Assessment of the research field in the European universities and analysis of the research projects impact on academic performance

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ABSTRACT – REZUMAT

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The research concept refers to the search for information; it can be defined as a scientific and systematic search for relevant information on a particular topic. In fact, research is an art of scientific investigation. Some consider research to be a movement, a movement from knowledge to ignorance. In this sense, the article allows to carry out an evaluation of the field of research within the universities of Europe regarding the research process in the university environment and the impact of the research projects on the academic performances. Bucharest University of Economic Studies have been involved in different scientific research projects in order to foster the modernization of the textile field, to create a favourable environment for the textile companies where they can develop their activities, implicitly supporting a sustainable development of this industry. One of the strategic directions for such development was to design and support the development of clusters for competitiveness in this field. Through this paper, we have conducted an in-depth analysis of the impact of research projects in the Bucharest University of Economic Studies in the period 2014–2018, using the propensity score method and performing a descriptive analysis of the data. One of the main results obtained, which is also consistent with the literature, is that research projects in the academic environment have a significant impact on the performance index h, the coefficient of the variable h index being statistically positive and significant. Thus, with an increase in the number of teachers benefiting from research projects, index h will also register an increase at the level of each individual. Funding based on academic performance can widen the gap between research and teaching. Therefore, the quality measurement instruments of the research should be treated with greater indulgence, as it is not possible to describe the contributions of an individual in a certain field of research based on simple numerical values.

Keywords: academic research, evaluation, best practices, performance, research projects, impact

Analiza activităţii de cercetare în universităţile din Europa și impactul proiectelor de cercetare asupra performanţelor academice

Conceptul de cercetare se referă la căutarea de informaţii; acesta poate fi definit drept o căutare ştiinţifică şi sistematică de informaţii pertinente cu privire la un anumit subiect. De fapt, cercetarea este o „artă" de investigare ştiinţifică. Unii consideră că cercetarea este o mişcare, o mişcare de la cunoaştere la necunoaştere. În acest sens, articolul îşi permite să realizeze o evaluare a domeniului cercetării în cadrul universităţilor din Europa privind procesul de cercetare în mediul universitar și impactul proiectelor de cercetare asupra performanţelor academice. Academia de Studii Economice Bucureşti a fost implicată în diferite proiecte de cercetare ştiinţifică în vederea participării la modernizarea domeniului textil, pentru a crea un mediu favorabil companiilor din acest domeniu în care ele să se poată dezvolta și, implicit, să asigure o evoluţie sustenabilă a acestei industrii. Una dintre direcţiile strategice a fost sprijinirea dezvoltării clusterelor pentru competitivitate în acest domeniu. Prin intermediul lucrării am realizat o analiză aprofundată a impactului pe care îl au proiectele de cercetare în cadrul Academiei de Studii Economice în perioada 2014–2018, utilizând metoda scorului de propensiune şi realizând o analiză descriptivă a datelor. Unul dintre principalele rezultate obţinute, care este şi în concordanţă cu literatura de specialitate, este acela că proiectele de cercetare din mediul academic au un impact semnificativ asupra indicelui de performanţă h, coeficientul variabilei h index fiind pozitiv şi semnificativ din punct de vedere statistic. Finanţarea bazată pe performanţele academice poate lărgi decalajul dintre cercetare şi predare. Prin urmare, instrumentele de măsurare ale calităţii cercetării ar trebui să fie tratate cu o mai mare indulgenţă, nefiind posibil să se descrie contribuţiile unui individ într-un anumit domeniu de cercetare pe baza unor valori numerice simple.

Cuvinte-cheie: cercetare academică, evaluare, bune practici, performanţă, proiecte de cercetare, impact

INTRODUCTION

Research is an academic activity and as such the term should be used in a technical sense. According to Clifford Woody, research contains defining and redefining problems, formulating hypotheses or suggested solutions; data collection, organization and evaluation; setting the assumptions and conclusions; and at least carefully testing the conclusions to be able to verify whether they fit the hypotheses formulated.

Slesinger and Stephenson, in the Encyclopedia of Social Sciences, defined research as a process of

manipulating concepts or symbols in order to generalize the expansion, correction, or verification of knowledge, whether it helps to build theory or practice art. Research is therefore an original contribution to the existing stock of knowledge that contributes to its development. This is the pursuit of truth through the study, observation, comparison and experimentation [1].

Evaluation has become a regular practice in science, technology and innovation management programs. This tendency is determined both by the pressure exerted by the company on the responsibility regarding the public expenses, and by the increase of the interest for evaluation as a basis for the planning and management of the programs. There is no clear definition of evaluation, but for the present purposes, it can be defined as a series of analytical approaches designed to identify and interpret the results and/or consequences obtained in order to generate concrete information that can be used for future actions. In order to increase the quality of education, educational research from different fields of study is carried out by well-trained scientists [2]. The teacher, representing one of the most important actors in the international system, expects to practice educational applications in the classroom in the light of the results obtained from the research [3].

In other words, teachers need to closely monitor the evolution of the educational field and monitor contemporary developments through research findings [4–5]. That is why teachers need to be aware of everything new in the field of educational research [6–7] and to fulfill the role of researcher [8].

Teachers, like all people in the field of work, must closely follow the latest developments in the field of activity and then put into practice the experience and knowledge gained in order to improve their professional competence [9–10]. In this sense, there are expectations from the teachers regarding the explanation and application of the results obtained in different studies of their own students. However, it cannot be said that teachers have research benefits [11]. Although it is considered that educational research has increased quantitatively [2, 12], the utility rate of these studies remains quite low in terms of educational practices [4, 11, 17–18]. In this context, it can be said that the initiatives of the teachers to share with the students the knowledge acquired in the field of research play a very important role in education [11, 13]. Therefore, teachers' views on educational research can be considered very important to researchers [2, 14, 16].

In the studies based on the research of the perceptions and attitudes of the teachers related to the field of educational research, the main results reveal that the teachers generally have negative perceptions about the research and that they consider that the results of the research are far from offering solutions to the problems encountered in the educational system [17]. The results of these studies reinforce the idea that teachers have negative opinions and attitudes towards educational research.

Although most studies have been conducted considering quantitative research methodology, there appears to be a study in which qualitative research methodology is pursued to determine teachers' views on educational research. The study by Yilmaz and Kilicoglu (2013) seems to adopt a qualitative research method to identify the views of teachers regarding educational research; this study focuses exclusively on comparing the opinions of teachers and students who have not yet graduated [18].

Therefore, it can be said that more studies are needed in which a qualitative method is applied in order to examine in detail the opinions of teachers regarding research. In this regard, it can be stated that there is a significant difference on this topic in the specialized literature. Even if the use of quantitative methods in determining teachers' attitudes is considered quite important, it is clear that at present there are only studies based on qualitative methods.

Taking into account the aforementioned aspects, the main objective of this paper is to identify the impact that the research projects have on the academic performances at the level of the teachers from the Bucharest University of Economic Studies, using complex statistical methods, based on the selection of a group of students, non-treats similar to treats using the propensity score method (Propensity Score Matching)

CRITICAL ANALYSIS OF THE EVOLUTION OF THE CONCEPT OF THE "ACADEMIC RESEARCH PROCESS" IN THE SPECIALIZED LITERATURE

The research process is described as a type of research carried out by practitioners in their own context and which has been accepted as a way of promoting professional development. Elliot (2008) describes educational research as a process of mutual learning, with teachers learning from each other as well as from their own students [19]. Beycioglu (2010) conducted a study on a sample of 300 Malatya teachers in order to identify teachers' views on educational research [20]. The obtained results show that 68% of the teachers are familiar with the educational research from the moment they started teaching. Academic journals were among the most frequent means of accessing research studies (28.2%), followed by books (18.8%). Regarding gender differences, there were no statistically significant differences between men and women.

McNamara (2002) stated that the most negative view of the research teachers was the quantitative and statistical nature of the research [21]. They cannot be based on statistics, being open for manipulation. Also, teachers believe that academics produce "dry things" that have no applicability in practice.

Shkedi (1998) stated that teachers become familiar with the field of research through the requirements of the academic environment [22]. Despite the problems encountered, the teachers were not motivated to develop in this area and those who were, seemed to do it at random and not on a regular basis.

However, research has been carried out in the field of English, with the purpose of identifying the research perceptions of the teachers. McDonough (1990) conducted a study on a sample of 34 English teachers aimed at finding out their vision for the field of research [23]. Similar to what Brown et al. (1992), the results of the study reflect that the teachers were not involved in the roles [24]. Allison Carey et al. (2007) analyzed perceptions of the relationship between professional development and research on a sample of 22 foreign language teachers from Canada, reporting certain factors that prevent teachers from developing in the field of research [25]. These factors include the lack of time, courage, expertise and confusion over the concept of "real research". McNamara (2002) obtained similar results by the fact that the workload of the teachers prevents the increase of the productivity in the research field [21].

Many researchers have emphasized the conflicting nature of teachers' demands, trying to meet the needs of the professional field on the one hand, and on the other, to comply with the academic performance rules for which the number of publications is of major importance. Education is located near the lower limit in the hierarchy of disciplines within the university, which means that it is particularly vulnerable to accusations that the academic performance rules are not respected.

The number of publications is sometimes interpreted as an indicator of quality, sometimes as an indicator of productivity. The logical understanding of each interpretation is subtle, as well as the fact that the same indicator is used for both productivity and quality measurement. Apparently, it could be said that a simple quantitative index could highlight to a greater extent productivity and not quality. In fact, according to the literature, the productivity of research in the academic environment is directly proportional to the number of publications. This way of defining research productivity ignores the fact that the term productivity implies a relationship between inputs and outputs. This definition, rather, equates productivity with product.

Over time, there have been numerous criticisms regarding the emphasis placed on the number of publications in order to recognize academic performance. These criticisms determine the faculty to focus on research and publication to the detriment of other activities, especially in pre-university education. W.S. Massy and R. Zemsky (1994) consider this as a "weakening" of the institution's responsibilities [26].

Shelly Park (1996) stated that men spend more time on research studies than women, who devote more time to teaching. This statement suggests the idea that men publish more in comparison with women. Based on the idea that research is the most rewarding activity within a university and also in most studies it is suggested that research articles are evaluated on the basis of quantity rather than quality, Park says that men receive higher rewards than women [27].

Robert T. Blackburn and Janet H. Lawrence (1995) challenge the claim that men are more public than women [28]. The two reports that while the results of more than 50 studies show that women publish less; the latest studies show that there is gender equality in terms of number of publications.

Examining the links between funding and citation from other studies is a window to research and understand the sponsorship processes, performance and results obtained in the world of scientific research.

The evaluation of the research projects is used to decide on the funding based on the academic performance of the researchers, projects, departments and institutions [29]. The assumption is that the funds allocated after the performance evaluation will have a higher yield. Over time there have been many debates about the benefits of evaluation as a tool for political research.

Evaluation, in a certain form, inevitably occurs whenever a paper is submitted for publication, the appointment of a new teacher or the promotion of a teacher or when a grant is offered to a school or government body. However, although there are many studies in the literature on performance indicators, there is little consensus as to which measures work best [30]. At the same time, the objectives of the evaluation tend to be defined by the agency responsible for verifying the work.

RESEARCH METHODOLOGY ON BEST PRACTICES IN EUROPEAN UNIVERSITIES. THE IMPACT OF RESEARCH PROJECTS ON ACADEMIC PERFORMANCE

The investigation sample was made up of large universities from some countries regarding the evaluation of the research field. In the UK, research at universities is funded through a dual system that combines the funding of general institutions with grants and contracts. At the end of the 1980, the system underwent radical changes, wishing that universities, polytechnics and colleges would be transformed into public institutions, to be carried out at the expense of the state, to suppliers, to serve customers.

In the last decade, the United Kingdom has developed one of the most advanced research evaluation systems in Europe [31]. According to the new system, performance evaluation is performed not only at the level of researcher and individual project, but also at the institutional and national level. The first application evaluation exercise (EVC) was conducted in 1986, and was repeated in 1989, 1992, 1996 and 2001.

In the Netherlands, research in the academic environment is also funded through a dual system. The Dutch Ministry of Education and Science offers funding through the so-called "first stream" program. Grants for "secondary flows" come from research councils and foundations, and contracts for "third flows" come from government departments as well as

from other organizations. As in other parts, concern about quality and usefulness has led to the provision of responsibility measures. In 1979, changes in research management were recommended, and in 1983 a "conditional funding" system was introduced in order to make research more socially efficient [32]. Through this scheme, a distinction was made between the funds granted for teaching and those for research. Thus, the research posts were funded according to the quality of the publication (Steen and Eijffinger). In the Netherlands, research in the academic environment is classified according to disciplines and programs.

The Dutch used the assessments to develop strategies and not to allocate funds. On the one hand, as Arie Rip and Barend vad der Meulen have shown, Dutch culture prefers informal "bottom-up" evaluations. On the other hand, policy makers are more interested in making strategic choices than in evaluating performance [33]. Therefore, each of the 27 disciplines is evaluated by a different committee. In contrast to British practice, according to which all disciplines are evaluated simultaneously, in Dutch culture the assessments are made over four to six years.

In Germany, most academic research is carried out either in research institutes (such as Max Plank or Fraunhofer) or in "scientific universities". Some research also takes place within polytechnics, which are mainly educational institutions. In German culture, research is funded through contracts with government agencies, with only a few private universities. There are three categories of public funding for research in German culture. The first category refers to the institutional financing, which takes the form of subsidies blocked from the state. Institutional financing is applied in almost two thirds of the total university expenses and covers the basic infrastructure and staff. The second category is in the form of a capital grant for buildings and equipment, being provided by the federal government. The third source is "third party funds" which are grants and contracts awarded by public institutions for specific projects. As in the case of other countries, these funds are awarded based on reviews, using criteria of scientific excellence and social utility. In order to realize the research budgets, a coefficient of research and development is derived from surveys that show the time spent for research and teaching. In general, academic performance was not considered for the allocation of funds and there were no evaluations for this purpose [34]. However, in recent years, several countries have allocated additional resources for performance.

The Nordic countries use a dual system to finance research in the academic environment. In Denmark and Finland, research councils grant grants based on international review, and the government grants institutional funding. Only in Denmark and Finland funds are granted for academic performance. In Denmark, in 1994 a new budgeting system was introduced through which a distinction is made between the funds granted for teaching and those granted for research.

The budget contains 5 elements: a basic financing, a financing according to the performance in teaching, a financing for research, a financing for other activities and a capital grant. Until 1995, research funds were allocated in ascending order. Since then, the amounts granted have begun to depend on the volume of publications and revenues from external research. No other performance measurement indicator is used, although the number of PhD students helps determine the performance for teaching.

In Norway, universities benefit from blocked funds and there is no difference between teaching and research. Until recently, there was no attempt to use a performance measurement identifier, except for the amount of each graduate student. Similarly, there is no funding for academic performance in Sweden. Following the 1993 legislation, the results of the examinations represent the only indicator taken into account in the decision to allocate funds.

Of the Nordic countries, Finland has the most experience in performance-based financing [35] which makes us think that it is a developed country. Most of the academic research in Finland is carried out within the Finnish universities, being financed by funds allocated by the Ministry of Education. The didactic component is represented by the number of graduates of the masters programs, and the research element by the number of graduates of the doctoral studies. The financing of the projects is allocated to the programs that the government defines. Research funding is granted on the basis of quality and impact indicators, being used to create centers of excellence, to increase international collaboration, to improve the placement of graduates and to meet the planned objectives.

After 1945, the national research systems in Eastern Europe were based on the Soviet tripartite model, according to which the universities must focus on teaching, the research being done in the institutes of the Academy, and the research applied either in academic institutions or in government ministries [36]. In the last 10 years, with the development of open market economies, the system has undergone some changes. Research evaluation has emerged as a tool for examining how budgets could be reduced without the need for research, with mutual evaluation becoming the main tool used [37]. While national systems have undergone major changes, academies continue to play an important role in the field of research, and evaluations have focused on institutes.

The Polish universities compete for funds based on the number of registered students and through two hypotheses submitted by the Scientific Research Committee. The first hypothesis represents a system of individual and team financing based on open competition and mutual evaluation. The second hypothesis, called "statutory funding", is allocated to faculties within universities based on past assessments. Each year, the institutions must present the achievements recorded during the past year and also a research plan for the coming year. The evaluations are carried

out by groups of experts who assign the institutions to a certain category.

In 2000, New Zealand began to allocate 20% of the institutional funding based on mutual assessments. If the experiment proves to be successful, it is intended to increase from 20% to 80%. In Australia and Hong Kong, there are national research assessments, and both cultures use the results obtained for funding.

In many studies on the impact of funding on research activity, the implicit or explicit theoretical assumption is that reliance on external resources forces research organizations and implicitly researchers to change their field of activity to benefit from changes in funding [38]. There is no simple mechanism for funding the research field, but rather it is a complex combination of the different allocation mechanisms, the sources of funding and the criteria on which the funds are granted [39]. Sometimes these incentives balance each other out, and sometimes they reinforce each other [40–41].

There is no doubt that the research activity is affected by several other contextual elements, from cultural practices to the political legitimacy of a system. For example, research assessments and global scientific policy – as long as they are not directly related to funding – can have institutional consequences [42]. On the other hand, researchers and universities are able to adapt their behavior and organization to new external requirements so that their field of activity is not affected if the requirements do not suit their own interests [43]. In addition, foreign policy pressures and incentives are mediated by existing disciplinary cultures [44].

Assessing the potential impact of research projects on academic performance within the Bucharest University of Economic Studies (ASE) makes it possible to conduct more expansive investigations on research funding in an advanced research university and the relationships between funding and other features of a published work, including citation, this being the major unit of impact measurement The evaluation of the research projects is used to decide on the funding based on the academic performance of the researchers, projects, departments and institutions.

Bucharest University of Economic Studies have been involved in different scientific research projects in order to foster the modernization of the textile field, to create a favourable environment for the textile companies where they can develop their activities, implicitly supporting a sustainable development of this industry. One of the strategic directions for such development was to design and support the development of clusters for competitiveness in this field.

In the analysis from the case study presented in this paper, it was investigated the provisions and results of different projects with the textile industry. Ones of the main scientific research projects in this field were "Entrepreneurial culture – a chance to develop the entrepreneurial spirit of the employees in the textile industry" and "Postdoctoral school Economics of

knowledge transfer in sustainable development and environmental protection".

We can see from these examples that different research entities share a continuous preoccupation for fostering the research and development activities in order to have access to the latest know-how in the textile field. At the same time, the joint projects are designed to bring higher value to the textile industry by taking into consideration a better economic perspective and a strong connection to the market demand.

In order to achieve this, the propensity score matching (PSM) method was used, which aimed to quantify the effect of participating in research projects both as a member and as a director on the academic performances of ASE teachers, performances evaluated by four result indicators: number of ISI articles, number of BDI articles, h index and i10 index for the period 2014–2018.

The concept of Propensity Score Matching (PSM) was first introduced by Rosenbaum and Rubin (1983) in the paper entitled "The Central Role of the Propensity Score in Observational Studies for Casual Effects". Heckman (1997) also played an important role in developing the propensity score method. It focused on the selection tendency, with a primary focus on certain random deductions when there is an uneven distribution. Heckman later developed the difference approach based on the application of PSM.

A propensity score (π) for an individual (s) is defined by Rosenbaum and Rubin (1993) as the conditional probability (P) that it be distributed in the treatment group or in the control group (T), given a vector of covariate observations (X_i), expressed as [45]:

$$\pi_i = P(T_i = 1|X_i) \tag{1}$$

Since the propensity score is a probability, its values can be between 0 and 1. If the propensity score was used in a randomized trial comparing two groups, then the propensity score for each individual in the study would be 0.50. This result is due to the fact that each participant would be randomly assigned to either the treatment group or the control group with a probability of 50%. In study models where there is no randomization, such as in a quasi-experimental project, the propensity score should be estimated. Propensity score values depend on a vector of covariate observations that are associated with receiving treatment. In general, if a treated subject and a subject in the control group have the same propensity score, it means that the observations are controlled. Therefore, any difference between the treatment group and the control group will be taken into account and will not be the result of the observed covariates.

The main limitation of a study is given by the fact that there may be random selections of the subjects, but it is not possible to randomly assign them to a certain group (treatment or control). When we are faced with the lack of randomization, no deductions can be made because it is not possible to determine whether the difference in results between the treated group

and the untreated group (the control group) is due to the treatment or the differences between the subjects regarding other characteristics. Individuals with certain characteristics may be assigned to the treatment group with a higher probability than those without those characteristics.

Generally, propensity scores are calculated by logistic regression or by classification and regression tree analysis.

1. *Logistic regression*: is the most commonly used method for estimating propensity scores. It is a model used to determine the likelihood of an event occurring.

$$\ln \frac{e(x_i)}{1 - e(x_i)} = \ln \frac{\Pr(z_i = 1 \,|\, x_i)}{1 - \Pr(z_i = 1 \,|\, x_i)} = \alpha + \beta^T x_i \quad (2)$$

where:

$e(x_i) = \Pr(z_i = 1 \,|\, x_i)$

$e(X_i) = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + ... + b_i X_i$

and:

b_0 – free term;

b_i – regression coefficient;

X_i – treatment variables;

x_i – the observed values of the variables.

In the case of logistic regression, the dependent variable is a dummy variable, $Zi = 1$ being the value assigned to the individuals in the treatment group, and $Zi = 0$, representing the value of those belonging to the control group.

2. *The classification and regression tree model* (*CART*): this is a non-parametric method that can effectively divide individuals into homogeneous subgroups. It is not used as much as the logistic regression for estimating propensity scores because it is much more complex.

Adjusting the estimated propensity scores is performed using one or a combination of the four main methods: stratification, matching, regression and weighting.

The empirical results

Analyzing the table 1 it can be noticed that at the level of the group of treaties, there are, on average, 4.55 scientific articles present in the journals listed in the bibliographic database of the Institute of Scientific Information (ISI). The average of the specialized arti-

cles existing in the international databases at the level of the studied group is 5.03. Also, it can be concluded on the basis of the obtained results that, on average, about 5 papers published by the university staff that make up the group of treaties were cited at least 5 times, the index h having a value equal to 5.11. The average value of the i10 index suggests that approximately 3 scientific articles recorded at least 10 citations. It is also worth noting that for both the scientific articles present in the journals listed in the Institute of Science (Web of Science) bibliographic database and for the existing publications in international databases (BDI) the value of the median is 4, which means that 50% of those included in the treaty group have published more than 4 specialized articles BDI, and 50% have published less than 4 papers, respectively 50% of the university staff register more than 4 articles listed WoS (ISI), and 50% have less than 4 WoS listed items.

Based on the modal value of the performance index h, it can be concluded that the most frequent value of the index h is 4, which means that in the studied group, most have 4 specialized papers that have been cited at least 4 times. The highest value of the h index is 15, and the smallest is 1. It should also be noted that the maximum number of BDI articles is lower than that of WoS articles. The index h, considered in the specialty literature as an indicator of measuring the performance in the field of research has a maximum value of 15, this being registered by a single teacher. Most researchers (31) obtained a value of index h equal to 4, a result identified previously, in the descriptive analysis of the data. The most frequent value recorded for the index i10 in the studied group is 23, this threshold being reached by a single teacher. The value 23 of the i10 index suggests the idea that 23 scientific articles have been cited at least 10 times. 30 university staff does not register values for the i10 index, and 41 of them have a single article with at least 10 citations. Most of the specialized articles existing in international databases belong to the university staff with the position of doctor university professor, and the few (67) belong to the university assistants. An explanation for these results of the distribution of the number of BDI articles according to the didactic degree would be that, a professor is based on several years of experience in the field of

Table 1

DESCRIPTIVE ANALYSIS OF TREATMENT GROUP DATA DURING THE PERIOD 2014–2018					
		i10_index	no_art_ISI_sum	no_art_BDI_sum	h_index
N	Valid	152	142	167	152
	Missing	37	47	22	37
Mean		3.07	4.55	5.03	5.11
Median		2.00	4.00	4.00	5.00
Mode		1	1	1	1
Minimum		0	1	1	1
Maximum		23	27	23	15

Table 2

DESCRIPTIVE ANALYSIS OF THE DATA OF THE CONTROL GROUP DURING THE PERIOD 2014–2018					
		no_art_ISI_sum	no_art_BDI_sum	h_index	i10_index
N	Valid	673	598	466	466
	Missing	321	396	528	528
Mean		2.47	3.69	4.66	2.96
Median		1.00	2.00	4.00	1.00
Mode		1	1	3	0
Minimum		1	1	0	0
Maximum		59	75	27	92

research and has a greater recognition both nationally and internationally than an assistant at the beginning of his career. It also has more resources and funds needed to publish the works. According to the literature, individuals who are senior in the field of research enjoy greater recognition and receive easier funding from organizations.

As expected after analyzing the results obtained based on the BDI and WoS articles, the average value of the average h index among doctoral university teachers is 6.12, being the highest value recorded at the didactic level. It is worth noting that the average h index for the teaching degree of doctoral assistant is higher than that of the university lecturers. This result could be explained by the fact that the assistants enjoy the fact that they appear as co-authors on certain papers published by the university professors. The value of the average h index suggests that, on average, an individual with the degree of doctoral university professor published 6 scientific articles that were subsequently cited at least 6 times. In the case of the average i10 index, the registered value is 4.2, which means that, on average, each university professor included in the group of treaties has 4 specialized publications that have registered a number of citations at least equal to 10.

It can be observed that at the control group level, there are, on average, 2.47 scientific articles present in the journals listed in the bibliographic database of the Institute of Scientific Information. The average value of the i10 index leads to the conclusion that approximately 3 scientific articles registered at least 10 citations. Based on the obtained results, it can be stated that, on average, about 4 works published by the members of the control group registered at least 4 citations, the index h being equal to 4.66.

It is also worth noting that for both the WoS articles and the i10 index, the median value is equal to 1, which means that 50% of the individuals included in the control group have more than 1 paper present in the journals listed on the basis WoS bibliographic data, and 50% have less than one WoS-rated specialty article. For scientific articles existing in international databases, the median is equal to 2, and the median for the performance index h equals 4, indicates that 50% of the control group has more than

4 published articles that have registered at least 4 citations and 50% have less than 4 articles published with the same number of citations.

Analyzing the modal value of the performance index h, it can be concluded that most frequent value is 3, which means that at the control group level; most individuals have published 3 specialized articles that have been cited at least 3 times. The highest value of index h is 27, and the smallest is 0. According to the literature, an index h equal to 0 does not necessarily indicate that a researcher was completely inactive: the author has already published a series of papers, but if none was mentioned at least once, the index h is 0. Unlike the results obtained for the group of treaties, the maximum number of BDI articles is higher than that of ISI articles. In table 2, the main results obtained from estimating the propensity score (PSM) method can be identified. A first notable result that is in line with the specialized literature is that the research projects carried out within the Bucharest University of Economic Studies during the period 2014–2018 have a significant impact on the performance index h, which means that an increase in the number of research projects by 1%, the value of index h for a teacher from the Bucharest University of Economic Studies will increase by 0.78%.

Another important result is that the i10 index is also influenced by the research projects, being statistically significant and positive. This result suggests that, as in the case of index h, an increase in the number of research articles will result in a higher value of index i10 for an ASE teacher and more than this, the number of publications with at least 10 registered citations will increase with the number of research articles.

CONCLUSIONS

In the given circumstances, the Performance Based Assessment System, as it encourages competition, may also encourage the shift towards "homogenizing" research, discouraging experiments with new approaches and rewarding "safe" research regardless of their benefits to society. The decrease in diversity can be harmful. Moreover, a system for which publications are a key criterion encourages "inflation of publications". Certainly, many academics will

respond by participating in the "game" without necessarily improving their performance (D. Cannadine, 1999, pp. 18–19).

In Romania, the performance of teachers in the field of research is weak compared to other countries in Europe. According to the specialized literature, Romania is ranked in the last places at European level regarding the scientific publications existing in journals listed in the bibliographic database of the Institute of Scientific Information. Also, Romania has low values compared to other countries in terms of the value of the h performance index, which in countries such as the United States of America, Great Britain and Germany is equal to 400, respectively 200 and 206.

Through this paper, we have conducted an in-depth analysis of the impact of research projects in the Bucharest University of Economic Studies in the period 2014–2018, using the propensity score method and performing a descriptive analysis of the data. One of the main results obtained, which is also consistent with the literature, is that research projects in the academic environment have a significant impact on the performance index h, the coefficient of the variable h index being statistically positive and significant. Thus, with an increase in the number of teachers benefiting from research projects, index h will also register an increase at the level of each individual.

The research projects carried out within the Bucharest University of Economic Studies in the period 2014–2018 also had a significant impact on the i10 index. This result suggests that an increase in the number of research articles will result in a higher i10 index value for an ASE teacher and, moreover, that the number of publications with at least 10 recorded citations will increase with the number of research articles.

Funding based on academic performance can widen the gap between research and teaching. If the rewards awarded in the field of research are greater than those awarded for education, the university staff will focus more on research than on teaching. While the intention is to reward and encourage, the evaluation inevitably focuses on previous performances rather than current ones, and less so on future ones. Therefore, the quality measurement tools of the research should be treated with greater indulgence, as it is not possible to describe the contributions of an individual in a certain field of research based on simple numerical values.

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