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College of Political, Administrative and Communication Sciences

THESIS SUMMARY

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**The impact of the European structural
funds on research, in Romanian
universities, in the period 2014-2020**

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European funds, absorption, research, Structural funds, Universities

1. INTRODUCTION

1.1. Motivation for choosing the research topic

European funds have profoundly shaped Romania's development during its post-EU accession period as they have pushed for reforms and major investments and fostered a competitive social and economic environment. At the same time, universities have over time speeded up the development of the eco-system in which they operate, contributed to the creation of a competitive society and shaped new directions in research and innovation.

The chosen topic thus establishes a connection between European funds and universities and covers both the field of finance and that of European funds. In this paper, I set out to analyse the impact of the European funds on research development in universities and whether or not the EU funds have been able to increase the quantity and quality of research in public higher education institutions during the 2014-2020 period. I have chosen to focus largely on structural funds because all universities in Romania have been granted equal access to structural funds. The chosen research topic is all the more interesting notably in the context of the complex decision of universities to access European funds, as such a decision entails a number of risks, most of which are financial risks.

In writing this paper, it was my desire to conduct a complex and comprehensive piece of research, and to adopt a multivalent approach from a financial perspective as well as from the EU funds perspective. This called for a review of all aspects related to the context of the research, namely the reform of the educational system, EU structural funds with all three major programming periods, issues related to the funding of higher education and research. I have also approached issues related to the status of research in Romania, strategic aspects and relevant statistics. In this research, I analysed all the relevant data to see if the hypothesis on which this paper is based is proven by the statistical analysis of the collected and processed data.

I think it is appropriate here to clarify an aspect related to the analysis period selected in the paper. I have chosen to focus on the financial perspective/framework 2014 – 2020 because in the previous financial perspective 2007 – 2013 the institutions in charge of managing European funds were still in their infancy and there was a lot of disruption in accessing funds as well as in submitting,

assessing, and implementing projects. It was also a period of trial and error marked by many bottlenecks, many financial corrections and many problems related to accessing and implementing European funds, the end result being a relatively low absorption. As for the 2014 – 2020 financial perspective, although still in progress, the collected data show that universities have exhibited increased interest in accessing European funds for research development, among others.

1.2 Scientific relevance of the topic

The timeliness of the topic stems from the need to identify some elements that can be used as arguments for or against supporting or limiting universities' access to European funds. At the same time, the topic is relevant as we approach the end of a new financial perspective and the evaluation of the impact the European funds have had on the development of universities may lead to changes in the approach to funding in the new financial perspective.

The Europe 2020 strategy has precise development paths and adopts a straightforward approach to research at university level and in other areas. That is why I believe that the current impact at the end of a programme cycle must be measured in order to determine which direction universities should take in the future.

The paper is interdisciplinary in nature as it addresses topics from the fields of European studies and finance in order to provide an overview on the correlation between university financial management and European funds.

In terms of scientific relevance, I believe this topic will lead to a growing interest in European funds on the part of higher education institutions, the creation of financial-accounting mechanisms that will mitigate the degree of risk in the implementation of such projects and, last but not least, will highlight which funding directions are most beneficial to university development. Moreover, this paper aims to highlight the role and impact of universities in terms of European funds for research, in order to establish the extent to which these institutions should have decision-making power in this sector.

1.3 Abstract

The financial aspect is probably the most important aspect in connection with Romania's accession to EU as this provided access to the five major funds but other important aspects related to our country's accession to EU concern our rapid evolution needed to adapt to a major competitive and constantly innovative context.

Two themes widely debated in the European environment were those related to the integration of young people in the common European area and the need to increase our competitiveness as a country. The integration of young people is primarily achieved through education, which has always been a top sensitive issue, mainly because education reform, so necessary for the integration of young people into the European system, has raised a number of challenges from the outset. Each EU Member State has its own education system, but in time attempts have been made to establish common objectives and means of cooperation by promoting common goals and generally valid principles that would allow people to move from one education system to another, thereby encouraging mobility. The Bologna Process and the Copenhagen Process are just two of the positive examples of the EU's involvement in national education and training systems. These two processes have had a direct impact on the education system through the immediate reforms that have been implemented at several levels, but other types of funding have also had an important indirect impact, facilitating in one way or another the access to education or integration into the current education system. The paper attempts to discover the actual extent of the impact that the various types of European funds have on the financial management of state higher education institutions in Romania. At the same time, I have analysed the models of higher education funding used in Romania in recent years to try to recognize different funding patterns. A second aspect mentioned above which is directly related to the chosen research topic is related to increasing competitiveness, which is best achieved by increasing research, innovation and development.

I have chosen this topic because I think it is important now that we should be able to highlight, from a certain perspective, the stance of universities in relation to the entities managing European funds and at the same time I think it is important to determine what should be the contribution of academia in establishing relations with the European entities that centrally manage financial resources. Furthermore, by means of this topic, I believe I have managed to address a particularly

important issue related to the funding of higher education in Romania in general, the funding models used and the system underpinning the allocation of additional funds to support certain institutional development directions.

Chapter one provides an introduction to the topic and contains elements related to the motivation for choosing the topic and its scientific relevance. Chapter two deals with the analysis of the entire educational system in Romania. In the first part of this chapter I analyzed the most relevant stages in the reform of the educational system, from 1990 to the present. Thus, I provided an overview of the legislative efforts in conjunction with Romania's need to join a European educational system. Moreover, as I have chosen to analyse the impact of European funds on research in Romanian state universities, in this chapter I also provided an overview of some aspects related to the administrative organisation of universities.

In the third chapter I conducted an analysis of the European funds starting with the pre-accession period until 2013, when the first post-accession financial perspective ended. Thus, the following amounts were invested in Romania from the Pre-Accession funds: 927.8 million Euros through the PHARE programme, 299.8 million Euros through the SAPARD programme, 580.1 million Euros through the ISPA programme, amounting to a total of 1,807.7 million Euros in funds allocated to prepare our country for accession to the European Union.

The 2007-2013 financial framework opened the way for funding through the five major funds to which Romania has had access since its EU accession was completed. During this period, seven operational programmes were financed in the country, namely: the Regional Operational Programme (ROP), the Sectoral Operational Programme for the Environment (SOP ENV), the Sectoral Operational Programme for Transport (SOPT), the Sectoral Operational Programme Increase of Economic Competitiveness (SOPIEC), the Sectoral Operational Programme Human Resources Development (SOPHRD), the Operational Programme Administrative Capacity Development (OPACD) and the Operational Programme on Technical Assistance (OPTA). According to the annual report presented by the Ministry of European Funds (MEF), Romania received 19,057,658,140 Euros for the 2007-2013 programming period. Statements covering expenses amounting to 13,187,654,038 Euros were sent to the European Commission, representing more than 69.20% of the total amount of funds received out of which the European Commission

reimbursed 65.05%, that is, 12.397.003.965 Euros.

In this chapter I also analysed carefully the allocation of funds for SOPIEC. In conclusion, for the 2007 – 2013 period, the absorption rate of funds allocated through SOPIEC was 85.94%. This is a good percentage notably in comparison with the absorption rate for the Competitiveness Operational Programme (COP), which amounted to about 20% in 2020.

In this chapter I conducted an analysis of the challenges raised by the implementation of these post-accession first projects in order to have an accurate and complete overview of the whole process.

The 2007-2013 period was marked by delays and difficulties in implementation and in establishing relationships between central authorities charged with the management of operational programmes and beneficiaries. However, absorption was satisfactory in the case of SOPIEC, particularly as the period was marked by many legislative and procedural changes and delays.

In the fourth chapter I presented a broad overview of the funding for higher education based on the public data and annual reports drawn up and published by the National Council for Higher Education Funding. I analysed how funding evolved from one year to another in the 2014 – 2020 period in an attempt to capture the elements of continuity in funding state universities and the elements of novelty introduced each year. At the same time, I highlighted a recurrent issue raised by NCHEF and indicated by the comparative analyses of GDP allocation for education in other European countries and the USA, that is, the underfunding of state higher education in Romania. I also presented the destination of funds received by universities from the state budget, with emphasis on the fact that, during the 2014 – 2020 period, although universities are directly linked to the research environment and represent an indisputable factor of progress not only as regards research but also innovation (evidence of this being the number of publications and patents produced by universities in this period), they were not allocated a separate budget for research. I proceeded with an introduction to European funds during the 2014 – 2020 programming period and then I carried out an in-depth analysis of the Operational Programme Administrative Capacity.

The following amounts were received from the European Commission for the 2014 – 2021 period, apportioned between operational programmes: Operational Programme for Assisting the

Disadvantaged Persons - EUR 318.8 million; Operational Programme on Technical Assistance – EUR 244.4 million; Competitiveness Operational Programme – EUR 957.4 million; Operational Programme Human Capital – EUR 2.620 billion; Operational Programme Administrative Capacity – EUR 306.7 million; National Rural Development Programme – EUR 7.324 billion; Regional Operational Programme – EUR 3.909 billion and the Large Infrastructure Operational Programme – EUR 5.789 billion.

As regards the Competitiveness Operational Programme in the 2014 - 2020 period, 51.2% of ERDF funds out of the approximately 22.4 billion Euros allocated to Romania within the Cohesion Policy shall be directed for research and development, competitiveness and reduction of carbon emissions. This is an important message at national level which helps understand the importance the European Commission and Romania place on this field.

As part of the analysis on the Competitiveness Operational Programme (COP), I processed, analysed and compared all data on accessing COP funds by state universities in Romania. The conclusion I reached is as follows: during the 2014-2020 period, 103 COP projects were implemented, of which 83 had universities as beneficiaries and 20 had universities as partners. Out of about 55 state universities, only 30 universities took on the role of beneficiary and/or partner in the 103 projects funded at national level. The projects' total value amounted to 1,403,468,207 lei, out of which the EU contribution was 1,000,410,521 lei, the national co-funding amounted to 190,425,486 lei, the beneficiaries' total contribution added up to 135,745,909 lei and the value of ineligible sums, VAT included, totaled 76,886,291 lei. The universities holding top positions in terms of absorption were: University POLITEHNICA of Bucharest and Alexandru Ioan Cuza University of Iasi closely followed by Dunarea de Jos University of Galati, Technical University of Cluj-Napoca and the Babes-Bolyai University of Cluj-Napoca. In order to build a bridge between European funds and their impact on research in universities, I analysed the programme indicators advanced for the Competitiveness Operational Programme.

I focused primarily on three programme indicators, that is, the indicator measuring the increase in the number of public-private co-publications which led to a growing interaction between academia and the private sector and the identification of new avenues for private sector involvement in research. Moreover, this indicator led to more research publications with direct impact on

quantitative measuring of research in universities. The indicator concerning European funds absorption through Horizon projects is directly linked to the increase in the quality of research and in its degree of internationalization. It is one of the indicators dealing with the issue related to the number of researchers working in improved research infrastructure, an issue identified within both national R&D strategies. This indicator led to an increase in the number of staff directly involved in research in universities and opened the way, step by step, for research career to become more professional not only in R&D institutes but also in higher education institutions.

An interesting conclusion was in relation to the specific objective in which universities expressed the keenest interest as indicator of the interest in the development of specific research-related aspects. Thus, in terms of specific objectives of the projects submitted by universities, the COP projects had the following specific objectives during the 2014-2020 period: Increase of RDI capacity in the areas of smart specialisation and health, within which 17 projects were submitted; Increase of private investment in RDI, within which 16 projects were submitted; Increase of Romania's participation in research at EU level, within which 46 projects were submitted and Increasing the transfer of knowledge, technology and staff with RDI skills between the public and the private research environments, within which 24 projects were submitted. A major interest was noticed in submitting projects within the specific objective "Increase of Romania's participation in research at EU level".

As a side point, the universities which took part in project competitions within COP are much the same with the universities that took part in the project competitions organized within SOPIEC, with minor differences.

In parallel with my analysis of universities' participation to programmes financed through structural funds, I analysed universities' participation to the Horizon 2020 programme, likely the most relevant funding programme of the European Union up to now. As expected, the Horizon 2020 programme sparked great interest among European and Romanian universities alike. However, Romania is at the bottom of the rankings in terms of funds absorption within this programme, attracting only EUR 300.28 million, much like Hungary which attracted EUR 371.35 million and Slovenia which attracted EUR 379.64 million. At the opposite end is Germany, which holds the top position with EUR 10.11 billion, and Great Britain which ranks second with EUR

7.86 billion.

In the fifth chapter I made a presentation of how research is being done at national level and, in particular, at university level. I analysed and compared the two national strategies in the field of research, development and innovation as well as the national funding allotted during the 2014 – 2020 period and during the previous period in order to have an overall picture of funds allocated to this field. I also analysed GDP spending on research against European spending on the same field. I also reviewed the two national RDI strategies to identify the main guidelines for development imposed by the central government, in correlation with European strategies in the field. It would be appropriate to sum up this chapter in the following conclusion: although there was a strategic and legislative framework in the 2007 – 2013 period which continued in the next period when the new National Strategy for Research, Development and Innovation 2014-2020 was drawn up under the influence of the Europe 2020 Strategy, which puts the Horizon 2020 European funding under the banner of Innovation Union—a strong message coming to foster research and innovation as a major current concern of the European Commission for the 2014 – 2020 programming period—the interest in promoting research and innovation was not, however, financially supported with sufficient determination. The Eurostat data for 2014 show that only 2.04% of GDP was allocated to research whereas the Europe 2020 Strategy recommended a 3% target allocation of GDP.

Chapter six focused on conducting research on the data collected, interpreted and contextualized in the previous chapters. Thus, the purpose of the research is to carry out a complex analysis of the impact that the use of European funds has on research in universities. This was done by analysing the amounts drawn starting with 2014 and until 2020 and their impact on some indicators which are relevant to the measuring of the quality of research, that is, the publication of ISI articles and the obtaining of patents. The chapter started with generalities related to the purpose and objective of the paper, methodology, limits of research and data collection and analysis.

The purpose of the chapter was to analyse whether there is correlation between European funds absorption by Romanian state universities during the 2014 – 2020 period and the growth of research. After collecting all data on universities' absorption of structural funds coming directly from the European Commission—analysis presented in a previous chapter of this paper—I verified

whether there is correlation between funding attracted through COP, ISI published articles, the national patents obtained and the funding attracted through the Horizon 2020 programme. In order to have a balanced situation, the highly specialised universities, such as the Bucharest University of Economic Studies and military, music and art universities, were excluded from the research, remaining a total of 26 general, medical or technical universities.

The analysis of revenues attracted from structural funds through European-funded projects and the articles published in the same period reveals there is a low correlation between the two elements. There is a logical connection between them because one of the main indicators used within COP projects was the number of published articles with no specific requirement in terms of which journal they should be published in, either ISI or BDI-indexed journals or any other type of journal.

Thus, the correlation coefficient is 0.64 and R^2 is 0.4 for the correlation between funds attracted through COP and ISI articles published in the same period of time. Certainly, there are many aspects to be analysed here, such as the fact that the indicator showing the number of articles published within projects does not constrain beneficiaries to publish a certain type of articles as it is up to them to choose how they publish the scientific paper and the type of journal. However, based on the analysis of the correlation coefficient derived from the two quantitative variables—articles and funds attracted through COP, I believe it is appropriate to infer that universities which evinced keen interest in attracting European funds for research also expressed keen interest in publishing papers indexed in the most prestigious journals in Europe and elsewhere.

Therefore, there is a positive, albeit weak correlation explained by the fact that only 26 general, medical and technical universities were analysed, while the military and art universities, the universities which did not submit COP-funding projects and the Bucharest University of Economic Sciences were not included in the analysis. However, one can state there is a correlation between the two sets of data as the publishing of ISI papers is fostered by the attraction of external funding for research development.

The correlation between COP projects and the number of patents obtained was also analysed in order to show that European funds had a positive and significant impact on research in universities. Again, I identified a positive correlation, although less strong than the correlation between

attraction of EU funds and academic paper publishing. The correlation coefficient is 0.5 and R^2 is 0.3, which indicates a slight interest in obtaining patents despite the great number of European-funded projects and the great interest in research.

It is only natural that this correlation should be less strong than the paper publishing-related correlation because patents naturally belong to exact or technological sciences while human sciences have a limited number of patents. Thus, a quick analysis of the number of patents in comprehensive universities versus technical and polytechnic universities shows that the latter category obtained, as expected, a larger number of patents during this period.

Since the attraction of European funds directly from the European Commission was an extremely important issue at stake for the universities in Romania, I wanted to analyse the extent to which the attraction of European structural funds is related to the attraction of European funds through the Horizon 2020 programme.

The analysis reveals that there is a strong correlation between the interest in national European funds and the interest in the funds directly managed by the European Commission. Thus, it was only to be expected that universities showing interest in increasing research quality and competitiveness through structural European funds should make ongoing and constructive steps to attract European funds through the Horizon 2020 programme. It is important to highlight that the Horizon 2020 funding programme was not only a source of financing but also a springboard for researchers in all Europe, allowing them to gain greater visibility at international level. The coefficient of this correlation is 0.85 and R^2 is 0.72. It is to be expected that the strongest relationship should exist between these two variables as project writing and submission was stimulated at mental and administrative level by COP project submission. Moreover, part of the infrastructure procured through the COP programme was used to develop research studies which subsequently formed the basis for writing new projects within the Horizon 2020 programme.

I proceeded with the data analysis to check whether a relationship between the European funds attracted by universities within Horizon 2020 and the number of ISI papers published during this period can be identified. The correlation coefficient is 0.77 and R^2 is 0.59 which indicates a relatively strong correlation between the two sets of data.

In a similar vein, I attempted to identify whether there is a correlation between Horizon 2020 funding and the number of patents. I used the same sets of data and the outcome was a relatively low correlation coefficient of 0.56 and a R^2 of 0.3. As in the case of the correlation between the attraction of structural European funds and patents, this is also a weak correlation, which is quite natural because patents are mostly obtained by technical disciplines.

In this chapter I analysed the universities which attracted European funds in terms of their position in the Meta-rankings developed between 2016 and 2020.

The impact of European funds was significant for Romanian universities but was not sufficient to solve the research-related systemic problems occurring at national level. I believe it is important to convey the message that, although the effects of the growing national interest in research are seen in the small steps taken at central level, we are far from the targets set in the National Research, Development and Innovation Strategy for 2014 – 2020 (SNCDI 2014 – 2020).

I conducted a brief analysis of the administrative issues which were changed to foster the identification, writing, contracting, implementation and reporting of European-funded projects.

The conclusion is that all universities with the highest COP absorption rate had distinct departments specifically tasked with managing European projects, which were, obviously, closely connected with the functional administrative apparatus of universities.

The paper ends with a separate chapter about the overall conclusions, the paper's specific contribution, originality and possible future directions for research.

1.4 The paper's contribution

The present paper is unique by its particular approach to the correlation between European funds and the increase in the quality of research in Romania's higher education institutions. Aspects related to European funds and the national absorption rate according to each funding programme have been analysed so far but this approach is unique.

The paper's most significant contribution lies in pointing out the special role of European funds for universities and the importance of universities in the process of absorbing these funds in

Romania. Moreover, the paper aims to highlight how relevant research is for universities because research is not a mere concept but generates knowledge and innovation. The paper also aims to emphasize the positive aspects of university autonomy and the fact that universities' decisions to be involved in attracting European funds eventually created a positive impact, despite the challenges faced along the process.

By analysing the data received from the Ministry of European Funds and the great amount of public information, the paper also contributes to creating a comprehensive image of how universities participated in attracting European funds through the Competitiveness Operational Programme and the Horizon 2020 financing programme. Furthermore, the paper provides a realistic picture of university funding in 2020.

In Romania, European funds represented a major driver of national reforms necessary not only to ease our country's European integration but also to speed up our transformation process during the post-communist period. European funds have characterised the last 15 years of Romania's political, administrative and social evolution and, undoubtedly, are a factor of progress. European funds management per se represents a novelty generated by our country's need to effectively manage and implement European funds, and will maintain its continuity even after the end of the attraction of structural funds.

The uniqueness of the paper also lies in its niche approach, highlighting not only aspects related to university funding but also aspects related to research and to the impact of European funds on research in universities.

The paper is unique because it singles the Competitiveness Operational Programme out of the large pool of European funds and analyses strictly its impact on paper publishing, on obtaining patents and on attracting funds directly from the European Commission. Another unique aspect of the paper is its addressing directly the issue of research in academia which, at least during the 2014-2020 period, did not receive direct funding from the state budget as the decision on the funding of internal research promotion was left to each university.

In the same vein, one of the secondary objectives of the paper is, in my opinion, to highlight that universities have been important and relevant players ever since the first projects were

implemented with structural funds, entitling universities to actively participate in the consultation process for drawing up operational programme strategic documents.

The growing interest in the field of European funds over the last years has determined the writing and publishing of complex papers dealing both with Romania's capacity to absorb these funds and with the direct results of projects implementation. Some papers analysed the challenges and problems faced by beneficiaries, others focused on the analysis of legislative changes which enabled the implementation of projects while others merely made an overview of the amounts of money attracted by Romania during the post-accession period. But the topic of the paper and how it was approached represents the element of novelty.

Another novel feature of the paper is its complex approach to European funds in the context of the general funding obtained by education and/or research institutions during the 2014-2020 period.

The topic of the paper falls within the field of finance because its purpose was to closely monitor the use of attracted funds in correlation with the overall context of European funds absorption and of university funding.

The paper is a point of convergence of two main areas with high potential for future analysis, namely, European funds management and funding of higher education in Romania.