

Erasmus in the Healthcare Education System: Network Analysis of Latin-Speaking Countries' Strategic Partnerships

Barbara Kulaga¹, Elisa D'Adamo²

¹Department of Management, Marche Polytechnic University, Ancona, Italy

²Department of Economics and Social Science, Marche Polytechnic University, Ancona, Italy

Email: b.kulaga@univpm.it, e.dadamo@pm.univpm.it

How to cite this paper: Kulaga, B., & D'Adamo, E. (2024). Erasmus in the Healthcare Education System: Network Analysis of Latin-Speaking Countries' Strategic Partnerships. *Open Journal of Business and Management*, 12, 1058-1073.
<https://doi.org/10.4236/ojbm.2024.122056>

Received: January 10, 2024

Accepted: March 23, 2024

Published: March 26, 2024

Copyright © 2024 by author(s) and Scientific Research Publishing Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

The strategic partnerships within the Erasmus + program determine a wide relational network of institutions that collaborate with each other in order to support the development and transfer of innovative practices. This contribution analyzes the themes and relational networks of the training projects financed in the health sector, with a particular focus on Latin-speaking countries.

Keywords

Erasmus, Latin Countries, Network Analysis, Healthcare Education System

1. Introduction

Inclusive and quality education and training, formal and informal learning fall within the priority thematic areas of intervention of the European Union and are supported through periodic financial allocations. The program dedicated to this purpose is Erasmus, now Erasmus +, which for the period 2021/2027 was financed with an amount almost double compared to the previous 2014/2020 program, i.e. € 28.4 billion.

Erasmus + is structured in several key actions: individual mobility for learning purposes (key action 1), innovation and best practices (key action 2), support for policy reform (key action 3). In this paper, we will consider strategic partnerships for innovation and best practices.

Transnational strategic partnerships aim to develop initiatives relating to one or more sectors of education, training and youth and to promote innovation, the

exchange of experience and know-how between different types of organizations. Erasmus + offers great flexibility in terms of activities that strategic partnerships can implement, provided that the proposal demonstrates that these activities are the most appropriate to achieve the objectives defined for the higher education, vocational training, schools and education sectors, adult education.

Strategic partnerships, although the number of partners may vary according to the objectives and activities of the project, in general must include 3 partners from 3 different countries of the programme, including the coordinating organization (the applicant) and can receive a maximum funding of 150,000 euros per year.

To ensure efficient access to the various funding opportunities, including the Erasmus + program, in addition to the knowledge of specific tools, there is a need to have national and international networks for the design and construction of partnerships, conducting innovation activities with a logic network and forging strategic partnerships (Segers, 2013) to develop and absorb new knowledge and/or learning methodologies.

In the next paragraphs, we will consider the relational networks that have developed over the years within the Erasmus + program, as well as the issues on which the same networks have cooperated, with particular attention to what is happening in Latin-speaking countries.

2. Erasmus + Programme

“Where people have improved their chances of finding a job, learned a new language, gained a clearer idea of European citizenship or found a new passion for volunteering” (Council of the European Union, 15 June 2017, Celebration of 30 years of Erasmus).

What we know as Erasmus, an acronym for European Region Action Scheme for the Mobility of University Students, was launched in 1987 offering European students the opportunity to study not only in their country of residence but also, for a period of time, in one of the 33 countries participating in the program. Since then, not only has the popularity of Erasmus increased over time but also its aims have been extended, supporting, through the aforementioned key actions 2 and 3, also the organizations operating in the education and training sectors to encourage collaboration and bringing the world of education and work closer together, with the aim of addressing the current skills needs in Europe, in particular on the issues of inclusion, digital transformation, the environment and participation in democratic life.

By way of example, to understand the additional purposes that have been added, we can mention the “S.M.I. The Sale Management, Inter-culture, Learning” project which created and tested a new training standard for the Intercultural Sales Agent, a key figure in the b2b sales process, in the intercultural field, both in house and in the field, for strategic and operational commercial negotiations abroad; or again, in the health sector, the Health C project, which has im-

proved the communication and crisis management skills of the health authorities' staff, creating a specialized course, training materials and an emergency tool kit, for staff to could communicate effectively in the event of a health disaster.

3. Network Analysis

The Erasmus program is characterized by a system of international relations with a reticular structure, and therefore lends itself well to being analyzed with a network analysis approach, where the participating countries represent the nodes of the network and the projects carried out in cooperation the links between the countries. Network type analyzes applied to the Erasmus + program have already been previously carried out by [Derzsi et al. \(2011\)](#), [Breznik et al. \(2013\)](#), [Böttcher et al. \(2016\)](#) and [De Benedictis & Leoni \(2020\)](#) but, all the aforementioned studies, albeit with references to different time periods, use the network analysis approach in reference to key action 1 and in particular to student mobility; In this study, on the other hand, the exchange flows between students are not analyzed, but the innovative training projects in the medical field developed in transnational partnerships in which Latin-speaking countries have participated.

For this purpose, the projects financed in the 2014-2021 programming period were extracted from the Erasmus + Results portal: as in [Table 1](#), a total of 154 projects implemented in the health sector were identified, amounting to 726 participations (connections). From a grand total of 154 projects, 122 saw the participation of at least one Latin-speaking country as leader or partner.

Overall, Neo-Latin speaking countries account for 31% of total participations, while non-Neo-Latin speaking countries account for 69%, as reported in [Table 2](#) below. Regarding the former, [Table 3](#) provides a detailed frequency distribution of countries, where Italy emerges as the most active in the sector with 30% of participations, followed by Spain (25%) and Romania (16%).

Table 1. Data summary.

Programming Period	Sector	Identified Projects	Total Participations	Projects involving Neo-Latin Countries
2014-2021	Health	154	726	122

Table 2. Countries' participation in healthcare-related Erasmus+ projects.

Participant's Countries	N. project participations	% Frequency of project participations
Neo-Latin speakers	222	31%
Non neo-Latin speakers	504	69%
Total participations	726	100%

Table 3. Countries' participation frequency distribution.

Participating Countries	N. of project participations	Relative frequency of project participations	% Frequency of project participations
IT	66	0.297	30%
ES	56	0.252	25%
RO	36	0.162	16%
PT	32	0.144	14%
FR	26	0.117	12%
MD	2	0.009	1%
PH	2	0.009	1%
CR	1	0.005	0%
MX	1	0.005	0%
Total	222	1.000	100%

With reference to the coordinators or the applicants, out of a total of 154 projects, 14 lead Romanian, 12 Spanish, 9 Italian and 1 Portuguese. In this regard, it should be noted that countries outside the European Union cannot hold the position of coordinator but only of partners.

In order to contribute also with practical implications, the list of coordinating institutions is also included in the appendix (**Table A1**).

As shown in **Table 4**, the thematic areas on which neo-Latin institutions projects are most focused concern:

- the creation of curricula or the development of innovative training courses in the health sector, with a total of 39 institution collaborating,
- improvement of the quality or assurance of institutions and/or methodologies, with a total of 17 institutions collaborating,
- health and wellness, with a total of 22 institutions collaborating,
- ICT—new technologies and digital skills, with a total of 15 institutions collaborating.

By way of example, illustration of projects carried out in the aforementioned thematic areas is reported.

One of the examples of training courses carried out within the Erasmus + program is CLEVER, which aimed to modernize the learning methods already used by participating universities using the latest ICT technologies. To this end, “Team-based learning” and “Problem-based learning” were integrated as teaching methodologies and a platform was created with 24 cases of virtual patients, using both medical simulation techniques and simulation on “virtual scenarios”, also using modern medical simulators.

Table 4. Erasmus + projects' thematic area financed in the 2014-2021 programme.

Country	Projects' topic		
	Intercultural/ intergenerational education	Health and wellbeing	New innovative curricula/educational methods/development of training courses
CR			
ES	1	4	10
FR	2	4	3
IT	2	8	13
MD			
MX			
PH	2		
PT	2	3	4
RO		3	9
Total	9	22	39
Country	International cooperation, international relations, development cooperation	Disabilities - special needs	Quality Improvement or Assurance of Institutions and/or methods
CR			
ES	4		4
FR			2
IT	3	2	5
MD			
MX			
PH			
PT	1	1	2
RO	1	1	4
Total	9	4	17
Country	Recognition, transparency, certification	Cooperation between educational institutions and business	Open and distance learning
CR			
ES	3	2	2

Continued

FR		1	2
IT	1		5
MD			
MX			
PH			
PT		3	
RO	1	1	2
Total	5	7	11
	Research and innovation	Creating new, innovative or joint curricula or courses	Development of training courses
CR			1
ES		3	2
FR			1
IT	1	3	1
MD			
MX			1
PH			
PT	1	1	1
RO	1	2	
Total	3	9	7
	Entrepreneurial learning or entrepreneurship	ICT - new technologies - digital competences	Environment and climate change
CR			
ES	2	6	2
FR	1	3	
IT	1	3	1
MD		1	
MX			
PH			
PT			1
RO	1	2	1
Total	5	15	5

Continued

Inclusion	Minor topics (14 projects)	Not declared	
			1
	3	8	56
	2	5	26
2	6	9	66
		1	2
			1
			2
1	6	5	32
	1	6	36
3	18	34	222

With reference to quality improvement, we can mention the project “Innovative education in medical and health sciences to improve teaching strategies on the health needs of pregnant and postpartum women” aimed at women during pregnancy and childbirth, students of medical courses, doctors and journalists disseminating health problems, as well as students and their parents in connection with health prophylaxis programs. The project is not yet completed but provides for the creation of an interactive platform to which any person interested in issues concerning pregnancy and post-partum will be able to access and consult concrete information in the form of advice, indications, medical news, photo galleries, online courses, educational videos, interactive lessons and a forum. Clearly the platform will only be managed by healthcare professionals: midwives, nurses, physiotherapists, doctors and paramedics.

An example of a project carried out on health and well-being is “Technology to support older people to stay active and fully integrated in society”, which has developed a training program in the form of blended learning aimed at older people to make them able to live a more active life using technology. As regards the ICT—new technologies and digital skills, we can mention the Interprofessional European eHealth Program in Higher Education (eHealth4all @ EU) project born in response to the strong demand of health professionals to be competent in eHealth. The training course was tested in four European health systems: Germany, United Kingdom (Scotland), Finland and Portugal on over 250 graduate students (master and PhD) from various disciplines such as medicine and nursing but also engineering, economics, law and management.

Topics which have instead been given less space are:

- ethics, religion and philosophy,
- development of key competences,

- civic engagement,
- creation of digital content,
- physical and mental health.

In **Figure 1**, the network shows the connections that have been created between the countries where the main language is neo-Latin, highlighted in green, and the other countries participating in the same projects, highlighted in purple.

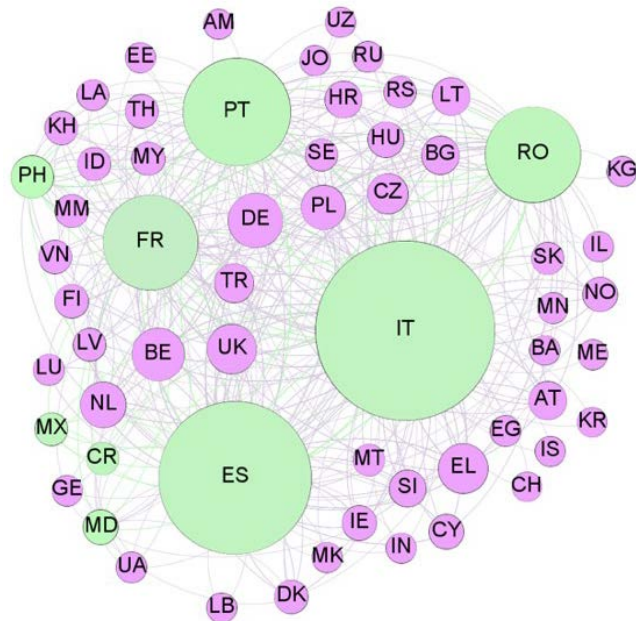


Figure 1. Erasmus + network between neo-Latin speaking countries.

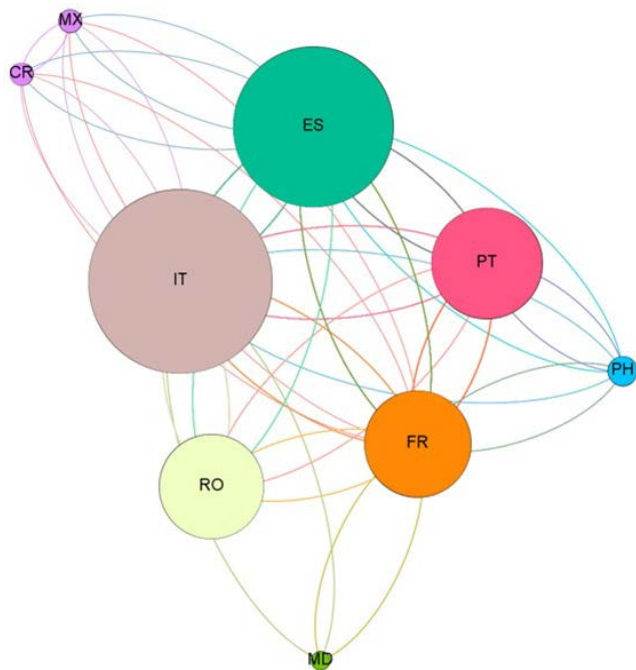


Figure 2. Erasmus + most interconnected countries.

Each node represents a country and the size is directly proportional to the degree of the node itself. The arcs of the graph are of the undirected type and represent the link that connects two nodes participating in the same project. Starting, therefore, from the center of the graph it is possible to observe the countries that have a greater degree of connection, which however decreases as it moves towards the more peripheral areas of the graph, where the nodes for which the developed connections are positioned are positioned in smaller numbers. As you can see, there are no countries with a non-neo-Latin language that stand out for connection with countries with a neo-Latin language.

In **Figure 2**, on the other hand, it is possible to see how the most interconnected countries of the neo-Latin language are Italy, Spain, Portugal, Romania and France.

4. Conclusion

The present study aims to demonstrate how the Erasmus program, mainly known for student mobility, also allows for the creation of links between institutions and the synergistic implementation of innovative projects in the health sector. Network analysis, already used for studies related to this program, albeit with reference to the action regarding student mobility, is confirmed to be simple to apply. In order to provide practical implications, the topics that have been financed in recent years are reported, as well as minority topics that could instead be further developed; with the same purpose, examples of funded projects are reported. The recurring links between countries or institutions can also be useful information in the event that newcomers decide to join a partnership or create one by exploiting the skills and knowledge acquired by experienced members.

Conflicts of Interest

There are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

References

- Böttcher, L., Araújo, N. A., Nagler, J., Mendes, J. F., Helbing, D., & Herrmann, H. J. (2016). Gender Gap in the ERASMUS Mobility Program. *PLOS ONE*, *11*, e0149514. <https://doi.org/10.1371/journal.pone.0149514>
- West, J., Salter, A., Vanhaverbeke, W., & Chesbrough, H. (2014). Open Innovation: The Next Decade. *Research Policy*, *43*, 805-811. <https://doi.org/10.1016/j.respol.2014.03.001>
- De Benedictis, L., & Leoni, S. (2020). *La rete di mobilità degli studenti Erasmus: Topologia e caratteristiche*. La forza delle reti, Aracne.
- Derzsi, A., Derzsy, N., Káptalan, E., & Néda, Z. (2011). Topology of the Erasmus Student Mobility Network. *Physica A: Statistical Mechanics and Its Applications*, *390*, 2601-2610. <https://doi.org/10.1016/j.physa.2011.02.041>
- Segers, J. P. (2013). Strategic Partnerships and Open Innovation in the Biotechnology In-

dustry in Belgium. *Technology Innovation Management Review*, 3, 23-28.

<https://doi.org/10.22215/timreview/676>

Breznik, K., Skrbinjek, V., Law, K., & Dakovic, G. (2013, June). On the Erasmus Student Mobility for Studies. In *Active Citizenship by Knowledge Management & Innovation: Proceedings of the Management, Knowledge and Learning International Conference* (pp. 19-21).

Appendix

Table A1. Coordinating institutions in Erasmus + healthcare projects, divided by country.

Coordinator's country	Coordinating organisation name	N. projects
Austria	VETERINAERMEDIZINISCHE UNIVERSITAET WIEN	1
<i>AT Total</i>		1
Belgio	Centre Neuro Psychiatrique Saint-Martin	1
	Haute Ecole Bruxelles-Brabant (HE2B)	1
	Haute Ecole Libre Mosane	2
	HAUTE ECOLE PAUL-HENRI SPAAK	1
<i>BE Total</i>		5
Bulgaria	LOT-CONSULT EOOD	1
	MULTIPROFILE HOSPITAL FOR ACTIVE TREATMENT AND EMERGENCY MEDECINE PIROGOV	1
	NEW BULGARIAN UNIVERSITY	1
<i>BG Total</i>		3
Repubblica Ceca	Masarykova univerzita	3
<i>CZ Total</i>		3
Germania	Arbeitsgemeinschaft Notfallmedizin Fürth e. V.	1
	BERNHARD-NOCHT-INSTITUT FUER TROPENMEDIZIN	1
	MSH Medical School Hamburg GmbH	1
	PHILIPPS UNIVERSITAET MARBURG	1
	STIFTUNG FACHHOCHSCHULE OSNABRUECK	2
	TECHNISCHE UNIVERSITAET DRESDEN	1
	TECHNISCHE UNIVERSITAET MUENCHEN	1
	WESTSACHSISCHE HOCHSCHULE ZWICKAU	1
<i>DE Total</i>		9
Danimarca	AALBORG UNIVERSITET	1
	FOA - Leder Forum	1
	KOBENHAVNS UNIVERSITET	2
	ODENSE UNIVERSITETSHOSPITAL	1
	SOSU OSTJYLLAND	1
<i>DK Total</i>		6
Estonia	JÄRVAMAA KUTSEHARIDUSKESKUS	1
	TARTU ULIKOOL	2

Continued

<i>EE Total</i>		3
Egitto	ALEXANDRIA UNIVERSITY	1
	ASSIUT UNIVERSITY	1
<i>EG Total</i>		2
Grecia	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	2
	ETHNIKO KAI KAPODISTRIAKO PANEPISTIMIO ATHINON	1
	PANEPISTIMIO DYTIKIS MAKEDONIAS	1
<i>EL Total</i>		4
Spagna	INSTITUT CATALA D'ONCOLOGIA	1
	INSTITUTO DE BIOMECANICA DE VALENCIA	1
	International Network for Health Workforce Education	1
	UNIVERSIDAD COMPLUTENSE DE MADRID	1
	UNIVERSIDAD DE LA IGLESIA DE DEUSTO ENTIDAD RELIGIOSA	3
	UNIVERSIDAD DE MALAGA	1
	UNIVERSIDAD DE MURCIA	1
	UNIVERSIDAD DE SALAMANCA	2
	UNIVERSIDAD PUBLICA DE NAVARRA	1
<i>ES Total</i>		12
Finlandia	TURUN AMMATTIKORKEAKOULU OY	1
<i>FI Total</i>		1
Francia	ASS GROUPE ECOLE SUPERIEURE AGRICULTURE	1
	INSTITUT NATIONAL D'ENSEIGNEMENT SUPERIEUR POUR L'AGRICULTURE, L ALIMENTATION ET L'ENVIRONNEMENT	1
	UNIVERSITE DE BORDEAUX	1
	Université de Paris	1
<i>FR Total</i>		4
Croazia	Agencija za ruralnirazvoj Zadarskežupanije	1
	HP - Hrvatska posta d.d.	1
	HRVATSKI SUMARSKI INSTITUT	1
	MEDITERANSKI INSTITUT ZA ISTRAZIVANJE ZIVOTA	1
	UNIVERSITY OF ZAGREB-FACULTY OF VETERINARY MEDICINE	1
<i>HR Total</i>		5
Ungheria	PECSI TUDOMANYEGYETEM - UNIVERSITY OF PECS	1

Continued

<i>HU Total</i>		1
Irlanda	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	1
	WATERFORD INSTITUTE OF TECHNOLOGY	1
<i>IE Total</i>		2
Italia	Comunità Capodarco di Roma	1
	UNIVERSITA DEGLI STUDI DEL MOLISE	1
	UNIVERSITA DEGLI STUDI DEL PIEMONTE ORIENTALE AMEDEO AVOGADRO	1
	UNIVERSITA DEGLI STUDI DEL SANNIO	1
	UNIVERSITA DEGLI STUDI DELL'AQUILA	1
	UNIVERSITA DEGLI STUDI DI BARI ALDO MORO	1
	UNIVERSITA DEGLI STUDI DI CAMERINO	1
	UNIVERSITA DEGLI STUDI DI FOGGIA	1
	UNIVERSITA DEGLI STUDI DI PADOVA	1
<i>IT Total</i>		9
Giordania	HASHEMITE UNIVERSITY	1
	JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY	1
<i>JO Total</i>		2
Kazakistan	KARAGANDA STATE MEDICAL UNIVERSITY	1
<i>KZ Total</i>		1
Lituania	KAUNO TECHNOLOGIJOS UNIVERSITETAS	1
<i>LT Total</i>		1
Lettonia	BANKU AUGSTSKOLA	1
	REZEKNES TEHNOLOGIJU AKADEMIJA	1
<i>LV Total</i>		2
Montenegro	UNIVERZITET DONJA GORICA PODGORICA	1
<i>ME Total</i>		1
Macedonia del Nord	Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE	1
<i>MK Total</i>		1
Malta	UNIVERSITA TA MALTA	1

Continued

<i>MT Total</i>		1
PaesiBassi	ACADEMISCH ZIEKENHUIS GRONINGEN	1
	EATRIS ERIC	1
	ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM	1
	RIJKSUNIVERSITEIT GRONINGEN	2
	STICHTING EAU FOUNDATION FOR UROLOGICAL RESEARCH	1
	STICHTING FONTYS	1
	UNIVERSITAIR MEDISCH CENTRUM UTRECHT	2
	UNIVERSITEIT MAASTRICHT	2
<i>NL Total</i>		11
Norvegia	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	1
	Norske leger mot atomvapen	1
	UNIVERSITETET I AGDER	1
<i>NO Total</i>		3
Polonia	EDU Research Polska Sp. z o. o.	1
	Fundacja Luminar	1
	Grupa Regionalna Gorskiego Ochotniczego Pogotowia Ratunkowego Grupa Podhalanska	1
	Instytut "Centrum Zdrowia Matki Polki"	1
	INSTYTUT MEDYCYNY PRACY IMIENIA PROF. DRA MED. JERZEGO NOFERA W LODZI	1
	KIKO Educational Solutions Sp. z o. o.	1
	POLITECHNIKA KRAKOWSKA	1
	POLITECHNIKA LODZKA	2
	POLITECHNIKA POZNANSKA	1
	POLITECHNIKA SLASKA	1
	UNIwersytet Jagiellonski	2
	UNIwersytet Medyczny w Lublinie	1
	UNIwersytet Opolski	3
<i>PL Total</i>		17
Portogallo	UNIVERSIDADE DE LISBOA	1

Continued

<i>PT Total</i>		1
Romania	Academia Tehnica Militara Bucuresti	1
	ASOCIATIA NATIONALA de STOMATOLOGIE PEDIATRICA din ROMANIA	1
	FUNDATIA ROMTENS	1
	SC Fit Express International SRL	1
	SPITALUL CLINIC DE URGENTA BUCURESTI	1
	UNIVERSITATEA DE MEDICINA SI FARMACIE GRIGORE T POPA DIN IASI	3
	Universitatea de Medicina, Farmacie, Stinte si Tehnologie George Emil Palade din Tirgu Mures	1
	UNIVERSITATEA DE STIINTE AGRICOLE SI MEDICINA VETERINARA A BANATULUI REGELE MIHAI I AL ROMANIEI DIN TIMISOARA	1
	UNIVERSITATEA DE STIINTE AGRICOLE SI MEDICINA VETERINARA ION IONESCU DE LA BRAD DIN IASI	1
	UNIVERSITATEA LUCIAN BLAGA DIN SIBIU	1
	UNIVERSITATEA TEHNICA GHEORGHE ASACHI DIN IASI	1
	ZIVAC GROUP CENTRAL SRL	1
<i>RO Total</i>		14
Serbia	UNIVERZITET U BEOGRADU	2
	UNIVERZITET U NOVOM SADU	1
<i>RS Total</i>		3
Svezia	BLEKINGE LANS LANDSTING	1
	UNIVERSITETSKANSLERAMBETET	1
<i>SE Total</i>		2
Slovenia	OZARA STORITVENO IN INVALIDSKO PODJETJE DOO	1
	UNIVERZA V LJUBLJANI	1
	Visoka zdravstvena sola v Celju	1
<i>SI Total</i>		3
Slovacchia	Prvá klinika akupunktúry a naturálnej medicíny G. Solára s.r.o.	1
	UNIVERZITA KOMENSKEHO V BRATISLAVE	1
	UNIVERZITA PAVLA JOZEFA SAFARIKA V KOSICIACH	1
	ZILINSKA UNIVERZITA V ZILINE	1

Continued

<i>SK Total</i>		4
Turchia	Akdeniz Kan Hastaliklari Vakfi	1
	ANKARA YILDIRIM BEYAZIT UNIVERSITESI	1
	BILECIK UNIVERSITESI	1
	CANAKKALE ONSEKIZ MART UNIVERSITESI	1
	ESKISEHIR IL AFET VE ACIL DURUM MUDURLUGU (ESKISEHIR AFAD)	1
	GAZI UNIVERSITESI	2
	HACETTEPE UNIVERSITESI	1
	IMKB ZUBEYDE HANIM MESLEKI VE TEKNİK ANADOLU LİSESİ	1
	Saglik Bilimleri Universitesi Antalya Egitim ve Arastirma Hastanesi	1
	TRAKYA UNIVERSITESI	1
<i>TR Total</i>		11
Regno Unito	Equality and Inclusion Partnership	1
	KING'S COLLEGE LONDON	1
	THE UNIVERSITY OF BIRMINGHAM	1
	THE UNIVERSITY OF NOTTINGHAM	2
	UNIVERSITY OF PLYMOUTH	1
<i>UK Total</i>		6
Total Projects		154