

Why do higher education institutions internationalize? An investigation of the multilevel determinants of internationalization rationales

Marco Seeber¹, Michele Meoli², Mattia Cattaneo²

¹ Corresponding Author. Ghent University, Department of Sociology, CHEGG. Korte Meer 3, 9000 Ghent (Belgium). Email: marco.seeber@ugent.be ; Tel.: +32 9 2648437

² University of Bergamo, Department of Management, Information and Production Engineering. Via Pasubio 7b, 24044 Dalmine (Italy)

Abstract

This article explores how Higher Education Institutions (HEIs) internationalize, employing information on the internationalization activities (IA), context and organizational characteristics of 431 HEIs from 34 European countries. A latent cluster analysis identifies three distinct clusters of HEIs with distinct portfolios of IA: *basic*, *academic* and *entrepreneurial*. The *basic* portfolio includes the most common IA, whereas IA that requires larger organizational capacity are rare. The *entrepreneurial* portfolio distinguishes from the *academic* portfolio for it also includes IA aimed to attract resources. We explore what contextual and organizational traits characterize HEIs with different IA portfolios. Small HEIs tend to display a *basic* portfolio, without national variations. On the contrary, there are strong national variations in the frequency of *academic* and *entrepreneurial* portfolios, which strongly relates to the level and importance of tuition fees. Significant differences are also observed as to the organizational traits, private HEIs displaying predominantly an *entrepreneurial* portfolio, and as to the internationalization rationales.

1. Introduction

Internationalization is a process that increasingly impacts and involves higher education institutions (HEIs) worldwide. Several internationalization activities (IA) are developed by HEIs, such as international research collaborations, joint degrees, promoting student and staff mobility (Egron Polak and Hudson 2014). Research on internationalization activities has aimed to classify (Knight 2012), measure (e.g. Horn et al. 2007), and explore the specific activities of internationalization, such as opening branch campuses (Wilkins and Huisman 2012) or internationalizing the curricula (Leask and Bridge 2013).

Surprisingly, there is a lack of inquiry and understanding for how HEIs internationalize, namely on what are the most common portfolios of IA, and on whether HEIs with a similar IA portfolio also share similar environmental conditions, organizational traits and rationales to internationalize.

In order to address these questions, we need to consider the complexity of factors affecting HEIs' internationalization. While universities have been always expected to be internationally oriented, in the past internationalization efforts were left to the initiative of its members, which established research collaborations, spent sabbatical periods abroad, etc. (Davies 1995). As a matter of fact, in the 1970s organizational scholars argued that decisions and actions within universities – not only in the domain of internationalization – were taken autonomously by departments and individuals. Universities were depicted 'arenas', namely entities whose members are guided by external interests, values and norms and perform their activities free from the control of the local leadership (Brunnsson and Anderson 2000). In these conditions, the set of -internationalization-

activities developed in a HEI resulted, to a great extent, from the sum of individual scholars' initiatives.

Still nowadays, HEIs' IA develop to a significant extent thanks to the initiatives of its individual members. However, in recent decades, two important processes have arguably complemented the bottom-up nature of HEIs' internationalization activities. First, public sector reforms inspired by new public management (NPM) principles have strengthened the hierarchical structure and rationalization of universities in many countries (Brunnsson and Sahlin Andersson 2000; De Boer et al. 2007; Seeber et al. 2015). Second, internationalization has emerged as a prominent mission for modern universities (Scott 2006), which now assign specific motivations – i.e. rationales – to internationalization (Altbach and Knight 2007; De Wit 1999; Knight 1999, 2004) and develop strategies to pursue internationalization (Davies 1995; Taylor 2004; Ayoubi and Massoud 2007; Maringe 2010; Tadaki and Tremewan 2013). In turn, modern HEIs are expected to be capable of action (Krücken and Meier 2006), and internationalization is among their priorities. As a result, the IA of a HEI are not only “emergent” from its members' initiatives, but also from its goals and *rationales* for internationalization.

HEIs' internationalization processes are also heavily affected by environmental conditions. HEIs' capability to attract foreign scientists – for example – is strongly affected by the country wealth, investment and performance in research (Lepori et al. 2015), and HEIs' rationales to internationalize are affected by the level of competition for resources and status in which they are embedded (Seeber et al. 2016).

Therefore, the goals of this article are: i) to explore what are the most common portfolios of IA, ii) to investigate what environmental conditions, organizational traits and rationales to internationalize characterize HEIs with the same IA portfolio, and to iii) explore the extent to which HEIs tend to be rational in developing their portfolio of IA. The empirical analysis includes 431 HEIs from 34 European countries, and employs the results of a large-scale survey carried out by the International Association of Universities (IAU), and information on organizational characteristics of European HEIs retrieved from the European Micro Data collection (EUMIDA) and the European Tertiary Education Register (ETER).

The paper is structured as follows. Section two describes the main internationalization activities and their classification discussed so far in the literature. Next, we discuss the complex relationships between environmental - organizational traits on one hand and internationalization activities on the other hand. The research design is described in the third section, followed by the research analysis in the fourth. In the final section we discuss the results and promising directions for future research.

2. Theoretical Framework

2.1 Internationalization activities

A plethora of activities is acknowledged to characterize the internationalization of universities at multiple levels (Knight 2012), from teaching to scientific research. Starting from an in-depth analysis of the literature and considering the IA that are included in the survey conducted regularly by the IAU among its members (Egroun-Polak and Hudson 2014), Box 1 outlines the most common and important IA.

BOX 1. The definition of IA

IA	Definition
Internationalize the curriculum	Process of designing and implementing programs/courses with an international content (Huang 2006). It refers to the internationalization of the curricula in home institutions, for both home and overseas.
Research collaboration	Development of international research collaborations aimed at improving the scientific standing of individuals/groups/departments inside global research networks.
Mobility of students	Activities aimed at fostering students' international experience, such as through participations to international summer schools and international internships.
Mobility of faculty	Opportunities for the mobility of faculty staff, such as teaching mobility projects like Fulbright (Vam Damme 2001).
Student exchange	Design and implementation of exchange programs for students' mobility towards cross-border universities, such as Erasmus-Socrates programs. Benefit in terms of linguistic competency and cultural familiarity.
Joint degree	Development of degree programs leading to one certificate issued jointly by the two or more HEIs (Chan 2012).
Development of projects	Development of cross-border cooperation where the academic staff work together on specific projects.
Marketing	Promotion of the university at an international level by marketing of e.g. study opportunities and services for foreign students (Altbach and Teichler 2001).
Distant learning	Delivery of distance/online degree courses or e-learning courses/programmes designed for students in other countries (Sloan et al. 2014).
Off-shore provision	The development of a cross-border operation, such as an international branch campus or academic courses/programmes abroad run by a university or as a joint venture in which the institution is a partner and uses the name of the foreign institution (Kosmützky and Putty 2016).
Recruiting fee paying undergraduates	All activities involved in the setting of a successful fee-scheme able to attract paying international students (both at an under- and post-graduate level), such as the analysis of the disciplinary offer and the cost in other competing universities.
Recruiting fee paying postgraduates	

Few scholars have proposed conceptually-driven classification of internationalization activities. Most notably, Knight (2012) distinguished internationalization at home and internationalization abroad activities. The first category includes IA developed in the institution, such as the internationalization of the curriculum. The latter category includes IA developed in another country, such as establishing campuses abroad and distant learning.

We propose further categorizations of IA and apply them to the set of IA included in the IAU survey (Table 1).

First, IA can be classified according to their relationship with the two core tasks of HEIs: education or research. As a matter of fact, most IA are education related. Only 'research collaboration' is related to research only, whereas mobility of faculty, development of project and marketing are arguably related to both.

Some IA have been in place for a long period of time, while others have diffused in recent decades. For example, whereas faculty have been traditionally travelling and establishing research collaborations, it is only with the advent of information technologies that distance learning have become possible, and globalization favoured the establishment of off-shore campuses (Bartell 2003; Kosmützky and Putty 2016)

IA also varies in the extent to which they can be developed autonomously by individual scholars or whether they need some level of organizational capacity. Research collaboration, for example, can be developed by individual scholars, whereas establishing joint degrees, off-shore provision and marketing activity require a certain level of organizational capacity, an initial investment and fixed costs that are worthwhile only over a given size.

IA are also more or less oriented to attract revenues. Recruiting fee paying under and postgraduates directly aim to increase funding, but also marketing, distant learning and establishing off-shore provision can indirectly increase the resources available to the institution. On the contrary, internationalizing the curriculum, or promoting the mobility of students have a much weaker connection to the attraction of funding.

Table 1 resumes the proposed conceptually-driven classifications of IA.

Table 1 - Classification of internationalization activities

	at home/ from abroad	research- education related	recent (+) / established (+++)	need for central coordination	resource oriented
Internationalize the curriculum	home	education	+	++	+
Research collaboration	home	research	+++	+	+
Mobility of students	home	education	++	++	+
Mobility of faculty	home	both	+++	+	+
Student exchange	both	education	+	++	+
Joint degree	both	education	+	++	+
Development of projects	both	both	+	++	+
Marketing	both	education	+	++	++
Distant learning	abroad	education	+	+++	++
Off-shore provision	abroad	education	+	+++	++
Recruiting fee paying undergraduates	both	education	++	++	+++
Recruiting fee paying postgraduates	both	education	++	++	+++

A different way to regroup IA is to take a bottom-up, empirical approach, and look at what IA occur more frequently together in the same HEIs. In other words, to explore what are the most common portfolios of IA and whether IA portfolios reflect any of the conceptually-driven classification of IA.

2.2 A configurational approach to internationalization

A main objective of this article is to explore whether HEIs' with different IA portfolios also display different organizational characteristics and environmental contexts. Different types of relationships can exist between environmental-organizational factors on the one hand and IA on the other hand, namely direct or mediated, and exogenous or endogenous.

Direct and mediated effects

In a recent paper, Seeber et al. (2016) investigated the environmental and organizational factors that affect the motivations – or ‘rationales’ - of HEIs to internationalize. The importance of studying rationales is based on the assumption that organizational cognition is an important antecedent of actions. This assumption has been object of extensive debate and several theories have been developed to account for why organizations behave as they do. These theories make different assumptions on the extent to which action results from rational and purposeful agency. Traditionally, economic and management theories assumed that firms’ decisions are calculated to obtain a given goal, leading to a rational and purposeful view on action (Godard 1999). In this perspective, the environmental factors – such as national regulation and the level of competition for resources – and the organizational factors – such as an organizations’ goals - affect action to the extent that they affect organizational cognition about the opportunity to undertake a given action, i.e. its rationales for action. In other words, the effect of environmental, organizational and intra-organizational factors on action would be fully *mediated*¹ by the rationales. From the 50s onwards, organization theories developed by the Carnegie and Columbia schools abandoned strict assumptions of rationality and deliberate decision-making (Scott 2004) towards bounded rationality and a natural system view on organizations (Simon 1945; March and Simon 1958). From a *natural system* perspective, organizations do not possess autonomous will and their actions are unconsciously taken, with little margin of autonomy but to adopt legitimate structures and practices (Meyer and Rowan 1977; Di Maggio and Powell 1983). Since organizations do not have a true purposeful essence, rationales will have no effect on action. Instead, actions are directly determined by environmental and organizational factors, while rationales represent mere ex-post rationalizations or ‘justifications’ of actions. Mainstream organizational theories are actually positioned in between the rational and natural perspectives on organizations. Therefore, environmental, organizational and intra-organizational factors are expected to affect actions partly directly and partly through the mediation of cognition (HEI’s rationales for action).

Exogenous and endogenous variables

Seeber et al. (2016) found small variations between countries in HEIs’ rationales to internationalize. The only remarkable difference pertained to UK and Irish HEIs, which are much more likely to see internationalization as a way to expand their base of revenues. The main explanation for such difference is that UK and Irish HEIs face a very different funding environment than continental European countries. Namely, the share of core-funding is only around 30–40 % of their total budget – compared to 60% - and they face much less constraints regarding the amount of tuition fees (Aghion 2008; EUMIDA, ETER datasets). Regulation on tuition fees and decisions upon public financial support represent largely exogenous factors. They affect, for example, the extent to which HEIs in a country can rise the tuition fees and hence will be prone to recruit fee paying international students, while IA will not affect the regulation, at least in the short and medium term.

Also some organizational characteristics can be considered as exogenous factors. For example, the private or public status of a HEI influences the possibility and propensity to set higher tuition fees, and hence to recruit (international) fee-paying students. On the other hand, most organizational variables are at least partly endogenous. The most clear example regards the internationalization rationales. For example, HEIs that conceive internationalization as an instruments to expand their base of revenues will be more likely to recruit international fee-paying students, but it is also likely

¹ In statistical terms, mediation occurs when the independent variable influences the mediator variable, which in turn influences the dependent variable.

that by increasing the amount of resources from tuition fees the economic rationale of internationalization will be strengthened. Given the extensive presence of endogenous relationships and the lack longitudinal data, a configurational approach appears to be more appropriate than trying to ascertain causal relationships with techniques such as instrumental variables. Configurational research' underlying assumption is that organizations can be better understood via identifying distinct, internally consistent sets of organizations, than by seeking to uncover causal relationships that hold across all organizations (Ketchen, Thomas, & Snow, 1993; Short et al. 2008).The configurational research offers description of organizations by identifying groups that resemble each other along important dimensions.

3. Data and methods

3.1 Data and variables

We explore the internationalization activities and IA portfolios of 431 European HEIs from 34 countries.

Information related to the internationalization rationales and activities were extracted from the International Association of Universities (IAU) survey, which mapped trends and developments in internationalization (Egron-Polak and Hudson 2014). The survey was completed by Rectors and/or a key person responsible for internationalization strategies. Respondents could select three out of the nine rationales and rank them on an ordinal scale from 1 to 3 (most important), and they could identify which among twelve possible IA are developed within their HEI (binary response).²

In order to construct variables of environmental and organizational factors we employed two datasets on the structural characteristics of European HEIs, namely EUMIDA (Niederl et al. 2014; EUMIDA 2009) and ETER datasets (Lepori et al. 2013).

BOX 1 presents the main organizational variables considered for the analysis.

Variable name	Description
World class HEI	Dummy variable for HEIs appearing in ARWU global ranking (1) or not (0).
Public-Private status	Public HEIs (0), private HEIs (1). The classification between public and private is made according to whether a public agency or a private entity has ultimate control over the institution. i.e. the power to determine the general policies and activities of the institution, to appoint the officers managing the school, the decision to open or close the institution (source: ETER; definition: ETER handbook).
Doctorate awarding	Awarding doctoral degrees (1) or not (0).
Scientific productivity	Ratio between the total number of publications normalized by their impact factor and the number of academic staff. Data for two-thirds of the universities could be derived from the SCIMAGO institutional rankings for the year 2011 (http://www.scimagoir.com/), which is based on publications from the period 2005-2009; One-third of the universities are not covered since they had less than 100 SCOPUS publications. For these universities the indicator was set to zero. In fact, the scaling properties of research output (van Raan 2007) imply that productivity tends to correlate with the organizational output, so that the indicator approaches zero when the level of output approaches the threshold of 100 publications (Lepori et al. 2015).

² For an extended description of the rationales see Seeber et al. (2016) BOX 1.

Teaching orientation	Ratio between the number of undergraduate students per academic staff (sources: EUMIDA, ETER, Turkish HE statistical office).
Importance of tuition fees	Ratio between the revenues from tuition fees and total revenues
Size / organizational capacity	Number of total staff in full time equivalent (source: ETER)
Influence of internal actors	Respondents could select three out of nine internal actors and rate their importance with weights from 1, 2 to 3 (most important). We considered four sub variables regrouping selected actors: 1) <i>students</i> ; 2) <i>academics</i> (faculty members); 3) <i>middle management</i> (deans, academic department heads, international office, administrative staff, deputy head); 4) <i>central leadership</i> (Rector, governing board). The value of each sub variable is given by the maximum value among the actors included.

Our sample includes 431 HEIs, of which 28 had two responses. In these cases the concordance of the responses is rather high, and backs their reliability and their use for measuring organizational constructs.³ Because of the position they hold, the respondents are also expected to have an accurate and comprehensive view of the HEI, therefore providing responses close to the real value (validity criterion).

3.2 Methods

We employ the responses to identify different portfolios of IA by employing a Latent Class Analysis (LCA). Alike cluster analysis, LCA is a statistical method for finding subtypes of related cases (latent classes), that is employed when dealing with multivariate categorical or binary data (Titterton, Smith & Makov, 1985).

We focus on portfolios of activities, rather than on each of the IA or groups of IA for two main reasons. First, the low correlations between IA (see Table 3) suggest that it is not possible to merge groups of IA in a straightforward way and without losing much information. Second, because portfolios also give an indication of which activities tend to occur together, therefore providing a more accurate representation of a HEI's internationalization profile.

In a second stage, we explored iteratively what organizational and environmental characteristics distinguish HEIs with different IA portfolios. To do this, multilevel regression models are employed. A multilevel model divides the unexplained variance between level 2 (country) and level 1 (respondent)⁴, and allows the significance of country level variance to be computed as well as to identify which countries significantly differ from the sample mean (Snijders and Bosker 2012).⁵ Further, we combine descriptive statistics and regression analyses for identifying

³ Double responses are attributed to the same cluster in 60% of the cases, compared to a random expected co-clustering of 36%. The difference in actual and random co-clustering is highly significant (p-value: 0.009**) (see section 3.2)

⁴ The data have a three-level structure: 459 respondents nested into 431 universities, nested within 34 countries. Since most HEIs have only a single respondent, then respondents are selected at level 1 units. We employ a Markov Chain Monte Carlo (MCMC) method of estimation, since with a low number of level 2 units it provides more stable parameter estimates than the maximum-likelihood method of estimation (Stegmueller 2013).

⁵ The relationship between two variables may be very different when considering relationships within a group and between-groups. For example, cardiovascular death rates (Y) are higher in richer countries (income=X), but within each country it is poorer people that tend to be more at risk. Hence, the true

significant associations between IA portfolios and given organizational traits. We run multilevel regression models to explore whether the association holds true when considering both the between-group and within-group regression coefficients (Snijders and Bosker, 2012).

4. Empirical analysis

4.1 Identification of IA portfolios and clusters of HEIs

In the IAU survey, the respondents could identify which IA their institution undertakes among a set of twelve IA.

Outgoing *mobility* opportunities and learning experiences *for students* (e.g. study abroad, international internships etc.) (96%) and outgoing *mobility opportunities for faculty/staff* (93%) are the most frequent IA, followed by international *research collaboration* (89%), bi- or multilateral international *student exchanges* (86%) and strengthening the international/intercultural content of the *curriculum* (76%).

Developing *joint* and/or double/dual *degree* programmes with foreign partner institutions (69%), and international development and capacity building *projects* (55%) as well *marketing* and promoting the institution internationally (66%) are also rather common.

A considerable number of HEIs also aim to attract resources by *recruiting fee paying undergraduate* (40%) and *postgraduate students* (46%).

Only a minority of HEIs deliver *distant e-learning* courses or programmes designed for students in other countries (29%) and *off-shore provision* (academic courses/programmes abroad, branch campuses, overseas joint venture, franchises) (23%).

Table 2 presents the relative frequency of each IA and the correlations between the IA. Correlations are often significant but rarely high – with the only exception of recruiting fee-paying students (0.65, p-value < 0.01).

[Table 2]

relationship between Y and X is revealed only when both relations are considered jointly (Snijders and Bosker, 2012; pp. 29).

Table 2 - Frequency of internationalization activities and correlation -
n=459

	frequency	1	2	3	4	5	6	7	8	9	10	11	12
1 Curriculum	76%	1	,219**	,105*	,160**	,171**	,149**	,196**	,165**	0,08	0,09	0,02	,116*
2 Research collaborations	89%	,219**	1	,134**	,122**	,218**	,231**	,224**	,123**	,096*	,122**	0,05	,176**
3 Mobility students	96%	,105*	,134**	1	,395**	,199**	,183**	,106*	,116*	0,04	0,07	0,04	0,05
4 Mobility faculty/staff	93%	,160**	,122**	,395**	1	,189**	,292**	,221**	,155**	0,08	0,05	0,09	0,07
5 Student exchanges	87%	,171**	,218**	,199**	,189**	1	,340**	,237**	,164**	0,04	,108*	,139**	,179**
6 Joint degree	69%	,149**	,231**	,183**	,292**	,340**	1	,252**	,260**	,183**	,228**	,120*	,190**
7 Development projects	55%	,196**	,224**	,106*	,221**	,237**	,252**	1	,146**	,196**	,198**	0,04	,124**
8 Marketing	66%	,165**	,123**	,116*	,155**	,164**	,260**	,146**	1	,157**	,210**	,302**	,376**
9 Distant learning	29%	0,08	,096*	0,04	0,08	0,04	,183**	,196**	,157**	1	,345**	,161**	,223**
10 Off-shore provision	23%	0,09	,122**	0,07	0,05	,108*	,228**	,198**	,210**	,345**	1	,203**	,306**
11 Recruiting fee paying undergraduates	40%	0,02	0,05	0,04	0,09	,139**	,120*	0,04	,302**	,161**	,203**	1	,654**
12 Recruiting fee paying postgraduates	46%	,116*	,176**	0,05	0,07	,179**	,190**	,124**	,376**	,223**	,306**	,654**	1

The LCA with three classes/portfolios displays the optimal fit compared to solutions with less or more classes.⁶ The output of the LCA is the probability of a HEI to belong to each one of the three portfolios. We attribute each HEI to the portfolio with the highest probability of belonging to. Three clusters of HEIs are identified accordingly.

Figure 2 illustrates the frequency of IA among the HEIs in each cluster, giving an indication of the typical IA portfolios. We labelled the three clusters/portfolios as: i) *basic* ii) *entrepreneurial*, and iii) *academic*. HEIs with an *entrepreneurial* portfolio are the most numerous (197), and with the average highest number of IA: 9.66. 172 HEIs display an *academic* portfolio (7.29 IA), whereas 90 HEIs display a *basic* portfolio (4.12 IA).

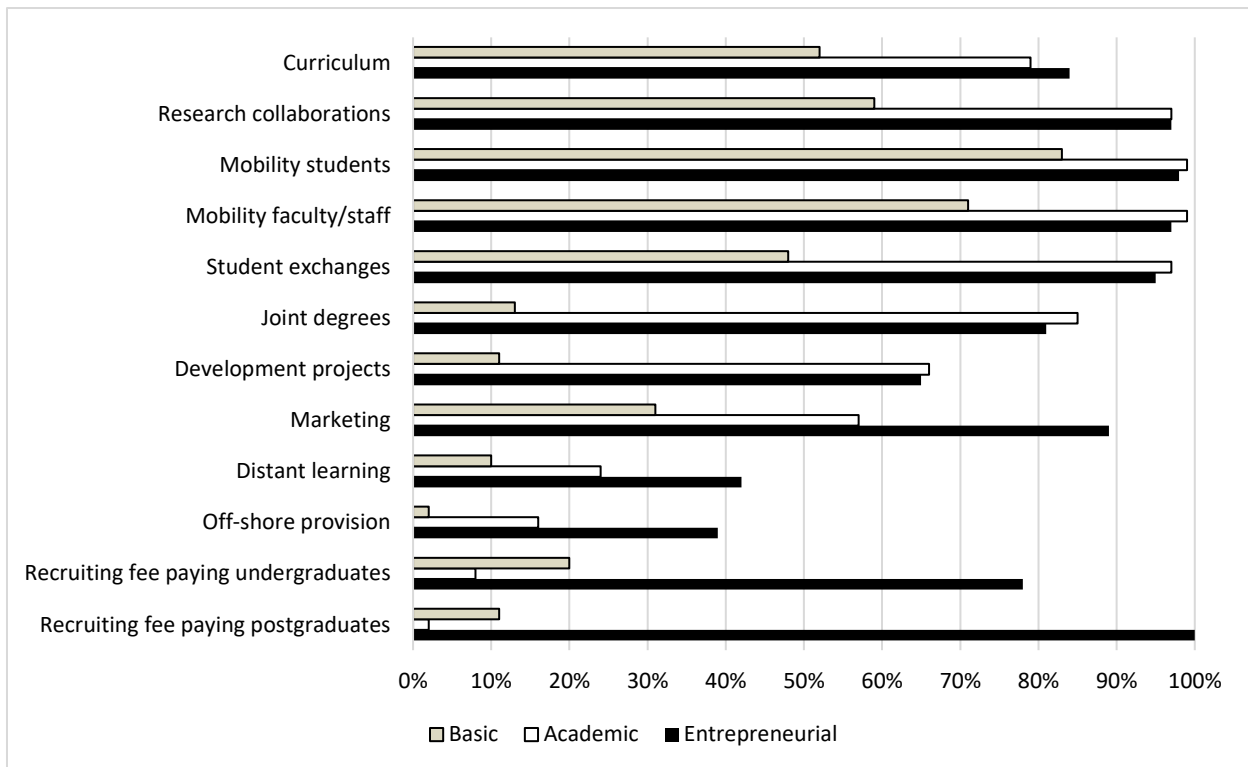
HEIs with a *basic* portfolio focus on the most common IA, namely: i) internationalization of the curriculum, ii) research collaboration, iii) mobility of students and iv) staff as well as v) student exchange. Instead, IA that require a stronger organizational capacity are developed much less frequently (i.e. off-shore provision, joint degree, development projects). In comparison to the *academic* portfolio, recruiting fee-paying students occurs slightly more frequently.

Compared to *academic* HEIs, *entrepreneurial* HEIs develop more frequently IA reflecting an entrepreneurial model of university (Clark, 1998), namely activities aimed at attracting resources from international students, both *directly* via actively recruiting fee paying students and *indirectly*, through i) marketing, ii) distant courses, iii) off shore provision and iv) distant learning. *Entrepreneurial* and *academic* HEIs do not differ when it comes to the frequency of IA that are not resource oriented, namely: i) internationalize their curricula, ii) develop international research collaboration, iii) promote outgoing mobility of student and iv) staff, vi) promote student exchanges and vii) establish joint degrees.

[Figure 2]

Figure 2 – Portfolios of IA

⁶ Chi-square goodness of fit: 2 classes: 513837; 3 classes: 25903; 4 classes: 35498



4.2 Contextual and organizational factors related to the IA portfolios

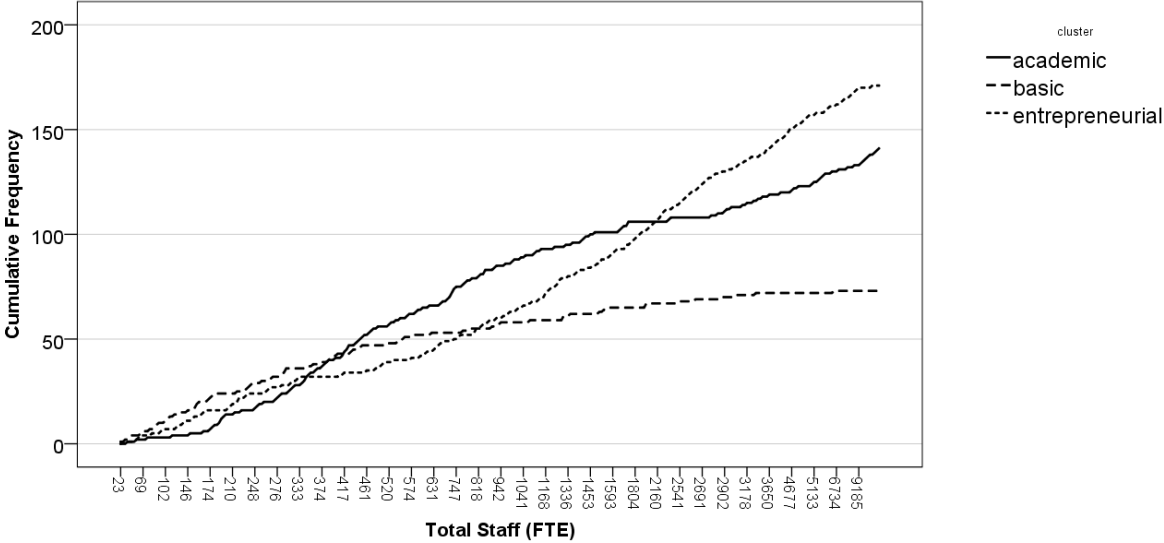
We run multilevel binary regression models to explore whether national environmental conditions affect the likelihood of specific IA portfolios.

For the *basic* portfolio between country variations are small (only 4% of variance between countries⁷) and not significant (see Table A in the appendix). The basic portfolio is characterized by a much lower frequency of IA that requires a high level of organizational capacity. For example, opening a branch campus for off-shore provision requires considerable managerial and economic resources, and it entails a minimum level of coordination and investment which makes it more difficult for small institutions. Hence, we explore the relationship between organizational capacity and IA portfolios. Figure 3 presents the cumulative frequency of HEIs with *basic*, *entrepreneurial* and *academic* portfolios by increasing organizational capacity, using as a proxy the total number of staff full time equivalent (X axis). The basic portfolio is very common among small HEIs: 49% of all HEIs up to 180 units of staff display a *basic* portfolio and gradually decline above this size. As a result, half of the HEIs with a *basic* portfolio are smaller than 305 units of staff, compared to only 17% of the *academic* and 16% of the *entrepreneurial* HEIs.

HEIs with a *basic* portfolio are also less likely to be ‘world-class’ universities (6%) compared to HEIs with an *academic* (20%) and an *entrepreneurial* (20%) portfolio (p-value < 0.001***), they are less scientifically productive (average productivity score of 0,82 compared to 2,16 and 2,68 of *academic* and *entrepreneurial* HEIs, p-value < 0.001***), and less often doctoral awarding institutions (56% compared to 68% and 88%, p-value < 0.001***), while no significant differences exist as to the teaching intensity.

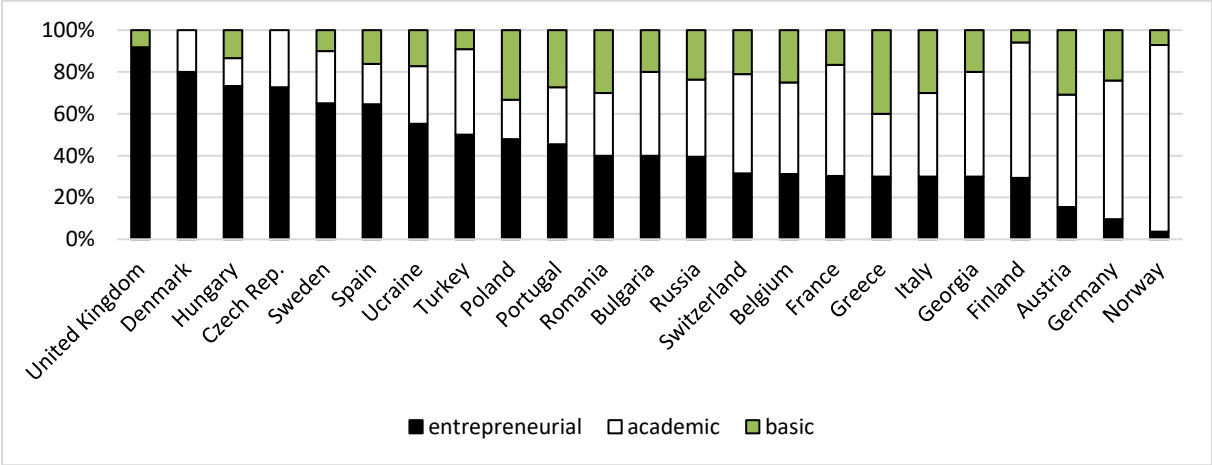
⁷ In binomial multilevel regression the proportion of variance at country level (VPC, variance partitioning coefficient) is computed as: $\sigma^2 / (\sigma^2 + 3.29)$; where σ^2 = variance at country level (Snijders and Bosker, 2012)

Figure 3 – Organizational capacity and IA profile; n=385



Between country variance is large and significant for the *entrepreneurial* portfolio (43%) and the *academic* portfolio (32% of the total variance). HEIs from United Kingdom, Hungary and Spain are significantly more likely to display an *entrepreneurial* portfolio, whereas Norwegian, German and Austrian HEIs are significantly less likely. On the other side, HEIs from United Kingdom are less likely to display an *academic* portfolio, whereas Norwegian and German are significantly more likely.⁸ National variations in IA portfolios are also illustrated in Figure 4.

Figure 4 – Relative frequency of IA portfolios (countries with at least ten HEIs in the sample)



National differences as to the *entrepreneurial* and *academic* portfolios are consistent with differences in the level and importance of tuition fees in these countries (see Table 3): tuition fees are very important source of revenues for HEIs in the United Kingdom (47%), Hungary (11%) and Spain (18%), while tuition fees are very low in Austria and Germany and there are no tuition fees in Norway. Table 3 shows the large differences existing across European countries in the amount of tuition fees that they can charge to EU and non-EU students, the overall importance of tuition fees on HEIs’ budget and the share of mobile students from European and extra European countries.

⁸ For some countries the number of HEIs is too small to achieve significant differences, such as for Denmark, Czech Republic and Ireland

Table 3 - Tuition fees for public and government dependent HEIs * (yearly)

Country	Students from EU/EEA	Students from other countries	% of total revenues from tuition fees **	% mobile students****			
				bachelor		master	
				from Europe	extra Europe	from Europe	extra Europe
Austria	free	ca. 1,500 €	<1%***	15,6%	2,4%	15,8%	2,5%
Belgium	400-800 €	900-4,000 €	5%	5,5%	0,9%	6,7%	4,0%
Denmark	free	6,000 - 16,000 €	2%***	4,9%	0,7%	15,0%	3,0%
Finland	free	5,000 - 20,000 €	<1%***	1,7%	2,4%	3,5%	7,1%
France	200 - 650 €	200 - 650 €	2%	1,7%	5,1%	2,5%	9,9%
Germany	100- 200 €	100- 200 €	1%	2,0%	2,0%	5,0%	7,5%
Greece	free	ca. 1,500 €	<1%***	1,0%	2,5%	0,9%	na
Hungary	1,000-4,000 €	2,000-20,000 €	11%	3,1%	1,9%	8,7%	5,4%
Ireland	2,500-8,000 €	9,000-45,000 €	45%	1,6%	4,4%	3,9%	8,0%
Italy	1,000-4,000 €	ca. 4,000 €	15%	2,4%	2,5%	2,2%	2,4%
Netherlands	avg. 2,000 €	above 6,000 €	13%	5,2%	1,0%	7,6%	3,7%
Norway	free	free	0%	1,3%	0,8%	2,3%	4,2%
Poland	free	ca. 2,000 €	<1%***	2,0%	0,4%	2,7%	0,6%
Slovenia	free	ca. 5,000 €	<1%***	2,2%	0,1%	3,7%	0,4%
Spain	680 - 2,000 €	ca. 2,000 €	18%	0,9%	0,5%	4,5%	6,4%
Sweden	free	10,000 -14,000 €	2%***	1,1%	0,6%	3,9%	3,7%
Switzerland	1,000 - 8,000 €	1,000 - 20,000 €	5%	8,1%	1,7%	18,1%	6,9%
United Kingdom	avg 11,000 €	avg 20,000 €	47%	5,0%	9,0%	8,0%	28,9%
Turkey	70 - 400 € (nationals)	200 - 1300 €	na	0,2%	0,8%	0,6%	2,7%

sources: <https://www.mastersportal.eu>; www.studyineurope.eu; for Switzerland: <https://www.swissuniversities.ch>; for Turkey: <http://www.studyinturkey.com>; Austria: <https://www.bmbwf.gv.at>; Spain: crue.org; for Denmark: <http://studyindenmark.dk/>

* ETER distinguishes three categories of HEIs - see variables description

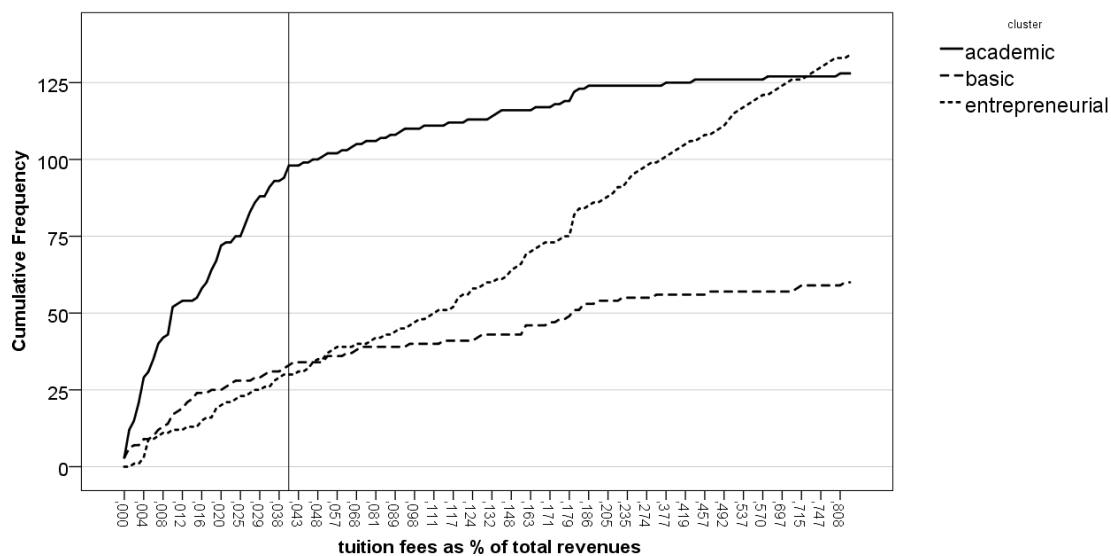
** source: ETER or EUMIDA. Average per public HEIs

*** missing or nor complete in ETER. Estimates based on the number of non-EU students

****source: Eurostat 2015; for Greece, Switzerland and Turkey 2014

The strong linkage between IA portfolios and the importance of tuition fees as a source of revenues is also observed at the level of individual HEIs. Figure 5 shows the cumulative frequency of HEIs displaying a *basic*, *entrepreneurial* or *academic* portfolios by increasing importance of tuition fees, in terms of percentage of the total revenues (X axis). *Academic* portfolios are much more frequent than *entrepreneurial* portfolios when tuition fees represents less than 4% of the total revenues HEIs (61% vs 19%); the opposite occurs when revenues from tuition fees represent more than 4% of total revenues (19% *academic* vs 65% *entrepreneurial*), while the share of basic portfolios is similar below and above the threshold (20% and 16%). Moreover, a multilevel regression, including only public HEIs and size as covariate, show that *entrepreneurial* HEIs attract +29% more resources from tuition fees than *academic* and *basic* HEIs (p-value <0.001***, see Table A in the appendix).⁹

Figure 5 – Share of tuition fees on total revenues and IA profile; n=322¹⁰



At the same time, some countries display a lower or higher than expected number of *entrepreneurial* HEIs. Despite tuition fees represent an important source of funding for Italian universities (around 15% of the total revenues), the *academic* profile is more common than the *entrepreneurial* one (8 vs. 6). On the contrary, for Danish and Swedish HEIs tuition fees are still a negligible source of revenues, yet they often display an *entrepreneurial* IA portfolio (respectively 7 out of 8 and 12 out of 19). The share of extra-European students is similar in the three countries. However, in Italy extra-European students pay a similar amount of fee, while in Denmark (since 2006) and Sweden (since 2011) tuition fees have increased remarkably for non EU students and are now among the highest in Europe. Moreover, in Italy the potential for attracting foreign mobile students is constrained by existing legislation, which limit the use of foreign languages for teaching,¹¹ while Denmark and Sweden introduced scholarship programs and targeted marketing

⁹ The result with all the HEIs is less reliable as most private HEIs display either a basic or entrepreneurial portfolio.

¹⁰ Data on revenues from students' fees are available for 26 countries, while they are missing or partly missing for HEIs from Turkey, Romania, Greece, Finland, Poland, Latvia, Bulgaria, Czech Republic, Austria, Estonia.

¹¹ Several jurisdictional bodies have intervened in 2017 against the decision of the Polytechnic of Milan to provide some degree courses only in English and oblige to always provide the same course also in Italian (e.g. Corte Costituzionale, 2017).

campaigns to an initial decline of international enrolments after the rising of the tuition fees (Nordic Council of Ministers, 2013).

Beyond national contextual factors, selected organizational traits are also related to IA portfolios. Most notably, private HEIs tend to receive less public funding support on the one side, and have more leeway in setting tuition fees on the other side. Private are in fact more likely to display an *entrepreneurial* (63%) than an *academic* portfolio (17%), while the opposite is true for public HEIs (36% vs. 45%).¹² Private HEIs are also more likely to conceive internationalization as an instrument to increase revenues (Seeber et al. 2016), which arguably increases the propensity to develop resource-oriented IA. At the same time, HEIs developing IA oriented to attract resources will likely increase the amount or revenues from international students fees, and an increasing importance of tuition fees from international students will likely reinforce an economic rationale for internationalization. *Entrepreneurial* HEIs do attribute more importance to an economic rationale to internationalization (see Table 4).

Figure 6 summarizes the existing relationships between key contextual and organizational factors and IA aimed at attracting resources, i.e. the likelihood to develop an entrepreneurial portfolio.

Figure 6 –Contextual- organizational factors and IA aimed to attract resources

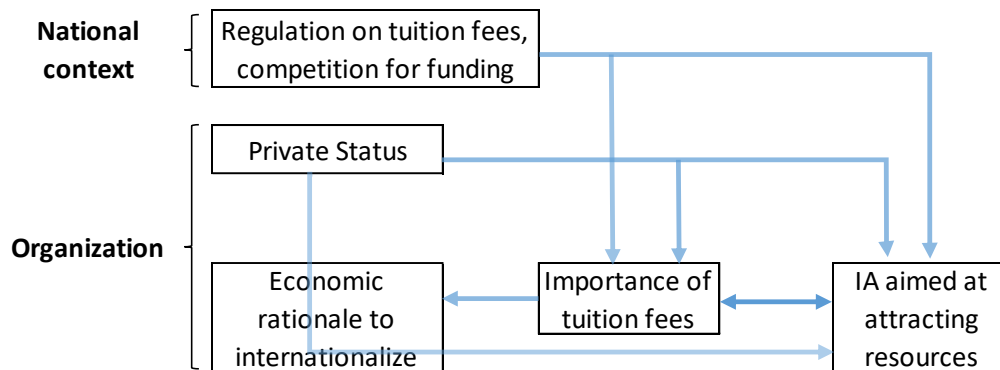


Figure 7 resumes the two most important traits related to IA portfolios: size (Y axis) and importance of tuition fees (X axis). HEIs with an *academic* portfolio (blue dots) are predominantly in the left side (low importance of tuition fees), while *entrepreneurial* portfolios (black dots) are instead more common on the right side (high importance of tuition fees), whereas *basic* portfolios (red dots) are common in the bottom part (small HEIs).

Figure 7 – IA portfolios by HEIs' organizational size and importance of tuition fees.

n. 322 – power scale

¹² In turn, 39% of *entrepreneurial* HEIs are Private, 28% of *basic* and 12% of *academic*. It is important to remark that ETER classifies as private also 'government dependent' HEIs, namely HEIs receiving more than 50% of their core funding from government agencies or whose teaching staff are paid by a government agency. Thus almost all UK HEIs are classified as private. In any case, the relationship between private status and entrepreneurial portfolio holds true also in a multilevel regression (p-value < 0.001***).

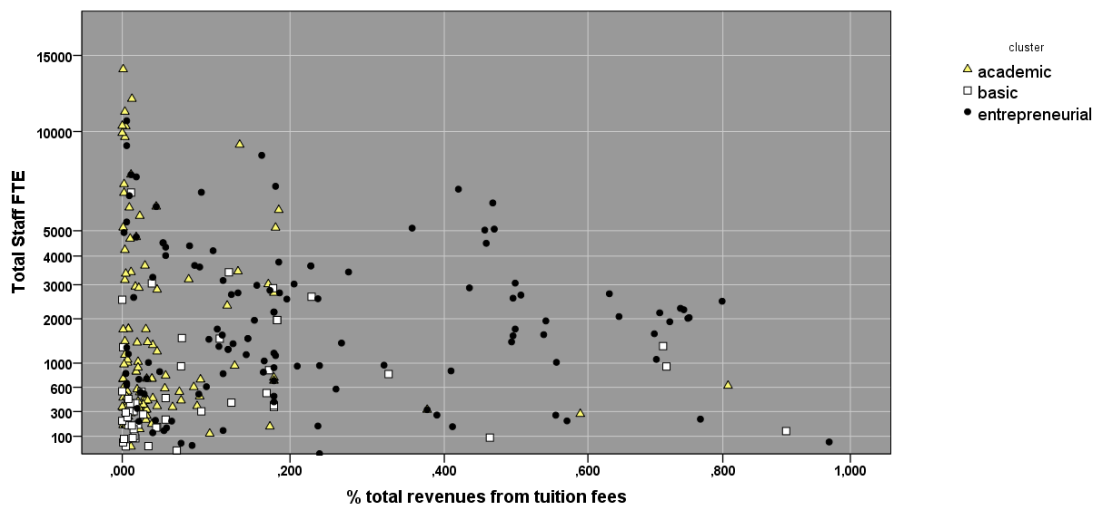


Table 4 displays the average importance (between 0 and 3) of different internationalization rationales and internal actors as drivers of internationalization for HEIs in the three clusters. Some notable and significant differences are observed. The most important rationales for HEIs with an *academic* and *entrepreneurial* portfolio are similar: improving quality in teaching and research, increasing students' awareness. At the same time, *academic* HEIs give comparatively more importance to the rationale of enhancing cooperation, and less to the prestige rationale. On the other size, the economic rationale (revenue) is relatively more important for *entrepreneurial* HEIs. Increasing students' awareness is comparatively much more important for HEIs with a *basic* portfolio, whereas strengthening research and enhancing cooperation are much less important. Differences in the internal drivers of internationalization are not significant in a multilevel regression, which suggest that their impact is – at best - mediated by the internationalization rationales (see Seeber et al. 2016).

Table 4 – Internal drivers and rationales of internationalization: differences between clusters

	Basic	Academic	Entrepreneurial	sign.
Internationalization rationales				
1 awareness	1,36	0,91	0,89	***
2 curriculum	0,5	0,69	0,6	
3 quality teaching	0,9	0,94	0,96	
4 research	0,59	0,93	0,89	***
5 prestige	0,83	0,44	0,71	***
6 benchmark performance	0,33	0,2	0,23	
7 cooperation	0,56	0,98	0,79	***
8 networking by faculty	0,72	0,8	0,54	.
9 revenue	0,13	0,06	0,35	***
Internal drivers of internationalization				
Students influence	0,83	0,68	0,66	
Faculty members influence	0,88	1,15	0,8	
Middle Management influence	2,24	2,18	1,89	
Leadership influence	1,38	1,62	2,11	

*** p< 0.001; ** p< 0.01; * p< 0.05; '.' p<0.1

5. Conclusions and reflections

This article explored how European HEIs internationalize and what environmental conditions and organizational traits characterize HEI with different IA. We found three distinct portfolios of IA. The *basic* portfolio includes the most common IA, such as the internationalization of the curriculum and research collaboration, while IA that require larger organizational capacity are developed much less frequently. *Entrepreneurial* HEIs differ from *academic* ones for they develop more frequently IA aimed at attracting resources from international students, both directly via actively recruiting fee paying students and indirectly, for example through marketing and distant learning.

HEIs with a *basic* portfolio are mostly small, and evenly distributed across countries. The *entrepreneurial* and *academic* portfolios are strongly related to the *actual* and *potential* importance of tuition fees as a source of revenues. This depends on the HEIs' legal status, as private HEIs have more need and leeway to set high fees, and to national regulations. In countries where there are no or very low tuition fees, like in Germany and Norway, the *academic* portfolio is very common; whereas in the United Kingdom, Hungary and Spain the *entrepreneurial* portfolio prevails. In Denmark and Sweden, tuition fees represent a small share of the HEIs' revenues but they are very high for non-EU students and a potentially important resource in the future, so that HEIs from these countries very often display an *entrepreneurial* portfolio. On the contrary, Italian HEIs rely heavily on tuition fees but their potential for attracting internationally mobile students is constrained by rules imposing Italian as the main language for tertiary education. In turn, while HEIs' rationales to internationalize are similar across European countries (Seeber et al. 2016), instead remarkable variations exist as to how they internationalize.

These findings have relevant implications for our understanding of HEIs' internationalization. Overall, they suggest that HEIs tend to be rational in managing their internationalization process. Namely, they endeavour in IA aimed to attract resources only when this is rewarding or potentially rewarding, and they are more likely to develop IA requiring large investment and coordination when they have sufficient organizational capacity. Clearly, one possibility is that small HEIs are not purposefully avoiding certain IA, but rather they are not able to develop them because of limited capacity. These patterns may also result from a learning process, so that some HEIs did and do try to develop IA even when not suited to their context or traits, but later on tend to abandon them as not feasible or not rewarding enough. Future research adopting a longitudinal perspective may improve our understanding of the relationship between exogenous-endogenous conditions and the adoption/dismantling of given IA. We also found that *entrepreneurial* HEIs attract a larger share of revenues from tuition fees, compared to HEIs with a *basic* and an *academic* portfolio. Longitudinal studies can deepen the causality between IA and organizational outcomes.

A final reflection is whether increasing tuition fees can incentive to internationalization or troy horse an economic rationale into internationalization. The fact that the frequency of teaching and research related IA of *entrepreneurial* and *academic* HEIs, as well as their internationalization rationales are rather similar, suggests that there neither case is true. However, future in-depth case studies seem warranted to shed light into this important issue.

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APPENDIX

Table A - Multilevel binary regression empty models predicting HEIs IA portfolios and Multilevel regression model predicting the proportion of revenues from tuition fees for public HEIs - MCMC method of estimation 10,000 iterations

	academic			entrepreneurial			basic			tuition fee on revenues			tuition fee on revenues		
	coeff.	s.e.	sign.	coeff.	s.e.	sign.	coeff.	s.e.	sign.	coeff.	s.e.	sign.	coeff.	s.e.	sign.
cons	-0,83	0,27	**	-0,08	0,32		-1,48	0,16	***	-2,39	0,33	***	-2,38	0,36	***
basic vs academic													-0,01	0,09	
entrepreneurial vs academic													0,26	0,08	**
size: total staff FTE*													-0,00009	0,00002	***
Level: country	1,52	0,75	*	2,43	1,05	*	0,13	0,15		2,48	0,82	**	2,24	0,89	*
Level: case	1	0		1	0		1	0		1	0		1	0	
Units: country	34			34			34			24			18		
Units: case	459			459			459			247			216		
DIC:	524,21			493,94			455,79			1299,2			1149,879		
pD:	22,303			24,944			6,5471			23,146			20,71723		

* centred on the sample mean