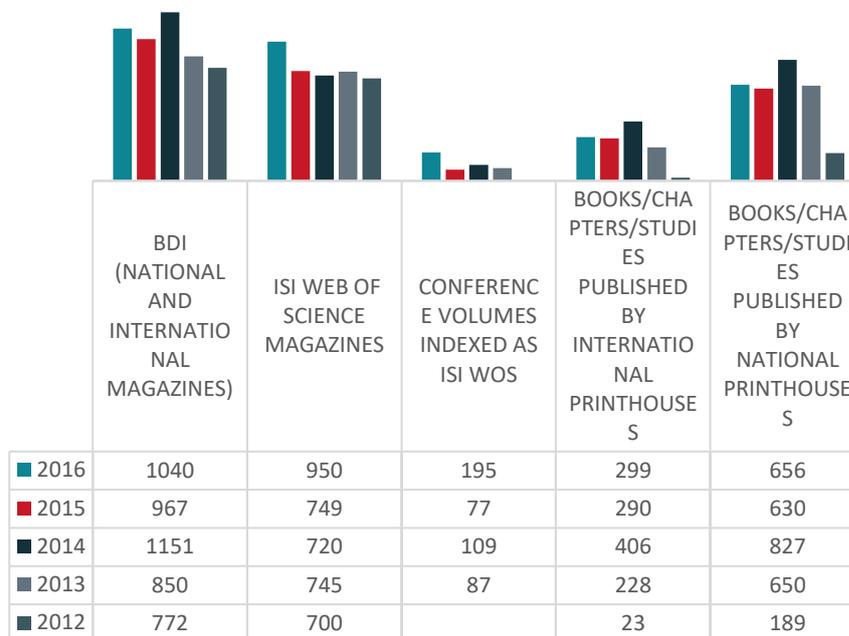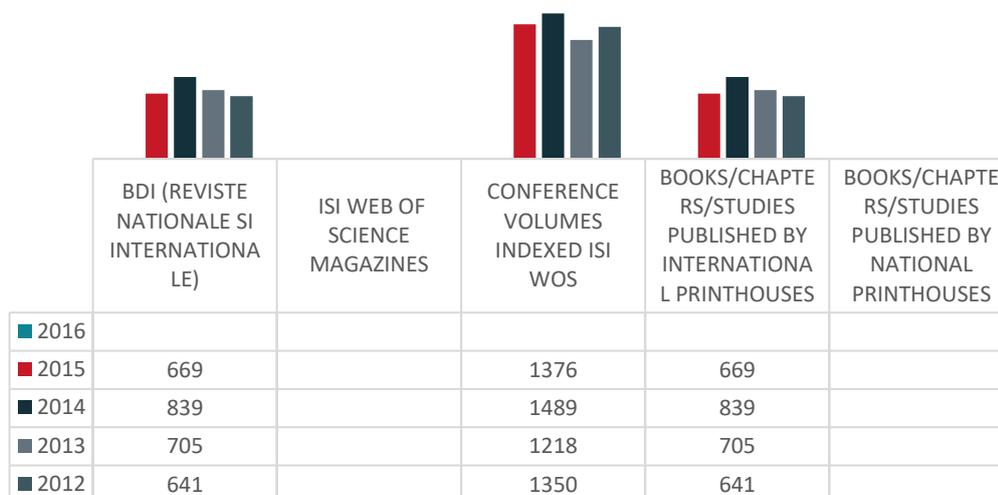|	BDI (NATIONAL AND INTERNATIONAL MAGAZINES)	ISI WEB OF SCIENCE MAGAZINES	CONFERENCE VOLUMES INDEXED AS ISI WOS	BOOKS/CHAPTERS/STUDIES PUBLISHED BY INTERNATIONAL PRINTHOUSES	BOOKS/CHAPTERS/STUDIES PUBLISHED BY NATIONAL PRINTHOUSES
2016	1040	950	195	299	656
2015	967	749	77	290	630
2014	1151	720	109	406	827
2013	850	745	87	228	650
2012	772	700		23	189

Graph No. 10. Alexandru Ioan Cuza University Publications Number

	BDI (REVISTE NATIONALE SI INTERNATIONALE)	ISI WEB OF SCIENCE MAGAZINES	CONFERENCE VOLUMES INDEXED ISI WOS	BOOKS/CHAPTERS/STUDIES PUBLISHED BY INTERNATIONAL PRINTHOUSES	BOOKS/CHAPTERS/STUDIES PUBLISHED BY NATIONAL PRINTHOUSES
2016					
2015	669		1376	669	
2014	839		1489	839	
2013	705		1218	705	
2012	641		1350	641	

Source: own calculus based on Universitatea Alexandru Ioan Cuza din Iasi. (2017). Raport 2012-2016.

Graph No. 11. State University from Bucharest Number of Published Paperwork

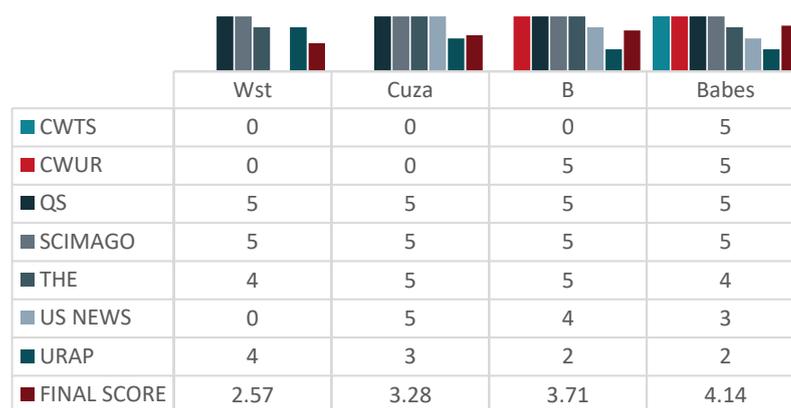| BUCHAREST UNIV. NO. OF THESIS	BDI (NATIONAL AND INTERNATIONAL)	ISI WEB OF SCIENCE MAGAZINES	CONFERENCE VOLUMES INDEXED AS ISI WOS	BOOKS/CHAPTERS/STUDIES PUBLISHED BY INTERNATIONAL PRINTHOUSES	BOOKS/CHAPTERS/STUDIES PUBLISHED BY NATIONAL PRINTHOUSES
2016	466	761	230	69	23
2015		742	179		
2014		680	96		
2013		663	182		
2012					

Source: own calculus based on Universitatea din Bucuresti. (2017). Raportul Rectorului privind starea Universitatii din Bucuresti in anul 2016.

Graph no. 12. International Ranking

	Wst	Cuza	B	Babes
CWTS	0	0	0	5
CWUR	0	0	5	5
QS	5	5	5	5
SCIMAGO	5	5	5	5
THE	4	5	5	4
US NEWS	0	5	4	3
URAP	4	3	2	2
FINAL SCORE	2.57	3.28	3.71	4.14

CWTS CWUR QS SCIMAGO THE US NEWS URAP FINAL SCORE

Source: own calculus based on David, Daniel; et. al. (2017). Metarankingul Universitar 2017. Clasamentul Universitatilor din Romania

Table No. 1. Funding Models for budget allocation

	Formula		Project		Contract	
Fixed Amount	Input	Outputs	Competitive	Non-competitive	Intentions	Agreed performance

Source: data from Jongbloed, Ben (2010), Funding Higher Education: A View Across Europe.

Table No. 2 Comparison for Universities Performance)

	National projects		International Projects		No. of students		
	ongoing	completed	ongoing	completed	bachelor	masters	phd
babes	54	280	29	87	26782	7559	1255
cuza	96	259	28	96	16895	5340	809
West			24	28	10481	3525	560
bucuresti		83	37	29	22045	7867	1476

Source: own calculus