Influence of the academic drift and subject specialisation on the participation of Universities of Applied Sciences in EU research projects

Marco Cavallaro

University of Lugano, Lugano, Switzerland

Research Domain: International contexts and perspectives (ICP)

Abstract: The development of research activities in University of Applied Sciences (UAS) has often been associated to the term “academic drift”, which implies an attempt to replicate the model of Universities towards the establishment of a unitary higher education system, as it happened to the polytechnics in the United Kingdom in 1992. In most European countries, however, UASs adopted characteristics of Universities, but kept a certain degree of differentiation, e.g. research missions towards applied sciences and/or regional innovation.

The present work investigates how UASs’ heterogeneity is reflected in their participation in Horizon 2020, the eighth European Framework Program for Research (EU-FP). We analyse UASs’ and ex-UASs’ participation at the organizational level, considering their proximity to the University model (University status, availability of PhD programs), their research and innovation output (prior experience in EU-FPs, publications, and patents), education intensity, and subject specialization (STEM vs. Social Sciences and Humanities).

Paper: Introduction

UASs represent an important component of European higher education. While created as teaching-only institutions, in the course of time, several UASs have acquired an official mandate to conduct research. A scholarly debate has emerged on whether developing research means that UASs are becoming increasingly similar to traditional universities (“academic drift”) or whether UASs are developing a specific mission, oriented towards applied research and regional development (Burgess 1972; Neave 1979; Lepori & Kyvik 2010). Comparative research has shown important cross-country differences in this respect (Kyvik & Lepori 2010; Vossensteyn & De Weert 2013).

Through the provision of grants from basic to applied research, EU-FPs are the main drivers in the development of the European research and innovation areas. Due to their close ties to regional innovation and industry, UASs can highly contribute to the EU-FPs’ objectives and the establishment of a European innovation area.

This paper aims at investigating how UASs’ heterogeneity is reflected in their participation in EU-FP projects. Literature on EU-FP participation indicates that project acquisition significantly relies on scientific reputation and network mechanisms (Lepori et al. 2015). Some scholars highlight the
existence of “closed clubs” of research institutions that accumulate EU funding at the expense of more peripheral and less reputed institutions (Enger 2018).

The scope of this paper is twofold. We firstly intend to verify whether the UASs with more participations are the ones that are closer to the model of traditional universities, notably considering ex-UASs that acquired the University status and UASs that can deliver PhD degrees. Secondly, we investigate the influence of UASs’ subject-orientation on EU-FP participation, particularly between STEM- and SSH-oriented UASs.

Methodology

Since we expect variations across the types of EU projects, we consider participation in different H2020 funding schemes covering the whole spectrum from fundamental to applied research, namely the European Research Council grants and Marie Skłodowska-Curie Actions (ERC & MSCAs), Research and Innovation Actions (RIAs) and Innovation Actions (IAs).

To measure and identify patterns in UAS EU-FPs participation, we use a set of potential explanatory variables (cf. Table 1).

The final sample includes a total of 391 UASs and ex-UASs in ten different countries, of which 21 are located in Austria, 16 in Belgium’s Flemish region, eight in Switzerland, 187 in Germany, 24 in Finland, 14 in Ireland, 37 in the Netherlands, 13 in Norway (including three ex-UAS), 48 in Portugal, and 23 ex-polytechnics in the UK.

Since our dependent variables are count variables that follow a negative binomial distribution, we use the negative binomial regression method. To better account for patterns among current UAS, we distinguish the “Full model” which includes ex-UASs, and the “UAS model” which only covers UASs. Since “Reputation” is highly correlated with “FPexp” (0.60), we avoid including both variables in the same model and perform two separate regressions, as the results may differ depending on which of these two variables we consider.

Results

Figure 1 shows that there is a rather high divergence according to countries, in terms of levels of UAS participation in EU-FPs. We observe that UK ex-UASs have the highest levels of participation in the ERC and MSCA schemes, while Switzerland is the country with the most UAS participations in RIA and IAs. German, Portuguese, Dutch and Flemish UASs have rather low levels of participation.

The negative binomial regressions show different patterns according to the project types and regression models (Table 2). Previous EU-FP experience is however highly correlated with participation in all three project types. Expectedly, UASs’ integration to EU-FP networks is, therefore, a major factor for EU-FP participation. Another variable with constantly significant p-values is “education intensity” which is negatively correlated with participation in all project types and independently of the model. We suggest that academic staff in UASs with high levels of education intensity have less time to allocate for research activities.

We did find statistically relevant evidence on the effect of academic drift on participation in ERC-MSCA and RIA, where ex-UASs and UASs with PhD programs tend to acquire more project
participations. These funding schemes typically support basic research and/or the exploration of the feasibility of new or improved solutions. MSCAs are also targeting primarily PhD-awarding institutions.

STEM intensity is found to be highly correlated with UASs’ participation in RIA. This may either reflect an orientation of RIA towards natural and technical disciplines or the choice of EU consortia to opt for other types of institutions to cover SSH activities.

**References:** Table 1: List of variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC-MSCA</td>
<td>Number of European Research Council (ERC) grants and Marie Sklodowska-Curie Actions (MSCA) projects acquired from 2014 to June 2020</td>
<td>CORDIS</td>
</tr>
<tr>
<td>RIA</td>
<td>Number of Horizon 2020 Research and Innovation Actions (RIA) acquired from 2014 to June 2020</td>
<td>CORDIS</td>
</tr>
<tr>
<td>IA</td>
<td>Number of Horizon 2020 Innovation Actions (IA) acquired from 2014 to June 2020</td>
<td>CORDIS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UAS organizational characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
</tr>
<tr>
<td>PhD-award</td>
</tr>
<tr>
<td>Uni status</td>
</tr>
<tr>
<td>STEM orient.</td>
</tr>
<tr>
<td>STEM size</td>
</tr>
<tr>
<td>Education intensity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS research outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-PPRP</td>
</tr>
<tr>
<td>Reputation</td>
</tr>
<tr>
<td>Patents</td>
</tr>
</tbody>
</table>

**Figure 1:** UAS participation in H2020 according to countries

**Table 2:** Negative binomial regressions for UASs and ex-UASs in ERC-MSCA, RIA and IA within the full model (N=350) and the UAS model (N=325). Correlation significant at the 0.001 (***) , 0.01 (**) and 0.05 (*) levels
References


for information science and technology 63.12: 2419-2432.