The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24

Alper Çalıkoğlu
Glen A. Jones
Yangson Kim *Editors*

Internationalization and the Academic Profession

Comparative Perspectives

Springer

The Changing Academy – The Changing Academic Profession in International Comparative Perspective

Volume 24

The landscape of higher education has in recent years undergone significant change. This has been particular the case for research training, academic life, employment, working conditions and entrepreneurial activities of universities around the globe. The academy is expected to be more professional in teaching, more productive in research and more entrepreneurial in everything. Some of the changes involved have raised questions about the attractiveness of an academic career for today's graduates. At the same time, knowledge has come to be identified as the most vital resource of contemporary societies. The Changing Academy series examines the nature and extent of the changes experienced by the academic profession. It aims to address these changes from an international comparative perspective, focusing at both the higher education system level as well as the STEM fields of science, technology, engineering and mathematics in particular. It explores both the reasons for and the consequences of these changes. The series considers the implications of the changes for the attractiveness of the academic profession as a career and for the ability of the academic community to contribute to the further development of knowledge societies and the attainment of national goals. It provides analyses on these matters drawing initially on available data-sets and qualitative research studies with special emphasis on the international studies of the Changing Academic Profession and the national surveys in STEM fields. Among the themes featured will be: • Relevance of the Academy's Work • Enrolment, graduation and the institutional setting of STEM • Research, development and technology policies with regards to STEM • Internationalization of the Academy Governance and Management • The new generation in the academic profession – the doctoral graduates Editorial Board: Elisabeth Balbachevsky, Department of Political Science, University of Sao Paulo, Brazil Jung Cheol Shin, Department of Education, Seoul National University Ulrich Teichler, International centre for Higher Education research (INCHER), University of Kassel William Cummings, Graduate School of Education and HD, George Washingtion University Akira Arimoto, Kurashiki Sakuyo University, Okayama.

Please contact Astrid Noordermeer at Astrid.Noordermeer@springer.com if you wish to discuss a book proposal.

Alper Çalıkoğlu • Glen A. Jones • Yangson Kim
Editors

Internationalization and the Academic Profession

Comparative Perspectives

Springer

Editors
Alper Çalıkoğlu
Borsa Istanbul Vocational School
Ministry of National Education
Canakkale, Turkey

Glen A. Jones
Ontario Institute for Studies in Education
University of Toronto
Toronto, ON, Canada

Yangson Kim
Research Institute for Higher Education
Hiroshima University
Higashi-Hiroshima, Japan

ISSN 2214-5346 ISSN 2543-0378 (electronic)
The Changing Academy – The Changing Academic Profession in International Comparative Perspective
ISBN 978-3-031-26994-3 ISBN 978-3-031-26995-0 (eBook)
https://doi.org/10.1007/978-3-031-26995-0

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Acknowledgments

The book emerged from the Academic Profession in the Knowledge-based Society (APIKS) project, perhaps the largest international comparative study in the field of higher education. This is a collaborative project involving more than twenty independent national or regional research teams, and we would like to acknowledge the key roles played by Timo Aarevaara and Monica Marquina who co-chair the coordinating body that moves the project forward through collegial processes.

The comparative analysis of research findings in the APIKS project has generally been pursued thematically through international conferences that have provided the foundation for the development of edited books and special issues of academic journals. In December of 2020 the Turkish team organized a major virtual conference focusing on the theme of internationalization, and the papers that appear in this volume emerged from discussions and the creation of international working groups at that very important meeting. We would like to acknowledge the leadership of the Turkish team (Baris Uslu, Fatma Nevra Seggie, Sedat Gumus, and Yasar Kondakci) in initiating this project.

Alison Elizabeth Jefferson, an outstanding doctoral student in higher education at the Ontario Institute for Studies in Education, University of Toronto, played a very important role in copy-editing draft chapters and helping prepare the manuscript for submission. We benefited greatly from her well-honed attention to detail in the editorial process. Her contributions to the project were supported by the Social Sciences and Humanities Research Council of Canada.

Alper's research on the APIKS project has been supported by The Scientific and Technological Research Council of Turkey (TÜBİTAK - Project No: 117K917) and The Unit of Scientific Research Projects at Canakkale Onsekiz Mart University, Turkey (COMU-BAP - Project No: SBA-2017-1093).

Glen's research on the APIKS project has been supported by the Ontario Human Capital Research and Innovation Fund and the Social Sciences and Humanities Research Council of Canada. He would also like to acknowledge the collegial support of Prof. Grace Karram Stephenson.

Yangson's research on the APIKS project has been supported by the Japan Society for the Promotion of Science and she would like to acknowledge the support and mentorship of Prof. Akira Arimoto, Prof. Futao Huang and Prof. Tsukasa Daizen.

Finally, we appreciate the very hard work of the international research teams that contributed chapters to this book. Working within international research teams can be extremely rewarding, but there can also be complex challenges of coordination associated with scholarly collaboration across regions, countries, and cultures. This book is the legacy of successful international scholarly collaboration and partnership.

Contents

Chapter 1
Internationalization and the Academic Profession: Key Concepts and Themes

Glen A. Jones, Alper Çalıkoğlu, and Yangson Kim

Abstract Internationalization has become a key issue in higher education as well as an important research topic in higher education scholarship. This paper provides an overview of research on internationalization focusing on the academic profession. Internationalization was identified as one of the key thematic areas of scholarship within the Academic Profession in the Knowledge-based Society (APIKS) project. The paper provides an overview of the book, including the core comparative research studies conducted by international research teams, and identifies a number of recent shifts and transformation that may be impacting internationalization and the academic profession.

Keywords Internationalization · Academic profession · Academic work · Higher education · Universities

Introduction

Internationalization has become a key theme and an almost ubiquitous goal of higher education systems and institutions worldwide (Altbach, 2016). Defined by Knight (2003, p. 2) as "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education,"

G. A. Jones (✉)
Ontario Institute for Studies in Education, University of Toronto, Toronto, ON, Canada
e-mail: glen.jones@utoronto.ca

A. Çalıkoğlu
Borsa Istanbul Vocational School, Ministry of National Education, Canakkale, Turkey
e-mail: alpercalikoglu@gmail.com

Y. Kim
Research Institute for Higher Education, Hiroshima University, Higashi-Hiroshima, Japan
e-mail: yskim@hiroshima-u.ac.jp

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_1

internationalization is a highly complex, multi-dimensional phenomenon covering a broad swath of transitions and transformations, from curriculum reforms, to increasing student and faculty mobility, to new forms of international partnerships and consortia. This increasing international dimension of higher education is supported by regional and national policies and funding mechanisms (Trilokekar et al., 2020), stimulated by global competition for prestige and resources, and motivated by a plethora of values and goals, ranging from cosmopolitanism to neo-liberalism.

This volume makes a major contribution to the scholarship on internationalization in higher education by focusing on the perceptions and experiences of the academic profession in comparative perspectives. Drawing from data collected by the Academic Professions in the Knowledge-based Society (APIKS) project, the largest comparative international project ever undertaken in the field of higher education (Aarrevaara et al., 2021), the contributors to this volume are uniquely positioned to explore the impact and implications of internationalization on those who play the central role in the teaching and research functions of higher education: the professoriate. With access to data from a common questionnaire administered to members of the academic profession in more than twenty countries, the contributors to this edited volume have conducted comparative studies investigating core themes and questions that are central to the process of internationalization, and in doing so make highly original contributions to a body of scholarship that has been dominated by research focusing primarily on higher education systems, institutions, and students.

The objective of this chapter is to briefly introduce the concept of internationalization and locate this volume within the research literature on the internationalization of higher education. We will then discuss the APIKS project and the international dataset that has allowed the chapter authors to explore important research questions through the analysis of data on faculty perceptions obtained in more than twenty countries. Given that the APIKS data was collected in 2017–18 (with some variation by country), we discuss some of the recent changes, events, and transitions that have significant implications for internationalization, including the emergence of populist political regimes, the return of "big government" and, of course, the realities of a global pandemic. In some respects, given the timing of the APIKS study, the findings presented in this volume might be viewed as a baseline analysis collected just prior to a series of disrupting forces that we recognize have shifted or are shifting key international dimensions of higher education in ways that we do not yet fully comprehend. We conclude the chapter by briefly illuminating how each of the core thematic chapters contributes to the "whole" of the volume.

The Internationalization of Higher Education and the Academic Profession

Internationalization is a multi-dimensional process, and it impacts almost every element or activity associated with higher education. From their origins in Europe, Asia, and North Africa, early institutions of higher education were regional/

international rather than local in scope. These hubs of intellectual activity attracted both students and teachers from far beyond the local environments (Huang, 2014). While universities would later emerge as national institutions funded by governments in order to further the interests of the state, they continued to have a strong international dimension; students, faculty, and knowledge continued to flow across national boundaries (Marginson & van der Wende, 2007).

By the later decades of the twentieth century, internationalization had become an almost ubiquitous dimension within higher education, in part as a response to globalization. The relatively free-flow of capital, communication, transportation, and labour across national borders provided a foundation for an exponential growth in international trade and mobility. Higher education was positioned as a space for the development of the highly educated human resources required in this rapidly changing, increasingly global economic system. The forces of globalization also impacted scholarship and international collaboration. The growth of international research networks was facilitated by increasing access to international transportation, and through the emergence of new information and communication technologies and new mechanisms for knowledge dissemination (Kim, 2009).

As a strategic process, internationalization is impacted by a multitude of factors and based on a diverse range of rationales. Government policies are important drivers of internationalization in some countries, as governments take steps to support student mobility, to support international research collaboration as part of national research and innovation strategies, and/or to encourage the development of "world-class universities." Institutions of higher education frequently develop internationalization policies that encourage and incentivize certain types of activities or outputs. The reasons to support internationalization can vary dramatically (Knight, 2004; Seeber et al., 2016). Increasing the international dimension of curriculum is frequently associated with the notion of internationalization "at home" by creating opportunities for students to learn different cultural perspectives and develop more global understandings (Leask, 2013). International student recruitment can be a major source of institutional revenue in some systems, but international students can also contribute to cross-cultural learning and facilitate international relationships. Multiple rationales underscore international faculty recruitment, faculty mobility, international research collaboration and partnerships, inbound and outbound student mobility, and almost every other activity associated directly or indirectly with internationalization (Huang et al., 2014).

Research on internationalization has become a major area of scholarship within the field of higher education, and systematic reviews have indicated that the direction of attention in this growing area has been evolving (Deardorff et al., 2012). Kehm and Teichler (2007) reveal that academic mobility and institutionalization processes were at the forefront of internationalization studies with the domination of scholars from the United States. Recent studies, however, have addressed topics on internationalization at home and of the curriculum, multicultural issues, transnational delivery of higher education, and online learning as emerging areas in internationalization research (Bedenlier et al., 2018; Yemini & Sagie, 2016). Moreover, the dominating role of the United States (US) and other English-speaking countries

in the field has recently been challenged by studies from other regions, especially from Continental Europe, China, and South America (Kuzhabekova et al., 2015; Yemini & Sagie, 2016). Buckner (2019) notes that even in the Anglophone world there are important regional/national differences in how internationalization is interpreted and positioned, which, in turn, differ from other regions. Hence, the implementation of internationalization has become broadened and diverse both in terms of region and form of practice. Internationalization is a global phenomenon in higher education, but the concept has become an umbrella term for a plethora of activities and processes with both international and distinctly local understandings.

Related literature has also shown that faculty members' perspectives are critical in understanding and implementing internationalization. For instance, Schwietz (2006) posits that attitudes towards internationalization and prior international experiences play a critical role in enhancing faculty involvement in internationalization. Childress (2010) notes the essentiality of organizational structures and institutional networks to encourage faculty for international activities. Friesen (2013) reveals that faculty rationales for internationalization may differ from institutional motivations. Similarly, Li and Tu (2016) confirm that faculty members' intrinsic motivations are critical in expanding international efforts, although environmental factors can also be important. Finally, Calikoglu et al. (2022) indicate that faculty motivations to become involved in internationalization are diverse, and those motivations have academic, institutional, socio-cultural, student, and international development aspects. The authors also note that faculty perspectives toward internationalization can be either stimulated or discouraged through institutional, governmental, national, geo-political, and financial factors.

Despite the growing body of literature regarding the importance of faculty perspectives toward internationalization, one can note that most of these studies appear limited in terms of their scope (e.g., conceptualization or specific practical forms of internationalization) or geographical focus. Here, previous studies based on the Carnegie (e.g., Welch, 2005) and Changing Academic Professions (CAP) (Huang et al., 2014) projects play a vital role in the literature as studies examining the topic through a diverse body of researcher groups, cases, and areas. There is also a growing recognition of the need to consider important national differences in the structure and nature of academic careers in the comparative analysis of the academic profession (Jones & Finkelstein, 2019), including the study of internationalization. Given that the nature of internationalization and its sub-topics are continuing to evolve with diverse challenges around the world, the current volume aims to contribute to the efforts toward linking faculty perspectives to the internationalization of higher education by examining critical areas in internationalization research through the analysis of a unique comparative dataset by teams of scholars from different countries/higher education systems.

The Academic Profession in the Knowledge-Based Society Project

This volume is a product of the Academic Profession in the Knowledge-based Society (APIKS) project, the most recent of a series of international and comparative studies of the academic profession. Given the tremendous transformations in higher education and higher education systems since the last decades of the twentieth century, there has been an increasing interest in understanding the changing nature of academic work and the ways in which these broad changes and transitions have been experienced and understood by those who are on the 'shop floor' of the higher education enterprise. The Carnegie Foundation Survey of the Academic Profession, conducted between 1991 and 1993, was the first international and comparative survey of academics (Altbach, 1996). A collective of national research teams led the development of the Changing Academic Professions (CAP) project, which included a larger group of jurisdictions (19) and an expanded questionnaire, including a series of questions on the international dimension of academic work. CAP project national research teams collected data in the (roughly) 2007–2008 period (Teichler et al., 2013). The CAP project was followed by a series of other regional and national surveys, including regional projects in Europe and Asia (Aarrevaara et al., 2021).

The APIKS project was initiated in 2014 with the objective of developing a comparative project that would survey faculty roughly ten years following the CAP project, but also include a number of new components and foci in recognition of the potential repositioning of higher education and the academic profession in the context of notions of a knowledge society and/or a knowledge economy. Aarrevaara et al. (2021) provided a detailed description of the evolution of the project which would emerge as the largest comparative study of higher education ever undertaken. Over thirty national or jurisdictional research teams have been involved with the project, and well over twenty administered the international questionnaire during the 2017–2020 time period. Data from these common national studies have now been combined to create an international dataset that is stored and overseen by colleagues in Finland.

Aside from its size, one of the unusual features of the APIKS project (like the previous CAP project) is that there is no central project funding. APIKS is essentially a collaboration between national/jurisdictional research teams. The research teams worked together to develop a common questionnaire that would later be translated and administered at the national level. Each research team was funded locally, often through national research funding agencies. The leader of each team is a member of the core governance group for the project. While there is ongoing electronic communication between groups, thematic international conferences focusing on specific elements of the questionnaire have been the major forum for the development of international/comparative analyses. Several of these international conferences took place virtually in the context of the global pandemic.

A thematic conference focusing on the theme of internationalization was organized by the Turkish national team and took place (virtually) in Turkey in December 2020. Conference presentations and other contributions from the collaborative work among each country's team members became the foundation for a special issue of *Yükseköğretim Dergisi/Journal of Higher Education* (Turkey).

At the same time, the conference provided the space for comparative discussions that were foundational to the strategic design of this volume. A discussion of key themes and research questions led to the development of international working teams that co-authored book chapters. Encouraging international and comparative perspectives was foundational to the strategic design and organization of the project. Each of the core chapters involves a systematic analysis of an internationalization issue or theme through an exploration of relevant elements of the international APIKS dataset and other relevant national and international data. Each of these chapters is written by an international team of three or more scholars from different countries and regions that was organically constructed during or shortly after the Istanbul conference. The three co-editors are located in different continents within very different national systems.

The core thematic chapters address essential questions related to internationalization and the academic profession. Each of these chapters draws on the existing research literature in these thematic areas as a foundation for the systematic analysis of the international APIKS dataset to illuminate and discuss key findings, in some cases comparing the experiences of faculty in countries selected because of national system characteristics, comparing and contrasting experiences within regions, or exploring an internationalization theme across all twenty countries represented in the international dataset at the time these studies were completed. We will provide a brief overview of each study later in this chapter.

Recent Shifts and Transformations in the Internationalization of Higher Education

As we have noted, the APIKS international data that is foundational to the analyses presented in this volume was collected during a period beginning in 2017 and therefore provides a snapshot of faculty perceptions of internationalization during this time. While internationalization has never been a static phenomenon and has always been impacted by broader national, international, and global trends, there is little doubt that more recent events and global geo-political shifts have been extremely dramatic and have and will continue to influence the internationalization of higher education.

The rise of new populist governments has challenged either directly or indirectly many of the foundational elements of globalism. The election of Donald Trump as President of the United States in 2016, for example, led to major shifts in American foreign policy (Ashbee & Hurst, 2020) including, but far from limited to, a travel

ban related to several predominantly Muslim countries, an "America first" approach to discussions of global trade that evolved into a trade war with China, and a distrust or repositioning of international organizations such as the United Nations and NATO. All of these policy shifts had important implications for American higher education, but perhaps particularly for internationalization (Douglas, 2021a). Nationalism clearly underscored the Brexit victory in the United Kingdom referendum and the county's withdrawal from the European Union, leaving many lingering questions on a range of key issues, including the future of international research collaboration and partnerships in the context of these shifting relationships (Corbett & Gordon, 2018). In Brazil, the election of Balsonaro's neo-nationalist government had huge implications for that nation's foreign policy and the entire higher education system (Balbachevsky & Albuquerque, 2021). These, and somewhat parallel shifts in other countries, served to disrupt and destabilize global geo-politics, with implications for international faculty and student mobility, and even for the conceptual foundations of internationalism in the face of neo-nationalist movements (Hammond, 2016; Lee, 2016; Lee et al., 2017; Pan, 2021). Some of these shifts have had even broader implications for the positioning of higher education. Douglas notes, "We have entered an era in which neo-nationalists often attack universities as hubs of dissent, symbols of global elitism, and generators of biased research" (Douglas, 2021b, p. 22).

The emergence of a global pandemic in 2019 had immediate implications for the international activities of higher education. In many parts of the world international travel suddenly became impossible. In many countries, higher education transitioned to online education in order to protect the health and safety of students and faculty, and to reduce the spread of disease within broader communities. International projects, partnerships, and conferences were frequently paused in the initial phases of the pandemic, and then re-initiated or resumed through virtual communication media.

The short-term implications of the pandemic on the internationalization of higher education were dramatic, and while the pandemic is far from over as we write this chapter in the spring of 2022, there are signals of longer-term shifts and transitions. The pandemic illuminated systemic inequities within many societies, and within higher education systems. International student mobility appears to have rebounded as travel restrictions have decreased, but markets and patterns may shift given the experience of online education and transitions in the broader geo-political environment. The implications of international travel for the climate crisis may (and should) lead to shifts in international scholarly communication, and in particular the important role that in-person conferences have historically played in the development of international networks and academic collaboration. In short, there may be important changes in internationalization that extend well beyond the current concerns with public health.

We would also note that the pandemic, as well as a number of other related factors, has led to a shift in the role of government in many jurisdictions. There has been a return to "big government" as governments have tried to address the crises and uncertainties associated with the rapidly changing economic realities of the

pandemic. This phenomenon is far from universal, but direct government involvement in the economy has clearly grown in many countries, and with it a sense of increased legitimacy for government steering and/or intervention. Whether "big government" will be sustained post-pandemic, and the implications of this shift, if any, for higher education systems and internationalization, is impossible to predict at this time.

Organization of This Volume: Chapter Contributions

In many ways, the dramatic changes and events discussed above reinforce the importance of the unique analyses of internationalization presented in the chapters of this volume. The APIKS project provides a unique opportunity to compare the perceptions of members of the academic profession across nations using data from a common questionnaire. The core chapters of this book not only make significant contributions to the literature on internationalization in higher education, but they provide us with an important pre-pandemic snapshot, a base-line from which to explore and understand the implications of many of the dramatic changes that we have recently experienced. The next two chapters focus on the institutional context by looking at internationalization in teaching and learning, and issues of governance and incentivization. The following series of papers look at internationalization in relation to characteristics of the profession, such as career stage, international experience, and educational background. The final two core chapters look at internationalization of research.

In "International Dimensions of Teaching and Learning" (Chap. 2), Sophia Shi-Huei Ho, Manja Klemenčič and Edgar Oswaldo González Bello focus on internationalization at home through a comparative analysis of faculty perceptions of, and reported activities related to, internationalization of teaching and learning. They note major differences in faculty responses to these issues by country and region, and the importance of institutional internationalization strategies.

Grace Karram Stephenson, Sude Pekşen, Nicolás Reznik, Maria João Manatos, and Robin Chen explore the relationships between university governance styles and incentives and/or strategies for internationalization. Their paper, entitled "Internationalisation Activities: The Influence of Governance and Management Models in Argentina, Canada, Lithuania, Portugal and Taiwan" (Chap. 3) provides a very unique comparative analysis of relationships between faculty perceptions of university governance elements and institutional internationalization policies in five counties.

The perceptions of more junior members of the academic profession concerning internationalization is the focus of attention of Chap. 4. In "Early Career Academics and Internationalization," Alenka Flander, Pamela Guzmán, Carole Probst Schilter, Paula Tulppo, and Chang Da Wan analyze and compare the responses from early career faculty with the responses from their more senior colleagues in sixteen countries. They focus on differences between junior and senior career academics in

international training background and in international work activities (teaching, research, and external engagements).

In "International staff and diversity in missions" (Chap. 5), Maarja Beerkens, Anna Panova, and Pekka Vasari compare responses between "international" staff, individuals who hold citizenship in a country other than one they are working in, and "local" staff who are citizens of the country of their employment. Focusing on faculty responses from six countries, they explore whether there are differences between these two groups on a range of issues, including research emphasis and local engagement.

Instead of looking at citizenship, Futao Huang, Liudvika Leišytė, Aliya Kuzhabekova and Sara Diogo compare responses from faculty who obtained their final degree or a postdoctoral experience in a foreign country with those who did not. In "Academics with International Educational and Research Experiences: Differences across countries?" (Chap. 6), the authors analyze data from respondents in seven countries in order to determine whether there are differences in characteristics and academic activities between these two groups of academics.

Sergio Celis, Fatma Nevra Seggie, and Norzaini Azman are also interested in the background educational experiences of academics, but their focus is on semi-peripheral systems of higher education and the comparison is between faculty who obtained their doctoral degree from a core country and those who obtained their degree from a country classified as peripheral or semi-peripheral. Noting the dramatic imbalances in power and prestige between the Global North and the Global South, their paper, "Internationalization Across Global Divides: Comparisons Between Core and Semi-Periphery Doctoral Holders in Chile, Malaysia and Turkey" (Chap. 7), explores differences between countries in the employment of faculty educated in core countries, as well as analyzing differences between faculty educated within these very different geo-graphic and economic spheres in terms of time allocation, preferences, and overall satisfaction.

The next two papers focus on the internationalization of research. Drawing on the literature focusing on discipline differences, Sebastian Kocar, Daniela Véliz, Lars Geschwind, and Pío Marshall explore differences in response by faculty in different discipline areas in terms of international research activities. Their paper, entitled "Internationalization of research across disciplines in practice: Global similarities and differences" (Chap. 8), analyzes data from twenty countries and notes important differences by broad discipline categories and jurisdiction.

In their paper "International research collaboration practices and outcomes: A comparative analysis of academics' international research activities" (Chap. 9), Olivier Bégin-Caouette, Timo Aarrevaara, Anna-Lena Rose, and Akira Arimoto analyze the relationship between international research collaboration activities and outcomes in five countries. Conceptually gounded in the theory of scientific and technical human capital, their study examines whether practices and outcomes are correlated.

The concluding chapter, entitled "The comparative study of internationalization and the academic profession: Challenges and possibilities" (Chap. 10) reviews the core findings and illuminates how these studies contribute to the broader literature

on internationalization and the academic profession. Yangson Kim, Glen A. Jones, and Alper Çalıkoğlu draw important conclusions emerging from the volume and raise important questions for further study.

All of these papers make important contributions to the study of internationalization and the academic profession. While internationalization has become a very important research topic within the field of higher education, most of the emphasis has been on issues of student mobility (and the student experience), system-level policy, and institutional strategy and inititiatives. University professors clearly play a key role within the institutionalization process, especially given their central positioning in the teaching and research activities of universities, but the perceptions and activities of academics has received surprising little attention within the research literature. All of the chapters in this book explore extremely important research questions on internationalization through original and insightful comparative analyses.

References

Aarrevaara, T., Finkelstein, M. J., Jones, G. A., & Jung, J. (2021). The academic profession in the knowledge-based society (APIKS): Evolution of a major comparative research project. In T. Aarrevaara, M. J. Finkelstein, G. A. Jones, & J. Jung (Eds.), *Universities and the knowledge society: The nexus of National Systems of innovation and higher education* (pp. 49–64). Springer.

Altbach, P. G. (Ed.). (1996). *The international academic profession: Portraits of fourteen countries*. Princeton.

Altbach, P. G. (2016). *Global perspectives on higher education*. Johns Hopkins University Press.

Ashbee, E., & Hurst, S. (2020). The trump foreign policy record and the concept of transformational change. *Global Affairs, 6*(1), 5–19.

Balbachevsky, E., & Albuquerque, J. A. G. (2021). Bolsonaro's Brazilian neo-nationalism and universities. In J. A. Douglas (Ed.), *Neo-nationalism and universities: Populists, autocrats, and the future of higher education* (pp. 239–556). Johns Hopkins University Press.

Bedenlier, S., Kondakci, Y., & Zawacki-Richter, O. (2018). Two decades of research into the internationalization of higher education: Major themes in the Journal of Studies in International Education (1997-2016). *Journal of Studies in International Education, 22*(2), 108–135.

Buckner, E. (2019). The internationalization of higher education: National interpretations of a global model. *Comparative Education Review, 63*(3), 315–336.

Calikoglu, A., Lee, J. J., & Arslan, H. (2022). Faculty international engagement: Examining rationales, strategies, and barriers in institutional settings. *Journal of Studies in International Education, 26*(1), 61–79.

Childress, L. K. (2010). *The twenty-first century university: Developing faculty engagement in internationalization*. Peter Lang.

Corbett, A., & Gordon, C. (2018). Brexit and higher education research. In P. Diamond, P. Nedergaard, & B. Rosamond (Eds.), *The Routledge handbook of the politics of Brexit* (pp. 103–117). Routledge.

Deardorff, D. K., de Wit, H., Heyl, J. D., & Adams, T. (Eds.). (2012). *The SAGE handbook of international higher education* (1st ed.). Sage.

Douglas, J. A. (2021a). Trumpian nationalism and American universities. In J. A. Douglas (Ed.), *Neo-nationalism and universities: Populists, autocrats, and the future of higher education* (pp. 61–91). Johns Hopkins University Press.

Douglas, J. A. (2021b). Neo-nationalism and universities: A conceptual model. In J. A. Douglas (Ed.), *Neo-nationalism and universities: Populists, autocrats, and the future of higher education* (pp. 22–42). Johns Hopkins University Press.

Friesen, R. (2013). Faculty member engagement in Canadian university internationalization: A consideration of understanding, motivations and rationales. *Journal of studies in international Education, 17*(3), 209–227.

Hammond, C. D. (2016). Internationalization, nationalism, and global competitiveness: A comparison of approaches to higher education in China and Japan. *Asia Pacific Education Review, 17*(4), 555–566.

Huang, F. (2014). The internationalisation of the academic profession. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 1–21). Springer Netherlands.

Huang, F., Finkelstein, M., & Rostan, M. (Eds.). (2014). *The internationalization of the academy: Changes, realities and prospects*. Springer.

Jones, G. A., & Finkelstein, M. (2019). Looking across systems: Implications for comparative, international studies of academic work. In M. Finkelstein & G. A. Jones (Eds.), *Professorial pathways: Academic careers in global perspective* (pp. 265–290). Johns Hopkins University Press.

Kehm, B. M., & Teichler, U. (2007). Research on internationalisation in higher education. *Journal of Studies in International Education, 11*(3/4), 260–273.

Kim, T. (2009). Shifting patterns of transnational academic mobility: A comparative and historical approach. *Comparative Education, 45*(3), 387–403.

Knight, J. (2003). Updated internationalization definition. *International Higher Education, 33*, 2–3.

Knight, J. (2004). Internationalization remodeled: Definition, approaches and rationales. *Journal of Studies in International Education, 8*(1), 5–31.

Kuzhabekova, A., Hendel, D. D., & Chapman, D. W. (2015). Mapping global research on international higher education. *Research in Higher Education, 56*, 861–882.

Leask, B. (2013). Internationalizing the curriculum in the disciplines—Imagining new possibilities. *Journal of Studies in International Education, 17*(2), 103–118.

Lee, J. J. (2016). Neo-nationalism: Challenges for international students. *International Higher Education, 84*, 23–24.

Lee, J., Jon, J.-E., & Byun, K. (2017). Neo-racism and neo-nationalism within East Asia: The experiences of international students in South Korea. *Journal of Studies in International Education, 21*(2), 136–155.

Li, B., & Tu, Y. (2016). Motivations of faculty engagementin internationalization: A survey in China. *Higher Education, 71*(1), 81–96.

Marginson, S., & van der Wende, M. (2007). *Globalisation and higher education*. OECD education working papers, no. 8. OECD Publishing.

Pan, S. (2021). Reconceptualing 'internationalisation' in higher education: The case of Hong Kong. *Higher Education Quarterly, 75*(3), 48–499.

Schwietz, M. S. (2006). Internationalization of the academic profession: An exploratory study of faculty attitudes, beliefs and involvement at public universities in Pennsylvania. (doctoral dissertation).

Seeber, M., Cattaneo, M., & Huisman, J. (2016). Why do higher education institutions internationalize? An investigation of the multilevel determinants of internationalization rationales. *Higher Education, 72*(5), 685–702.

Teichler, U., Arimoto, A., & Cummings, W. (Eds.). (2013). *The changing academic profession: Major findings of a comparative study*. Springer.

Trilokekar, R. D., Jones, G. A., & Tamtik, M. (2020). Introduction: The emergence of international education as public policy. In M. Tamtik, R. D. Trilokekar, & G. A. Jones (Eds.), *International education as public policy in Canada* (pp. 3–25). McGill-Queen's University Press.

Welch, A. (Ed.). (2005). *The professoriate: Profile of a profession*. Springer.

Yemini, M., & Sagie, N. (2016). Research on internationalization in higher education—Exploratory analysis. *Perspectives: Policy and Practice in Higher Education, 20*, 90–98.

Glen A. Jones is Professor and Director of the Centre for the Study of Canadian and International Higher Education, Ontario Institute for Studies in Education (OISE), University of Toronto. His research focuses on higher education governance, systems, policy and academic work. Recent co-edited or co-authored books include *Professorial Pathways: Academic Careers in a Global Perspective* (Jones & Finkelstein, 2019), *International Education as Public Policy in Canada* (McGill-Queen's, 2020), *Universities and the Knowledge Society: The Nexus of National Systems of Innovation and Higher Education* (Springer, 2021), and *University Governance in Canada: Navigating Complexity* (McGill-Queen's, 2022). He is a former dean of OISE, and he has received numerous awards for his research, including an honorary doctorate (University of Manitoba).

Alper Çalıkoğlu is a researcher in Turkey. His research interests include the internationalization of higher education, the academic profession, and higher education governance and management. His recent articles related to internationalization and the academic profession include Faculty international engagement: Examining rationales, strategies and barriers in institutional settings (with Jenny J. Lee and Hasan Arslan, Journal of Studies in International Education, 2022) and Changing patterns of international academic mobility: Experiences of Western-origin faculty members in Turkey (with Fatma Nevra Seggie, Compare: A Journal of Comparative and International Education, 2021). Based on articles from the Academic Profession in the Knowledge-Based Society (APIKS) project, he has co-edited a special issue on internationalization in the Journal of Higher Education, Turkey. He has also served as an administrative board member of the Association for Higher Education Studies (YÖÇAD) in Turkey.

Yangson Kim is Associate Professor of Research Institute for Higher Education at Hiroshima University in Japan. Her research focuses on the academic profession, internationalization of higher education, research productivity and collaboration, institutional context and governance of higher education, and comparative higher education in Asia-Pacific countries. Her recent co-authored articles and book chapters include *Being Academic: How Junior Female Academics in Korea Survive in the Neoliberal Context of a Patriarchal Society* (Higher Education, 2021), *Junior Female Academics: Experiences and Challenges* (Japan Documents, 2021), and *International Faculty Members in China, Japan, and Korea: Their Characteristics and the Challenges Facing Them* (Edward Elga, 2022). She had co-edited a special issue on *the Research and Teaching Nexus of Academics in the New Era* (Higher Education Forum, 2020).

Chapter 2
International Dimensions in Teaching and Learning

Sophia Shi-Huei Ho, Manja Klemenčič, and Edgar Oswaldo González Bello

Abstract With the spread of globalization, the need to equip *all* students in higher education with international, intercultural, and global competencies has become more pronounced. International mobility has long been the preferred practice to achieve this. However, despite the continuous increases in international education, the limits on student mobility are undisputed. This is how internationalization at home became a policy priority. One of the most direct and impactful mechanisms of internationalization at home is through teaching, specifically through emphasizing international perspectives and content in course teaching. In this chapter, we analyze international dimensions in teaching and learning by comparing survey data from

Using CRediT - Contributor Roles Taxonomy, the co-authors of this chapter performed the following roles: Sophia Shi-Huei Ho was the primary responsible for formal analysis of data, contributed to methodology, data interpretation, and to writing of the original draft, editing, and proofreading. Manja Klemenčič was the primary responsible for writing the original draft, review and editing, and contributed to methodology and to interpretation of findings. Edgar Oswaldo González Bello was the primary responsible for the interpretation of findings and contributed to writing and to methodology. All co-authors jointly conceptualized the chapter. The division of intellectual property rights on authorship is equal among the three co-authors with Sophia Shi-Huei Ho as first author.

S. S.-H. Ho (✉)
University of Taipei, Taipei, Taiwan
e-mail: shihuei@utaipei.edu.tw

M. Klemenčič
University of Harvard, Cambridge, MA, USA

University of Ljubljana, Ljubljana, Slovenia
e-mail: manjaklemencic@g.harvard.edu

E. O. G. Bello
University of Sonora, Sonora, Mexico
e-mail: edgar.gonzalez@unison.mx

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_2

academics' self-reported behaviors and perceptions. This study is guided by two research questions: (1) How do countries compare according to academics' emphasizing international perspectives and content in teaching? and (2) How do the internationalization practices impact the internationalization of the curriculum across countries? The chapter utilizes the survey data of academic staff acquired within the global research network APIKS (Academic Profession in Knowledge-based Society) with a geographic focus involving 20 countries from three world regions. Our findings point to notable differences between countries and world regions in academics' implementation of international perspectives or content in their course teaching.

Keywords APIKS · Internationalization of the curriculum · Internationalization strategy · Outcomes of internationalization

Introduction

Internationalization of higher education is seen as one of the key markers of quality higher education. Student mobility, recruitment of international students and staff, and international research collaboration have long been held as important aims and key indicators of internationalization of higher education (Huang, 2014). Other themes have also emerged, such as academic mobility and international knowledge transfer (Huang, 2014). With the spread of globalization, the need to equip *all* students with international, intercultural, and global competencies have become more pronounced. This is to fulfill one of the purposes of higher education as "as the key engines of human resource development and ultimately their economic competitiveness" (Huang, 2014, p.1). Despite the continuous increase in international education, both in terms of mobile degree students and short-time mobile students, the limits to student mobility are undisputed. It is unlikely that most of the student population in any country will benefit from study abroad opportunities despite increases in funding and increased offers of mobility programs. This is how internationalization at home became a policy priority. Internationalization at home enables the development of international, intercultural, and global competencies for students who do not engage in mobility programs. Practices of internationalization at home also more purposefully engage incoming foreign students.

Internationalization at home is an umbrella term to describe the variety of instruments and activities to enable all students, regardless of whether they participate in study abroad programs or not, to develop international, intercultural, and global competencies (Leask et al., 2013). One such instrument of internationalization at home is the internationalization of the curriculum. This too has several dimensions, including measures whereby academics emphasize international perspectives and content in course teaching. Another practice includes international modules as part of study programs offered by the departments.

In this chapter, we focus specifically on international dimensions in teaching as the most direct measure of internationalization of the curriculum and thus of internationalization at home. We are interested in academics' behaviors in terms of their emphasizing international perspectives and content in teaching, comparing these behaviors across countries in different world regions. We also compare academics' observations of the two indirect indicators of internationalization of the curriculum: the increase in the number of incoming international undergraduate students, and the presence of international graduate students. Furthermore, we are interested in understanding how different internationalization practices at a higher education institution influence the international dimension in teaching. Does a clear internationalization strategy at an institution positively impact academics' propensity to emphasize international perspectives and content in teaching? Our research is guided by two research questions: (1) How do countries compare according to academics' emphasis of international perspectives and content in teaching? and (2), How do internationalization practices impact the internationalization of the curriculum across countries? We utilize survey data of academic staff acquired within the global research network, Academic Profession in Knowledge Societies (APIKS), with the geographic focus involving 20 countries from three world regions (APIKS – IDB, 2021).

Academics' insights on this topic are relevant since academic staff are one of the key agents of internationalization (Brotherhood et al., 2020). Academics have the capability to drive internationalization by directly implementing the desired policy measures, such as emphasizing international perspectives and content in teaching. Academics can also stall internationalization processes if they lack the capability to implement the policy measures or are otherwise unwilling to do so. The existing studies of the internationalization of curriculum focus mostly on the analysis of policies and practices at the national, institutional, or study-program level (Childress, 2010; Jones & Killick, 2013). The approach taken in our study aligns with the work conducted by Coates et al. (2014) included in the edited volume *The Internationalization of the Academy: Changes, Realities and Prospects* (Huang et al., 2016). The survey data from the country studies conducted as part of the APIKS survey offers first-hand reports from academic staff on their actual behavior, i.e., how likely they are to include international perspectives or content into course teaching, as well as their perceptions of internationalization practices, such as incoming student mobility and presence of international graduate students. The APIKS data we utilize in our study also has a unique geographic reach involving survey data from 20 countries from three world regions: the Americas, Asia, and Europe.

In the remainder of the chapter, we first review the literature on the internationalization of the curriculum and international dimensions in teaching to locate our research within broader scholarly conversations. Next, we describe the methodology of our study which focuses on academics' agentic behavior with respect to international dimensions in teaching, and their perceptions of other internationalization practices. In the section on findings, we present data from international

comparative analysis on the two research questions. Our conclusion summarizes the main findings of this international comparative research on the academics' perspectives on the internationalization of the curriculum.

Review of Literature

Internationalization of the curriculum has come to the forefront of the internationalization efforts in the report by the Organization for Economic Cooperation and Development (OECD) (van der Wende, 1996). Over time it has become one of the central concepts and an essential component of *internationalization at home*, which is part of the internationalization of higher education (Leask et al., 2013; Leask, 2015). Beelen and Leask (2011, p.5) define internationalization at home not as an aim or a didactic concept, but rather as a set of instruments and activities at a home institution that aims to develop international, intercultural, and global competencies in all students enrolled at that institution, regardless of whether they engage in mobility programs abroad or not. Internationalization of curriculum can thus be considered as one of the instruments of internationalization at home specifically and of internationalization of higher education more broadly. Practices of internationalization at home also more purposefully engage incoming foreign students and international graduate students. Hence, the presence of such students can help reinforce the objectives of internationalization at home.

Internationalization of the curriculum refers to international, intercultural, and global dimensions in higher education curricula. It encompasses, first and foremost, the practices of curriculum development inclusive of international, intercultural, and global perspectives both in content and in teaching and learning strategies (Clifford, 2013). These practices as well as the student learning outcomes that show improved international, intercultural, and global competencies are rather difficult to measure. However, there has been pressure on higher education institutions to measure and quantify the inputs and outputs of internationalization (Brandenburg & de Wit, 2011, in Aškerc Zadravec, 2021). Therefore, more quantifiable measures have been introduced to determine the extent of internationalization of the curriculum in a specific institution, department, or study program (Aškerc Zadravec, 2021). The markers of internationalization of the curriculum nowadays include not only curricular content and teaching and learning approaches inclusive of international, intercultural, and global perspectives, but also other indicators. Such indicators include the presence of international visiting professors offering courses, recruitment of academic staff from foreign countries, number of courses taught in foreign languages, and enrollment of international visiting students or international degree students (Aškerc Zadravec, 2021; Çalikoglu, 2018). Still, the most conclusive and decisive indicator of internationalization of the curriculum remains the academics' emphasis on international perspectives and content in their course teaching. Therefore, in this study, academics' emphasis on international perspectives and content in their course teaching is our prime dependent variable, but we also

consider the observed increases in foreign students and recruitment of foreign academic staff as dependent variables.[1]

What are the drivers and rationales of the internationalization of the curriculum? How is the internationalization of the curriculum achieved at a higher education institution? Leask and Bridge (2013) suggest that internationalization of the curriculum is highly "context dependent" and varies across study programs and disciplines, institutions, and countries (cited in Leask et al., 2013, p. 188). This means that there is likely a variety in the presence of the markers of internationalization of the curriculum mentioned earlier, and that differences can exist within institutions (based on disciplinary differences and priorities), and between institutions (based on political, economic, cultural influences).[2] Some institutions or study programs will emphasize more or less curriculum development, other institutions or study programs might put a greater or lesser emphasis on recruitment of foreign teaching staff (visiting or permanent) or recruitment of international students (visiting or degree). The institutional rationales and goals for internationalization are recorded in institutional strategies, in particular institutional strategies on internationalization.

Having a clear institutional strategy for internationalization may create enabling conditions for internationalization of the curriculum. However, we must consider academics' agentic capabilities in implementing these institutional policies and guidelines or not (Gopaul et al., 2016). Osakwe (2017) highlights that administrative support is needed to ensure the professional development of academics to be prepared to integrate international perspectives in their courses. There is ample research that reports difficulties in engaging academic staff in the processes of internationalization of the curriculum (Childress, 2010; Egron-Polak & Hudson, 2010; Leask & Beelen, 2010; Leask, 2015; Osakwe, 2017; Stohl, 2007). Additional challenges are posed by the established pedagogical traditions in the different disciplines. Disciplines have different approaches, and indeed different academic cultures, when it comes to internationalization, international cooperation, and/or including international content and perspectives in course teachings (Osakwe, 2017; Stohl, 2007). Part of the problem is a lack of understanding by academics about what internationalization of the curriculum means within their disciplinary and institutional contexts, or not feeling responsible or having the capabilities to implement internationalization in their courses (Stohl, 2007).

The institutional policies and strategies on the internationalization of teaching may have positive effects but cannot guarantee implementation by academics. The policy may or may not develop specific support measures or incentives for

[1] Another relevant measure on international dimensions in teaching and learning would be students' reported course learning and transcripts from higher education institutions in participating countries. However, these data belong to students' privacy and are not easily obtained in the academic databases of HEIs. Therefore, given the size of the survey population we have not included this measure in our analysis.

[2] In our study we focus exclusively on intercountry comparisons and do not account for interdisciplinary variations.

academics to do so. Even if there are explicit goals for the internationalization of the curriculum stated in an institutional strategy, the implementation might now be fully followed by all academics, or it might be followed by more academics in some study programs than others. The discrepancy between institutional strategies and the actual implementation of these strategies is a common feature in higher education (as it is in other social institutions). The main explanation lies in the agentic capabilities of key actors responsible for implementation, especially academics as in the case of implementation of international dimensions in teaching and learning.

Nevertheless, we can hypothesize that the presence of a clear institutional strategy on internationalization increases the likelihood of seeing the outcomes of internationalization in the emphasis on international content and perspectives in course teaching, as measured in this study, as well as other outcomes of internationalization, such as an increased presence of international students and international academics. We test this hypothesis in the analysis below and measure how other institutional conditions, such as presence of international mobile students or international graduate (degree) students (independent variables), impact the internationalization of the curriculum. We understand that the institutional strategies continue to evolve following the changes in the rationales for internationalization and specific goals that the institutions set for themselves. For example, the rationales for internationalization of the curriculum can be "preparing graduates for a globalized world" or "developing intercultural competence" in students (Leask et al., 2013; Leask, 2015). The prioritized measures to achieve this can be an internationally diverse student body, internationalized academic staff, international modules in study programs, international content and perspectives in teaching, or some combination.

The institutional priorities for the internationalization of teaching and learning are reflected in the broader goals for the internationalization of higher education in a specific country. Huang (2014) reports that the internationalization of the academic profession has reflected the rationales for internationalization in a country: in countries that seek to become internationalization centers, it is more closely linked to commercial activities, while in peripheral countries, it is more linked to improving academic quality through internationalization of teaching and research. Countries can be categorized into centers and peripheries based on their civilizational and economic attraction (Klemenčič, 2017). Language, especially in non-English-speaking countries, also plays a role, especially in the internationalization of teaching and learning (Coates et al., 2014; Lee et al., 2021).

Finally, this study contributes to the growing literature on academic profession by comparing the behaviors and experiences of academics across countries and world regions and explaining the changes in the academic profession and conditions of academic work. We focus on the issue of internationalization of the academic profession which is the focus of the present volume to which our study contributes. Our findings can be also compared to the studies which were based on the Changing Academic Profession (CAP) project conducted in 2007 which is a predecessor to

the APIKS project (Coates et al., 2014; Aarrevaara et al, 2014; Huang, 2015; Kwiek, 2014; Aarrevaara et al., 2013), and other related studies. Through the analysis of the data from these two surveys, we can understand the changes in higher education in the process of internationalization of teaching and learning, as well as its impact and relevance on academics' professional development.

Specifically analyzing data on the question "In your courses, you emphasize international perspectives or content", Coates et al. (2014) found the highest responses (approximately two-thirds and greater) from academics in seven countries:

> Highest rate of response was from Portugal (where 81% of academics strongly agreed or agreed that they emphasized international perspectives), with Mexico, Korea, Hong Kong, Australia, Norway, and the United Kingdom also having at least 67% of their academics strongly agreeing or agreeing. The lowest responses came from Japan and Finland (51%), the United States and Brazil (53%), and Argentina (58%). (p. 112).

Coates et al. (2014, p. 112) sought to distinguish between the trends among English-speaking and non-English-speaking countries, but they also suggested that the interpretation of the result was "not straightforward"; especially when a country, such as Portugal — a non-English-speaking country — scored so high.

In a comparison between countries in Europe (Austria, Finland, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Switzerland, and the United Kingdom), Kwiek (2014) reported that 64% of full-time academics emphasize international perspectives or content in their courses. Higher percentages were achieved in countries such as Ireland and Portugal, unlike Poland and Germany where this perspective was least developed. In Finland, only half of the teachers emphasized this perspective (Aarrevaara et al., 2014). In the Asian continent, more Korean academics reported having integrated international perspectives and content into their teaching than in China or Japan (Huang, 2015). In the Americas, especially considering México, Brazil, Chile, and excluding the United States and Canada, the internationalization of the curriculum has had heterogeneous results and the main actions have been shared programs and degrees, and co-tutorials between academics (Didou, 2017).

Researchers point to different factors having a positive influence on academics' emphasizing of international perspectives and content in their courses. In the European context, Locke (2013) suggests that the higher education institutions in England where research activities are carried out with greater intensity are more likely to emphasize international perspectives or content in their courses. The emphasis on international content and perspectives was also more frequently reported among academics from the departments of engineering and technology (Locke, 2009). In the case of Poland, Kwiek (2017) found that internationalized teaching was more pronounced by full-time professors in contrast to junior academics. McGinn et al. (2013), who analyzed a sample of academics from 19 countries participating in CAP, found that there were significant differences between national and immigrant academics; the latter were more likely to emphasize international perspectives and content.

Methodology and Methods

Addressing the research question of how countries compare according to academics' emphasizing international perspectives and content in teaching, we investigate the occurrences in the internationalization of the curriculum as self-reported behaviors by academic staff in different countries. We focus here specifically on the academics' reported behavior responding to the APIKS survey question, "In your courses, you emphasize international perspectives or content".

We also measure two indirect indicators of the internationalization of the curriculum: 1) the increase in the number of international students (survey question "Since you started teaching, the number of international students has increased"); and 2) the presence of international graduate students (survey question "Currently, most of your graduate students are international"). As discussed earlier, the presence of international students in the classroom can reinforce internationalization at home. As such, these two variables have also been identified in the literature as indirect indicators of the internationalization of the curriculum. When having international students in the classroom, academics can draw on their specific knowledge and experiences from their home countries as a resource to emphasize international perspectives. Having international students present in the classroom can also serve as a "living laboratory" for all students developing international and intercultural competencies. This happens especially in-class activities that include collaborative (team) assignments. However, it should be emphasized that, in our study, two variables reflect academics' subjective perception of the situation, not objective measures of international students' enrollment at their institution. It is possible that such subjective perceptions don't align with actual institutional measures.

We explore which internationalization practices have a positive impact on the internationalization of the curriculum. Specifically, we measure the correlation between six internationalization practices as independent variables and the academics' reported behaviors emphasizing international perspectives and content in course teaching as the dependent variable. We measures academics' perception on the following six internationalization practices: (1) existence of a clear institutional internationalization strategy (survey question: "Your institution has a clear strategy for internationalization; (2) exchange programs for students (survey question: "Your institution provides various international exchange programs for students"); (3) funding and opportunities for research abroad (survey question: "Your institution provides various opportunities/funding for faculty members to undertake research abroad"); (4) funding and opportunities for visiting international students (survey question "Your institution provides various opportunities/funding for visiting international students"); (5) funding and opportunities for visiting international scholars (survey question "Your institution provides various opportunities/funding for visiting international scholars"; and (6) recruitment of faculty members from abroad (survey question "Your institution encourages the recruitment of faculty members from foreign countries").

Furthermore, we also investigate the correlation between the six internationalization practices and all three dependent variables that, in our view, indicate internationalization of the curriculum: academic staff emphasizing international perspectives or content in teaching; observed increase in the number of international students; and observed the high presence of international graduate students. Based on the existing literature, our working hypothesis here is that a presence of a clear institutional strategy on internationalization increases the likelihood of the outcomes of internationalization in terms of the emphasis on international content and perspectives in course teaching as measured in this study, but also other outcomes of internationalization such as an increased presence of international students and international academics in the respective institution.

To verify the research hypotheses, we utilized the scale developed by the Academic Profession in the Knowledge-based Society (APIKS) survey to measure the perception of selected variables by university academics in 20 countries (APIKS-IBD, 2021). APIKS is an international and comparative study, which is the third wave after the Changing Academic Profession (CAP) survey in 2007 and the Carnegie 1992 projects (Höhle & Teichler, 2013; Teichler et al., 2013), aiming to understand the creation and emergence of the knowledge society, comparing academics' changing working conditions across the world. The subjects of this study are academics working at higher education institutions in 20 countries, including Canada, Chile, Argentina, Mexico, Croatia, Estonia, Finland, Germany, Portugal, Russia, Slovenia, Sweden, Switzerland, Turkey, Lithuania, Taiwan, Japan, South Korea, Malaysia, and Kazakhstan. A total of 42,413 samples were analyzed. In this study, we first use descriptive statistical analysis to analyze and compare the international dimensions in 20 participating countries and find out the factors that influence university internationalization in teaching and curriculum. Pearson product-moment correlation and multiple stepwise regression were adopted to clarify the relationship between these factors, and explain the relevant factors that most affect internationalization, while academics' courses emphasize international perspectives or content. We have also utilized the 2007 CAP data set for conducting the longitudinal comparison. However, we could not perform longitudinal analysis for all countries since not all countries were included in both CAP and APIKS studies.

Findings

In this section we present data and findings on the research questions. First, we present the findings on the occurrences in internationalization of the curriculum through analysis of data on the academics' reported behavior emphasizing international perspectives and content in teaching which is a direct measure of internationalization of the curriculum. We also compare data on the two indirect indicators of the internationalization of the curriculum: the increase in the number of international students and the presence of international graduate students. Second, we explore

how internationalization practices correlate with the internationalization of the curriculum. We first compare the observed internationalization practices among the countries. Then, we measure the correlation between the six internationalization practices and the internationalization of the curriculum.

International Comparison of Internationalization of the Curriculum

Our data on the occurrences of internationalization of the curriculum as reported behavior by academic staff to emphasize international perspectives or content in teaching points to notable differences between the 20 countries. The highest reported emphasis on international content or perspectives in course teaching is among academic staff from Turkey, Kazakhstan, Portugal, Mexico, and Chile, and the lowest from Germany and Japan (see Fig. 2.1).

In terms of regional differences, the Americas scored above the global average with Mexico and Chile above the regional and global average. The Asian countries' average score is just slightly below the global average, and Kazakhstan and Malaysia scored above the global average. An Asian country with a very low reported score is Japan. The average score among the European countries is the lowest among the three world regions. Among the European countries, five scored above the global average: Turkey, Portugal, Slovenia, Estonia, and Croatia. Also, some of the countries with the lowest reported behavior of including international content and

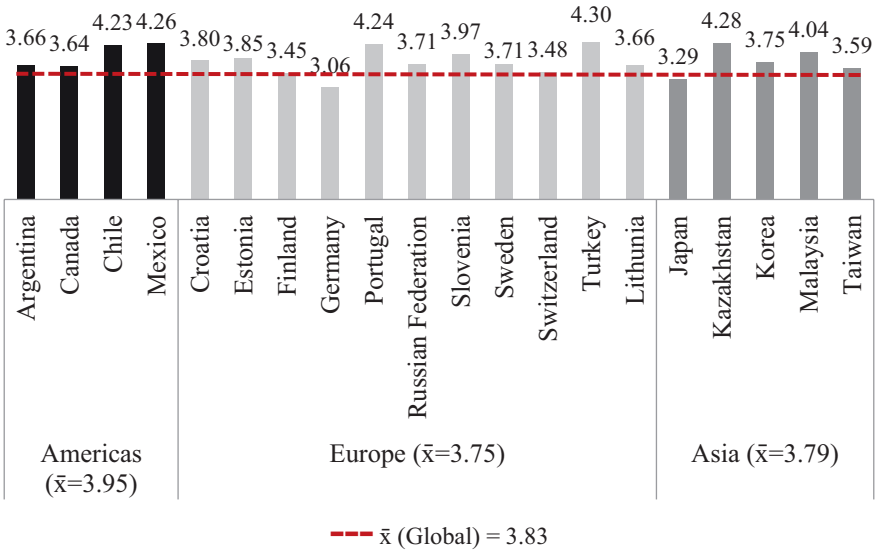


Fig. 2.1 Emphasize international perspectives or content in teaching activities by countries

perspectives in teaching are from Europe, most notably Germany, Finland, and Switzerland.

Comparing APIKS data to the CAP international dataset from 2011, we observe some continuity.[3] In Europe, Portugal continues to stand out for highly reported behavior that emphasizes international perspectives and content. Germany's position worsened compared to the CAP survey, and the reported behavior of Finish academics remains low, but higher than German. In the Americas, Mexican, Argentinian, and Canadian situations remain about the same. Among Asian countries, Korean academics' reported behavior lowered compared to the CAP survey, and that for Malaysia increased. Japanese academics' reported behavior remains low, and among the lowest globally.

Next, there are also notable differences between countries regarding the observed increase in the number of international students by the academic staff. On this indirect indicator of the internationalization of the curriculum, the highest observed increases were in Portugal, followed by Slovenia, Russian Federation, Canada, Finland, and Lithuania. In the Americas, on this measure, Canada and Argentina score higher than Chile and Mexico, but only the former is above the global average (3.30). European countries' average is above the global score; however, it also includes Croatia which scored significantly lower than other countries. Among the Asian countries, Malaysia scored the highest (Fig. 2.2).

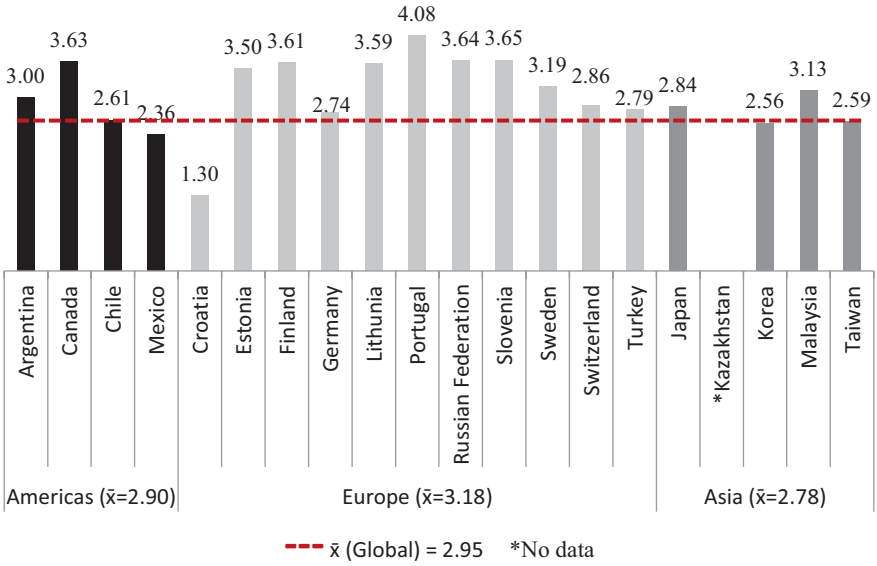


Fig. 2.2 Perception of an increase in the number of international students by region

[3] Please note that we could not compare longitudinally data for some European countries, Asian countries, and countries in the Americas since different countries were included in the dataset.

Regarding the observed number of international graduate students, Kazakhstan and Croatia clearly stand out and Sweden, Canada and Malaysia are above the global average. Among the world regions, Asian countries on average report the highest presence of international graduate students, and the four countries in the Americas, the lowest (Fig. 2.3). As reported by Didou (2107), student mobility is the internationalization activity that is mostly carried out in higher education institutions in countries such as Latin America (Chile, Argentina México, etc.), although it is reduced in global terms (less than 1% of enrollment). Brazil and Mexico are the countries with the highest international mobility, with the United States as the predominant place of arrival (Didou, 2017).

In sum, the occurrences in internationalization of the curriculum vary significantly between the 20 countries included in the study reflecting the differences in internationalization priorities or academics' willingness and capability to implement these priorities. What is clear from the data is that Kazakhstan prioritizes indicators of the internationalization of the curriculum measured in our study, emphasizing international content and perspectives as a direct indicator, and the increase in international students and presence of international graduate students as indirect measures. Portugal scores above the global average on the former two, but below average on the presence of international graduate students. The situation in Croatia is somewhat complex. While academics report an emphasis on international perspectives or content for teaching activities slightly below the global average, the situation of international students is presented in opposite routes: higher in graduate students and lower for the increase in the number of students. Germany also stands

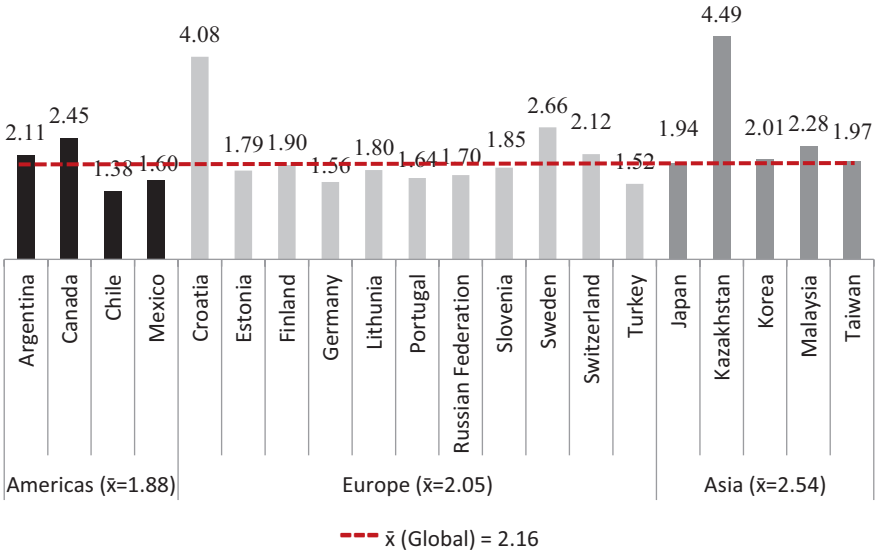


Fig. 2.3 Comparison by country about which currently, most of its graduate students are international

out as a country that presents indices below the European average and below the global average for all three indicators of the internationalization of the curriculum: emphasis oninternational perspectives and content, graduate international students, and increase in the number of international students. At the global level, there are shared trends: America shows a higher index in emphasizing international perspectives or content in teaching, Europe in the increase in the number of international students, and Asia in the perception that graduate students are international.

Correlation of Internationalization Practices on Internationalization of the Curriculum

We investigated the impact that internationalization practices have on the internationalization of the curriculum. In Table 2.1, we first compared the institutional support for internationalization in different countries as observed by the academic staff in respect to six specific internationalization practices. The APIKS questionnaire uses a Likert five-point scale, with 1 representing "strongly disagree" to 5 for "strongly agree".

As shown Table 2.1, the higher the average score of each item, the greater the support for internationalization by the higher education institutions. Regardless of the continent, the countries with the highest average scores are Kazakhstan (4.1), Finland (3.63), and Japan (3.59); the countries with the lowest average scores are Germany (2.61), Slovenia (2.76), and Croatia (2.77). We then analyze by continent and find that the country with the highest average score in the Americas is Mexico (3.20) and the lowest average score is Argentina (2.81). The country with the highest average score in Europe is Finland (3.63), and the lowest average score is Germany (2.61). The highest average score in the Asian region is Kazakhstan (4.10), and the lowest average score is Korea (3.16). Overall, the Asian region has the highest average score (3.56), followed by the Europe Region (3.05), while the Americas has the lowest average score (2.99). Higher education institutions in Asia are more supportive of internationalization than those in Europe and the Americas.

On the six indicators, academic staff from Kazakhstan report the highest occurrence, while Korea presents the lowest indices, except for the existence of a clear internationalization strategy, and funding and opportunities for visiting international students. Among the countries in the Americas, Mexico's academic staff reports high or the highest occurrence on all indicators (with higher indexes in exchange programs for students), except for the recruitment of teachers from foreign countries, in which Chile is higher. Canada has the lowest index in four indicators, and Argentina takes its place in the remaining two: exchange programs for students and recruitment of faculty members from foreign countries. Among the European countries, the comparative picture is more complex, although Finland stands out in most indicators, alternating with Switzerland. The lowest rates are

Table 2.1 The average score of internationalization strategies of higher education institutions by countries and regions

Region	Countries	Existence of a clear strategy for internationalization	Exchange programs for students	Funding and opportunities for research abroad	Funding and opportunities for visiting international students	Funding and opportunities for visiting international scholars	Recruitment of faculty members from foreign countries	Average for each item
Americas	Argentina	3.10	3.38	2.71	2.82	2.82	2.01	2.81
	Canada	2.98	3.73	2.52	2.78	2.54	2.53	2.85
	Chile	3.39	3.71	2.79	3.00	2.86	2.79	3.09
	México	3.54	3.76	3.12	3.09	2.91	2.78	3.20
	Average of participating countries	3.25	3.65	2.79	2.92	2.78	2.53	2.99
Europe	Croatia	2.94	3.67	2.63	2.67	2.64	2.07	2.77
	Estonia	3.17	3.94	3.22	3.48	3.45	3.26	3.42
	Finland	3.39	4.09	3.64	3.91	3.69	3.04	3.63
	Germany	2.70	3.34	2.56	2.62	2.33	2.12	2.61
	Portugal	3.24	3.92	2.54	2.80	2.51	2.17	2.86
	Russian Federation	3.38	3.62	2.65	3.09	3.04	3.01	3.13
	Slovenia	3.03	3.31	2.50	2.68	2.68	2.34	2.76
	Sweden	3.26	3.43	2.81	3.03	2.90	3.12	3.09
	Switzerland	3.36	4.10	3.24	3.37	3.18	3.27	3.42
	Turkey	3.00	3.40	2.57	2.90	2.78	2.33	2.83
	Average of participating countries	3.15	3.68	2.84	3.06	2.92	2.67	3.05

Asia	Kazakhstan	4.43	4.46	3.68	3.88	4.03	4.09	4.10
	Korea	3.95	3.52	2.68	3.28	2.71	2.79	3.16
	Japan	3.39	4.09	3.32	3.88	3.60	3.23	3.59
	Malaysia	3.76	3.86	3.11	3.08	3.15	3.35	3.39
	Taiwan	3.78	3.64	3.33	3.46	3.29	3.85	3.56
	Average of participating countries	3.86	3.91	3.22	3.52	3.36	3.46	3.56

between Germany and Slovenia, and Croatia with the issue of recruitment of faculty members from foreign countries.

Finally, we measured the correlation between the nine internationalization practices as independent variables:

- In your courses you emphasize international perspectives or content (C4_5)
- Since you started teaching, the number of international students has increased (C4_9)
- Currently, most of your graduate students are international (C4_10)
- Your institution has a clear strategy for internationalization (F6_1)
- Your institution provides various international exchange programs for students (F6_2)
- Your institution provides various opportunities/funding for faculty members to undertake research abroad (F6_3)
- Your institution provides various opportunities/funding for visiting international students (F6_4)
- Your institution provides various opportunities/funding for visiting international scholars (F6_5)
- Your institution encourages the recruitment of faculty members from foreign countries (F6_6)

And the scores of the following nine internationalization achievements are added up and named as the outcome of internationalization as dependent variables:

- Enhanced prestige (F5_1)
- Enhanced academic quality (F5_2)
- Increased revenue (F5_3)
- Enhanced research networks (F5_4)
- Increased mobility of students (F5_5)
- Increased mobility of faculty (F5_6)
- Weakening cultural identity (F5_7)
- Increased brain gain (F5_8)
- Increased costs associated with internationalization (F5_9)

We find that all internationalization practices included in the survey, i.e., all independent variables, have a correlation with the dependent variables. The respective variables have 38.5% explanatory power for the dependent variables (see Tables 2.2a and 2.2b). The existence of a clear institutional internationalization strategy followed by the encouragement of recruitment of faculty members from abroad has the greatest correlation among the three aspects of the internationalization of the curriculum. This data confirms our hypothesis that having an institutional strategy on internationalization increases the likelihood for academics to also emphasize international content and perspectives in courses. Interestingly, we find that opportunities/funding for visiting international students has a negative correlation on the dependent variable. This could be explained as institutional internationalization strategies that prioritize study abroad programs, including programs for incoming international visiting students, tend to pursue internationalization of the curriculum to a lesser extent.

Table 2.2a Multiple regression analysis with dependent variables

Model summary			
R	R square	Adjusted R square	Std. error of the estimate
0.621[a]	0.385	0.385	0.609

[a]Predictors: (Constant), Your institution has a clear strategy for internationalization (F6_1), Your institution encourages the recruitment of faculty members from foreign countries (F6_6), Your institution provides various opportunities/funding for faculty members to undertake research abroad (F6_3), Since you started teaching, the number of international students has increased (C4_9), In your courses you emphasize international perspectives or content (C4_5), Your institution provides various international exchange programs for students (F6_2), Currently, most of your graduate students are international (C4_10), Your institution provides various opportunities/funding for visiting international scholars (F6_5), Your institution provides various opportunities/funding for visiting international students (F6_4)
The respective variables have 38.5% explanatory power for the dependent variables

Table 2.2b Multiple regression analysis with dependent variables

ANOVA[a]						
Model		Sum of squares	df	Mean square	*F*	Sig.
	Regression	6045.048	9	671.672	1811.171	<.001[j]
	Residual	9641.719	25,999	0.371		
	Total	15686.767	26,008			

[a]Dependent Variable: Outcome of internationalization

[j]Predictors: (Constant), Your institution has a clear strategy for internationalization (F6_1), Your institution encourages the recruitment of faculty members from foreign countries (F6_6), Your institution provides various opportunities/funding for faculty members to undertake research abroad (F6_3), Since you started teaching, the number of international students has increased (C4_9), In your courses you emphasize international perspectives or content (C4_5), Your institution provides various international exchange programs for students (F6_2), Currently, most of your graduate students are international (C4_10), Your institution provides various opportunities/funding for visiting international scholars (F6_5), Your institution provides various opportunities/funding for visiting international students (F6_4)

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity statistics	
	B	Std. Error	β			Tolerance	VIF
(Constant)	1.212	0.020		59.221	<.001		
Your institution has a clear strategy for internationalization (F6_1)	0.209	0.004	0.311	48.215	<.001	0.570	1.756
Your institution encourages the recruitment of faculty members from foreign countries (F6_6)	0.113	0.004	0.180	28.984	<.001	0.616	1.624

(continued)

Table 2.2b (continued)

Your institution provides various opportunities/ funding for faculty members to undertake research abroad (F6_3)	0.084	0.005	0.131	18.561	<.001	0.471	2.122
Since you started teaching, the number of international students has increased (C4_9)	0.044	0.003	0.083	16.049	<.001	0.893	1.120
In your courses you emphasize international perspectives or content (C4_5)	0.068	0.004	0.091	18.502	<.001	0.974	1.026
Your institution provides various international exchange programs for students (F6_2)	0.049	0.005	0.067	10.345	<.001	0.562	1.779
Currently, most of your graduate students are international (C4_10)	0.030	0.003	0.049	9.649	<.001	0.926	1.080
Your institution provides various opportunities/ funding for visiting international scholars (F6_5)	0.038	0.005	0.057	7.067	<.001	0.365	2.740
Your institution provides various opportunities/ funding for visiting international students (F6_4)	−0.014	0.005	−0.020	−2.670	0.008	0.405	2.468

[a]Dependent Variable: Outcome of internationalization

Discussion

In our research, we find notable differences between countries. For one, we find a compelling account of some countries, such as Kazakhstan, which are purposefully pursuing internationalization of the curriculum in every respect, mainly to enhance the quality of teaching and learning in the international classroom (Gregersen-Hermans & Lauridsen, 2021). In contrast, most countries only focus on certain aspects of the internationalization of the curriculum but not others. While in some countries the introduction of international content and perspectives has been prioritized, in other countries, institutions have placed an emphasis on increasing the number of international undergraduate students or attracting international postgraduate students. Many countries where English is not a native language are establishing programs and courses in other foreign languages with the purpose of increasing

the enrolment of foreign students (Huo, 2020). Therefore, the behavior of internationalization varies from one country to another and between regions, although there are shared trends worldwide.

The countries of the Americas show a higher rate of emphasizing international perspectives or content in teaching than perceive incoming international students. However, as shown by Gacel-Ávila (2020), these countries are also experiencing a lag in terms of organizational (strategic planning and design; quality assurance and monitoring, etc.) and programmatic structures (collaborative international degrees; foreign language proficiency, etc.) supporting internationalization. Furthermore, student mobility is reported at less than 1% of total enrolment, and mostly at private universities (Didou, 2017). In Asian countries, academics observe a growing number of international graduate students, and in Europe an increase in the number of international undergraduate students. The emphasis in these two regions appears to be more on recruitment of students, graduate students in the case of Asia, and enabling undergraduate mobility in the case of Europe, what de Wit (2020) terms an "elitist approach to internationalization". The emphasis appears to be less on the promotion of internationalization competencies more broadly and on building more tolerant, cosmopolitan societies (de Wit, 2020.).

Our findings also point to an unequivocal positive correlation between an institution having a clear internationalization strategy and the pursuit of curriculum internationalization. Although the definition of a clear internationalization strategy is necessary, it is not a sufficient condition for the internationalization of the curriculum to occur. The way that international perspectives are included in the study programs and course syllabi will continue to be relevant. Ultimately, the internationalization of curriculum continues to depend on academic-teaching staff as agents of internationalization along with the institutional support they receive (Barbosa et al., 2020).

We also find a positive correlation between the institutions that promote the internationalization of the curriculum and the hiring of foreign professors. The hiring of foreign professors is considered an important factor in the evaluation of the quality of universities (Huo, 2020). Furthermore, in countries where institutions encourage the recruitment of international scholars, scholars also see an increase in international students and more international graduate students and are more likely to emphasize international perspectives and content in teaching.

Conclusion

In brief, our findings point to notable differences between countries and world regions in academics' implementation of international perspectives or content in their course teaching. The highest reported such behavior was among academics from Turkey, Kazakhstan, Portugal, Mexico, and Chile, and the lowest from Germany and Japan. We also find that the greatest impact on academics' emphasizing international content in their teaching comes from an institution having a clear

internationalization strategy and if the institution encourages recruitment of foreign academics. Finally, we also found that funding and other opportunities for international visiting students negatively correlate with the internationalization of the curriculum.

Higher education institutions worldwide have different preferences for international dimensions in teaching and learning, as well as different rationales for, and expectations of, the internationalization outcomes. National and institutional approaches may be driven by aspirations to recruit (fee-paying) foreign students to signal quality in international rankings, to equip their national students with international competitions, or a combination of these or something else. Although the rationales of internationalization outcomes are not mutually exclusive, there are differences between institutions and countries and these rationales may change over time (de Wit, 2013, p. 17). Furthermore, institutional approaches to internationalization vary from a focus on student and staff mobility in the context of commercialization and increased cross-border provision of higher education, to the internationalization of the curriculum as part of developing students' international competencies at home (de Wit, 2013, p. 14).

The different cultural, political, or economic rationales that countries have adopted to internationalize higher education are reflected in these countries' approaches to internationalization at home, internationalization of the curriculum, and specifically the international dimensions of teaching and learning. The study presented in this chapter employs survey data from the academic staff teaching at institutions around the world to capture, compare, and analyze their reported behaviors on the internationalization of the curriculum, specifically on the emphasis on international perspectives or content in course teaching.

The measures we employ — reported inclusion of international perspectives and content in course teaching, presence of international graduate students, and increase in international students — are, indeed, "rudimentary proxies" for assessing internationalization at home since they do not necessarily guarantee that students will gain international results, intercultural and global competencies (Knight, 2011). However, the analysis of these measures, especially from the perspective of academics as key agents of internationalization, offers important insights into internationalization practices in teaching and learning from an international comparative perspective.

In addition, the academics' observations on institutional support for internationalization add an important perspective on whether the academics' home institutions prioritize internationalization and what type of activities related to the internationalization of teaching they support. It is the combination of these independent variables that have possible effects on the internationalization of the curriculum. The international data set enables us to discern patterns of reported and observed internationalization outcomes across different countries and determine how they relate to institutionalization practices. In sum, the global comparison of academics' reported behaviors and observations enables us to cluster the APIKS countries according to their current practices and institutional support for including international dimensions in teaching.

Globally, the internationalization of the curriculum and the different behaviors of the academics are mathematically presented in a "fractal" way. The same efforts are replicated internationally: more than 90% of higher education institutions members of the International Association of Universities mention internationalization in their mission statement or strategic plan (Knight, 2021). However, as mentioned throughout this chapter, the internationalization efforts vary significantly between regions, countries, and institutions. International comparative analyses are important since they help us discern the similarities and differences across countries, as well as the different rationales behind internationalization efforts (Knight, 2021). International comparisons also contribute to practice discerning the most effective approaches to foster internationalization, but also the different realities of academics on whose shoulders lie internationalization tasks (Filippov, 2021).

References

Aarrevaara, T., Dobson, I. R., & Postareff, L. (2013). The scholarly question in Finland: To teach or not to teach. In J. C. Shin, A. Arimoto, W. K. Cummings, & U. Teichler (Eds.), *Teaching and research in contemporary higher education: Systems, activities and rewards* (pp. 135–152). Springer.

Aarrevaara, T., Dobson, I., & Pekkola, E. (2014). Finland: CAPtive academics – An examination of the binary divide. In W. Locke, W. Cummings, & D. Fisher (Eds.), *Changing governance and management in higher education (243–262)*. Springer.

APIKS-IDB. (2021). The academic profession in the knowledge-based society (APIKS) survey 2018. International Database version 1.2 (APIKS-IDB 1.2). 16 May 2021. https://www.ulapland.fi/APIKS.

Aškerc Zadravec, K. (2021). *Mednarodna razsežnost kurikuluma v visokošolskih študijskih programih [The international dimension of the curriculum in higher education study programmes]*. Faculty of Education, University of Ljubljana.

Barbosa, B., Santos, C., & Prado, C. (2020). There is no one way to internationalization at home: Virtual mobility and student engagement through formal and informal approaches to curricula. *Revista Lusófona de Educação, 47*, 85–98.

Beelen, J., & Leask, B. (2011). Internationalisation at home on the move. In EAIE (Ed.), *Handbook of internationalisation of higher education*. Raabe Academic Publishers.

Brandenburg, U., & de Wit, H. (2011). The end of internationalization. In H. de Wit (Ed.), *Trends, issues and challenges in internationalisation of higher education, ed., (pp. 27–29)*. Centre for Applied Research on Economics & Management.

Brotherhood, T., Hammond, C. D., & Kim, Y. (2020). Towards an actor-centered typology of internationalization: a study of junior international faculty in Japanese universities. *Higher Education, 79*, 497–514.

Çalikoglu, A. (2018). International student experiences in non-native-english-speaking countries: postgraduate motivations and realities from Finland. *Research in Comparative and International Education, 13*(3), 439–456. https://doi.org/10.1177/1745499918791362

Childress, L. K. (2010). *The twenty-first century university: developing faculty engagement in internationalization*. Peter Lang Publishing.

Clifford, V. A. (2013). *The elusive concept of internationalisation of the curriculum*. Oxford Center for Staff and Learning Development, Oxford Brookes University.

Coates, H., Dobson, I., Goedegebuure, L., & Lynn, V. (2014). The international dimension of teaching and learning. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: changes, realities and prospects (pp. 105–118)*. Springer.

de Wit, H. (2013). Internationalisation of higher education, an introduction on the why, how and what. In H. de Wit (Ed.), *An introduction to higher education internationalization* (pp. 13–46). Centre for Higher Education Internationalisation (CHEI), Universita Cattolica del Sacro Cuore, Milan, Italy.

de Wit, H. (2020). The future of internationalization of higher education in challenging global contexts. *Campinas, 22*(3), 538–545.

Didou, S. (2017). *La internacionalización de la educación superior en América Latina: transitar de lo exógeno a lo endógeno* [The internationalization of higher education in Latin America: moving from the exogenous to the endogenous]. UDUAL.

Egron-Polak, E., & Hudson, R. (2010). *Internationalization of higher education: global trends, regional perspect–ves - IAU 3rd global survey report*. IAU.

Filippov, V. (2021). Internationalization of universities: 70 years of experience. In H. van't Land, A. Corcoran, & D. Iancu (Eds.), *The promise of higher education. essays in honour of 70 years of IAU* (pp. 113–118). Springer.

Gacel-Ávila, J. (2020). Internationalisation of higher education in Latin America and the Caribbean. *International Journal of African Higher Education, 7*(2), 141–156.

Gopaul, B., Jones, G. A., Weinrib, J., Metcalfe, A., Fisher, D., Gingras, Y., & Rubenson, K. (2016). The academic profession in Canada: Perceptions of canadian university faculty about research and teaching. *Canadian Journal of Higher Education, 46*(2), 55–77.

Gregersen-Hermans, J., & Lauridsen, K. (2021). *Internationalising programmes in higher education. An educational development perspective*. Routledge.

Höhle, E. A., & Teichler, U. (2013). The academic profession in the light of comparative surveys. In B. Kehm & U. Teichler (Eds.), *The academic profession in europe: new tasks and new challenges. The changing academy – The changing academic profession in international comparative perspective* (Vol. 5). Springer.

Huang, F. (2014). The internationalisation of the academic profession. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects (pp. 1–22)*. Springer.

Huang, F. (2015). The internationalization of the academy in East Asia. In U. Teichler & W. Cummings (Eds.), *Forming, recruiting and managing the academic profession* (pp. 259–270). Springer.

Huang, F., Finkelstein, M., & Rostan, M. (2016). *The internationalization of the academy: Changes*. Springer.

Huo, X. (2020). *Higher education internationalization and english language instruction: intersectionality of race and language in canadian universities*. Springer.

Jones, E., & Killick, D. (2013). Graduate attributes and the internationalized curriculum: Embedding a global outlook in disciplinary learning outcomes. *Journal of Studies in International Education, 17*(2), 165–182.

Klemenčič, M. (2017). Internationalisation of higher education in the peripheries: The 'gear effect' of integrated international engagements. In H. de Wit, J. Gacel-Ávila, E. Jones, & N. Jooste (Eds.), *The globalization of internationalization: Emerging voices and perspectives* (pp. 99–109). Routledge.

Knight, J. (2011). Five myths about internationalization. *International Higher Education, 64*, 14–15.

Knight, J. (2021). Higher education internationalization: concepts, rationales, and frameworks. *Revista Redalint, 1*(1), 65–88.

Kwiek, M. (2014). The Internationalization of the polish academic profession. A comparative European approach. *Zeitschrift für Pädagogik, 60*(5), 681–695.

Kwiek, M. (2017). A generational divide in the academic profession: A mixed quantitative and qualitative approach to the Polish case. *European Educational Research Journal, 16*(5), 645–669.

Leask, B. (2015). *Internationalizing the curriculum*. Routledge.

Leask, B., & Beelen, J. (2010). Enhancing the engagement of academic staff in international education. In *Proceedings of a joint IEAA-EAIE symposium* (pp. 28–40). International Education Association of Australia.

Leask, B., & Bridge, C. (2013). Comparing internationalisation of the curriculum in action across disciplines: theoretical and practical perspectives. *Compare: A Journal of Comparative and International Education, 43*(1), 79–101. https://doi.org/10.1080/03057925.2013.746566

Leask, B., Beelen, J., & Kaunda, L. (2013). Internationalisation of the curriculum: international approaches and perspectives. In H. de Wit, F. Hunter, & L. Johnson (Eds.), in H. G van Liempd *Possible futures; The next 25 years of the internationalisation of higher education* (pp. 188–204). European Association for International Education.

Lee, Y., Davis, R., & Li, Y. (2021). International graduate students' experiences of english as a medium of instruction (EMI) Courses in a Korean University. *International Journal of Learning, Teaching and Educational Research, 20*(9), 38–51.

Locke, W. (2009). Reconnecting the research-policy-practice nexus in higher education: Evidence-based policy in practice in national and international contexts. *Higher Education Policy, 22*, 119–140. https://doi.org/10.1057/hep.2008.3

Locke, W. (2013). Teaching and research in english higher education: the fragmentation, diversification and reorganisation of academic work, 1992-2007. In J. Shin, A. Arimoto, W. Cummings, & U. Teichler (Eds.), *Teaching and research in contemporary higher education: systems, activities and rewards* (pp. 319–334). Springer.

McGinn, M., Rarković, S., & Wolhuter, C. (2013). Global connectedness and global migration: Insights from the international changing academic profession survey. *Brock Education, 22*(2), 56–68.

Osakwe, N. (2017). Internationalizing courses: A faculty development process. *International Research and Review, 6*(2), 1–31.

Stohl, M. (2007). We have met the enemy and he is Us: The role of the faculty in the internationalization of higher education in the coming decade. *Journal of Studies in International Education, 11*(3), 359–372.

Teichler, U., Arimoto, A., & Cummings, W. (2013). *The changing academic profession: Major findings of a comparative survey*. Springer.

van der Wende, M. (1996). Internationalizing the curriculum in higher education. *Tertiary Education and Management, 2*, 186–195.

Sophia Shi-Huei Ho is a Professor and Director of the Institute of Educational Administration and Evaluation at University of Taipei (Taiwan). Her major research contribution is in the study of faculty development, institutional governance, and academic profession in higher education. Currently, she is also the Deputy CEO, Accreditation Council for Chinese Business Education (ACCBE) (Taiwan); Executive Committee Member, South East Asian Association for Institutional Research (SEAAIR); and the delegate of the Task Force on Action Plan of APEC Education Strategy of Chinese Taipei. Dr. Ho has published several journal articles and presented at international conferences on the topics of institutional management, teaching and research in higher education, and student learning outcomes, as well as won 2015 and 2016 Charles F. Elton Best Paper Awards of the Association for Institutional Research (AIR) in the USA.

Manja Klemenčič is an Associate Senior Lecturer on Sociology and in General Education at Faculty of Arts and Sciences, Harvard University, and Associate Researcher at Centre for Educational Policy Studies, University of Ljubljana. She researches, teaches, advises, and acts as a consultant in the area of sociology and politics of higher education and international and comparative higher education. Among her latest publications are *The Routledge Handbook of Student Centered Learning and Teaching in Higher Education* and the thematic section on Elite and Mass Higher Education in *The International Encyclopedia of Higher Education Systems and Institutions*. Since 2014, Klemenčič has served as Editor-in-Chief of the *European Journal of Higher Education*, since 2015, as Co-Editor of the Bloomsbury book series *Understanding Student Experiences of Higher Education*, and since 2022, as Co-Editor of Springer Nature's *Higher Education Dynamics*.

Edgar Oswaldo González Bello is a professor-researcher at the University of Sonora (Mexico) in the Department of Psychology and Communication Sciences. His performance is in the area of Education and postgraduate degrees in Educational Innovation. He is a member of the National System of Researchers (CONACyT-Mexico) and of the Mexican Research Council. Research topics of interest are innovation and educational change, higher education, and academics, teaching and the processes of internationalization of the curriculum, as well as digital technology and distance education.

Chapter 3
Internationalisation Activities: The Influence of Governance and Management Models in Argentina, Canada, Lithuania, Portugal, and Taiwan

Grace Karram Stephenson, Sude Pekşen, Nicolás Reznik, Maria João Manatos, and Robin Jung-Cheng Chen

Abstract This chapter employs the concepts collegiality and managerialism to model two ideal-typical forms of university governance. These conceptions are used to examine academics' perspectives on governance and internationalization incentives or strategies as per the 2018 APIKS survey. It explores the relationship between academics' perceptions of their institutions' internationalisation strategies and activities, and perceptions of new managerialism. In particular, it aims to understand to what extent levels of new managerialism increase in relation to the strength of internationalisation incentives. Five country cases are compared regarding the relation between their higher education governance style and internationalization incentives: Argentina, Canada, Lithuania, Portugal, and Taiwan. Data shows that each country has evidence of both collegial and managerial forms of governance.

G. K. Stephenson (✉)
University of Toronto, Toronto, ON, USA
e-mail: grace.karram@utoronto.ca

S. Pekşen
TU Dortmund University, Dortmund, Germany
e-mail: sude.peksen@tu-dortmund.de

N. Reznik
Universidad Nacional de Tres de Febrero, Buenos Aires, Argentina

Universidad de Buenos Aires, Buenos Aires, Argentina
e-mail: nreznik@uba.ar

M. J. Manatos
Centre for Research in Higher Education Policies, Cambridge, MA, USA
e-mail: maria.manatos@ua.pt

R. J.-C. Chen
National Chengchi University, Taipei, Taiwan
e-mail: robin@nccu.edu.tw

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_3

Yet even with the presence of both governance forms, internationalisation as an institutional strategy is empirically shown to have a positive relationship with managerialism rather than collegiality. These findings are particularly insightful since the sample of countries represents different regions and modes of university governance, and yet in all locations the relationship between perceptions of managerial governance and internationalisation strategies or incentives is positive.

Keywords Internationalization incentives and activities · Managerialism · Collegiality · Comparative research

Introduction

Over the past forty years, higher education has risen to a central place in the global knowledge economy. Higher education institutions (HEIs) provide many of the knowledge products such as research, patents, and training that allow national economies to compete in the world market (Davenport, 2002; Olssen & Peters, 2005; Sörlin & Vessuri, 2007). In order to maximise their global impact and competitiveness, many HEIs have embarked on new strategic plans to become world-class universities. Scholars have identified two key processes that support universities' journey to achieving world-class status and becoming key players in the knowledge economy: *internationalisation,* and the restructuring of governance according to principles of *new managerialism* (Marginson, 2017; Yonezawa & Shimmi, 2016). Knight defines *internationalisation* as the process of adding an "intercultural or global dimension to the programs, functions or delivery" of higher education (HE) (Knight, 2004, p.3). Research has linked strong internationalisation processes to increases in research production, global rankings, and revenue from international students (Seeber et al., 2016). These perceived benefits lead many universities to provide strategic incentives to their faculty to internationalise their work. Likewise, *new managerialism* involves adopting corporate management strategies to promote efficiency in HEIs, increasingly viewing HEIs as hierarchical, centralised organisations. New managerialism, which takes the form of *New Public Management* in many state-strong countries, is a significant shift away from historic Anglo conceptions of the university as a collegium of self-governing scholars (Bardouille, 2000; Brock, 2006; Carvalho & Santiago, 2016; Locke & Spender, 2011; Magalhães & Amaral, 2009). Shifts toward new managerial governance include increasing autonomy, hierarchical approaches to organisation, market-driven competition between institutions, outcomes-based incentives, and a decrease in the conception of higher education for the public good (Verger & Curran, 2014).

Although studies suggest both internationalisation and new managerial governance help a university to increase in importance in the knowledge economy or reach coveted world-class status, there is currently little literature exploring the relationship between the two phenomena (Naidoo & Jamieson, 2005). If internationalisation is a stated institutional goal, supported by incentives, and new forms of

managerial governance increase administrative oversight, to what extent do levels of new managerialism increase in relation to the strength of internationalisation incentives? Is it possible for institutions to prioritise internationalisation without new managerialism and vice versa? This chapter tests the hypothesis that there is a positive relationship between professors' perceptions of managerial oversight and their perceptions of the strength of internationalisation activities and strategies. The investigation illuminates the relationship between managerialism and incentives for internationalisation across institutions in different national contexts. This allows for a deeper understanding of the various manifestations of this relationship and of diverse institutional approaches to the promotion of internationalisation.

This chapter employs the concepts of *collegiality* and *managerialism* as well as a hybrid *efficient-collegial* blend of the two (Deem, 1998; Trow, 1994; Yokoyama, 2006) to model three ideal-typical forms of university governance. These conceptions are used to examine academics' perspectives on governance and internationalisation incentives or strategies. The data is drawn from the Academic Profession in the Knowledge Society (APIKS) survey which was administered in 31 countries between 2017 and 2019. This paper uses data from Argentina, Canada, Lithuania, Portugal, and Taiwan to provide a five-country comparison of the relationship between levels of new managerialism and the strength of internationalisation, as perceived by faculty in the APIKS survey. This paper examines the following question: Is there a relationship between governance models and internationalisation strategies or activities, as perceived by faculty at universities in diverse countries?

Scholarship highlights significant variation between government and institutional conceptions and practices of internationalisation, as well as significant variation in how new managerialism is embraced and enacted. In regards to internationalisation, countries and institutions have very different rationales and priorities (Knight, 2004). Canada's focus on inbound student mobility, for instance, differs from Lithuania's focus on cross-border research mobility (Karram Stephenson, 2013; Urbanovič & Wilkins, 2013). Likewise, significant differences exist between countries in modes of university governance; Portugal and Argentina are examples of mid-level managerial systems, while Taiwan has significantly more institutional and national oversight (Horta, 2010; Marquina, 2020; Mok, 2000). In light of the significant variation between the two concepts, a cross-national comparison is needed to explore how internationalisation and new managerialism are related in distinct countries and regions.

Internationalisation, Competition and Managerialism: A Review of the Literature

Although Knight's (2004) definition of internationalisation as cited above is widely accepted as an adequate description of the phenomenon, the definition's pragmatic focus on external activities offers little analysis of the related institutional changes which instigate, and are furthered by, the drive for global significance in the

knowledge economy. This paper draws on the literature below to identify the relationship between internationalisation and universities' pursuit of prominence in the global knowledge economy or world-class university status. First, Goddard (2006) reframes internationalisation as an opportunity for the growth of enterprise, entrepreneurialism, and managerialism in HE; internationalisation is seen as essential for universities to retain competitiveness through university business models which underpin an entrepreneurial culture. This view repositions universities as business entities and internationalisation as the process that supports entrepreneurialism. Likewise, Marginson (2017) presents the drive for world class status as an inherently global journey that requires shifts toward managerial governance modes. As institutions attempt to improve their reputation and impact, they see government involvement increase and are repositioned between nation-state aspirations and global university competition for research, students, and partnerships. However, the worldwide pressure to internationalise, while felt by all institutions in all countries, is not experienced equally. King (2010) suggests countries face significant pressures to mimic world-class universities and thus commit to globalizing their programs and restructuring governance along managerial lines. At the same time, internal *structuration* or local policies limit the extent to which all institutions can fully implement these desired changes. According to Yonezawas and Shimmi (2016), this variation in implementing world-class strategies like internationalisation and new managerialism has led to disparity between institutions within countries, with some universities launching global initiatives and others remaining locally oriented in activities and modes of governance. These scholars confirm the parallel processes of internationalisation and new managerialism as central components of universities' pursuit of world-class status and eminence in the knowledge economy. Yet little is known about how these two processes manifest in different countries.

According to the British Council (2017), one of the main impacts of internationalisation on HE is the development of 'National Internationalisation Strategies.' Countries are actively attempting to increase the global market share of mobile students by implementing national policies on the internationalisation of HE that are closely linked to national trade and economic development. These internationalisation policies are crucial to foster needed expertise and human capital in targeted sectors. A more open environment for skilled migration is a way to address national concerns with regard to demographic shifts and related labour shortages, and a way for countries to remain competitive. Examples of these policies include Canada's International Education Strategy, Lithuania's Action Plan for Promoting the Internationalisation of Higher Education, and the Strategy for the Internationalisation of Portuguese Higher Education (OECD, 2016).

While new managerialism is often cast in a negative light, there is significant literature suggesting that this governance shift, as well as new forms of internationalisation, have significant benefits. Not only do they improve institutional standing and impact globally, but Van Damme (2001) argues internationalisation is a means of enhancing the quality of HE. An increasing focus on international education raises the quality of HE in the global labor market, but equally raises issues about how to measure that quality. There are two sides of the same coin when it comes to

better HE quality as it brings HE into unfamiliar terrain regarding quality assurance. Furthermore, the issue of degree recognition may also be brought to the table as ambiguous national legislation, lack of transparent information, limited interaction between recognition bodies and quality assurance agencies, and unclear responsibilities are common. Teichler (2004) focuses on the development of international partnerships to reduce risk, increase competitiveness, enhance reputation, and broaden the knowledge base for research, enterprise, and education.

The above literature identifies the pursuit of world-class university status and aspiring prominence in the global knowledge economy as central motivations for, and integrated components of, internationalisation. While isomorphic forces inspire diverse institutions to pursue the same global goals of research excellence and student recruitment to remain competitive in the worldwide education market, this scholarship suggests many HEIs are being restructured via new managerial forms of governance, seen a necessary transformation for ascendance in the knowledge economy.

Governance Models in Higher Education: A Conceptual Framework of Collegiality, Managerialism, and Hybrid Efficient-Collegiality

Just as internationalisation has many features, rationales, and manifestations, governance structures are rarely as binary as the ideal-typical representation of collegial or managerial. This section adapts the scholarship on new public management and new managerialism to develop a framework for conceptualising modes of governance as collegial, managerial, or collegial-efficient, a helpful hybrid of the two.

Since the 1980s, higher education systems have faced global-level challenges and global competitive pressures within the context of the knowledge-based society (economy). Many have been addressing these challenges by implementing significant governance reforms. These processes of institutional and organisational change in HEIs, highly influenced by New Public Management and managerialism, have been widely discussed in the literature on HE studies (Bardouille, 2000; Brock, 2006; Carvalho & Santiago, 2016; Locke & Spender, 2011; Magalhães & Amaral, 2009). In HE systems worldwide, the ‘traditional’ state-centred collegial model of governance, characterised by top-down ministerial law and Humboldtian tradition of a self-governing community of scholars, is moving towards a managerial, ‘marketised’ model, characterised by HEIs autonomy, greater accountability, diversification of funding sources, greater autonomy in human resources management, lump-sum budgeting, and ex-post quality audits. This model — influenced by New Public Management and New Managerialism — is based on a triad of management, market, and performance. Indeed, the managerial model highlights a trend towards the retreat of the state as a financier, the allocation of strategic authority to HEI management, an increasing focus on the economic utility of teaching and research,

and a focus on performance interrelated with accountability agendas sustained in measures, targets, benchmar,k and audits to feed the system in the name of improvement (Enders, de Boer & Leišytė, 2009; Meek & Wood, 1998; Neave 2003; Santiago & Carvalho, 2012).

In this context, the logic of accountability has become inseparable from the HE sector. The "erosion of trust" in HEIs associated with the New Managerialism and New Public Management, and massification within the HE sector, the demands for economic efficiency given resource constraints, and the increasing role of market regulation, has led to the need for HEIs to justify the expenditure of public funds and to demonstrate 'value for money' (Deem, 1998; Massy, 2003; Rosa & Amaral, 2007). Similarly, "academics are encouraged 'to do more with less' and be more accountable for scarce resources" (Becket & Brookes, 2008, p. 46). The pressures come both from outside and inside of HEIs. Externally, the pressures are exerted by funding bodies and external quality assurance agencies. Internally, the pressures are exerted by managers and administrators on academics and non-academic staff (Deem, 1998).

There is a clear change of paradigm, already identified in the literature on organisational change in HE, with public HEIs moving away from what was their collegial model into an entrepreneurial and managerial model, adapting private sector practices. Still, the predominance of a managerial model of governance in HEIs does not mean the extinction of the traditional collegial model; eEmpirical studies reveal the existence of hybrid governance models combining elements of the two (Bruckmann & Carvalho 2018; De Boer et al., 2007; Johanson & Vakkuri, 2017; Pekkola et al., 2020). According to Bruckmann and Carvalho (2018), HEIs are developing what is termed an 'efficient-collegial' model of governance, as institutional and organisational change seems to include both managerial and collegial elements. Table 3.1 describes the features of the three models — Collegial, Managerial, and Hybrid or Efficient-Collegial — in relation to decision-making, organisational values, institutional autonomy, and government or management structures.

Country Contexts

Currently, there is little cross-national or cross-regional data to illuminate the relationship between internationalisation and modes of managerial governance which the literature above suggests has a positive relationship. This study uses data from the APIKS survey of professors in Argentina, Canada, Lithuania, Portugal, and Taiwan to consider how internationalisation strategies and modes of governance manifest in different countries and regions. The sample countries were chosen because of their representation of major higher education regions, and their diversity in governance and internationalisation strategy. Argentina and Canada represented South and North America; Lithuania and Portugal represent Western and post-Soviet Europe; and Taiwan, East Asia. Each of these countries has a distinct history of higher education development, with Portugal and Taiwan having the earliest examples of higher learning in their ancient civilizations. In the twentieth

Table 3.1 Governance models in HE

	Collegial model	Managerial model	Hybrid/Efficient-Collegial model
Decision-making processes	Collegial decision-making processes	Top-down decision-making processes	Top-down decision-making processes, but prevailing advisory boards where academic matters are discussed in a collegial way
Organisational values	Collective decision-making, Inclusivity, Democracy, Sense of belonging	Efficiency, efficacy, leadership, and excellence	Efficient collective decision-making Sense of belonging and participating but accepting a stronger leadership
Institutional autonomy	Academic autonomy	Accountability, decentralisation, managerial freedom	Autonomy with accountability
Governance and management structures	Governance and management roles performed by academics Collegial governing boards Small participation of external stakeholders	Professionalization of governance and management roles Managerial governing boards Mandatory participation of external stakeholders	Shared governance and management roles (between academics and external stakeholders) Collegial governing boards, but empowerment of single-person governance roles Mandatory but not majoritarian participation of external stakeholders

Adapted from Bruckmann and Carvalho (2018)

Century, as the modern Western university model was adopted around the world, each country adapted the institution to uniquely suit its needs. Thus, each of these countries has a form of the university that is both international and reflective of the local context. For the purposes of this study, the differences between these jurisdictions confirm that the findings are applicable to a wide range of countries.

As the section above argues, internationalisation is often accompanied by, and a catalyst for, changes in management styles. The follow sections provide a brief overview of each national context for the internationalisation of higher education, the main trends, and the government strategy.

Argentina

Argentina's higher education system comprises a total of 132 institutions, of which 113 are universities; 67 of them belong to the public sector and 65 belong to private institutions. In terms of the number of students, Argentina has just over two million undergraduate and 150,000 graduate students. Between 75–80% of these students are enrolled in public institutions (SPU, 2020).

The ideas of academic freedom, autonomy, and co-governance among teachers, students, and graduates have been distinctive features of Argentina's higher education system. This originated with the Córdoba University Reforms of 1918. However, during the 1990's, a slow transformation began in the internal functioning of universities, shifting toward more managerial forms of governance that are affecting institutions differently (Marquina, 2020).

In Argentina, internationalisation is relatively new and has been incorporated gradually as part of the national agenda to advance universities in the early twenty-first century. Its emergence coincides with the development of global processes like financial interconnections and in relation to institutions or academics from developed countries. In short, internationalisation policies in Argentina have been scarce and have been related to regional financial integration.

The response of universities to the policies and promotion of internationalisation has been diverse. Some institutions have been reactive, while others have managed to be proactive, incorporating internationalisation into the institutional mission. In any case, most internationalisation efforts at universities continue to depend, for the most part, on individual efforts (Ramírez, 2017). The latest official data from 2018 shows that in Argentina, 3.6% of all professional and undergraduate students and 9.4% of graduate students were foreign higher education students. Among these, 75.2% were concentrated in the public sector. Regarding their countries of origin, the vast majority (95%) were from Latin-American countries and only 4% were from Europe (SPU, 2020).

Canada

Canada is a large country geographically with a federal political system dividing power between 10 provinces and 3 territories. The responsibility for higher education belongs generally to the provinces. However, public universities are established through legal charters that provide high levels of governing autonomy (Jones, 1997). This division of power contributes to a very decentralised university policy landscape and is particularly pronounced in internationalisation initiatives. Before 2014, any international university activities in Canada were initiated by individual professors, departments, or institutions. Thus, the programs, policie,s and bureaucratic infrastructure supporting internationalisation differ across institutions. However, in 2014 the government released the first strategy for international education. While this did not require institutional compliance in terms of practice, the strategy — and its subsequent update in 2019 — did articulate the national priorities for international education, with a strong focus on the recruitment of foreign students at the university level. Foreign students contribute $22 Million to the Canadian economy, and universities and vocational institutions are increasingly relying on these lucrative tuition fees to address fiscal shortages (CBIE, 2020).

While the federal strategy reflects this institutional and provincial focus on student recruitment, it offers less insight into the ongoing internationalisation activities

of professors. Canada's professors have added a global component to their research and teaching for decades. Past research, including the Changing Academic Profession survey (CAP) confirmed 66% of Canadian faculty collaborated with international colleges in their research projects. Furthermore, 63% incorporated international content in their teaching and course content (Metcalfe, 2008). At the same time, professors indicated different forms of international engagement often determined by their academic discipline. Those in fields related to social sciences and humanities are more likely to incorporate global perspectives in their teaching or research subject matter, while those in hard sciences or STEM subjects are more likely to collaborate and publish with those in other countries. This divide suggests distinct forms of internationalisation are present at Canadian universities.

Lithuania

After the independence of Lithuania from the Soviet Union in 1990, the internationalisation of Lithuanian higher education was strongly promoted with the integration into the European Higher Education Area and the signing of the Bologna Declaration (Zuzeviciute et al., 2017). The aim of the Bologna Process was to support the mobility of academic staff and students within Europe and to make the European higher education landscape more competitive worldwide (Teichler, 2009). In the current strategy of the European Commission, the focus is on further enhancement of mobility within the Erasmus+ and Horizon 2020 programmes. However, reinforcing the European Higher Education Area is still a priority (European Commission, 2021).

The internationalisation of higher education is an important part of Lithuania's policy agenda, especially due to the decreasing number of students in Lithuanian universities and the country's participation in the Bologna process since 1999. The Ministry of Education, Science and Sport developed a series of measures to foster internationalisation, specifically promoting EU Structural Funds projects to create English language programmes, investigate international peer-review of research council proposals, promote collaborations and participation in the EU research funding programmes, and foster student and staff mobility via the Erasmus programme (Leišytė et al., 2018). In 2019, the ministry adopted the OECD's science classification system to promote international collaboration (European Commission, 2020). In 2011, financial support mechanisms for prospective students and researchers from outside the EU were introduced and a special support programme for foreign students with Lithuanian migration background or expatriates was developed (European Commission, 2019). At the institutional level, internationalisation is one of the core strategies of higher education institutions and is part of the majority of university mission statements. In order to promote internationalisation in research and teaching, universities implemented performance indicators, such as the number of international peer-reviewed publications or research projects. Since implementing the higher education laws in 2009 and 2016, the governance of the Lithuanian

higher education system has become increasingly managerial. In particular, autonomy with regard to the organisation and finances of HEIs was reinforced (Leišytė, et al., 2018).

Portugal

The Portuguese higher education system was strongly influenced by a long-lasting authoritarian regime, which hampered investments in science and education and contributed to a somewhat isolated society internationally. However, the higher education system evolved from an elitist system to a mass education system in less than 30 years, rapidly increasing the number of students from 30,000 in the 1960s to nearly 400,000 students in late 1990s. Further increases were seen in the number of higher education institutions, which integrate a binary higher education system as it includes universities and polytechnics which have a more professionally oriented type of education, and both public and private institutions (Heitor et al., 2004; Horta, 2010).

With regard to internationalisation, the Portuguese higher education system took advantage of European integration, by reinforcing public investment and by designing and implementing a set of initiatives and programmes aimed at strengthening the Portuguese scientific and higher education systems, and internationalisation in particular. Although structural and incentive deficiencies persist, national policies have contributed to furthering institutions' internationalisation and global competitiveness, namely by "supporting the build-up of institutional knowledge capacity and by rewarding internationally oriented scholarly activities" (Horta, 2010, p. 63).

In Portugal, the state played and still plays a critical role in the internationalisation process of higher education systems and in 2014, the Portuguese Ministry of Education and Science and the Ministry for Regional Development developed a strategy for the internationalisation of Portuguese higher education (MADR/MEC 2014), which was implemented by the Portuguese Government in 2015 (Portuguese Government, 2015). It reflects the country's foreign policy interests and "it attempts to consolidate the role of Portugal as an education and science hub for Portuguese speaking communities across the world, while relying on the brain gain phenomenon that might be boosted by the country's EU membership" (Deca, 2020, p. 75).

National policies and initiatives have contributed to the development of institutional internationalisation policies in most (if not all) Portuguese higher education institutions and to the creation of specialised internationalisation offices aiming at promoting internationalisation (Eurydice, 2021). Both at a national and at an institutional level, there seems to be an "oversized focus on attracting degree-seeking students" (Deca, 2020, p. 75). In terms of student mobility in Portugal, in 2019 foreign students represented around 6% of the total number of students enrolled in higher education (4% of bachelor students, 8% of master students, and 27% of PhD students) (OECD, 2019). European programmes and initiatives, such as the Erasmus+ Programme, Erasmus Mundus programme, Marie Skłodowska-Curie

Actions, Horizon Programme 2020, the European Universities networks pilot initiative, have been greatly contributing to student and research mobility in Portuguese HE. Furthermore, the internationalisation of research has also been strengthened in Portuguese HEIs, namely by the participation in international research networks and in multiple international and regional associations, and by the increasing collaboration with international colleagues in research projects and international publications.

Taiwan

In Taiwan, HEIs are not distributed evenly across each district, as industry development in each region is taken into consideration when establishing HEIs. The institutional mechanism of university-industry linkage provides incentives and opportunities for commercialisation and increases the likelihood of HEIs obtaining external funding. Taipei and Hsinchu, the two most metropolitan areas in Taiwan, are located in the country's north and host the most concentrated high-tech industrial parks (Ho, Chen & Peng, 2017). Thus, half of the HEIs have been established in the northern region.

The internationalisation of higher education in Taiwan can be traced back to the 1990s, resulting from a series of social movements asking for significant reforms to education. Subsequently, the number of the HEIs grew by more than 50% within 20 years. Since the late 1980s, influenced by neo-liberalism market forces, the role of the state has changed. Higher education policies have been directed toward denationalisation, decentralisation, and autonomisation (Mok, 2000).Taiwan's government revised the University Law in 1994 to empower HEIs. Universities had greater academic freedom and autonomy in terms of controlling education affairs (MOE of Taiwan, 2001; Mok, 2006).

Moving toward the target of establishing world-class universities, the government issued a series of national programs comprised of the Promotion of University Teaching Excellence Program (2005–2016), the Development Plan for World-Class Universities and Research Centers for Excellence, and the Aim for Top University Project to pursue excellence. The specific goals included: (1) accelerating the internationalisation of top universities and expanding students' horizons; (2) enhancing the quality of research, development, and innovation in universities and strengthening international academic influences; (3) recruiting and cultivating talent to build up a human resource pool; and (4) training top talent in response to social and industrial needs (Wang & Tsai, 2014).

With the steadily decreasing population, Taiwan's Ministry of Education (2011) has been focused on recruiting international students. HEIs are encouraged to recruit international students from traditional exporting countries, such as European countries and the United States, as well as neighboring countries such as Japan, South Korea, and China. Unlike past eras, the recruitment of international students not only aimed to improve HE quality but also aimed at solving insufficient enrollment and the

fiscal problems of some private universities (Lin, 2020). To construct Taiwan as the hub of East Asian higher education, the government proposed to increase the number of international students from 56,135 in 2011 to 150,000 in 2021 (Executive Yuan of Taiwan, 2012), a goal that is close to realization. Both recruiting and cultivating talent were set as the first priority for policy makers because of the domestic atmosphere of studying abroad and the external threat of the rapid rise of China, India, and South Korea (MOE of Taiwan, 2013). The government began to develop students' global mobility competence and to cultivate talented students who were familiar with Southeast Asian countries in enhancing Taiwan's economic influence and establishing an overseas base for future development (MOE of Taiwan, 2016; Lin, 2020).

Methodology

The above countries represent five different systems of higher education with distinct emphases on specific forms of internationalisation and varying levels of managerial governance among institutions. Thus, the research design is based on diverse cases (Seawright & Gerring, 2008), in which the focus is on the variance of higher education systems. This paper considers each of these contexts, examining the perspectives of faculty working in each location via data from the APIKS survey. This 51-item survey was administered in 31 countries between 2017 and 2019, to understand professors' experiences of professional formation, teaching, research, governance, internationalisation, and external activities. This paper draws on data from items related to governance and internationalisation to explore the relationship between internationalisation activities or strategies and modes of governance.

Limitations

The APIKS survey data represents the opinions and perspectives of faculty rather than external observations or policy reviews. Thus, the findings of this paper do not identify the overall policy landscape at universities related to their internationalisation and managerialism strategies. Rather, the findings indicate survey respondents' opinions, perceptions of and experience with internationalisation policies, strategies, and new forms of managerial governance.

Sample

The APIKS International Database (IDB) was employed for this paper, selecting a total of 7533 valid cases from Argentina, Canada, Lithuania, Portugal, and Taiwan combined (See Table 3.1). We have considered only respondents from universities,

Table 3.2 Valid cases by country

Country	N	%
Argentina	1025	13.6%
Canada	2966	39.4%
Taiwan	1224	16.2%
Lithuania	389	5.2%
Portugal	1929	25.6%
Total	**7533**	100%

withdrawing technical-vocation institutions, colleges, and others non-university HEI's from the country samples (Table 3.2).

Analytic Framework

Based on previous CAP study research on HE governance and management, the operationalization of the independent variable "form of university governance" is a modified model of the CAP study research on *collegial* and *managerial university* concepts (Teichler, 2011). It considers the combination of three variables regarding academics' views on the governance model of their institution (Želvys et al., 2021), which has a higher reliability than the original model. The reliability was measured with Cronbach's alpha and indicates wide differences between the five countries, which could be due to the translation of the questionnaire. For example, Canada shows a Cronbach's alpha value of .769, however for Taiwan is it is .369. Overall, the Cronbach's alpha is .624 for all five countries, which is an acceptable level of reliability (Van Griethuijsen, 2015). These variables include: a) good communication between management and academics; b) a top-down management style; and c) collegiality in decision-making processes.

The outcomes were measured on a 5-point Likert scale (from 'strongly disagree' to 'strongly agree'). In order to measure "form of university governance", we built an additive index for the managerial-collegial continuum. First, we inverted the responses concerning "A top-down management style" to ensure the sense of the assessment coincided with the other two variables considered. Next, we added the valuation assigned to each one and divided it by three with equal weightings in order to measure the respondents' view of their university governance. The values for the independent variable are measured on a ratio scale with values <2.5 showing a managerial university governance and > 2.5 describing a collegial university governance style perceived by respondents.

Our dependent variables are a set of assessments of academics' perceptions of the institutional engagement in internationalisation. The outcomes were measured on a 5-point Likert scale from 'Strongly disagree' to 'Strongly agree'. In line with previous research (Huang et al., 2014), these assessments can be expected to relate to additional factors beyond the level of new managerialism and country location,

so we consider *gender*, *rank*, *discipline,* and respondents' perception on *increased costs* associated with internationalisation at their university as control variables. The variable *discipline* was recoded into a dichotomous variable *hard and soft sciences*. Following Biglan (1973), the scientific disciplines are divided; the *soft sciences*, including teacher training and education science, humanities and arts, social and behavioural sciences, business and administration, economics, law, social work and services, compare with *hard sciences*, including life sciences, physical sciences, mathematics, chemistry, computer sciences, engineering, manufacturing and construction, architecture, agriculture, forestry, medical sciences, health related sciences, personal services, transport services, and security services. Accordingly, after considering the descriptive statistics with a cross-table analysis, we ran multivariate regression models for each of the eight outcome variables.

Findings

Descriptive Variables

To answer our research question, "to what extent do levels of new managerialism increase in relation to the strength of internationalisation activities and strategies?" we first present descriptive analyses of our independent variable "form of university governance", and our dependent variables on internationalisation activities and strategies. For this purpose, we compiled a cross-tabulation and examined the significance of the categorical variables in relation to each other using the Pearson Chi-Square test (see Table 3.3). Overall, there are statistically highly significant differences between the countries studied and the control variables academic rank, gender, discipline, and increased costs associated with internationalisation. Overall, there are more senior academics than junior academics in the data set, yet Argentina has a more even distribution compared to the other countries. In terms of gender distribution, in Argentina and Lithuania women were surveyed more often and in Taiwan, more men. Canada and Portugal have an even gender distribution. When differentiating between hard and soft sciences, the soft sciences dominate in all countries except Lithuania and Taiwan. Finally, the findings concerning the internationalisation costs of the higher education institution are presented. Overall, the majority of respondents in all countries gave neutral answers. Furthermore, respondents from Argentina, Canada, Lithuania, and Portugal tended to perceive no increased costs, whereas Taiwanese respondents saw an increased cost associated with internationalisation at their university.

In Table 3.4, we observe that the form of university governance tends to range from moderate to neutral (2.75) when the complete sample of the five countries is considered. Thus, academics in all five countries identify forms of managerialism as well as collegiality within their universities' governance. Academics in Argentina and Taiwan are more likely than their peers in Canada, Lithuania, and Portugal to

Table 3.3 Cross-table of control variables

		Total	Argentina	Canada	Lithuania	Portugal	Taiwan
		Percentage					
Academic rank*	*Senior*	**80.4**	53.5	93.9	82.8	61.9	97.0
	Junior	**19.6**	46.5	6.1	17.2	38.1	3.0
Gender*	*Male*	**51.2**	42.2	49.9	41.5	50.8	64.9
	Female	**48.8**	57.8	50.1	58.5	49.2	35.1
Hard and soft sciences*	*Hard Sciences*	**46.1**	47.4	40.9	54.1	48.8	51.8
	Soft Sciences	**53.9**	52.6	59.1	45.9	51.2	48.2
Increased costs associated with internationalisation*	*1 -Not at all*	**11.8**	19.6	12.6	19.8	10.1	3.1
	2	**17.6**	21.2	17.8	16.9	22.0	9.8
	3	**38.8**	36.8	40.1	38.1	43.3	33.1
	4	**22.2**	15.0	19.5	20.1	20.4	36.7
	5 - Very much	**9.6**	7.4	10.0	5.2	4.1	17.3

Note: *Pearson Chi-Square test is for all variables highly significant $p < .001$

Table 3.4 Descriptive results of level of new managerialism (IV) and dependent variables

	Total	Argentina	Canada	Lithuania	Portugal	Taiwan
	Mean (Std. Deviation)					
Form of university governance	**2.75 (0.89)**	3.02 (0.82)	2.53 (1.04)	2.51 (0.89)	2.74 (0.76)	3.04 (0.73)
Your institution has a clear strategy for internationalisation	**3.22 (1.78)**	3.1 (1.19)	2.47 (2.67)	3.42 (1.17)	3.25 (1.19)	3.78 (1.02)
Your institution provides various international exchange programs for students	**3.73 (1.03)**	3.38 (1.18)	3.24 (2.65)	4.12 (0.88)	3.98 (0.92)	3.64 (1.02)
Your institution provides various opportunities/funding for faculty members to undertake research abroad	**2.71 (1.2)**	2.71 (1.21)	2.04 (2.55)	2.58 (1.15)	2.57 (1.21)	3.33 (1.15)
Your institution provides various opportunities/funding for visiting international students	**2.93 (1.16)**	2.82 (1.21)	2.22 (2.73)	3.09 (1.12)	2.8 (1.11)	3.46 (1.13)
Your institution provides various opportunities/funding for visiting international scholars	**2.75 (1.16)**	2.82 (1.19)	1.99 (2.68)	3.17 (1.11)	2.56 (1.09)	3.29 (1.15)
Your institution encourages the recruitment of faculty members from foreign countries	**2.65 (1.24)**	2.01 (1.06)	1.97 (2.72)	2.64 (1.13)	2.29 (1.12)	3.85 (1.02)
Your institution provides various opportunities/funding for faculty members to attend international conferences abroad	**2.88 (1.31)**	2.42 (1.18)	2.31 (2.68)	3.06 (1.28)	2.49 (1.3)	3.8 (1.05)
Your institution encourages faculty members to publish internationally	**3.67 (1.26)**	2.97 (1.38)	3 (2.92)	3.9 (1.23)	3.88 (1.2)	4.17 (0.92)

state that there is both a managerial as well as collegial governance style at their university. The form of managerial university governance is the highest in Lithuania and Canada, followed by Portugal.

However, when comparing the dependent variables, we find differences in the degree of internationalisation incentives in the countries studied. In terms of faculties' perceptions of institutional engagement in internationalisation, the strongest perceived activities are international student exchange programmes. The only exception is Taiwanese academics who perceive the encouragement of faculty members to publish internationally to be stronger than student mobility. For peers from the four other countries, international publications are also important along with a clear strategy for internationalisation. Conversely, a minority of respondents perceive their university to encourage the recruitment of academics from abroad. This pattern is observed in all countries except Taiwan.

Analysing the internationalisation activities or strategies and how they are perceived by academics in different countries, it is noted that academics in Taiwan and Lithuania most often agree that their university has a clear strategy for internationalisation. In comparison, most academics in Canada disagreed, meaning there is a lack of internationalisation strategies at their institutions. However, the high standard deviation shows that there might be great differences between Canadian institutions. In Argentina and Portugal, academics gave a neutral answer, neither agreeing nor disagreeing with the statement.

When investigating the availability of international exchange programmes for students, we find that these measures are promoted in all countries. However, it seems that in Lithuania and Portugal, they are supported more strongly than in Argentina, Canada, and Taiwan. However, incentives related to the institutional provision of opportunities and funding for faculty members to undertake research abroad, visiting international students, visiting international scholars, and faculty members attending international conferences abroad were generally perceived less frequently by academics in all five countries.

Furthermore, all respondents feel there is limited recruitment of academics from abroad except in Taiwan. The overall mean is 2.65, which means that the academics in Argentina, Portugal, Canada, and Lithuania tend to disagree with this statement.

Regression Analysis

In order to examine the data regarding the interrelation of the university governance style and universities' internationalisation activities and strategies more in-depth, we conducted a multivariate regression analysis. The regression models were analysed separately for each country and controlled by gender, academic rank, and discipline. Overall, there is a weak but highly statistically significant positive link between universities being perceived as managerial and their internationalisation activities and strategies across all countries. It also appears that the control variables gender, academic rank, and discipline seem to be slightly important for some

countries. However, the small R^2 coefficient shows that the form of university governance, gender, academic rank and the discipline of the respondents play a rather minor role in explaining the independent variables on internationalisation incentives. Thus, the institutional engagement in internationalisation can be explained only by 4–27 per cent of the variables analysed. There seem to be other factors not included in this paper which have a more significant influence on the organisational structures of universities to improve internationalisation, a finding that calls for further research.

Argentina

The results for Argentina indicate that the form of university governance has a weak (ß = .285) but highly significant ($p < .001$) effect on the perception of academics about the institutional commitment in internationalisation. Thus, for all of the eight internationalisation variables we find a positive relationship regarding managerial governance style. Concerning the control variables, we observe most variables have no significant effect except for academic rank and disciplines for some of the internationalisation variables. Senior academics indicated slightly more often that there is a clear internationalisation strategy at their institution (ß = −.110; $p < .001$). Further, hard scientists agreed slightly more often that their institution provides various opportunities and funding for visiting international students compared to soft scientists in Argentina (ß = -.065; $p < .05$). Also, in comparison, slightly more senior academics (ß = -.071; $p < .05$) and academics in hard sciences (ß = -.142); $p < .001$) indicated that their university encourages faculty members to publish internationally. Finally, in Argentina, all internationalisation incentives are correlated to the perception of increased cost associated with internationalisation.

Canada

In Canada, we also observed a positive and significant relationship between the managerial university governance and the perceived institutional commitment to internationalisation. The control variables have a minor impact in the assessments of the academics in terms of internationalisation strategies and activities of their institutions, however statistically significant.

Junior academics (ß = .040; $p < .05$) agree slightly more often that their university has a clear strategy for internationalisation. Further, females more often indicate that there are international exchange programmes for students (ß = .045; $p < .05$). Compared to senior academics, junior academics state that their institution provides opportunities and funding for faculty members for research abroad (ß = .040; $p < .05$), visiting international students (ß = .062; $p < .001$), as well as visiting international scholars (ß = .091; $p < .001$). Lastly, there are disciplinary differences for international strategies and activities regarding recruitment, conferences, and recruitment. Hard scientists more often indicate that their institution

encourages international recruitment (ß = -.074; p < .001) and publishing internationally (ß = -.073; p < .001) than soft scientists. Contrary, there is a highly significant relationship between academics in the field of soft sciences and the institutions' funding opportunities for attending international conferences abroad (ß = .213; p < .001). Finally, in Canada, all internationalisation incentives are correlated to the perception of increased cost associated with internationalisation, except for the variables related to funding for research and international conferences as well as international publication.

Lithuania

In Lithuania there is a low but highly significant positive relationship between managerial governance style of the universities and academics perception of internationalisation initiatives**.** Concerning the controls, most variables have no significant effect on the assessments, except for gender and its relationship to international exchange programmes for student and academic rank and hard and soft sciences in the strategy for internationalisation. In particular female academics (ß = .146; p < .001), senior academics (ß = −.160; p < .001) and hard scientists (ß = -.098; p < .05) indicate slightly more often that their university has a clear internationalisation strategy than their counterparts. Also, females stated slightly more frequently that there are opportunities for exchange programmes for international students than males (ß = .137; p < .05). Finally, in Lithuania, only the variables on internationalisation strategy, student exchange programs, funding for as well as recruitment of international scholars correlated to the perception of increased cost associated with internationalisation.

Portugal

In the case of Portugal, we observe a statistically significant relationship between the managerial form of university governance and the perception of academics about the institutional commitment to internationalisation, which is the highest among all countries. Further, there is a statistically significant relationship between senior academics and that the institution provides opportunities for international exchange programmes for students (ß = -.089; p < .01), as well as a positive relationship between being junior academic and funding opportunities for visiting international students (ß = .058; p < .05). Lastly, soft scientists slightly more often agreed that there are opportunities for visiting international scholars (ß = .067; p < .05) and attending international conferences (ß = .188; p < .001). Finally, in Portugal, all internationalisation incentives are strongly correlated to the perception of increased cost associated with internationalisation.

Taiwan

Finally, the results for Taiwan show the same pattern as that observed in the other countries. The managerial governance style of the university slightly influences the perception of academics about the institutional internationalisation engagement. The majority of the control variables have no significant effect on the assessments of the dependent variables regarding internationalisation incentives. However, compared to hard scientists, soft scientists state that there are various international exchange programs for students (ß = .055; $p < .05$). Further, females more often indicate that their institution encourages the foreign scholars (ß = .057; $p < .05$). All internationalisation incentives are strongly correlated to the perception of increased cost associated with internationalisation (Tables 3.5, 3.6, 3.7, and 3.8).

Explanation of Variation in the Findings

The findings from this analysis diverged in relation to the type of analysis conducted. The initial correlation analysis emphasized the connection between perceptions of collegial governance and internationalisation. Conversely, the subsequent regression analysis found a statistically significant relationship between managerial forms of governance and internationalisation strategy. The reason for this abnormal variance reflects the correlation analysis as a measurement to determine the relationship between two variables — and only these two variables — without considering the effects of other variables. Therefore, the correlation analysis shows possible connections while measuring the strength of the relationship between two metric variables. On the other side, the multivariate regression analysis provides additional insight about the relationship among one dependent variable (internationalisation strategies/activities) and multiple independent and control variables (governance style, gender, discipline, and academic rank). Thus, with the regression analysis we can, on the one hand, construct a model and, on the other hand, predict the impact of various variables.

Discussion and Conclusion

This paper has explored the relationship between professors' perceptions of their institutions' internationalisation strategies and activities and perceptions of new managerialism. It sought to answer the following question: "To what extent do levels of new managerialism increase in relation to the strength of internationalisation incentives?" In each of the five sample countries the regression analysis showed a statistically significant relationship between more managerial forms of governance and increases in internationalisation strategy. At the same time, each country has evidence of both collegial and managerial forms of governance, with Canada and

Table 3.5 Academics' perception regarding the institutional engagement in internationalisation (I)

Variables	Your institution has a clear strategy for internationalisation					Your institution provides various international exchange programs for students				
Countries	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*
Form of university governance	.285***	.267***	.355***	.414***	.269***	.204***	.173***	.186***	.233***	.234***
Gender	.024	.035	.146**	.026	.022	.026	.045*	.137*	.033	.009
Academic rank	-.110***	.040*	-.160***	−.012	−.016	−.070*	.008	−.061	−.089**	−.011
Hard and soft sciences	−.036	−.012	−.098*	.007	−.032	−.012	.041*	.042	−.004	.055*
Increased cost associated with internationalisation	.160***	.092***	.273***	.143***	.380***	.086	.074***	.147**	.123***	.320***
R^2	.120	.077	.270	.206	.261	.055	.037	.088	.085	.190

Entries are the standardized beta coefficients (ß). Significance levels:*p < 0.05, **p < 0.01, ***p < 0.001.

Table 3.6 Academics' perception regarding the institutional engagement in internationalisation (II)

Variables	Your institution provides various opportunities/funding for faculty members to undertake research abroad					Your institution provides various opportunities/funding for visiting international students				
Countries	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*
Form of university governance	.274***	.277***	.330***	.326***	.269***	.213***	.218***	.241***	.260***	.264***
Gender	−.005	−.002	.021	.009	.038	.019	.012	.074	−.012	.021
Academic rank	−.043	.040*	−.008	.005	−.014	−.047	.062***	.044	.058*	−.044
Hard and soft sciences	−.037	.001	−.077	.039	.032	−.065*	−.031	−.052	−.036	−.021
Increased cost associated with internationalisation	.129***	.010	.070	.104***	.264***	.141***	.059**	.074	.161***	.283***
R^2	.092	.077	.124	.128	.173	.064	.052	.074	.105	.184

Entries are the standardized beta coefficients (ß). Significance levels:*p < 0.05, **p < 0.01, ***p < 0.001.

Table 3.7 Academics' perception regarding the institutional engagement in internationalisation (III)

Variables	Your institution provides various opportunities/funding for visiting international scholars					Your institution encourages the recruitment of faculty members from foreign countries				
Countries	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*
Form of university governance	.267***	.244***	.276***	.271***	.302***	.150***	.201***	.242***	.277***	.172***
Gender	.028	.015	.039	−.006	.026	.048	−.013	.033	.014	.057*
Academic rank	−.026	.091***	.049	.0039	−.017	.046	.024	−.026	.049	−.050
Hard and soft sciences	−.031	−.043	−.008	.067*	−.031	.017	−.074***	.002	.031	.002
Increased cost associated with internationalisation	.135***	.019**	.128*	.150***	.263***	.152***	.047*	.303***	.141***	.284***
R^2	.088	.067	0.101	.114	.195	.046	.046	.169	.110	.136

Entries are the standardized beta coefficients (ß). Significance levels:*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 3.8 Academics' perception regarding the institutional engagement in internationalisation (IV)

Variables	Your institution provides various opportunities/funding for faculty members to attend international conferences abroad					Your institution encourages faculty members to publish internationally				
Countries	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*	*Argentina*	*Canada*	*Lithuania*	*Portugal*	*Taiwan*
Form of university governance	.262***	.230***	.305***	.279***	.219***	.319***	.219***	.270**	.205***	.160***
Gender	−.030	.001	.014	−.021	.024	.049	.025	−.081	.047	.001
Academic rank	−.036	.028	−.032	.011	−.013	−.071*	−.012	−.061	−.047	.014
Hard and soft sciences	.031	.213***	−.010	.188***	−.028	−.142***	−.073***	−.084	−.020	−.034
Increased cost associated with internationalisation	.089**	−.007	.037	.100***	.277***	.115***	.033	.092	.123***	.323***
R^2	.080	.099	.098	0.138	.151	.134	.053	.110	.066	.153

Entries are the standardized beta coefficients (ß). Significance levels:*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Portugal indicating the strongest perceptions of more managerial governance, comparatively. The presence of the efficient-collegial governance blend supports scholarship which suggests both modes can exist in different spheres within the same university (Bruckmann & Carvalho 2018; De Boer et al., 2007). Yet even with the presence of both governance forms, internationalisation as an institutional strategy is shown empirically to have a positive relationship with managerialism rather than collegiality.

Findings in Context

The strength of the relationship between managerialism and internationalization strategy varies by sample country. In Argentina, the strongest correlation is seen in concerns about the cost of internationalization. This is an important finding since internationalization can provide increased revenue and prestige through research partnerships. More research on the forms of internationalization that exist in Argentina would help clarify the concerns with cost.

Like Argentina, Canadian professors express concerns over the cost of internationalization. Furthermore, in Canada the relationship between internationalization and managerial governance is strong. Since Canada is a country of significant decentralization this finding raises questions about whether managerialism has increased in absolute or relative terms. Professors' perceptions may indicate more about the collective position of academics and leadership rather than confirm governance changes.

Lithuania shows a weaker positive relationship between internationalization and managerialism. Student mobility is a significant factor of interest for faculty, and the position in the European Union normalizes this finding.

Portugal shows the strongest relationship between managerialism and internationalization strategy. These findings align with both the authoritarian history of Portugal as well as its commitment to foreign student recruitment within the bounds of the European Union. Research infrastructure related to internationalization is continually developing and Portuguese academics have confirmed in these findings controlled systems of governance and international activities.

Lastly, Taiwan's findings are in keeping with the other countries with a strong focus on international student mobility, particularly recognised by women professors and those in the softer sciences. Taiwan has a unique context of industry partnerships among the five samples and the lack of internationalization awareness among harder sciences may reflect this context. Overall, Taiwanese professors are concerned about the costs of internationalization amid the strong managerial-international strategy relationship.

These findings are particularly insightful since the sample of countries represents different regions and modes of university governance, and yet in all locations the relationship between perceptions of managerial governance and internationalisation strategies or incentives is positive.

Subsequently, these findings raise important questions about the nature and nuance of internationalisation activities. If internationalisation flourishes in, or requires a more hierarchical, market-driven form of governance can it simultaneously contribute to the more egalitarian or esoteric goals attributed to it, such as global citizenship or inter-cultural awareness (Yemini, 2017)? What is clear from these findings is that further research is needed to deeply understand the different manifestations of internationalisation programs or strategies within universities, particularly seen at different levels of organization structure. Overall, however, this research confirms the positive relationship between new managerial forms of governance and the internationalisation of higher education from the perception of university professors.

References

Bardouille, N. C. (2000). The transformation of governance paradigms and modalities insights into the marketization of the public service in response to globalization. *The Round Table, 89*(353), 81–106.

Becket, N., & Brookes, M. (2008). Quality management practice in higher education–what quality are we actually enhancing. *Journal of Hospitality, Leisure, Sport and Tourism Education, 7*(1), 40–54.

Biglan, A. (1973). The characteristics of subject matter. *Journal of Applied Psychology, 57*(3), 195–203.

Brock, D. M. (2006). The changing professional organization: A review of competing archetypes. *International Journal of Management Reviews, 8*(3), 157–174.

Bruckmann, S., & Carvalho, T. (2018). Understanding change in higher education: An archetypal approach. *Higher Education, 76*(4), 629–647.

Carvalho, T., & Santiago, R. (2016). Transforming professional bureaucracies in Hospitals and Higher Education Institutions. In R. Pinheiro, L. Geschwind, F. O. Ramirez, & K. VrangbÆk (Eds.), *Towards a comparative institutionalism: Forms, dynamics and logics across the organizational fields of Health Care and Higher Education* (Vol. 45, pp. 243–269). Emerald Group Publishing Limited.

CBIE. (2020). International Students in Canada—Canadian Bureau for International Education. https://cbie.ca/infographic/

Davenport, P. (2002). Universities and the knowledge economy. In D. Laidler (Ed.), *Renovating the Ivory Tower*. C.D.

De Boer, H., Enders, J., & Schimank, U. (2007). On the way towards new public management? the governance of university systems in England, The Netherlands, Austria, and Germany. In D. Jansen (Ed.), *New forms of governance in research organizations* (pp. 137–152). Springer.

Deem, R. (1998). New Managerialism and Higher Education: The management of performances and cultures in universities in the United Kingdom. *International Studies in Sociology of Education, 8*(1), 47–70.

Deca, L. (2020). Internationalisation of Higher Education in Romania and Portugal— strategies and transitions at the (semi-)periphery. In A. Curaj, L. Deca, & R. Pricope (Eds.), *European Higher Education Area: challenges for a new decade* (pp. 67–80). Springer.

Enders, J., de Boer, H., & Leišytė, L. (2009). New public management and the academic profession: The rationalisation of academic work revisited. In J. Enders & E. Weert (Eds.), *The changing face of academic life* (pp. 36–57). Palgrave Macmillan.

European Commission. (2019). Other dimensions of internationalisation in early childhood and school education: European, Global and Intercultural Dimension in Curriculum Development. https://eacea.ec.europa.eu/national-policies/eurydice/content/other-dimensions-internationalisation-early-childhood-and-school-education-40_en.

European Commission. (2020). National Reforms in Higher Education. https://eacea.ec.europa.eu/national-policies/eurydice/content/national-reforms-higher-education-38_en.

European Commission. (2021). *About higher education policy*. Available at: https://ec.europa.eu/education/policies/higher-education/about-higher-education-policy_en

Eurydice. (2021). *Portugal: Other dimensions of internationalisation in higher education*. European Commission. https://eacea.ec.europa.eu/national-policies/eurydice/content/other-dimensions-internationalisation-higher-education-53_en

Goddard, S. E. (2006). Uncommon Ground: Indivisible territory and the politics of legitimacy. *International Organization, 60*(1), 35–68.

Heitor, M. V., Horta, H., & Conceicão, P. (2004). Do Ensino Técnico ao Ensino da Engenharia em Portugal. In M. V. Heitor, J. M. B. Brito, & M. F. Rollo (Eds.), *Momentos de Inovação e Engenharia em Portugal no século XX* (pp. 241–285). D. Quixote.

Ho, S., Chen, R. J. C., & Peng, M. Y. P. (2017). Perceptions of university professors in Taiwan towards institutional resource and social capital: Internal and external perspectives. *Journal of Institutional Research South East Asia, 15*(1).

Horta, H. (2010). The role of the state in the internationalisation of Universities in catching-up countries: An analysis of the Portuguese Higher Education System. *Higher Education Policy, 23*(1), 63–81.

Huang, F., Finkelstein, M., & Rostan, M. (2014). *The internationalisation of the academy: Changes, realities and prospects*. Springer.

Johanson, J. E., & Vakkuri, J. (2017). *Governing hybrid organisations: Exploring diversity of institutional life*. Routledge.

Jones, G. A. (Ed.). (1997). *Higher Education in Canada: Different systems, different perspectives*. Garland Pub.

Karram Stephenson, G. (2013). International students as lucrative markets or vulnerable populations: A critical discourse analysis of national and institutional events in four nations. *Comparative and International Education, 42*(1), 1. https://doi.org/10.5206/cie-eci.v42i1.9223

King, R. (2010). Policy internationalisation, national variety and governance: Global models and network power in higher education states. *Higher Education, 60*(6), 583–594.

Knight, J. (2004). Internationalisation Remodeled: Definition, Approaches, and Rationales. *Journal of Studies in International Education, 8*(1), 5–31. https://doi.org/10.1177/1028315303260832

Leišytė, L., Rose, A.-L., & Schimmelpfennig, E. (2018). Lithuanian higher education: Between path dependence and change. In J. Huisman, A. Smolentseva, & I. Froumin (Eds.), *25 years of transformations of higher education systems in post-soviet countries. Palgrave studies in global higher education*. Palgrave Macmillan.

Lin, A. F.-Y. (2020). Internationalisation Initiatives of Taiwan's Higher Education: a stepping stone to regional talent circulation or reproduction of unbalanced mobility scheme? *Higher Education Evaluation and Development, 14*(2), 69–91.

Locke, R. R., & Spender, J. C. (2011). *Confronting managerialism: How the business elite and their schools threw our lives out of balance*. Bloomsbury Publishing.

MADR/MEC. (2014). *A strategy for the internationalisation of portuguese higher education (Uma estratégia para a internacionalização do ensino superior português)*. Ministry of Regional Development and Ministry of Education.

Magalhães, A. M., & Amaral, A. (2009). Mapping out discourses on higher education governance. In J. Huisman (Ed.), *International perspectives on the governance of higher education* (pp. 208–223). Routledge.

Marginson, S. (2017). The world-class multiversity: global commonalities and national characteristics. *Frontiers of Education in China, 12*(2), 233–260.

Marquina, M. (2020). Entre ser "técnico", "académico" o "político" en la universidad. Los nuevos roles de gestión en las universidades argentinas. *RELAPAE/Revista Latinoamericana de Política y Administración de la Educación, 12*(7), 82–96.

Massy, W. F. (2003). *Honoring the trust: quality and cost containment in higher education*. Anker Publishing.

Meek, V. L., & Wood, F. Q. (1998). Higher education governance and management: Australia. *Higher Education Policy, 11*(2–3), 165–181.

Metcalfe, A. S. (2008). The changing academic profession in Canada: Exploring themes of relevance, internationalisation, and management. In *The changing academic profession in international. comparative and quantitive perspectives: Report of the international conference on the changing academic profession.* (pp. 57–73). RIHE International Seminar Reports. No.12. Research Institute for Higher Education, Hiroshima University.

Mok, K. H. (2000). Reflecting Globalization Effects on Local Policy: Higher education reform in Taiwan. *Journal of Education Policy, 15*(6), 637–660.

Mok, K. H. (2006). *Education Reform and Education Policy in East Asia*. Routledge.

Naidoo, R., & Jamieson, I. (2005). Knowledge in the Marketplace: The global commodification of teaching and learning in higher education. In P. Ninnes & M. Hellstén (Eds.), *Internationalizing higher education: Critical Explorations of Pedagogy and Policy* (pp. 37–51). Springer.

Neave, G. (2003). The Bologna Declaration: Some of the historic dilemmas posed by the reconstruction of the community in Europe's systems of higher education. *Educational Policy, 17*(1), 141–164.

OECD. (2016). *Internationalisation of universities and public research. In OECD Science, Technology and Innovation Outlook 2016*. OECD Publishing. https://doi.org/10.1787/sti_in_outlook-2016-16-en

OECD. (2019). *Education at a Glance: country note – Portugal*. OECD Publishing.

Olssen, M., & Peters, M. A. (2005). Neoliberalism, higher education and the knowledge economy: From the free market to knowledge capitalism. *Journal of Education Policy, 20*(3), 313–345. https://doi.org/10.1080/02680930500108718

Pekkola, E., Pinheiro, R., Geschwind, L., Siekkinen, T., Carvalho, T., & Pulkkinen, K. (2020). Nested hybridity and value definition in public higher education: A conceptual view. In J. Vakkuri & J.-E. Johanson (Eds.), *Hybrid governance, organisations and society* (pp. 59–80). Routledge.

Portuguese Government. (2015). Council of ministers resolution 47/2015 (Internationalisation of Portuguese Higher Education), National Official Journal (1 series, 135–14 July 2015, pp. 4801–4803).

Ramírez, B. (2017). ¿Internacionalizar? ¿Por qué? ¿Para qué? La internacionalización en las universidades argentinas. *Debate Universitario, 5*(10), 71–87.

Rosa, M. J., & Amaral, A. (2007). A self-assessment of higher education institutions from the perspective of the EFQM excellence model. In D. F. Westerheijden, B. Stensaker, & M. J. Rosa (Eds.), *Quality assurance in higher education: Trends in regulation, translation and transformation* (pp. 181–207). Springer.

Santiago, R., & Carvalho, T. (2012). Managerialism rhetorics in portuguese higher education. *Minerva, 50*(4), 511–532.

Seawright, J., & Gerring, J. (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political Research Quarterly, 61*(2), 294–308.

Seeber, M., Cattaneo, M., Huisman, J., & Paleari, S. (2016). Why do higher education institutions internationalise? An investigation of the multilevel determinants of internationalisation rationales. *Higher Education, 72*(5), 685–702.

Sörlin, S., & Vessuri, H. (2007). *Knowledge society vs. knowledge economy: Knowledge, power, and politics.* Springer.

SPU. (2020). *Síntesis de Información. Estadísticas Universitarias, 2018–2019*. Buenos Aires. https://www.argentina.gob.ar/sites/default/files/sintesis_2018-2019_sistema_universitario_argentino_-_ver_final_1_0.pdf (April 6, 2021).

Teichler, U. (2004). The changing debate on internationalisation of higher education. *Higher Education, 48*, 5–26. https://doi.org/10.1023/B:HIGH.0000033771.69078.41
Teichler, U. (2009). Internationalisation of higher education: European experiences. *Asia Pacific Education Review, 10*(1), 93–106.
Teichler, U. (2011). Germany: How changing governance and management affects the views and work of the academic profession. In *Changing governance and management in higher education* (pp. 223–241). Springer.
Trow, M. (1994). Managerialism and the academic profession: The case of England. *Higher Education Policy*, 1–11.
Urbanovič, J., & Wilkins, S. (2013). Internationalisation as a strategy to improve the quality of higher education in small states: Stakeholder perspectives in Lithuania. *Higher Education Policy, 26*(3), 373–396.
Van Damme, D. (2001). Quality issues in the internationalisation of higher education. *Higher Education, 41*(4), 415–441.
Van Griethuijsen, R. A., van Eijck, M. W., Haste, H., den Brok, P. J., Skinner, N. C., Mansour, N., et al. (2015). Global Patterns in Students' Views of science and interest in science. *Research in Science Education, 45*(4), 581–603.
Verger, A., & Curran, M. (2014). New public management as a global education policy: Its adoption and re-contextualization in a Southern European setting. *Critical studies in education, 55*(3), 253–271.
Wang, Y. F., & Tsai, C. T. (2014). Employability of hospitality graduates: Student and industry perspectives. *Journal of Hospitality & Tourism Education, 26*(3), 125–135.
Yemini, M. (2017). *Internationalisation and global citizenship: Policy and practice in education*. Palgrave Macmillan.
Yokoyama, K. (2006). The effect of the research assessment exercise on organisational culture in English Universities: collegiality versus managerialism. *Tertiary Education and Management, 12*(4), 311–322.
Yonezawa, A., & Shimmi, Y. (2016). Transformation of university governance through internationalisation: challenges for top universities and government policies in Japan. In N. C. Liu, Y. Cheng, & Q. Wang (Eds.), *Matching visibility and performance: A standing challenge for world-class universities* (pp. 101–118). Brill Sense.
Želvys, R., Leišytė, L., Pekşen, S., Bružienė, R., & Rose, A. L. (2021). From collegiality to managerialism in lithuanian higher education. *Acta Paedagogica Vilnensia, 46*, 27–42.
Zuzeviciute, V., Praneviciene, B., Simanaviciene, Z., & Vasiliauskiene, V. (2017). Internationalisation of higher education: Lithuanian experience in bologna process and beyond. *Montenegrin Journal of Economics, 13*(1), 73–86.

Grace Karram Stephenson is an Assistant Professor in the Department of Leadership, Higher and Adult Education at the Ontario Institute for Studies in Education (OISE), University of Toronto. Grace was the lead administrator for the Canadian chapter of the Academic Profession in the Knowledge Society survey. She teaches Comparative Higher Education, Systems of Higher Education, and Recurring Issues in Higher Education.

Sude Pekşen is a researcher at the Professorship of Higher Education, Center for Higher Education, and a PhD student at the Faculty of Business and Economics at TU Dortmund University, Germany. She holds a master's degree in sociology with a focus on comparative sociology and transnationalisation from the University of Duisburg-Essen, Germany. In her PhD dissertation, she investigates the digitalisation of higher education access. Her research interests further include comparative higher education organisation and academic profession, focusing on gender and diversity.

Nicolás Reznik is a researcher and a doctoral student in the Doctoral Programme of Higher Education Policy and Management, Universidad Nacional de Tres de Febrero, Argentina. He holds a specialization's degree in educational policy from the Facultad Latinoamericana de Ciencias Sociales (FLACSO), and another in public management from the University of Buenos Aires (UBA). His research interests further include strategic planning in higher education organisation and academic profession. He has been working in the public sector related to higher education policies.

Maria João Manatos is a postdoctoral researcher at the Centre for Research in Higher Education Policies (CIPES) and lectures in the Department of Social, Political and Territorial Sciences at the University of Aveiro, Portugal. She holds a doctoral degree in management from the ISEG Lisbon School of Economics and Management, University of Lisbon. Her doctoral research discussed the integration of quality management policies and practices in higher education institutions. She has been collaborating as an education and higher education expert in European organisations. She has published her work in higher education and quality management journals.

Robin Jung-Cheng Chen is a professor of Department of Education, National Chengchi University, Taiwan. He serves as the associate Dean of College of Education and conducts crucial government projects on rural education and privatized education. His expertise is in comparative education, sociology of education, and school leadership.

Chapter 4
Early Career Academics and Internationalization

Alenka Flander, Pamela Guzmán, Carole Probst Schilter, Paula Tulppo, and Chang Da Wan

Abstract This chapter focuses on internationalization trends of early career academics based on the Academic Profession in the Knowledge-based Society (APIKS) global survey, involving 34,674 academics across 16 countries. The 16 countries are further categorized into: advanced, emerging European, and emerging non-European. Among the participating academics, 15,871 (45%) were early career academics. Based on these participants, this chapter examines the extent of internationalization in the training background of early career academics, as well as in their current activities of teaching, research, and external engagement. In terms of background and training, we found that across all countries, a greater number of senior than early career academics obtained their doctoral degree from a different country to the one they are working in. Specifically in teaching, we examine the

The original version of the chapter has been revised. A correction to this chapter can be found at https://doi.org/10.1007/978-3-031-26995-0_11

A. Flander
Centre of the Republic of Slovenia for Mobility and Educational and Training Programmes (CMEPIUS), Ljubljana, Slovenia
e-mail: alenka.flander@cmepius.si

P. Guzmán (✉)
Pontificia Universidad Católica de Chile, Santiago, Chile
e-mail: paguzmans@uc.cl

C. P. Schilter
Zurich University of Applied Sciences ZHAW, Winterthur, Switzerland
e-mail: prot@zhaw.ch

P. Tulppo
University of Lapland, Rovaniemi, Finland
e-mail: paula.tulppo@ulapland.fi

C. Da Wan
National Higher Education Research Institute, Universiti Sains Malaysia, George Town, Malaysia
e-mail: changda.wan@usm.my

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_4

international perspective, content, and student body. In research, we explore collaboration with international colleagues, characterization of primary research, publications, co-authorship, and research funding. In external engagement, we delve into the contribution to external international society. Overall, this chapter highlights various trends of internationalization within and across the three categories of countries, and underlines illuminating key factors that support as well as challenge the extent of internationalization of early career academics.

Keywords Early career academics · Internationalization · Research · Teaching · External engagement

Introduction

The early career period is a pivotal part of the academic career. The ways in which early career academics are socialized into the profession, guided, and supported to develop has an important bearing on their future prospects in academia. At the same time, early career academics encounter a different set of challenges than their established colleagues, which may include uncertainty in a changing structure and environment of academia, reduction of permanent positions, and juggling between starting a family and advancing a career. What's more, this career is usually expected to be international, at least in part.

In this chapter, we focus on this last aspect of early career academics. We consider two specific internationalization features among early career academics across 16 higher education systems (HESs) involved in the international Academic Profession in the Knowledge-based Society (APIKS) global project, namely internationalization in training background and in work activities (research, teaching, and external engagements).

We first look at definitions of internationalization and of early career academics. Subsequently, we present our results, comparing early career academics with their established colleagues across the 16 countries. We conclude our chapter with a discussion on the results found from the APIKS project survey and some limitations.

What Is Internationalization?

Internationalization is an important aspect of higher education (HE) and one of the major processes influencing the development of HE in most countries (Egron-Polak, 2012). There are two widely recognized arguments as to why internationalization of HE is important (Qiang, 2003). First, HE needs to prepare graduates adequately for life and work in increasingly globalized environments by providing intercultural skills, attitudes, and multilingualism to their learning outcomes (Qiang, 2003). Second, research requires collaborative efforts and intensive international collaboration due to increasing specialization and the size of investments needed in certain

areas of research (Qiang, 2003). International academics, as well as returning native academics, have fresh ideas; they foster research contacts and the exchange of the latest development and research methods, as well as institutional networking (Melin & Janson, 2006, p. 114; Teichler, 2006, p. 2).

However, internationalization is not limited to geographical mobility. Internationalization is "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of higher education" (Knight, 2004, p. 9). It comprises "the variety of policies and programs that universities and governments implement to respond to globalization" (Altbach et al., 2010, p. 7) and is a broad practice amongst academics and higher education institutions.

The international dimension is fundamental in the definition of a higher education institution, and it can be achieved only with strong system support and proper organizational culture (Crowther et al., 2000). The emphasis is placed on program aspects as well as organizational elements such as policies and procedures (Qiang, 2003). One of the main reasons cited for internationalizing the higher education sector is the achievement of international academic standards for teaching and research. Thus, it represents an added value to the quality of HE and may serve as catalyst for the enhancement of the human, technical, or management infrastructure systems (Qiang, 2003). Driven by globalization, internationalization becomes an important aspect in the production of talent. Furthermore, as the academic labor market has become global (Slaughter & Leslie, 1997), competition for academic talent has extended beyond national boundaries, and international mobility and excellence are now perceived as a crucial element of an academic career (Jepsen et al., 2014; Van den Brink et al., 2013). Additionally, as argued by Jung et al. (2014), the analysis on how the academic profession is embedded in the internationalization of HE needs to consider that there is stronger emphasis paid to global knowledge capital, increased international communication and collaboration, and an increase in student and staff mobility (Musselin, 2005; Teichler, 2004, 2009, 2011).

Early Career Academics

The terms 'early career academic' or 'early career researcher' are variously defined and used (Bazeley, 2003). Despite internationalization being a strong element in all HESs, the way academic careers are built remains a local topic, thus leading to a broad variety in possible definitions of early career academics. This is reflected in the scholarly literature, where a variety of approaches is found.

In some countries, academics with a bachelor-level degree can be employed as junior academics, while in other countries, a master-level degree or doctoral degree is required; this means the level of education and experience of junior academics varies between countries (Finkelstein & Jones, 2019). Jung et al. (2014) also indicate sociological studies referring to status and rank as important elements for the definition, since academic identity, scholarship, and interpersonal relationships can be changed according to the length of service or position (Enders & De Weert, 2004;

Enders et al., 2009; Katz, 1973). Others define the early career according to a certain number of years after obtaining a specific degree, considering the first 5 years after obtaining the doctoral degree as the early career period, or an even longer time frame (Hakala, 2009; Sutherland, 2018). Thus, a definition of early career academics may vary between the first degree and the appointment to professorship (or a similar senior research position) (Teichler, 2006).

For this chapter, we use the early career classification according to employment/academic status, which was adopted in the APIKS project, as well as in previous projects on academic profession (CAP and EUROAC, see: Teichler et al., 2019; Teichler & Höhle, 2013; Kehm & Teichler, 2013). In the APIKS project, the research team from each individual country provides the classification of early-career academics in accordance with their respective national context. The studied group of early career academics (or junior staff, as classified in APIKS) are those occupying a position equivalent to assistant professors, lecturers, research associates, and assistants. In our analysis, we use both the terms *early career academics* and *juniors/junior academics* to indicate this group, while *established academics* or *seniors/senior academics* is used for the group of those academics already beyond the early career stage.

Internationalization Among Early Career Academics

Academia is an environment where international attributes are valued (Bauder et al., 2017). International work experience enhances competencies (Teichler, 2006) and helps early career academics avoid isolation when the academic career is not yet stabilized. Professional relationships play a central role in defining academic identity and making knowledge contributions to a specific field (Gergen, 2009), and isolation in this regard can be particularly detrimental to early career academics. It can limit their progress, stall career development, and result in a lack of scholarly skills necessary to publish research as well as field-specific knowledge, such as command of dominant theories, concepts, and methods (Belkhir et al., 2019).

Furthermore, individual academics are faced with many choices, challenges, and opportunities (Hemmings et al., 2013). This is particularly important for early career academics, as they are relatively new to a developing academy (Hemmings, 2012; Petersen, 2011). Also, Teichler (2006) underlines that the stages of scholars' careers between the first degree and the appointment to a professorship or a similar senior research position have undergone profound changes in the recent past and are likely to experience further changes in the future. Particularly, international mobility of early career academics during their formative years is recognized to enhance their competencies as well as provide benefits to the HESs, which get fresh ideas from visiting foreign scholars and from returning native scholars. Even though these changes seem to be, to a considerable extent, common features across disciplines, types of institutions and countries have great diversity of views and conditions shaping these career stages (Teichler, 2006).

Therefore, it is important for early career academics to develop internationally and expand their network with foreign colleagues. Mobility (including also short-term mobility and international collaboration) is an important part of the career for developing new research contacts, to learn the latest methods in a specific field, and to broaden the mind in many ways (Melin & Janson, 2006, pp. 113–114). With mobility during the formative years, academics get new impulses and new ideas as well as learn to develop new skills and new methods in selected research environments with high reputations (Öquist, 2006, pp. 101–102). Scholars are therefore encouraged or even expected to be internationally mobile (Bauder et al., 2017; Cairns et al., 2017). However, despite international mobility, the career paths of academics are also strongly under the influence of the reality of their national and institutional HES, its history, resourcing, and governance (Finkelstein & Jones, 2019; Matanle & McIntosh, 2020). There are substantial differences between countries, for example, in how funding for HE institutions has been arranged (Finkelstein & Jones, 2019), influencing internationalization. However, Herschberg et al. (2018) also pointed out that not all internationalization is considered equally. Related to a wider discussion on brain drain, internationalization can be considered a loss to these countries where the scholars were initially trained (Teichler, 2006).

Given the importance of internationalization across all HESs, the aim of this chapter is to establish the extent to which experiences of international issues of HE and international activities vary across the APIKS project countries for early career academics. More specifically, we look at the following research questions:

1. To what extent can we observe internationalization in the junior academics' training background? Is there any difference between early career researchers and their senior colleagues?
2. What is the extent of internationalization in the current activities of early career researchers in teaching, research, and external activities?
3. Which differences in terms of internationalization of the early career academics are observed between countries, especially among advanced and emerging countries?

Methods, Sample, and Definitions

In this chapter, we rely on data from 16 countries who invited their academics to answer the APIKS questionnaire between 2018 and 2020. We use descriptive statistical measures to analyze the data obtained from the survey for the specific items related to internationalization activities.

We use the APIKS definition of early career academics according to their status, as the range of statuses held by the academics to which the questionnaire was submitted varies according to the definitions used by each country. The proportions of junior and senior academics in our sample are not necessarily representative of the proportions in the academic population overall. For our analysis, we excluded

countries with a low percentage of junior academics in comparison to the percentages of senior academics, that is, countries with less than 7% junior academics in their sample. The countries excluded were Canada, Taiwan, Japan, and Korea, where the percentages of junior academics are 6.1%, 3%, 2.5%, and 5.4%, respectively. When discussing academics in an international comparative study, not only historical developments salient across countries and different lengths of professional experiences need to be taken into account, but also different positions of the academics within their organizational hierarchy (Jung et al., 2014).

Furthermore, we group the 16 countries analyzed in this study into *advanced* or *emerging*, according to Jepsen et al.'s (2014) categorization which also complement the Universitas 21 report (Williams & Jensen, 2020). Jepsen et al.'s (2014) classification mainly considers an economic status for the country grouping, while Universitas 21 ranks 50 countries across 24 indicators of higher education, which measure four modules: Resources, Environment, Connectivity, and Output. Here, advanced countries are those ranked from 1 to 24 and emerging countries from 25 to 50. Only two countries (Estonia and Lithuania) considered in our study are missing from this report, which we have classified as emerging. Thus, the countries in the *advanced* groups are Finland, Germany, Portugal, Sweden, and Switzerland. The *emerging* countries are Argentina, Chile, Croatia, Estonia, Kazakhstan, Lithuania, Malaysia, Mexico, Russia, Slovenia, and Turkey. The latter is further grouped into *European* (Croatia, Estonia, Lithuania, Russia, Slovenia, Turkey) and *non-European* (Argentina, Chile, Kazakhstan, Malaysia, Mexico).

Averages for the country groups and overall are calculated as averages of the country results and not as averages of all individuals, as the sample size per country does not reflect the size of the academic profession in each country. Our sample contains a total of 18,803 senior and 15,871 junior academics, with varying shares of junior academics between the countries and country groups (Table 4.1).

For our analysis, we use as indicators the following items used from the APIKS international survey, grouped into four dimensions (Table 4.2).

Besides results per country, for each indicator, the maximum, minimum, median, average, and standard deviation are calculated separately for junior and senior academics and for the country groups (Table 4.3). Overall, we note that there is less variation among those indicators where an academics' point of view or judgement of his or her own activities is asked, while those indicators that indicate concrete numbers, such as for example a share of funding from international agencies, show stronger variation between the countries. In addition, we use a benchmark approach to compare the juniors of all the countries (e.g. Probst et al., 2011). Table 4.4 indicates the values and benchmarks for each country separated by juniors and seniors. The benchmark is calculated as the deviation from the median measured in standard deviations. Figure 4.1 shows the benchmarks for all indicators for each country, and by the group classification used, with the colors of the bars representing the four dimensions.

For an overview, comparing the country groups by dimensions, composite indicators for teaching and research are used consisting of the average of the scores of all juniors of a country in each of the individual indicators of the dimension. No weighting is applied.

Table 4.1 Sample

Country group	Country	Senior	Junior	Share of juniors
Advanced	Finland	1081	287	21.0%
	Germany	5560	1664	23.0%
	Portugal	1200	1657	58.0%
	Sweden	848	1555	64.7%
	Switzerland	653	758	53.7%
Emerging European	Croatia	643	395	38.1%
	Estonia	467	394	45.8%
	Lithuania	170	219	56.3%
	Russia	391	1112	74.0%
	Slovenia	604	431	41.6%
	Turkey	495	1315	72.7%
Emerging non-European	Argentina	477	548	53.5%
	Chile	987	708	41.8%
	Kazakhstan	669	350	34.3%
	Malaysia	3187	1181	27.0%
	Mexico	1371	3297	70.6%
All	Total	18,803	15,871	45.8%

Results

Background Training of Academics

Regarding our first research question, we explore geographic mobility among academics (Fig. 4.2). The APIKS questionnaire includes the question whether the doctoral degree was obtained in the current country of employment or not. We take the share of academics with foreign doctorates as a proxy for internationalization in the training dimension. Obviously, this indicator only shows a small part of all possible international mobility in an academic's career. It does not include information on international mobility that could have happened before the doctoral degree was obtained, between the doctoral degree and the current position, or on short-term mobility.

Overall, there is strong variation between the countries in our sample, and between senior and junior academics. While on average, 14% of all juniors (STDEV: 10.94) and 23% of all seniors (STDEV: 16.15) do not work in the country where they obtained their doctoral degree, this share varies between 1.6% (Turkey) and 34.7% (Mexico) for juniors, and between 6.6% (Finland) and 58.8% (Mexico) for seniors. The average is highest in the emerging countries outside Europe, while among all European countries it is slightly higher for seniors in advanced countries than in emerging ones. This difference is much more accentuated for juniors in European countries.

While emerging European countries already demonstrate the lowest share of foreign doctorates among their academics, overall, they also have the strongest

Table 4.2 Survey items used in our analysis

Dimension	Survey item code	Survey item	Type of variable	Name of indicator
Training	A5_B_3	Was your doctoral degree obtained in the country of current employment?	Categorical, 2 options	training
Teaching	C4_5	In your courses you emphasize international perspectives or content	Categorical, 5 options	t.content
	C4_9	Since you started teaching, the number of international students has increased	Categorical, 5 options	t.students
	C4_10	Currently, most of your graduate students are international	Categorical, 5 options	t.graduates
Research	D1_5	Do you collaborate with international colleagues?	Categorical, 2 options	r.collaboration
	D2_5	Characterization of the emphasis of primary research: international in scope or orientation	Categorical, 5 options	r.scope
	D4_2	Percentage of publications in the last 3 years were: published in a foreign country	Numerical	r.published
	D4_4	Percentage of publications in the last 3 years were: co-authored with colleagues located in other (foreign) countries	Numerical	r.co-authors
	D6_6	Percentage of funding for your research came from international funding agencies	Numerical	r.funding
Society	E6_4	To what extent do your external activities contribute to society at the international level	Categorical, 5 options	society

difference between seniors and juniors. However, the high average of foreign doctorates among advanced countries is mainly influenced by Switzerland's numbers. This HES seems highly attractive for scholars with a foreign doctoral degree. The numbers of the other advanced European countries are much more similar those of the emerging European countries.

There might be several reasons for these differences, including for example the size of the country (and corresponding HES), the development status of its HES, its language, the attractiveness of its academic, and non-academic labor market. Comparing, however, senior academics and early career academics within the same HES, this might indicate to some extent a changing trend of internationalization, or an increase of opportunities for doctoral training within a country. On the other hand, it could also indicate that geographical mobility in an academic career typically occurs at a different point in time across the various systems.

Table 4.3 Descriptive statistics for all indicator by country groups and by juniors and seniors

		training		t.content		t.students		t.graduates		r.collaborations		r.scope		r.published		r.co-authors		r.funding		society	
		Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior
Advanced	Max	34.4	41.5	4.2	4.3	3.9	4.2	2.5	2.7	73.7	85.0	3.6	3.9	79.3	81.1	39.9	36.5	18.1	14.4	3.3	3.4
	Min	4.9	6.6	3.2	3.7	2.7	3.0	1.6	1.7	41.4	64.8	3.0	3.4	15.5	21.4	9.2	12.6	3.5	3.0	2.6	2.6
	Median	10.4	14.9	3.3	3.9	3.0	3.5	1.9	2.0	61.0	75.4	3.2	3.6	32.5	37.0	14.1	17.3	7.7	8.0	3.1	3.1
	Average	**13.9**	**17.8**	**3.5**	**3.9**	**3.2**	**3.6**	**2.0**	**2.1**	**59.0**	**74.8**	**3.3**	**3.6**	**40.4**	**47.9**	**20.9**	**23.7**	**8.6**	**8.3**	**3.0**	**3.0**
	Stdev	**12.02**	**13.88**	**0.39**	**0.24**	**0.50**	**0.51**	**0.33**	**0.40**	**13.73**	**7.23**	**0.27**	**0.21**	**26.48**	**24.67**	**13.18**	**11.43**	**5.88**	**5.16**	**0.30**	**0.37**
Emerging European	Max	7.6	27.2	4.1	4.4	3.6	3.9	1.9	2.0	74.8	93.8	3.6	3.8	75.3	83.2	52.2	47.6	16.2	17.2	3.1	3.3
	Min	1.6	7.8	3.5	3.7	2.6	2.8	1.3	1.3	20.1	29.6	2.5	2.6	14.0	14.6	3.2	2.7	0.8	1.7	2.6	2.5
	Median	7.0	13.4	3.7	4.0	3.3	3.7	1.7	1.7	67.5	82.0	3.4	3.6	52.6	53.9	18.6	19.7	8.3	11.1	3.0	3.0
	Average	**5.5**	**14.8**	**3.7**	**4.0**	**3.2**	**3.5**	**1.6**	**1.7**	**56.5**	**71.4**	**3.2**	**3.4**	**47.8**	**54.1**	**19.9**	**21.2**	**8.4**	**10.4**	**2.9**	**3.0**
	Stdev	**2.59**	**7.68**	**0.19**	**0.26**	**0.36**	**0.42**	**0.24**	**0.26**	**23.13**	**24.99**	**0.45**	**0.49**	**20.56**	**23.48**	**17.21**	**15.63**	**6.28**	**7.32**	**0.20**	**0.30**
Emerging non-European	Max	34.7	58.8	4.2	4.4	3.0	3.4	4.4	4.7	62.8	78.2	3.6	3.9	45.6	54.9	21.3	28.7	10.0	13.0	3.4	3.5
	Min	18.9	21.0	3.4	3.8	2.4	2.3	1.3	1.5	31.8	52.6	2.8	2.9	4.0	6.6	1.6	2.4	0.0	0.1	2.3	2.5
	Median	22.3	39.3	4.1	4.3	2.7	2.9	2.2	2.0	45.4	65.2	3.0	3.2	27.9	40.3	10.2	15.3	1.8	3.0	2.7	2.7
	Average	**24.5**	**39.6**	**4.0**	**4.2**	**2.7**	**2.9**	**2.4**	**2.5**	**46.3**	**65.3**	**3.1**	**3.3**	**27.2**	**34.1**	**12.7**	**15.9**	**3.1**	**4.3**	**2.8**	**2.9**
	Stdev	**7.06**	**16.50**	**0.32**	**0.22**	**0.34**	**0.43**	**1.20**	**1.32**	**12.74**	**12.26**	**0.34**	**0.40**	**16.41**	**18.48**	**8.44**	**10.47**	**3.97**	**5.04**	**0.50**	**0.50**
All	Max	34.7	58.8	4.2	4.4	3.9	4.2	4.4	4.7	74.8	93.8	3.6	3.9	79.3	83.2	52.2	47.6	18.1	17.2	3.4	3.5
	Min	1.6	6.6	3.2	3.7	2.4	2.3	1.3	1.3	20.1	29.6	2.5	2.6	4.0	6.6	1.6	2.4	0.0	0.1	2.3	2.5
	Median	9.0	16.6	3.7	4.0	3.0	3.4	1.8	1.9	61.0	75.4	3.3	3.5	38.1	45.3	16.1	17.6	4.4	4.8	3.0	3.0
	Average	**14.0**	**23.0**	**3.7**	**4.0**	**3.1**	**3.4**	**1.9**	**2.1**	**54.6**	**70.9**	**3.2**	**3.5**	**39.0**	**45.9**	**18.0**	**20.3**	**6.8**	**7.8**	**2.9**	**3.0**
	Stdev	**10.94**	**16.15**	**0.35**	**0.26**	**0.44**	**0.52**	**0.73**	**0.80**	**17.54**	**16.88**	**0.35**	**0.39**	**21.86**	**22.64**	**13.34**	**12.49**	**5.76**	**6.19**	**0.32**	**0.36**

Table 4.4 Results and benchmarks for all indicators and all countries, junior and senior

			training (%)		t.content (scale)		t.students (scale)		t.graduated (scale)		r.collaborations (%)		r.scope (scale)		r.published (%)		r.co-authors (%)		r.funding (%)		society (scale)	
Country group	Country	Senior/ junior	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark	Value	Bench-mark
Emerging non-European countries	Argentina	Junior	20.80	1.08	3.44	−0.80	3.00	−0.03	2.23	0.59	31.75	−1.67	2.90	−1.02	39.00	0.04	21.05	0.37	1.79	−0.45	2.31	−2.18
		Senior	32.10	0.96	3.84	−0.46	2.99	−0.72	2.01	0.13	52.61	−1.35	3.20	−0.83	40.31	−0.22	23.42	0.47	3.76	−0.17	2.50	−1.31
	Chile	Junior	18.90	0.91	4.14	1.20	2.43	−1.33	1.32	−0.64	62.78	0.10	3.31	0.16	45.62	0.34	21.30	0.39	10.05	0.98	2.88	−0.38
		Senior	21.00	0.27	4.36	1.53	2.88	−0.94	1.45	−0.56	78.21	0.16	3.55	0.08	54.88	0.42	28.66	0.89	13.01	1.33	2.97	0.00
	Kazhakstan	Junior			4.22	1.42			4.39	3.54	44.35	−0.95	2.77	−1.40	4.03	−1.56	1.65	−1.09	0.04	−0.75		
		Senior			4.40	1.70			4.68	3.49	57.33	−1.07	2.92	−1.53	6.61	−1.71	2.37	−1.22	0.09	−0.76		
	Malaysia	Junior	23.70	1.34	3.99	0.76	3.03	0.04	2.16	0.49	46.50	−0.83	3.61	1.01	27.90	−0.47	10.16	−0.45	1.42	−0.51	3.42	1.31
		Senior	46.40	1.85	4.17	0.80	3.37	0.00	2.59	0.86	73.01	−0.14	3.90	0.97	42.57	−0.12	15.33	−0.18	2.99	−0.29	3.54	1.59
	Mexico	Junior	34.70	2.35	4.21	1.39	2.43	−1.33	1.67	−0.17			2.98	−0.78	19.37	−0.86	9.18	−0.52	2.11	−0.40	2.47	−1.66
		Senior	58.80	2.61	4.28	1.21	2.33	−2.01	1.57	−0.42			3.07	−1.15	25.88	−0.86	9.95	−0.61	1.89	−0.47	2.46	−1.42
Emerging European countries	Croatia	Junior	4.20	−0.44	3.73	0.02	2.95	−0.15	1.30	−0.68	73.42	0.71	3.56	0.86	55.04	0.78	19.60	0.26	13.51	1.58	3.04	0.11
		Senior	9.40	−0.45	3.90	−0.23	3.18	−0.37	1.30	−0.76	88.00	0.74	3.75	0.58	57.71	0.55	21.60	0.32	17.21	2.00	3.14	0.48
	Estonia	Junior	7.30	−0.16	3.71	−0.02	3.27	0.59	1.61	−0.26	73.11	0.69	3.33	0.19	75.31	1.70	52.16	2.70	11.75	1.28	3.00	0.00
		Senior	27.20	0.66	4.02	0.23	3.76	0.75	1.99	0.11	86.25	0.64	3.80	0.71	83.17	1.67	47.60	2.41	16.92	1.96	3.21	0.68
	Lithuania	Junior	7.60	−0.13	3.61	−0.31	3.38	0.84	1.85	0.08	61.83	0.05	3.54	0.81	50.83	0.58	18.99	0.21	4.77	0.07	2.94	−0.21
		Senior	7.80	−0.54	3.68	−1.07	3.72	0.68	1.77	−0.17	77.84	0.14	3.35	−0.43	50.13	0.21	17.83	0.02	5.38	0.09	2.93	−0.11
	Russia	Junior			3.54	−0.52	3.59	1.31	1.73	−0.09	20.07	−2.33	2.48	−2.20	14.04	−1.10	3.25	−0.97	0.85	−0.61	2.56	−1.40
		Senior			3.77	−0.74	3.66	0.55	1.69	−0.27	29.59	−2.72	2.61	−2.34	14.62	−1.36	2.66	−1.19	1.73	−0.50	2.52	−1.26
	Slovenia	Junior	7.00	−0.18	3.80	0.22	3.42	0.92	1.74	−0.08	74.77	0.79	3.45	0.55	54.39	0.75	18.11	0.15	16.24	2.06	3.07	0.21
		Senior	16.20	−0.02	4.19	0.86	3.93	1.08	1.94	0.05	93.76	1.09	3.83	0.78	71.09	1.14	27.43	0.79	16.73	1.93	3.35	1.05

	Turkey	Junior	1.60	−0.68	4.08	1.03	2.60	−0.94	1.28	−0.71	35.93	−1.43	2.79	−1.32	37.18	−0.04	7.31	−0.66	3.11	−0.22	3.07	0.21
		Senior	13.40	−0.20	4.36	1.54	2.84	−1.02	1.54	−0.46	53.03	−1.33	3.04	−1.23	48.05	0.12	9.80	−0.62	4.22	−0.09	2.89	−0.24
Advanced countries	Finland	Junior	4.90	−0.37	3.33	−1.14	3.49	1.08	1.85	0.08	73.73	0.73	3.64	1.09	54.52	0.75	29.50	1.00	7.69	0.57	3.33	1.04
		Senior	6.60	−0.62	3.86	−0.39	4.01	1.23	2.04	0.18	85.00	0.57	3.92	1.01	65.80	0.91	35.68	1.45	8.03	0.52	3.41	1.23
	Germany	Junior	5.90	−0.28	3.34	−1.11	3.02	0.00	1.91	0.16	48.86	−0.69	3.05	−0.60	32.52	−0.25	14.14	−0.15	3.53	−0.15	2.74	−0.84
		Senior	9.20	−0.46	3.88	−0.33	3.49	0.24	1.86	−0.05	64.80	−0.63	3.40	−0.32	36.99	−0.37	17.30	−0.02	3.47	−0.21	2.55	−1.16
	Portugal	Junior	10.40	0.13	4.17	1.27	3.95	2.12	1.59	−0.28	60.98	0.00	3.20	−0.16	15.52	−1.03	11.99	−0.31	9.59	0.90	3.06	0.16
		Senior	17.00	0.02	4.29	1.28	4.21	1.63	1.67	−0.29	75.44	0.00	3.49	−0.08	21.40	−1.06	12.57	−0.40	12.56	1.25	3.08	0.30
	Sweden	Junior	13.90	0.45	3.50	−0.64	2.92	−0.23	2.48	0.94	69.93	0.51	3.53	0.79	79.30	1.89	39.87	1.78	18.08	2.38	3.22	0.69
		Senior	14.90	−0.11	3.81	−0.58	3.31	−0.11	2.73	1.04	75.92	0.03	3.77	0.63	81.10	1.58	36.45	1.51	14.37	1.54	3.31	0.94
	Switzerland	Junior	34.40	2.32	3.18	−1.56	2.69	−0.74	2.00	0.28	41.37	−1.12	3.10	−0.46	20.15	−0.82	9.22	−0.52	4.00	−0.07	2.63	−1.16
		Senior	41.50	1.54	3.66	−1.17	2.95	−0.80	2.19	0.36	73.02	−0.14	3.63	0.27	34.09	−0.50	16.52	−0.08	3.01	−0.29	2.74	−0.65

Note. Benchmark: Calculated as the distance from the overall median (seniors and juniors separately), measured in standard deviations. Example: In Argentina, 20.8% of all juniors have a doctoral degree from abroad (training). The median of this indicator is 9.0, STDEV is 10.94 (see Table 4.3). benchmark = (value-median)/STDEV

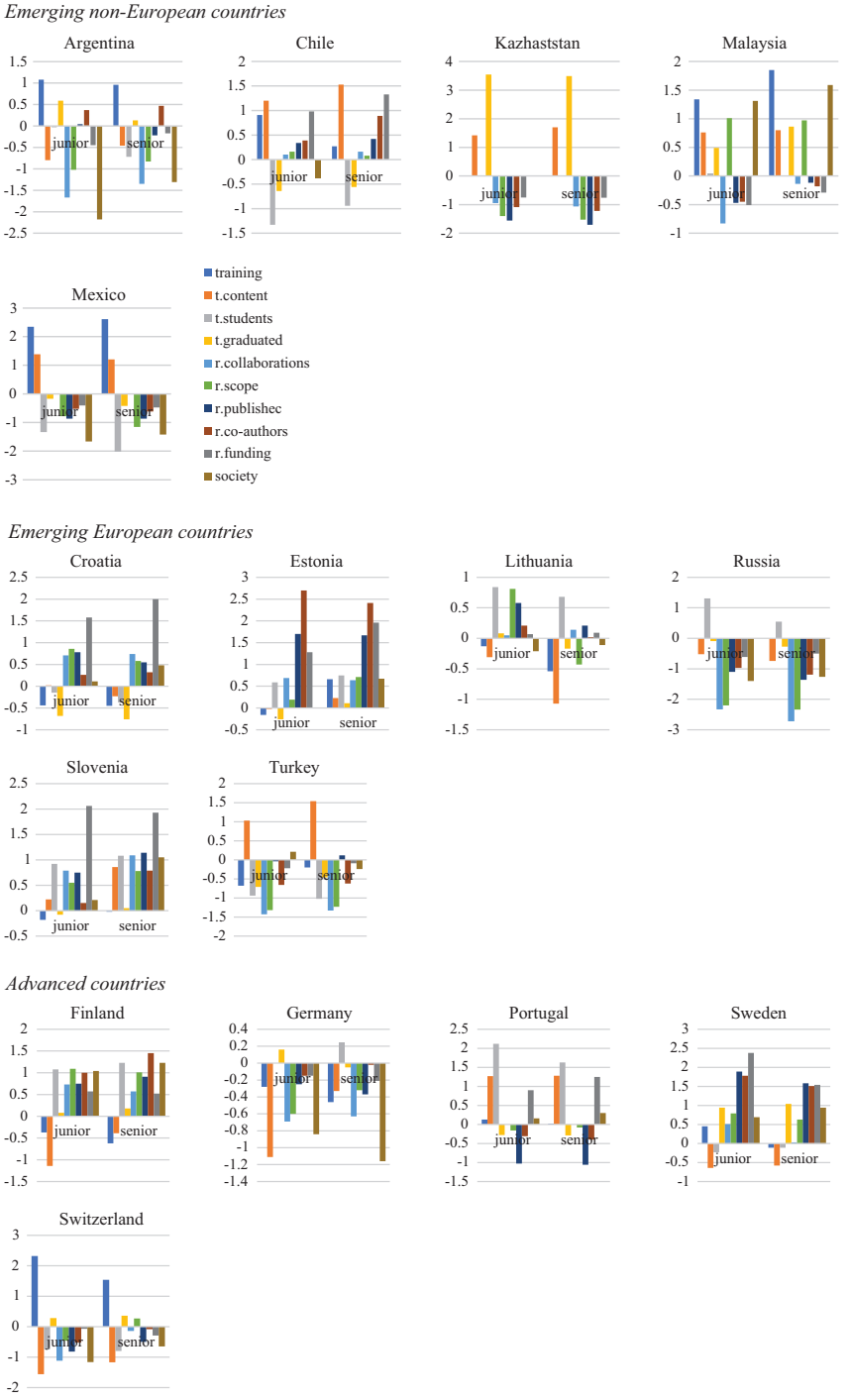


Fig. 4.1 Profiles of the countries in the international comparison

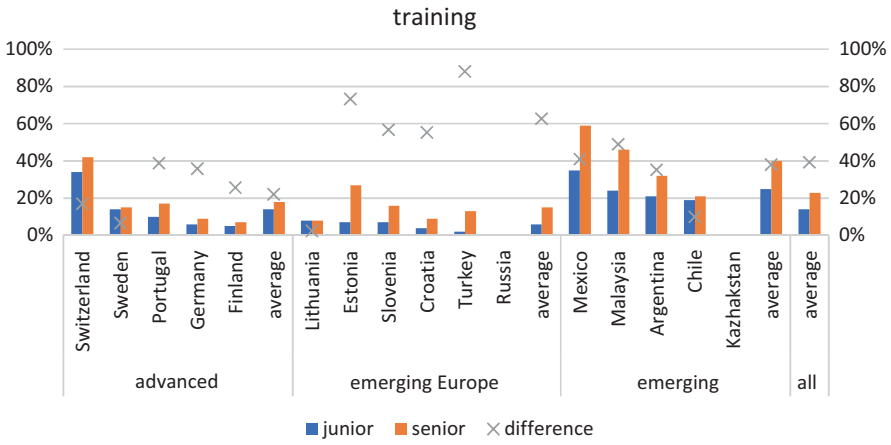


Fig. 4.2 Training: academics with doctoral degree from a country other than the one in which they are currently employed. (Chart by country)
Note. The secondary axis displays the percentage to which the juniors differ from the seniors. E.g., in Estonia, the share of juniors with a foreign doctoral degree is 73.2% lower than the share of seniors. Negative values would indicate that juniors score higher in the indicator than seniors

Teaching

The second research question is addressed by three dimensions interested in internationalization in the academics' day-to-day work portfolio. The first of these dimensions sets a focus on teaching, looking at three different aspects: the emphasis on international elements in teaching, the number of international students and the share of international graduate students, as perceived by the academics themselves.

International Perspectives or Content in Teaching

Academics indicated that they emphasize international perspectives or content in their teaching on a 1 (strongly disagree) to 5 (strongly agree) scale. On average, they answered with 3.7 (junior academics) and 4.0 (senior academics). Overall, the variation is rather low (STDEV for juniors: 0.35, for seniors: 0.26). This is also reflected in rather small differences between the various country groups. However, non-European emerging countries show the highest values for both seniors and juniors, while in advanced countries, they show the lowest values (though still in agreement). In all countries, seniors rate the statement "In your courses you emphasize international perspectives or content" slightly higher than juniors, with juniors differing from seniors by no more than 14% (as compared to 88% for Turkey in the previous indicator). The strongest differences between seniors and juniors are found in the advanced countries (especially Finland, Germany, and Switzerland), while in

Lithuania, Mexico, Portugal, Croatia, Kazakhstan, and Malaysia the values between juniors and seniors differ by less than 5%.

Internationalization of the Student Body

Secondly, we looked at the perception of the early career on the development of the internationalization of the student body. The academics were asked to rate the statement "Since you started teaching, the number of international students has increased", again on a 1–5 scale, with 5 being the highest agreement. On average, the junior academics answered with 3.1, i.e., neither really agreeing nor disagreeing, while their senior colleagues tend to agree (3.4) on average. The differences between seniors and juniors were highest in Finland, Germany, Sweden, Slovenia, Estonia, and Chile.

The differences between the countries, however, were higher than in the previous indicator (STDEV 0.44 and 0.52 for juniors and seniors respectively). Respondents from European countries (both advanced and emerging, with no differences between them except for a higher variation within the advanced countries) tend to agree with the statement (3.2 for juniors in both groups, 3.5 for seniors in emerging European countries, 3.6 in advanced), while in the other European countries the answers are slightly on the disagreeing side (2.7 for juniors, 2.9 for seniors). Thus, this indicates that in those countries, the share of international students has not increased since they started teaching. However, there are slightly disagreeing answers also among European countries, namely for juniors in Sweden and Switzerland, and for both seniors and juniors in Turkey.

When asked about the internationality of their graduate students ("Currently, most of your graduate students are international"), there is clear disagreement with the statement in all countries, except for Kazakhstan. This outlier also leads to strong variation among the emerging countries outside Europe. Except for Kazakhstan, the highest values for this indicator were found in Sweden and Malaysia. So overall, concerning the student body, it seems that in most countries international students are not in a majority and there has not been a strong increase in international students in the last few years.

Teaching overall

When it comes to teaching, we observed that juniors provided lower ratings on the indicators than seniors. While, on average, academics agreed that they emphasize international content in their teaching, graduate students still seem mostly national. Whilst there is variation between junior and senior academics regarding the increase in international students, both junior and senior academics generally agree that there are more international students.

If we compare the responses of junior academics of all observed countries, some interesting patterns emerge (see Fig. 4.1). Emerging non-European countries tend to be strongly above the median concerning internationalization in the content of their teaching, but rather close to or below the median for the student body and graduates. In emerging European countries, the increase in internationalization of the student body is rated above average (except for Croatia and Turkey), while graduate students are rated below, and teaching close to the median. In advanced countries, except for Portugal, the content of teaching is rated as international to a lower extent compared to the benchmark, while the increase of the internationalization in the student body is on average rated more positively, especially for Portugal and Finland. Those countries whose juniors appear to be most internationalized are Portugal, Slovenia, and Malaysia (not considering Kazakhstan and Russia for which one indicator is missing).

Internationalization in Early Career Academics' Work Activities: Research

Concerning the early career academics' activities in research, we consider five different aspects from the APIKS questionnaire: collaboration with international colleagues; an international scope or orientation in research; the percentages of publications published abroad, and of those published with colleagues in another country; and the share of funding from international agencies.

Collaboration with International Colleagues

When it comes to collaboration with international colleagues, we observed strong variation between and within the country groups. The variation appeared strongest within the emerging European countries (see Table 4.3). Advanced countries report the highest level of internationalization on this indicator (see Fig. 4.3). Overall, around half of all early career academics agreed that they collaborate internationally, compared to two thirds of their established colleagues. In this indicator, we found particularly strong differences between seniors and juniors, and strong variation between the countries. Seniors always reported more international collaboration (only in Russia did less than 50% of seniors answer in the affirmative) but in some cases, this was only slightly more than juniors: in Sweden, juniors report 7.9% less international collaboration than seniors. In other countries, however, this difference is considerable: in Switzerland, the different between juniors and seniors was 43.4%.

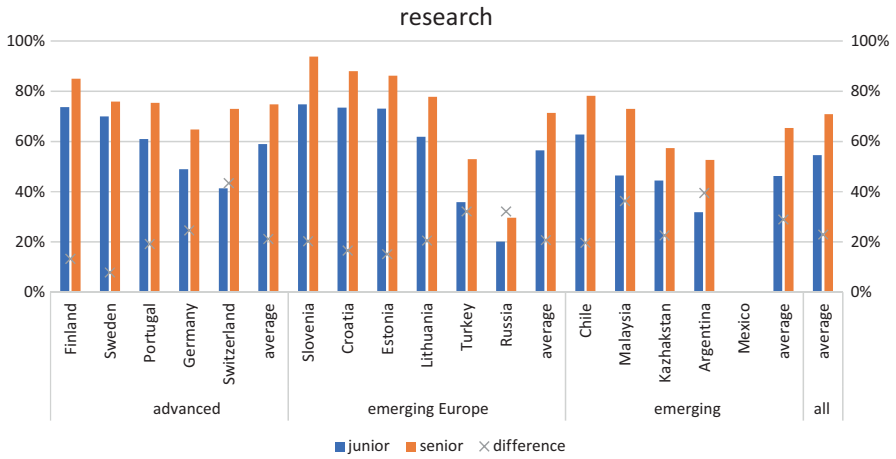


Fig. 4.3 Research: shares of academics answering with yes to the question whether they collaborate with international colleagues. (Chart by country)

Characterization of Emphasis of Primary Research: International in Scope or Orientation

The academics in most countries agreed or tended to agree to the statement that their research is international in scope or orientation. The answers are on the disagreeing side of the five-point scale (i.e., on average lower than 3) only for Russia and Kazakhstan (both seniors and juniors), and for juniors in Turkey, Argentina, and Mexico. Overall, there is stronger agreement among the advanced countries, but with stronger variation among the emerging European and non-European countries. Only in Lithuania did juniors agree more strongly than seniors (but only by 5.6%); the strongest differences were in the other direction, as seen in Switzerland, Germany, and Estonia.

Publications Published in a Foreign Country

When it comes to the percentage of the academics' publications over the last 3 years (at the time of the survey) that were published in a foreign country, we found that less than half of all publications belong to this category (39% for juniors, 46% for seniors); however, there are strong variations (see Table 4.3). Foreign publications were reported more frequently in European emerging countries.

In some countries, the percentage of international publications that are published abroadis similar for both juniors and seniors (e.g., Sweden, Croatia, Lithuania, Argentina), while in other countries, the share of international publications is clearly higher among seniors, with the highest differences in Switzerland and Malaysia. Less than every fourth publication is, on average, published internationally among

seniors and juniors from Kazakhstan, Russia, and Portugal and juniors from Switzerland and Mexico.

International Co-authorships

A similar picture emerges when looking at the share of the last 3 years' publications published with colleagues located in foreign countries. On average, every fifth publication is published with international colleagues. The highest share of publications carried out with foreign colleagues are found among the advanced countries, while emerging non-European countries reported clearly lower shares. Interestingly, in a few countries, juniors rated higher than seniors on this indicator: Russia by 21.9% (very low share overall), Estonia at 9.6% (highest shares overall), Sweden with 9.4%, and Lithuania with 6.5%. In the other countries, juniors reported up to 44.2% fewer international co-authorships than seniors (Switzerland: 44.2%; Slovenia: 34.0%, Malaysia: 33.8%, Kazakhstan: 30.5%, others between 4.6% and 25.7%).

International Research Funding

Compared to the above presented numbers for internationalization in collaborations and publications, the percentage of research funded by international funding agencies is rather low: 6.8% for juniors and 7.8% for seniors, with a strong variation (STDEV 5.76 and 6.19, respectively). The share is highest for seniors among emerging European countries, and lowest for juniors in the emerging non-European countries. In this indicator, early career academics from advanced countries (except for Portugal and Finland) showed a higher degree of internationalization than their established colleagues, indicating that international funding agencies have a certain number of instruments aiming at this specific group of academics. Among all emerging countries, this holds true only for Mexico. Overall, however, international funding is rather low, being higher than 5% only in three of the advanced countries in the sample (Sweden, Portugal, and Finland), in five of the emerging European countries (Slovenia, Croatia, Estonia, and Lithuania), and in Chile, among the non-European countries.

Research Overall

With regards to research, it seems that senior academics are more internationalized than their junior colleagues generally; however, there were considerable differences between the countries in our sample.

When looking only at early career academics, there were, on the one hand, a few countries that seem to be more internationalized in research than others (see Figs. 4.6 and 4.7). Among the advanced countries, these are the Nordic countries of Sweden and Finland. Among the emerging European countries, these are Estonia, Croatia, Slovenia and Lithuania. And among the non-European emerging countries,

Chile appears as more internationalized. On the other hand, a few countries seem clearly less internationalized, including when it comes to the research dimension among early career academics: Kazakhstan, Russia, and Mexico among the non-European emerging countries; and Turkey among the European emerging countries. Overall, the non-European emerging countries seem the least internationalized in our sample, except for Chile.

Overall, there appears to be less variation among the countries, especially in the group of European countries, when it comes to collaboration with international colleagues and to the scope and orientation of their research, but much stronger variation concerning concrete indicators such as publications and funding.

Contributions to External International Society

Organizations – including HE and research institutions – are always part of the social environment around them (Pfeffer & Salancik, 1978). Following data from the APIKS survey, HEIs interact with external partners such as other HE institutes, industry, government, museums, and schools. The activities include research and publications, but also teaching and public lectures with and for partners. These external activities contribute to society in different ways, related, for example, to local/regional community, industry, and society at the national and international levels. This latter aspect occurs, for example, through international topics in the projects which are organized with the external, international partners.

On average, academics responded to the question "To what extent do your external activities contribute to society at the international level?" with 2.9 (juniors) and 3.0 (seniors) on a five-point scale, thus neither agreeing nor disagreeing (see Fig. 4.4). The variation of the results between the country groups is not significant, but

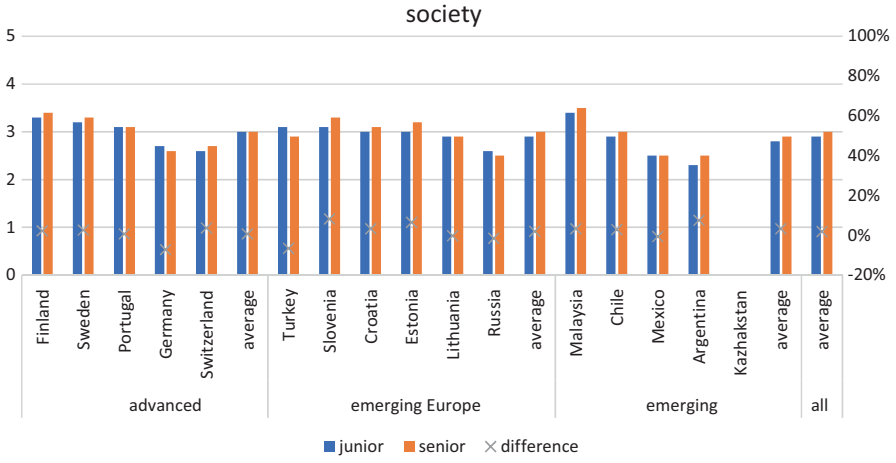


Fig. 4.4 Academic's perception about external activities contribution to the international society

according to the data, the respondents' activities in non-European emerging countries contribute to the society at international level slightly less than in the activities in other groups. However, there is significant variation on results within the groups.

When comparing early career academics with established academics, we note only slight differences, with juniors differing from seniors by no more than 10% in both directions. Most often, seniors report higher values than juniors, which may be related to the longer time that they have had for creating the international network. However, there are five countries, Germany, Turkey, Lithuania, Russia, and Mexico, where we find a stronger tendency to agree among early career academics.

Summarizing Results: Internationalization Among Early Career Academics, an International Benchmark

In order to answer our third research question, we summarize our results by comparing early career academics of the countries in our sample against the benchmark of all countries' values for juniors in the sample in the four dimensions of training, teaching, research and society, according to the country groups (Figs. 4.5, 4.6, and 4.7).

In our comparison, Sweden appears as the most internationalized of the advanced countries, above the benchmark in all indicators, and particularly strong in research, showing the strongest international orientation compared to our benchmark. Finland's junior academics are above the benchmark for research and society, below for training, and just on the benchmark for teaching. These Nordic countries appear

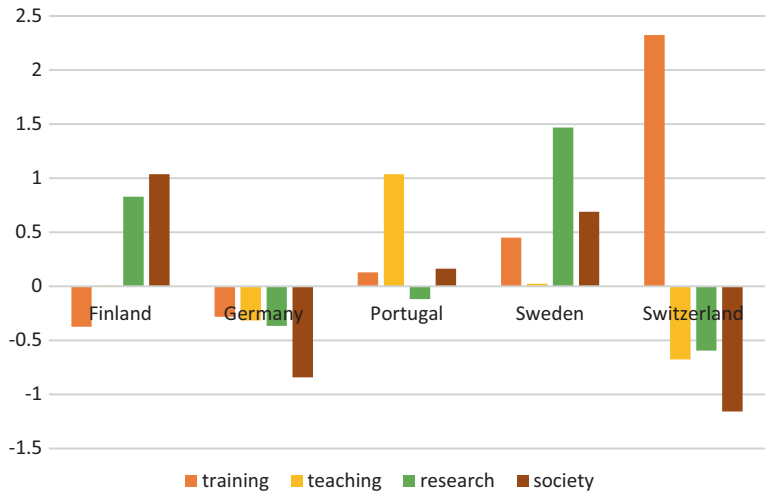


Fig. 4.5 Overall benchmark, all juniors, advanced countries

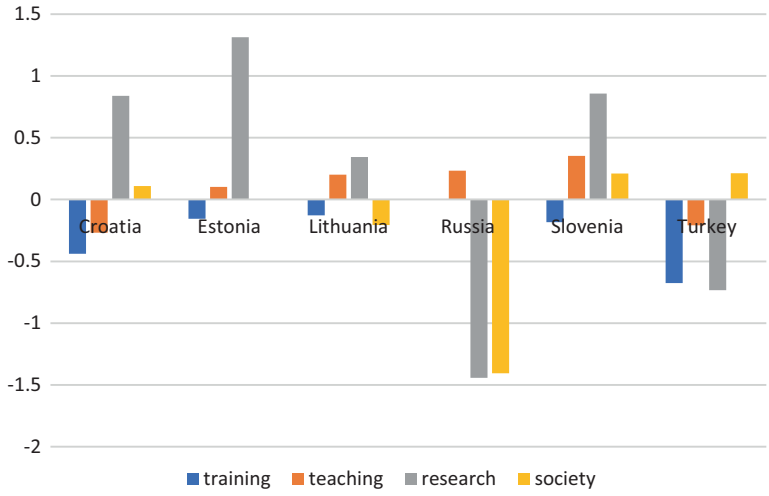


Fig. 4.6 Overall benchmark, all juniors, emerging European countries

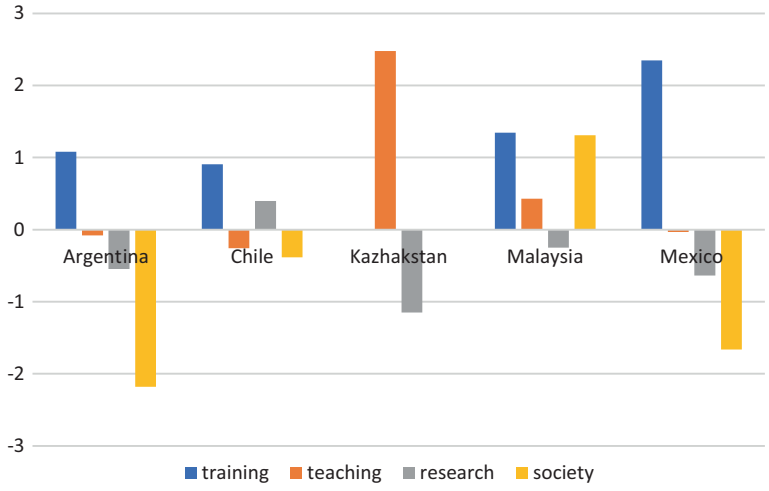


Fig. 4.7 Overall benchmark, all juniors, emerging non-European countries

as the most internationalized among the advanced countries in our sample. Portugal scores particularly high in the teaching dimension, where, overall, only Kazakhstan (with a missing indicator and an outlier on graduate students) is higher. Junior academics from Germany score below our benchmark, while in Switzerland they are below the benchmark for all indicators except for training, where they score the second highest in the whole sample. This might indicate that this latter HES imports internationalization mainly with the employment of academics.

In the overall benchmark, emerging European countries are diverging less from the average. If they are above average, it is in teaching and research. Overall, Slovenia appears as most internationalized in this country group, while juniors from Russia and Turkey reported the lowest level of internationalization. Slovenia shows a strong international profile in research, but also in teaching, and is below average only for the training indicator. Croatia also reported a strong research profile, while it is below the benchmark for training and teaching. Estonia has a rather strong international orientation in research (higher only in Sweden) and is around the average for the other dimensions. Lithuania is rather close to the benchmark in all dimensions, with the strongest positive difference in research. Turkey is below the benchmark for all dimensions except for society, with the least deviation in the teaching dimension, while Russia is clearly below the average in research and society and around average in teaching, with missing data for training.

Among the non-European emerging countries, we note divergence from the average most strongly in training, where the juniors of all countries are above the benchmark in our sample. Malaysia appears as the most internationalized country in this group, with particularly high values for training and society. Mexico has the highest value for the teaching dimension in the overall sample, while in the other dimensions it is below average. Also in Chile, the training dimension is the strongest compared to the others; the juniors of this country are above average also for research. Argentina again repeats the picture of a high value for the training dimension and below average values in the other dimensions.

Discussion

Internationalization of HE has many dimensions and is no doubt brought to the fore in the academics' career development. International collaboration and mobility are effective ways to shape the international presence and reputation as well as the academic career. They contribute to the international dimension of teaching, research, and quality of academic work in general, relevant in a society that is increasingly characterized by international and intercultural relationships, as well as global challenges.

The existing literature shows that these assumptions are not consistently beneficial in all aspects and that the emphasis and implications might differ in the different stages of the academic career. In our chapter, we analyzed whether various aspects of internationalization are similar or show varying patterns across generations and country groups. Due to historical, economic, and institutional factors, the peripheral universities in emerging countries face the same global challenges as the ones in the advanced countries, but in addition they must cope with the challenges of their historical dynamics, changes, and differences that influence academic development and openness towards more advanced scholarship (Zgaga, 2018). It could be expected that there will be, on the one hand, some similarities between advanced and emerging European countries as the HE systems are based on similar

philosophy and self-understanding of the role of academics. On the other hand, the emerging countries (regardless the continent) might be more similar in other respects.

In most of the world, doctoral students and post-doctoral researchers provide the human infrastructure that supports faculty in conducting research (Finkelstein & Jones, 2019). A global expansion of graduate, especially doctoral and postdoctoral, education in the university sector is observed (Shin et al., 2018), reflecting the need to maintain education and research at a high level and to provide the knowledge-based society with highly qualified staff and knowledge. In most of the emerging countries there was a limited supply of doctoral candidates and corresponding internal training options at the start of the expansion of their tertiary systems. There were substantial efforts and financial resources invested to enlarge their capacity to offer doctoral education also within their national boundaries. To support this process, as our data shows, countries often relied on international doctoral degree holders, especially the non-European countries.

The intra-country opportunities for doctoral training seem to increase, especially in Estonia, Slovenia, Croatia, and Turkey, where the share of senior international degree holders is substantially higher compared to juniors. This may suggest that, in recent times, these systems have been relying more strongly on internal resources and expertize to develop the next generation of academics. There is still an overall policy of sending academics abroad for their doctoral studies in Asia and Latin America in our sample. There was also an increase of opportunities for doctoral training available internally in both countries, but mostly within the elite HE subsystem of individual research universities, so the result is less pronounced on the overall perspective.

Regarding teaching, seniors reported more strongly that they emphasized international perspectives in their teaching and had observed a stronger increase in the number of international students since they started teaching. This might indicate a slight decrease or saturation in the internationalization of the student body over recent years, as people who are in academia for a longer time observed a higher increase (or lower decrease) than those serving in academia only for a few years. Those countries where seniors and juniors observed an increase in the international student body (Lithuania, Estonia, Slovenia, Russia, Portugal, Finland) have, in the last decades, set clear goals in their national internationalization strategies to attract highly qualified students and staff from other countries. Such strategies are also visible in the case of Kazakhstan and its graduate students. While Kazakhstan may not be very visible in the international arena, it set clear goals increasing the numbers of foreign students, is increasing English-language education nationwide, and invests heavily into the development of its HES and promotion abroad.

One of the widely recognized arguments as to why internationalization of HE is important is that research requires collaborative efforts and intensive international collaboration due to increasing specialization and the size of investments needed in certain research areas (Qiang, 2003). Even though, in our sample, there is a very high agreement among academics that they collaborate internationally, the picture gets diverse when looking at concrete estimations of international research output.

Academics tend to publish abroad more than in co-authorship with international colleagues, but still, this represents on a general level less than half of their publications. European academics from advanced and emerging countries reported higher shares of such publications than those from non-European countries, and both seniors and juniors from emerging-European countries published more abroad than those from the advanced countries. This reflects the introduction of models to increase science accountability and research excellence driven by indicators, especially present in recent years in most of the emerging European countries. Chile stands out among the Latin American countries as a country where internationalization is an important aspect in the accreditation processes, which results in stronger international output.

In the emerging countries, it is often debated whether to invest limited public funding into research universities that can compete in global rankings or rather adequately fund more modest institutions that can meet the broader social demand for HE (Meza & Zumeta, 2016). This makes the need for international sources even more important. However, the share of international funding in our sample is small, but more present in European countries where academics can benefit from European Union programs and initiatives. This indicator is in comparison rather strong for Slovenia, Croatia, and Estonia. These are countries that lack their own national research resources and depend heavily on European funds where massification has been associated with resource constraints. An international source for research funds is highly reported by Swedish academics, where almost 70% of research is financed by the private sector (i.e., big national and multinational companies). The share of international financing is, on the other hand low, in Germany (where, for example, research funding is already assured and comes with faculty positions,) and Russia, where very little competition exists at universities (Finkelstein & Jones, 2019).

As the academics' situation and activities are in constant flux, it is worthwhile to look also at trends and changes over time by comparing our findings with the findings from Jepsen et al.'s (2014) work on the comparable CAP project and the involvement of junior academics in different modes of internationalization of research. It must be noted, however, that there was no European country among the emerging ones and there were many non-European countries in the advanced country group, so comparison is not straightforward. Considering that internationalization in HE has strongly evolved over the past few decades all over the world, and that HE systems on similar or equal terms in their maturity and in international cooperation tend to respond similarly to global trends, we see an interesting phenomenon: Even though the junior academics from advanced and emerging countries report that they collaborate more with international colleagues than they did 10 years ago, they seem to have nowadays less co-authorships or publications abroad. This drop applies also for their international research funding and their judgement on their research being international in scope or orientation.

Even though today's global trends in the knowledge production and information flow push academics towards internationalization, and international collaboration is essential to broaden experience of the academic staff needed for their career

development, the national traditions and socio-economic circumstances continue to play an important role in shaping academic life. There were substantial changes in recent decades regarding context and societal expectations towards the academic profession. Growing expectations regarding the internationalization of academia and society are the most important trends addressed in this framework (Höhle & Teichler, 2013). Seeking international recognition is becoming to play an increasingly important role in academics' careers and vertical stratification, but is influenced by many external factors, such as history, language, cultural traditions, country size and economic status, and reputation. Academics, and especially early career academics as new entrants to the HES, could be expected to be more responsive to the changing environments and to be influenced more by the global trends and challenges than by the historical traditions. However, a general look shows that internationalization, even though brought to the fore of HE in many aspects, cannot overcome the traditions in HE concepts and the self-understanding of the role of academics, and that this, in fact, plays a stronger role than the central or peripheral geographical location of the country or its size.

Our findings show that internationalization of teaching related elements among junior academics is stronger in countries where the HES's traditions are defined as Napoleonic models that rely on learning rather than research (Portugal, Russia, and Latin American countries). On the other hand, a strong internationalization in research is reflected in countries with a strong Humboldtian tradition within the HES, with a clear research mission, such as Finland, Sweden, Germany, Switzerland, Croatia, and Slovenia. Estonia also undertook several extensive reforms in the field of HE to move away from the Russian HE model after 1991. Lower than probably expected are the overall values for Switzerland and Germany. The reason behind this is probably due to the fact that they both have a strong national research landscape and financial resources, so the push factors for internationalization of research are lower. The fact that Switzerland's universities of applied sciences with a traditionally regional focus are included in the sample might influence this as well.

It is argued that internationalization and massification of HE is very much influenced by global trends as well as the internal dynamics of social, economic, and political forces. Even though our data supports the general findings on increased internationalization dynamics, the results show that it is ethos and philosophy of HE that reflect the most in the types and ways of academics' engagement in internationalization. And finally, also in a very much globalized academic society, seniority (and experience) brings the highest international potential.

Limitations and Future Research

While this chapter allows a first look at internationalization among early career academics, there is still much more to explore. For example, the comparison between the countries could be enhanced by having a closer look at the compositions of each country sample in the APIKS database: To what extent are different

types of HEI included? Which disciplines are represented? What is the gender and age distribution? To what extent are these aspects distributed representatively for the countries?

A closer look at each country's definition of the early career could also shed more light on the data. More refined statistical analysis might also allow to create an inductive, data-driven definition of the early career which might lead to deeper and specific insights on the topic.

References

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2010). Tracking a global academic revolution. *Change: The Magazine of Higher Learning, 42*(2), 30–39.

Bauder, H., Hannan, C. A., & Lujan, O. (2017). International experience in the academic field: Knowledge production, symbolic capital, and mobility fetishism. *Population, Space and Place, 23*(6), e2040.

Bazeley, P. (2003). Defining'early career' in research. *Higher Education, 45*(3), 257–279.

Belkhir, M., Brouard, M., Brunk, K. H., Dalmoro, M., Ferreira, M. C., Figueiredo, B., Huff, A. D., Scaraboto, D., Sibai, O., & Smith, A. N. (2019). Isolation in globalizing academic fields: A collaborative autoethnography of early career researchers. *Academy of Management Learning & Education, 18*(2), 261–285.

Cairns, D., Cuzzocrea, V., Briggs, D., & Veloso, L. (2017). *The consequences of mobility: Reflexivity, social inequality and the reproduction of precariousness in highly qualified migration*. Springer.

Crowther, P., Joris, M., Otten, M., Nilsson, B., Teekens, H., & Wächter, B. (2000). *Internationalisation at home: A position paper* (P. Crowther, Ed.). European Association for International Education.

Egron-Polak, E. (2012). Internationalization of higher education: A few global trends and regional perspectives. In C. T. Ennew & D. Greenaway (Eds.), *The globalization of higher education* (pp. 57–69). Palgrave Macmillan.

Enders, J., & De Weert, E. (2004). *The international attractiveness of the academic workplace in Europe*. Gewerkschaft Erziehung und Wissenschaft (GEW).

Enders, J., De Weert, E., & de Weert, E. (2009). *The changing face of academic life: Analytical and comparative perspectives*. Springer.

Finkelstein, M. J., & Jones, G. A. (2019). *Professorial pathways: Academic careers in a global perspective*. Johns Hopkin University Press.

Gergen, K. J. (2009). *Relational being: Beyond self and community*. Oxford University Press.

Hakala, J. (2009). Socialization of junior researchers in new academic research environments: Two case studies from Finland. *Studies in Higher Education, 34*(5), 501–516.

Hemmings, B. (2012). Sources of research confidence for early career academics: A qualitative study. *Higher Education Research & Development, 31*(2), 171–184. https://doi.org/10.1080/07294360.2011.559198

Hemmings, B., Hill, D., & Sharp, J. G. (2013). Critical interactions shaping early academic career development in two higher education institutions. *Issues in Educational Research, 23*(1), 35–51.

Herschberg, C., Benschop, Y., & Van den Brink, M. (2018). Selecting early-career researchers: The influence of discourses of internationalisation and excellence on formal and applied selection criteria in academia. *Higher Education, 76*(5), 807–825. https://doi.org/10.1007/s10734-018-0237-2

Höhle, E. A., & Teichler, U. (2013). The academic profession in the light of comparative surveys. In B. M. Kehm & U. Teichler (Eds.), *The academic profession in Europe: New tasks and*

new challenges. The changing academy – The changing academic profession in international comparative perspective (pp. 23–38). Springer. https://doi.org/10.1007/978-94-007-4614-5_3

Jepsen, D. M., Sun, J. J.-M., Budhwar, P. S., Klehe, U.-C., Krausert, A., Raghuram, S., & Valcour, M. (2014). International academic careers: Personal reflections. *The International Journal of Human Resource Management, 25*(10), 1309–1326. https://doi.org/10.1080/09585192.2013.870307

Jung, J., Kooij, R., & Teichler, U. (2014). Internationalization and the new generation of academics. In *The internationalization of the academy* (pp. 207–236). Springer. https://doi.org/10.1007/978-94-007-7278-6_10

Katz, D. A. (1973). Faculty salaries, promotions, and productivity at a large university. *The American Economic Review, 63*, 469–477.

Kehm, B., & Teichler, U. (Eds.). (2013). *The academic profession in Europe. New tasks and new challenges*. Springer.

Knight, J. (2004). Internationalization remodeled: Definition, approaches, and rationales. *Journal of Studies in International Education, 8*(1), 5–31.

Matanle, P., & McIntosh, E. (2020). International mobility for early career academics: Does it help or hinder career formation in Japanese studies? *Japan Forum, 34*(2), 152–180. https://doi.org/10.1080/09555803.2020.1792534

Melin, G., & Janson, K. (2006). What skills and knowledge should a PhD have? Changing preconditions for PhD education and post doc work. In U. Teichler (Ed.), *The formative years of scholars* (Wenner Gren International series) (Vol. 83, p. 105). Wenner Gren International.

Meza, E. A., & Zumeta, W. (2016). Public higher education. In P. N. Teixeira & J.-C. Shin (Eds.), *Encyclopedia of international higher education systems and institutions*. Springer. https://doi.org/10.1007/978-94-017-9553-1_29-1

Musselin, C. (2005). European academic labor markets in transition. *Higher Education, 49*(1/2), 135–154.

Öquist, G. (2006). The role of co-operation and mobility in the formative years. In U. Teichler (Ed.), *The formative years of scholars* (Wenner Gren International series) (pp. 97–103). Wenner Gren International.

Petersen, E. B. (2011). Staying or going?: Australian early career researchers' narratives of academic work, exit options and coping strategies. *The Australian Universities' Review, 53*(2), 34–42.

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Harper & Row.

Probst, C., Lepori, B., De Filippo, D., & Ingehoff, D. (2011). Profiles and beyond: Constructing consensus on measuring research output in communication sciences. *Research Evaluation, 20*(1), 73–88.

Qiang, Z. (2003). Internationalization of higher education: Towards a conceptual framework. *Policy Futures in Education, 1*(2), 248–270. https://doi.org/10.2304/pfie.2003.1.2.5

Shin, J.-C., Kehm, B. M., & Jones, G. A. (2018). The increasing importance, growth, and evolution of doctoral education. In J. C. Shin, B. M. Kehm, & G. A. Jones (Eds.), *Doctoral education for the knowledge society* (pp. 1–10). Springer.

Slaughter, S., & Leslie, L. L. (1997). *Academic capitalism: Politics, policies, and the entrepreneurial university*. Johns Hopkin University Press.

Sutherland, K. A. (2018). *Early career academics in New Zealand: Challenges and prospects in comparative perspective*. Springer.

Teichler, U. (2004). The changing debate on internationalisation of higher education. *Higher Education, 48*(1), 5–26.

Teichler, U. (2006). Per aspera ad astra? The formative years of scholars. In U. Teichler (Ed.), *The formative years of scholars* (Wenner Gren International series) (Vol. 83, pp. 1–7). Wenner Gren International.

Teichler, U. (2009). Internationalisation of higher education: European experiences. *Asia Pacific Education Review, 10*(1), 93–106.

Teichler, U. (2011). Academic staff mobility. *Mapping Mobility in European Higher Education, 1*, 111–146.
Teichler, U., & Höhle, E. A. (Eds.). (2013). *The work situation of the academic profession in Europe: Findings of a survey in twelve countries*. Springer.
Teichler, U., Arimoto, A., & Cummings, W. K. (Eds.). (2019). *The changing academic profession. Major findings of a comparative survey*. Springer.
Van den Brink, M., Fruytier, B., & Thunnissen, M. (2013). Talent management in academia: Performance systems and HRM policies. *Human Resource Management Journal, 23*(2), 180–195. https://doi.org/10.1111/j.1748-8583.2012.00196.x
Williams, R., & Jensen, P. (2020). *U21 ranking of national higher education systems 2020*. University of Melbourne.
Zgaga, P. (2018). Autonomy and accountability in higher education, Eastern Europe. In P. N. Teixeira & J.-C. Shin (Eds.), *Encyclopedia of international higher education systems and institutions*. Springer. https://doi.org/10.1007/978-94-017-9553-1_161-1

Alenka Flander is the Director of the Centre of the Republic of Slovenia for Mobility and European programmes in education and training, the leading Slovene institution on the field of the internationalisation of higher education. Beside her advisory services for higher education institutions related to internationalisation of higher education, Alenka has carried out several research projects on the impact of the international cooperation on institutional and national systems development, as well as international comparative research on the academic profession. She is leader of the Slovene APIKS team. Alenka holds a PhD in Political Science and was trained as an electrical engineer at University of Ljubljana.

Pamela Guzmán is a mathematical engineer with a master's degree in applied mathematics and a master's in education. She is currently a doctoral candidate at the Faculty of Education at the Pontificia Universidad Católica of Chile. Her research interest is quantitative methods applied to higher education phenomena related to disadvantaged higher education students. More specifically, her studies include analysing the impact of education policies hoping to provide policymakers and leaders more insights about the implementation of inclusive programs and strategies. Additionally, she collaborates as a research assistant for the Academic Profession in the Knowledge-Based Society project in Chile and the Millennium Nucleus project, "Student Experience in Higher Education in Chile: Expectations and Realities".

Carole Probst Schilter is senior researcher in higher education and head of quality development at Zurich University of Applied Sciences ZHAW, Switzerland. Her journey into higher education research started with a PhD in Communication Sciences at University of Lugano, Switzerland, where she collaborated on various national and international projects. In her current position as higher education professional, she combines higher education research with higher education development. Her research interests include the academic profession, quality development, evaluation, and science and technology indicators. She is leader of the Swiss APiKS team.

Paula Tulppo is researcher at the University of Lapland, Finland, working with issues related to higher education and structural change. She is a member in the Professions in Arctic Societies (ProSoc) research team and the Finnish APIKS team. She holds an M.Sc. (Admin) in Regional Studies from the University of Tampere and is a PhD candidate in the field of Administrative Science at the University of Lapland. In her dissertation research she scrutinizes cross-border cooperation, multilevel governance, and place-based regional development.

Chang Da Wan is Adjunct Professor at the National Higher Education Research Institute (IPPTN), Universiti Sains Malaysia. He is currrently Chief Operating Officer at The HEAD Foundation, Singapore. He holds a DPhil from the University of Oxford and was trained as an economist at the

University of Malaya and National University of Singapore. His research interest is in higher education policy in the Global South, specifically on governance and management, access and success, the academic profession, and internationalisation. He has been involved in multiple research and consultancy projects with the UNESCO-Bangkok, OECD, Commonwealth Tertiary Education Facility (CTEF), Asia Pacific HE Research Partnership (APHERP) Research Cluster, the HE Leadership Academy (AKEPT), and the Ministry of Higher Education Malaysia. Chang Da is also a Member of the Global Young Academy.

Chapter 5
International Staff and Diversity in Missions

Maarja Beerkens, Anna Panova, and Pekka Vasari

Abstract Contemporary universities have many different tasks. Next to the traditional research and teaching mission, universities are also expected to engage in other activities that create social value. A balance between these different tasks varies across higher education systems, institutions, and individuals. This chapter examines the position of international staff on this landscape of different missions. International mobility is usually associated with research excellence. In this chapter we empirically examine the difference between local and international staff to test this image about international staff. The analysis shows that international staff is indeed significantly more oriented towards research and less on teaching, both in their intrinsic interest and time investment. Difference with respect to 'third mission' activities is small. International staff is equally or even more active in activities like patenting or creating spin-off companies. On the other hand, they are underrepresented in activities that are embedded in a local context, such as serving on expert committees or undertaking consultancy work. This triggers a question about an optimal engagement of international staff in the diversity of missions.

Keywords Internationalization · Academic staff · University missions · Diversity · Mobility

M. Beerkens (✉)
Leiden University, Leiden, The Netherlands
e-mail: m.beerkens@fgga.leidenuniv.nl

A. Panova
Higher School of Economics (HSE), Moscow, Russia

P. Vasari
University of Lapland, Lapland, Finland
e-mail: pekka.vasari@ulapland.fi

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_5

Introduction

Globalization is one of the key institutional characteristics of modern higher education and research systems. It has considerably intensified the mobility of people and ideas. There were over 5.5 million international students in 2018, compared to two million in 2000 (UNESCO, 2020). Already in 2003, a substantial number of doctoral degree holders in Europe, North America, and Australia were foreign-born (Auriol, 2007); the share of foreign-born researchers exceeds 25% in several leading economies (Schiller & Cordes, 2016), and international research collaboration is growing rapidly (Graf & Kalthaus, 2018).

It is widely recognized that international staff contribute to research excellence and reputation of universities (Anderson, 2020). Altbach & Yudkevich (2017) argued that international staff are expected to "bring new insights to research, teaching, and perhaps to the ethos of university". Furthermore, the ability to attract international talent is seen as vital for economic growth (Rovito et al., 2021). On the other hand, there are also concerns about increasing internationalization. As in other sectors, there may be tension between globalization and local interests. Overreliance on foreign PhD students may make a country vulnerable in terms of sustainable research potential, especially considering political uncertainties that may hinder mobility in the future (Baker, 2019). A drive for international excellence can make universities and academics sacrifice locally and regionally relevant knowledge creation (Leung, 2007). There may be a lack of integration of international staff, and tension between local and international staff. Furthermore, increasing numbers of international students have questioned whether the benefits of internationalization exceed the costs of providing state-subsidized education to international students (Bolhaar et al., 2019).

Universities operate in a complex institutional environment. International mobility is often presented as an inherent feature of universities. It is an expression of a universal, borderless academic culture. However, modern universities have institutional roots not only in a medieval tradition of universal knowledge, but also in the nineteenth century reforms to build nation states, strengthen national culture, and contribute to the development of vital professions and elites (Amaral & Magalhães, 2002). International and local interests are strongly interwoven, sometimes diverging, and sometimes strengthening each other. In times of economic transformation, for example, a university is often seen as an engine of new growth in otherwise declining regions. Local, regional interests and an international orientation of a competitive higher education institution can easily strengthen each other.

Internationalization, on the other hand, can also alienate a university from its local context. International staff mobility is usually discussed in the context of global competition and research excellence, and much more infrequently in the context of local benefits and the diversity of missions that universities are expected to fulfill. As Teichler (2008) argued, the most recent generation of debates about institutional diversity are strongly shaped by the desire to have world-class universities. Research excellence is a key factor in the 'world-class' narrative. It has been argued

that global competition is homogenizing higher education institutions. The ideal of a world class university is spreading the norm of what a good university is, and how quality should be defined (Marginson, 2006; Marginson & van der Wende, 2007). The narrative of global competition for talent and 'world-class universities' also guides government policies, including those that address international staff mobility. Yet the view does not do justice to the full diversity of higher education institutions and of tasks that academics are expected to carry out.

The diversity of missions leads us to the following research question: Do local and international staff serve different missions within higher education institutions? We will analyze whether international staff represents primarily the international research-centered academic space, as often projected in the 'international talent' narrative of knowledge economies and policy actions. Is international staff significantly different from their local colleagues in terms of their societal engagement, partnerships, and teaching responsibilities, i.e., in tasks that may be more locally oriented?

Researchers and practitioners have long been interested in the topic of academic mobility as well as mission diversity, yet very few studies bring the two themes together and discuss the topic comparatively. Furthermore, there is a lack of comparable statistics on international faculty by country. Often there is no reliable data about a share of international academic staff, or the definition what constitutes international staff varies substantially. Furthermore, different migration and naturalization policies may show the level of internationalization very differently, depending on the chosen definition. The international APIKS survey offers a unique opportunity to compare international faculty in their tasks and preferences.

We start the chapter by clarifying the notion of mission diversity and how it expresses itself in different higher education systems. Secondly, we will examine policies that encourage or facilitate international mobility and discuss their link to mission diversity. Finally, focusing on eight countries that differ in their size, level of internationalization, and system characteristics we analyze empirically whether international staff and local staff differ significantly in their interests, time-investment, and nature of activities.

Mission Diversity: Systems, Institutions, and Individuals

Universities are complex systems of multiple missions. The Humboldtian university reform established the notion of research and teaching as core missions of a university, with the conviction that the tasks of creating knowledge and transmitting knowledge could be best combined within one institution. More recently, the 'third mission' or 'knowledge valorization' has become of equal value. It represents all other activities that contribute to economy and society. The third pillar combines activities such as knowledge commercialization, offering expertise for policy making, contribution to cultural and social life, popularizing scientific knowledge, and many other tasks of social and economic value (Laredo, 2007). Relative importance

of the three missions — research, teaching, and knowledge valorization — can vary considerably across higher education systems, institutions, and individuals.

Higher education systems have approached the division of these various tasks differently (Schimank & Winnes, 2000). In the Humboldtian tradition, universities are a locus of both teaching and research activities, and the interaction between the two is seen as a strength of the system. Napoleonic tradition, on the other hand, divides the two functions between organizational types: universities focus on teaching, and research institutions focus on research. While the separation has become less pronounced over time, non-university research institutes as a strong locus of research excellence are still found in Germany and France, for example.

A relative role of research and teaching missions can vary also across higher education institutions. Binary higher education systems make a formal distinction between types of higher education institutions. A growing need for highly educated professionals gave rise to polytechnics and other types of professionally and vocationally oriented institutions, where education was the primary purpose. The status of research in these professionally oriented institutions differs considerably across countries, from virtually no research activity to a culture of high-quality applied research (de Weert & Beerkens, 2009). Several binary systems were unified during the 1990s, which has not necessarily changed their relative share of teaching and research activities.

Diversity in mission also characterizes unitary systems. We distinguish between vertical and horizontal diversity (Teichler, 2007; van Vught, 2008). Vertical diversity, or stratification, refers to differences between institutions in terms of reputation and prestige, while horizontal diversity refers to differences in mission and profile that should be seen as equal in value. It is much debated whether growth in higher education leads to more horizontal diversity across institutions or, on the contrary, contributes to homogenization of profiles and vertical diversity. Research intensity is a critical factor. It appears that research/non-research distinction always has positional implications (Teichler, 2008), even in the context of horizontal diversity.

Division of tasks can vary not only at a sectoral and institutional level but also at an individual level. Increasing proportions of competitive, project-based grants has led to a situation in which research and teaching tasks are differently divided across staff. A ‘Matthew effect’ has been shown to solidify the task division: academics who receive research funding are more likely to receive further funding in the future, due to the ‘halo effect’ of grants and increased research productivity due to additional research time. In some countries, the problem expresses itself in teaching-focused adjunct staff who substitute research-focused core staff in their teaching obligations, thereby creating a divide between teaching and research staff.

Whether different missions are complimentary or competing is not a simple question. The relationship between teaching and research quality has been extensively studied with inconclusive results (Marsh & Hattie, 2002). Research productivity appears to be a major factor in academics’ satisfaction with their work (Albert et al., 2018), and teaching load has a noticeable negative effect on research productivity (Hesli & Lee, 2011). Research productivity, however, is not only an individual phenomenon but it also depends on research climate and research productivity of

surrounding colleagues (Dundar & Lewis, 1998); the research-intensive environment has a spill-over effect. Furthermore, the relationship between teaching and research is not only quantitative but also qualitative: the nature of research activities can affect the nature of teaching activities (Mägi & Beerkens, 2016).

The relationship between research excellence and third mission activities is also complicated. Schneijderberg et al. (2021) found no relationship between so called 'excellence institutions' and their research commercialization activities. D'Este et al. (2013) concluded that the extent of university-industry collaboration is much more influenced by an institutional and departmental context than on academic excellence.

Mission Diversity and International Staff

The complexity of the relationships between different missions raises important discussions about an ideal model, how to integrate or segregate the missions at an individual, institutional, and system level. International mobility and its role in mission diversity adds another interesting dimension to this discussion.

A contribution of international staff has been studied primarily from the point of view of research excellence. It has been shown that international mobility increases research productivity and contributes to high-impact, co-authored publications (Horta, 2013; Jonkers & Cruz-Castro, 2013). Furthermore, international mobility is particularly influential at the beginning of the career when it contributes to international visibility and networking, as well as international research collaboration and productivity. International mobility in the early career is a long-term career strategy towards an academic, research-oriented career (Khattab & Fenton, 2016). Furthermore, international staff in non-English-speaking regions is often the trigger for developing English-language programs, which contributes to further internalization and visibility of these universities (Altbach & Yudkevich, 2017).

There is less evidence about the effect of international mobility on third mission activities. Bauder (2020) showed a negative relationship as the third mission activities are often based on personal ties that take time to develop, and thereby put international staff in a disadvantaged position. While there is ample evidence on the effect of international mobility on research quality and productivity (Netz et al., 2020), its effect on teaching is scarce. In Europe, the Erasmus program facilitates short-term mobility of teachers, and evaluations of the program show a positive effect of international mobility on teachers' awareness about different teaching methods, on developing intercultural skills, and on establishing research contacts (Enders & Teichler, 2005). Howwever, there can also be other reasons than research-related motives for international mobility. Lee and Kuzhabekova (2018) studied international staff in Kazakhstan and concluded that next to research motivation, the opportunity to build new study programs attracted international staff.

In sum, the link between international staff and mission diversity has multiple facets. Research activities are the most visible part of the task portfolio of

international staff. This might be explained by a self-selection element, as research opportunities seem to be the primary reason for staff to move abroad which may encourage a stronger research-interest of the group compared to non-mobile staff. On the other hand, international mobility of academic staff is the result of various push and pull factors. The visible layer of 'top researchers' may create a biased view of the profile and interests of international staff in general. It is also possible that international staff is in a disadvantaged position for many third mission activities, or even for teaching activities that can be more locally embedded and require good local knowledge and contacts. Furthermore, governmental, and institutional policies may facilitate greater mobility around research excellence, thereby attracting mobile staff who are unproportionally more research-focused relative to other missions of universities. In the next section we will explore further cross-country differences in the level of international mobility and the focus of policies.

Data and Methods

The empirical analysis in this paper is based on the data from the academic staff survey 'Academic Profession in a Knowledge Society' (APIKS) (see *Appendix in the volume for details about the survey*). The survey explores academic staff in 34 countries and in most countries, was conducted between the years 2018 and 2020. The survey asks about work conditions, tasks, preferences, and many other aspects of their work. In this study we make use of the following survey questions:

- *How many hours do you spend in a typical week on each of the following activities? [Teaching, Research, Externally oriented activities, Administration and services within academia, Other]*
- *Regarding your own preferences, do your interests lie primarily in teaching or research? [Primarily in teaching, Both but leaning towards teaching, Both but leaning towards research, Primarily in research]*
- *In the past three years, have you been involved in any of the following activities with 'external' partners? [Patenting and licensing, Public lectures and speeches, etc.]*

While 34 countries participate in the survey, we include only eight countries in this study. In other countries, the number of international staff in the dataset was too low (under 50) or not made available due to concerns about sufficient protection of anonymity. The eight countries include: Canada, Estonia, Finland, Mexico, Malaysia, Portugal, Sweden, and Switzerland. As can be seen in Table 5.1, the number of international respondents is significantly lower than the number of local respondents. This is explained by the fact that international staff is a minority in most institutions, but also likely due to a lower response rate among international staff.

Identifying 'international staff' is not a simple task. Having followed prior education and PhD training abroad, being born in another country, or holding a citizenship from another country are all a form of being international. Each of these

Table 5.1 Sample size

Country	Canada	Estonia	Finland	Malaysia	Mexico	Portugal	Sweden	Switzerland
Local staff	2630	774	1210	4227	4534	2058	2009	868
International staff	275	59	153	141	134	52	332	158
TOTAL	2966	861	1377	4368	4668	3199	2341	1411

Note: The total includes respondents that reported neither local nor international citizenship

definitions might label some people 'international' who are not perceived so by their colleagues or exclude people who are clearly perceived as international. Due to data limitations, we use *citizenship* as an identifier for international staff. Academic staff holding a citizenship of the country where an institution is placed is thus seen as 'local' and a staff member with another citizenship is seen as 'international'. The measure is not without weaknesses. Most importantly, countries differ significantly in their rates of naturalization. An international staff member in Canada may be more likely to take Canadian citizenship after staying for a number of years in the country than, for example, an international staff member in Estonia or Switzerland where both naturalization conditions but also cultural context are different. Therefore, a measure like 'not born' in Canada might give a better picture about the share of international faculty than citizenship (Barbaric & Jones, 2016).

The Level of Internationalization in the Selected Countries

In this section we will provide some background information on the eight countries that we have used in our empirical analysis. The sample includes both large and small countries, prominent and less prominent countries in terms of international research visibility, and countries with high and low share of international staff. The data provides a picture of the level of internationalization in each of the country in the sample. However, it should be noted that reliable and comparable statistics on international staff are difficult to find. The data is often not collected, but also countries and studies use different definitions for 'international staff' that makes reliable comparisons difficult.

In terms of academic mobility, Canada and Switzerland are clearly the most internationalized countries in our sample (Table 5.2). In Switzerland, the share of international staff exceeds 40% (ETER, 2019), and Sautier (2021) labeled it as having one of the most internationalized academic markets in the world. An OECD (2017) analysis of scientific publications showed that Switzerland had the highest percentage of publications authored by people who were previously affiliated with an institution abroad. Furthermore, Swiss universities have a goal of hiring half of their faculty through international recruitment (Altbach & Yudkevich, 2017). The high level of internationalization can also be seen in the student body. More than 17% of students in Switzerland are international students (Table 5.2). Canada shows

Table 5.2 Cross-country differences in the level of internationalization

	International staff estimate	International students (%)	Students studying abroad (%)
Switzerland	40–50% (2016)	17.8	5.3
Canada	40% (2014)	16.2	2.9
Estonia	8% (2014)	11.1	8.0
Portugal	5% (2016)	9.7	5.6
Finland	~10–20% (2016)	8.1	3.9
Sweden	~10–20% (2016)	7.2	3.3
Malaysia	<15% (2019)	6.7	4.8
Mexico	5% (2007)	0.7	0.7

Source: International student mobility data is based on Unesco (n.d.) data

a similar picture. More than 40% of academics in Canada are born in another country, based on data from 2014 (Barbaric & Jones, 2016). Also, Canada has one of the most international student bodies, with more than 16% of students being international students.

Other countries have a significantly lower rate of international staff. In Finland and Sweden, the ratio of international academic staff was between 10–20% in 2016. Malaysia's goal is to have at least 15% international faculty in public research universities by 2020 (Da Wan & Abdullah, 2021); however, in 2019 the share was about 7% (Ghasemy et al., 2021). In Estonia, international staff has been a strategic goal for the government and universities, and the percentage of foreign academics reached 8% in 2014 (Rose & Leišyte, 2016). In Mexico, about 5% of academic staff were foreign, based on data from 2007 (Gacel-Avila, 2018), and in Portugal the percentage was also about 5% based on data from 2016.

Internationalization of academic staff and internationalization of the student body seem to mirror each other. Internationalized higher education systems seem to be an attractive destination for mobile students. Canada and Switzerland are thus attracting the largest share of mobile students, Mexico the least, and other countries somewhere in between. On the other hand, an internalized staff and student body does not seem to affect the willingness of local students to go abroad. Canada is among the lowest in terms of mobility rate for outgoing students, but so is Mexico, for example.

Many countries have adopted policies to promote internationalization (De Wit et al., 2019). Malaysia, for example, has taken great efforts to transform itself from a dependent country into a partner country on the global academic market, particularly in terms of students but also staff (Da Wan & Abdullah, 2021). Studies on internationalisation in the sample countries tend to focus more on teaching and students than on mobile staff (Åkerlund, 2020; Rose & Leišyte, 2016; Didou Aupetit, 2016; Wan & Abdullah, 2021; Sautier, 2021; Välimaa & Weimer, 2014; Stephenson, 2018; Veiga et al., 2007; Gacel-Avila, 2018). There seem to be two main policy instruments to attract and accommodate international staff. Special visa regulations and work permits are instruments that countries use, as is the case in

Estonia, for example (Rose & Leišyte, 2016). International staff may also require more flexible contracts and exceptions to a restrictive civil servant model still in place in some countries (Siekkinen et al., 2016). Another powerful instrument is international research grant schemes that either directly or indirectly attract highly competitive international staff (Beerkens, 2019). The ability to attract international staff is thus dependent on various factors, both general working conditions in the country as well special arrangements for international staff.

Are International Staff Different?

In our empirical analysis, we will examine a difference between local and international staff on three aspects: difference in their interests in different missions, time division between different tasks, and engagement in various valorization activities.

Interest in Research Vs Teaching

The data confirms the view that international staff is intrinsically more research-focused (Table 5.3). Among local staff, 61% reported that their interest lies primarily in research, or both in teaching and research but leaning towards research. Only a minority — 43% of local staff — is interested primarily in teaching or leaning towards teaching. Among international staff, the research interest is even more pronounced: 79% of international staff is more interested in research than teaching, which is a 18-percentage point difference between local and international staff.

The difference is clear in all countries, but the magnitude of the difference varies. Countries with the biggest difference between the preferences of local and international staff are Estonia and Finland, where the difference approaches 30 percentage points. The smallest difference is in Canada and Portugal at just 12.6% difference. Interestingly, the two countries are opposites in many other ways. In Portugal, the smallest share of local staff report more interest in research (43%), while Canada — with 64% — has the second largest share in local staff, after Sweden. Furthermore, Portugal and Canada are at opposite ends of the spectrum in terms of the overall share of international staff of total staff. It is thus not easy to suggest what might

Table 5.3 Interest in research or leaning towards research, local and international staff compared (% of staff)

	Can	Est	Fin	Mal	Mex	Por	Swe	Swit	Average
Local staff	64	54.7	53	81.6	62.3	48.2	65.8	55.5	61.0
International staff	76.6	84.4	82.3	84.6	89.6	60.8	84.3	71.4	78.9
Difference	12.6	29.7	29.3	3.0	27.3	12.6	18.5	15.9	17.9

explain differences between preferences of local and international staff across different countries.

Time Division Between Different Tasks

How staff members divide their time between different tasks offers further insights about differences between local and international staff (Table 5.4). It is very clear that international staff invests more time into research, on average more than 4 h per week. Only in Canada and Malaysia is the difference marginal, and even negative. To some extent, cross-country variance reflects the difference in interests reported above. Both in Canada and Portugal, local and international staff do not diverge much, while in Finland, international staff spends on average over 1.5 days (13.9 h) each week more on research. Estonia is an exceptional case where differences in interest and in time investment do not coincide.

Most of the additional time-budget of international staff comes indeed from reduced time teaching (~3.2 h per week), but not entirely. International staff tends to spend slightly less time on various valorization activities (~0.6 h per week) and administrative tasks (~0.4 h per week). Differences in administrative tasks are very small and not consistently negative. Sweden and Malaysia are examples of countries where international staff has noticeably lower administrative burden, 2.2 or 2.3 h fewer per week, respectively. These are also countries where time spent on administration seems to be the highest. In other countries, differences between local and international staff are small and sometimes positive, sometimes negative.

Differences in time spent on valorization are more consistent across countries and show that internal staff spends between 0.5 and 1.2 h per week less on various valorization activities than local staff. Exceptions are Switzerland, where there is virtually no difference between international and local staff, and Malaysia, where international staff spend 0.4 h more on valorization activities. As valorization activities can vary in nature, the next section will have a closer look into different types of valorization activities.

Different Types of Valorization Activities

Table 5.5 lists different types of valorization activities based on their relative prominence among international staff. International staff is, on average, more active than local staff in two activities: joint research and publications with the industry, and patenting and licensing. On average, 6.2% more international staff are engaged in joint research and publications, but the average is influenced by two countries in particular: Finland and Estonia. In other countries, the difference is marginal or even slightly positive towards local staff. In terms of patenting and licensing, the average difference is low, only 0.7%. Since participation in such activities is in

Table 5.4 Time spent on teaching, research, and third mission activities, difference between local and international staff (mean values in hours)

		Canada	Estonia	Finland	Malaysia	Mexico	Portugal	Sweden	Switzerland	Ave Diff
Teaching	Local	20	17.5	18.6	18.2	18.1	16.5	21.3	14.9	
	Foreign	20.3	12.7	8.2	19.7	14.9	14.2	15.9	13.6	
	Δ	0.3	−4.8	−10.4	1.5	−3.2	−2.3	−5.4	−1.3	−3.2
Research	Local	13.5	14.4	11.9	11.5	13.2	10.9	12.5	16.8	
	Foreign	12.9	15.4	25.8	15.9	19.9	12	18.6	18.3	
	Δ	−0.6	1	13.9	4.4	6.7	1.1	6.1	1.5	4.3
Valorisation	Local	3.3	4.4	2.4	4.6	3.7	3.5	3.7	7.3	
	Foreign	2.8	3.7	1.5	5	2.5	2.5	2.7	7.4	
	Δ	−0.5	−0.7	−0.9	0.4	−1.2	−1	−1	0.1	−0.6
Administration	Local	8.4	7.4	4	8.8	5.2	6.2	9.2	6.3	
	Foreign	8.6	8	3.1	6.5	5.9	6.7	7	6.5	
	Δ	0.2	0.6	−0.9	−2.3	0.7	0.5	−2.2	0.2	−0.4

Table 5.5 Contribution of international staff to various valorisation activities, compared to local staff in parentheses (% of staff involved in each activity)

	Canada	Estonia	Finland	Malaysia	Portugal	Sweden	Switzerland	Average difference
Joint research and publications	45.8%	62.7%	53.6%	71.3%	64.4%	49.1%	35.7%	6.2%
	(42.2%)	(35.5%)	(37.9%)	(75.1%)	(65.9%)	(49.8%)	(33.1%)	
Patenting and licensing	4.7%	11.8%	6.0%	11.0%	4.4%	6.9%	2.5%	0.7%
	(4.4%)	(4.2%)	(5.9%)	(12.8%)	(4.9%)	(4.9%)	(5.6%)	
Creation of a spin-off/ start-up company	3.6%	17.6%	6.6%	3.7%	2.2%	3.9%	1.9%	0.1%
	(3.8%)	(4.5%)	(10.0%)	(3.1%)	(4.5%)	(6.5%)	(6.7%)	
Evaluation (of policies, etc.)	15.3%	15.7%	9.9%	14.0%	22.2%	12.9%	20.4%	−1.6
	(19.8%)	(14.0%)	(17.2%)	(15.5%)	(16.2%)	(21.7%)	(17.5%)	
Public lectures and speeches	52.7%	60.8%	34.4%	34.6%	75.6%	32.9%	43.3%	−1.8
	(53.9%)	(63.2%)	(40.9%)	(38.9%)	(66.4%)	(42.5%)	(41.6%)	
Supervision of student internship/ placements	22.5%	39.2%	37.1%	62.5%	40.0%	28.1%	23.6%	−2.6%
	(26.7%)	(29.2%)	(39.9%)	(65.9%)	(52.5%)	(27.2%)	(30.0%)	
Publications for broader audience	29.8%	49.0%	43.0%	44.9%	22.2%	29.0%	31.2%	−4.1
	(31.4%)	(47.8%)	(52.0%)	(44.3%)	(28.7%)	(41.1%)	(32.3%)	
Consultancy	23.3%	35.3%	14.6%	47.1%	37.8%	15.6%	26.1%	−6.4
	(28.6%)	(42.9%)	(30.6%)	(49.9%)	(36.8%)	(27.0%)	(28.7%)	
Participation in external boards and committees	31.6%	21.6%	18.8%	41.2%	20.0%	23.1%	13.4%	−7.5
	(35.4%)	(42.2%)	(33.8%)	(41.6%)	(24.3%)	(24.4%)	(19.9%)	
Volunteer-based professional work	26.9%	21.6%	12.6%	46.3%	20.0%	8.4%	15.9%	−9.8
	(33.4%)	(41.4%)	(20.1%)	(53.6%)	(23.8%)	(19.9%)	(28.0%)	
Average difference across all activities (absolute)	−2.3%	1.0%	−5.2%	−2.4%	−1.5%	−5.5%	−2.9%	

general very low (less than 10%), the 0.7-percentage point difference could be substantial. Nevertheless, the difference in favor of international staff in this example is not shared by all countries. In creating spin-off and start-up companies, the ratio of international to local staff is more or less similar, with Estonia as an outlier with very active international staff.

Towards the end of the list (Table 5.5) we can find activities such as participation in external boards and committees, volunteer-based professional work, and consultancy where international staff is clearly underrepresented. This is the case in all countries, and the difference for both activities reach above 6 percentage points. In

the middle of the continuum, we find activities like public lectures and speeches, policy evaluations, publications for broader audience, and supervising student internships and placement. In all these activities, international staff is somewhat underrepresented (between 4.1 and 1.6 percentage points), but consistently over all countries with only incidental exceptions.

We can see that countries differ quite a lot in terms of how similar or different international and local staff are in terms of valorization activities (see last row in Table 5.5), the biggest differences seen in Estonia and Finland, at 11.1% and 6.8%, respectively. Also, in terms of interest in research and time investment in research, these countries show a sharp difference between local and international staff. On the other hand, there are countries where differences are quite small in all respects. Canada is one such example. On average, the difference between various staff members is small, but particularly in terms of more societally oriented activities (volunteering, membership in board) there is still a noticeable underrepresentation of international staff. On the other hand, difference in research preference is smaller than in other countries, and time investment in teaching and research tasks shows no difference. Also, in Switzerland, there is no difference between time investment, and difference in valorization is moderate but in an expected pattern similar to Canada. A third type of country is that in which differences between valorization activities is moderate, but in which there is a significant orientation of international staff towards research. Sweden is an example of one such country, and Malaysia also shows signs of such a pattern.

This study is not equipped to explain these cross-country differences. Four contributing factors can be mentioned. First, disciplinary mix of international staff can vary across countries. It may be the case that international staff in Estonia and Finland, for example, are relatively more concentrated in hard sciences. As a result, they may demonstrate higher commitment to research as well as to certain types of valorization activities (e.g., joint research, valorization) that is typical to these disciplines. Secondly, dominant language in a country is likely to contribute to how easy or difficult it is for the international staff to be integrated in various tasks. International staff in Canada is probably more easily integrated in teaching tasks due to English language, compared with Estonia or Finland where most study programs are in a local language, though the number of English-based programs is growing rapidly. Nevertheless, even in countries like Canada there is a clear difference in terms of the tasks that require societal engagement, such as board memberships and volunteer-based professional work. Thirdly, programs to attract international staff are likely to vary substantially across countries. Countries that are trying to build up their international research visibility offer research positions and funding to attract international staff, including PhD positions, which leads to research prioritization among the group. Lastly, naturalization policies matter. Citizenship, as measurement for international staff, can hide some essential differences. Relatively small differences between international and local staff in Canada may be explained by the fact that a large proportion of international staff takes Canadian citizenship after a relatively short stay in the country, which makes a

distinction between international and local staff somewhat blurry. Additional research on this topic might help to clarify further the role of each of these factors.

Conclusion

This chapter focused on mission diversity in higher education. While research excellence is often the most visible and prominent part of universities' activities, the quality of teaching and other contribution of universities to society are increasingly recognized. Yet the combination of different types of activities at an institutional but also individual level is often a challenge. Interrelationships between different missions are complex, both competing and complementary at the same time. Furthermore, the relative importance of different missions changes over time. Several countries have seen a recent over-focus on research excellence as harmful for the system as a whole and try to balance a whole palette of different tasks.

In the context of over-focus on research excellence and rising sensitivity towards downplaying other tasks, it is interesting to examine the position of international staff on the landscape of different missions. The emerging picture is quite nuanced. International staff mobility in policy agenda and literature is primarily approached through the logic of research excellence. The empirical analysis in this chapter confirms that international staff is on average more research oriented both in their interests and their time investment. There is a substantial cross-country variation in how similar or different international staff can be compared to local staff. Based on data in this study, it is impossible to say what explains the difference. It seems that the share of international staff matters. In countries like Canada or Switzerland where the share of international staff is reaching 50%, the difference in research-teaching task division is smaller. This is likely to indicate that a larger share of international staff means that they must be fulfilling a more diverse set of tasks. It may also refer to a fact that teaching programs are more open to international staff, for example, not inhibited by the local language requirement that might be an obstacle for engaging international staff.

Various valorization activities also show a great diversity. Some activities are equally or even more common among international staff. These seem to be activities that relate directly to research and are more common in hard sciences, such as patenting/licensing and joint industry research. For some activities, international staff is underrepresented. These seem to be activities where either local knowledge or local networks are important, such as serving on boards and expert committees, professional volunteer work, and evaluation projects.

While there seem to be systematic differences between local and international staff, it is clear that international staff is actively involved in all three missions. They are not only heavily engaged in research activities but also their teaching contribution is substantial, and they are actively involved in various valorization activities. In this chapter we have not looked deeply into differences among international staff that countries attract. There is probably a large difference in the profile of

international staff in different countries. The relative share of early-career researchers (e.g., postdocs) vs senior scholars is likely to influence the task portfolio. Furthermore, we have not looked at a disciplinary mix of international staff in different countries, which again is likely to influence the nature of activities.

The contribution of international staff to various missions of universities is an important topic. It triggers questions about using the full potential of international staff for all the missions. Their underrepresentation in certain activities may also inspire universities to think how to engage them better in activities that require local knowledge or local networks. It also illustrates the complexity of the mission diversity and raises the question of how to divide the tasks most effectively, both at an individual and institutional level. This makes the position of international staff in mission diversity a relevant issue. Understanding preferences and obstacles that international staff face in their attempt to engage in a variety of tasks might be valuable for designing effective organizational policies and creating supporting facilities.

Funding Acknowledgement Anna Panova was financially supported by HSE University Basic Research Program.

References

Åkerlund, A. (2020). A competition state perspective on the development of Swedish policies for internationalisation of higher education and research 1960s–2010s. *Nordic Journal of Educational History, 7*(2), 99–123.

Albert, C., Davia, M. A., & Legazpe, N. (2018). Job satisfaction amongst academics: the role of research productivity. *Studies in Higher Education, 43*(8), 1362–1377.

Altbach, P., & Yudkevich, M. (2017). The role of international faculty in the mobility era. University World News. https://www.universityworldnews.com/post.php?story=20170125121351466

Amaral, A., & Magalhães, A. (2002). The emergent role of external stakeholders in european higher education governance. In A. Amaral, G. A. Jones, & B. Karseth (Eds.), *Governing higher education: national perspectives on institutional governance. Higher education dynamics* (Vol. 2, pp. 1–21). Springer. https://doi.org/10.1007/978-94-015-9946-7_1

Anderson, S. (2020). Immigrants, nobel prizes and the American dream. Forbes. https://www.forbes.com/sites/stuartanderson/2020/10/14/immigrantsnobel-prizes-and-the-american-dream/?sh=694eb4f4372e

Auriol, L. (2007). Labour market characteristics and international mobility of doctorate holders: results for seven countries. In *OECD science, technology, and industry working papers 2007/2*. OECD Publishing.

Baker, S. (2019, September 26). Reliance on foreign PhD students 'could harm US research' Data show US has relatively low number of domestic PhD graduates, leaving it reliant on potentially fragile international recruitment. *THE*. https://www.timeshighereducation.com/news/reliance-foreign-phd-students-could-harm-us-research

Barbaric, D. V., & Jones, G. A. (2016). International faculty in Canada: Recruitment and transition processes. In M. Yudkevich, P. G. Altbach, & L. E. Rumbley (Eds.), *International faculty in higher education* (pp. 51–75). Routledge.

Bauder, H. (2020). International mobility and social capital in the academic field. *Minerva, 58*(3), 367–387. https://doi.org/10.1007/s11024-020-09401-w

Beerkens, M. (2019). The European research council and the academic profession: Insights from the starting grant holders. *European Political Science, 18*(2), 267–274.

Bolhaar, J., Kuijpers, S., & Nibbelink, A. (2019). *Economische effecten van internationalisering in het hoger onderwijs en mbo*. CPB.

D'Este, P., Tang, P., Mahdi, S., Neely, A., & Sánchez-Barrioluengo, M. (2013). The pursuit of academic excellence and business engagement: is it irreconcilable? *Scientometrics, 95*, 481–502.

Da Wan, C., & Abdullah, D. (2021). Internationalisation of Malaysian higher education: Policies, practices and the SDGs. *International Journal of Comparative Education and Development, 23*(3), 212–226.

de Weert, E., & Beerkens, M. (2009). Research at universities of applied sciences in Europe: Conditions, achievements and perspectives. In *Report prepared for the European network for universities of applied sciences (UASNET)*. CHEPS.

De Wit, H., Rumbley, L. E., Craciun, D., Mihut, G., & Woldegiyorgis, A. A. (2019). *International mapping of national tertiary education internationalization strategies and plans (NTEISPs) CIHE Perspectives* (Vol. 12).

Didou Aupetit, S. (2016). Attraction, integration, and productivity of international academics in Mexico: Comparative perspectives on recruitment, integration, and impact. In M. Yudkevich, P. G. Altbach, & L. E. Rumbley (Eds.), *International Faculty in Higher Education: Comparative perspectives on recruitment, integration, and impact* (pp. 173–195). Routledge.

Dundar, H., & Lewis, D. R. (1998). Determinants of research productivity in higher edu-cation. *Research in Higher Education, 39*, 607–663.

Enders, J., & Teichler, U. (2005). Academics' view of teaching staff mobility: The ERASMUS experience revisited. In A. Welch (Ed.), *The professoriate* (pp. 97–112). Springer.

ETER. (2019). Internationalisation of academic staff in european higher education european tertiary education register. The ETER project, 2019. https://www.joanneum.at/fileadmin/user_upload/ETER_AnalyticalReport_01_final.pdf

Gacel-Avila, J. (2018). Internationalization of higher education in Mexico: Progress and challenges. Mapping internationalization globally. International briefs for higher education leaders no. 7. *American Council on Education*.

Ghasemy, M., Derahvasht, A., & Castillo Apraiz, J. (2021). Antecedents and consequences of wandering scholars' affect: the case of multi-cultural Malaysia in the internationalization era. *Journal of Applied Research in Higher Education, 14*(2). https://doi.org/10.1108/JARHE-02-2021-0078

Graf, H., & Kalthaus, M. (2018). International research networks: Determinants of country embeddedness. *Research Policy, 47*(7), 1198–1214.

Hesli, V., & Lee, J. (2011). Faculty research productivity: Why do some of our colleagues publish more than others? *Political Science & Politics, 44*(2), 393–408.

Horta, H. (2013). Deepening our understanding of academic inbreeding effects on research information exchange and scientific output: new insights for academic based research. *Higher Education, 65*, 487–510. https://doi.org/10.1007/s10734-012-9559-7

Jonkers, K., & Cruz-Castro, L. (2013). Research upon return: The effect of international mobility on scientific ties, production and impact. *Research Policy, 42*(8), 1366–1377.

Khattab, N., & Fenton, S. (2016). Globalisation of researcher mobility within the UK Higher Education: Explaining the presence of overseas academics in the UK academia. *Globalisation, Societies and Education, 14*(4), 528–542.

Laredo, P. (2007). Revisiting the third mission of universities: Toward a renewed categorization of university activities? *Higher Education Policy, 20*, 441–456.

Lee, J. T., & Kuzhabekova, A. (2018). Reverse flow in academic mobility from core to periphery: Motivations of international faculty working in Kazakhstan. *Higher Education, 76*(2), 369–386.

Leung, K. (2007). The glory and tyranny of citation impact: An East Asian perspective. *Academy of Management Journal, 50*(3), 510–513. https://doi.org/10.5465/AMJ.2007.25525592

Mägi, E., & Beerkens, M. (2016). Linking research and teaching: Are research active staff members different teachers? *Higher Education, 72*(2), 241–258.
Marginson, S. (2006). Dynamics of national and global competition in higher education. *Higher Education, 52*(1), 1–39.
Marginson, S., & van der Wende, M. (2007). *Globalisation and higher education*. OECD working paper.
Marsh, H. W., & Hattie, J. (2002). The relation between research productivity and teaching effectiveness. *The Journal of Higher Education, 73*(5), 603–641.
Netz, N., Hampel, S., & Aman, V. (2020). What effects does international mobility have on scientists' careers?. A systematic review. *Research Evaluation, 29*(3), 327–351.
OECD. (2017). OECD science, technology and industry scoreboard 2017: The digital transformation. *OECD Publishing*. https://doi.org/10.1787/9789264268821-en
Rose, A. L., & Leišyte, L. (2016). Integrating international academic staff into the local academic context in Lithuania and Estonia. In M. Yudkeich, P. G. Altbach, & L. E. Rumbley (Eds.), *International faculty in higher education* (pp. 101–123). Routledge.
Rovito, S. M., Kaushik, D., & Aggarwal, S. D. (2021). The impact of international scientists, engineers, and students on U.S. research outputs and global competitiveness. *MIT Science Policy Review, 2*, 15–25.
Sautier, M. (2021). Move or perish? Sticky mobilities in the Swiss academic context. *Higher Education, 82*, 799–822. https://doi.org/10.1007/s10734-021-00722-7
Schiller, D., & Cordes, A. (2016). Measuring researcher mobility: A Comparison of different datasets and methods with an empirical application of micro-data for the United States and Germany. Paper presented in the OECD Blue Sky Forum 2016. https://www.oecd.org/sti/062%20-%20Schiller-Cordes-Researcher-Mobility-final.pdf
Schimank, U., & Winnes, M. (2000). Beyond Humboldt? The relationship between teaching and research in European university systems. *Science & Public Policy, 27*(6), 397–408.
Schneijderberg, C., Götze, N., Jones, G. A., Bilyalov, D., Panova, A., Karram Stephenson, G., & Yudkevich, M. (2021). Does vertical university stratification foster or hinder academics' societal engagement? findings from Canada, Germany, Kazakhstan, and Russia. *Higher Education Policy, 34*, 66–87.
Siekkinen, T., Pekkola, E., & Kivistö, J. (2016). Recruitments in Finnish universities: practicing strategic or pathetic HRM? *Nordic Journal of Studies in Educational Policy, 2-3*, 32316.
Stephenson, G. K. (2018). The State of Internationalization in Canada: Strategic and Innovative. *International Briefs for Higher Education Leaders, 7*, 9–11.
Teichler, U. (2007). *Higher education systems. Conceptual frameworks, comparative perspectives, empirical findings*. Sense.
Teichler, U. (2008). Diversification? Trends and explanations of the shape and size of higher education. *Higher Education, 56*, 349–379.
UNESCO. (n.d.). Education statistics. [Database]. http://data.uis.unesco.org/
Välimaa, J., & Weimer, L. (2014). The trends of internationalization in Finnish higher education. *Zeitschrift für Pädagogik, 60*(5), 696–709.
van Vught, F. (2008). Mission diversity and reputation in higher education. *Higher Education Policy, 21*, 151–174.
Veiga, A., Rosa, M. J., & Amaral, A. (2007). The internationalisation of Portuguese Higher Education: How are higher education institutions facing this new challenge? *Higher Education Management and Policy, 18*(1), 105–120.

Maarja Beerkens is Associate professor in International Governance at Leiden University, the Netherlands. Her research covers a wide range of issues in higher education and science policy, from quality assurance, research management and internationalisation to student experiences and teaching practices.

Anna Panova is a research fellow of the Centre for Institutional Studies at National Research University Higher School of Economics in Moscow, Russia (HSE) and a senior lecturer at the Economics Department of HSE. She has a PhD in Economics.

Pekka Vasari is visiting researcher at the University of Lapland in Finland.

Chapter 6
Academics with International Educational and Research Experiences: Differences Across Countries?

Futao Huang, Liudvika Leišytė, Aliya Kuzhabekova, and Sara Diogo

Abstract This study analyses the most striking characteristics of academics with international educational and research experiences, and their engagement in teaching, research, and governance in Argentina, Canada, Finland, Germany, Japan, Malaysia, and Russia. Drawing on findings from the international database of the APIKS project, the study depicts an overview of a portrait of key characteristics of academics from various backgrounds with international educational and research experiences in the seven case countries. Further, the comparative study suggests that more differences and fewer similarities were confirmed in their engagement in teaching, research, and governance between the seven case countries. Finally, the study suggests that not only were the similarities and differences in these aspects identified based on the cross-country analysis in a more comprehensive way, but also, more details of these aspects were analysed and classified into patterns among the seven case countries in terms of both academic rank/generation and disciplines.

F. Huang (✉)
Research Institute for Higher Education, Hiroshima University, Hiroshima, Japan
e-mail: futao@hiroshima-u.ac.jp

L. Leišytė
Center for Higher Education (zhb), TU Dortmund University, Dortmund, Germany
e-mail: liudvika.leisyte@tu-dortmund.de

A. Kuzhabekova
Graduate School of Education, Nazarbayev University, Astana, Kazakhstan

University of Calgary, Calgary, AB, Canada
e-mail: aliya.kuzhabekova@nu.edu.kz

S. Diogo
CIPES, Research Centre on Higher Education Policies, Department of Social, Political and Territorial Sciences, University of Aveiro, Aveiro, Portugal
e-mail: sara.diogo@ua.pt

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_6

Keywords Internationally mobile academics · Comparative study · APIKS project · Internationalisation of the academy

Introduction

The international mobility of academics is not a new phenomenon: it was common for academics to move from one place or one university to other places or universities when the medieval universities emerged. Specifically speaking, internationalisation has been part and parcel of the academy since the creation of universities, whereby the mobility of academics is as old as 'science itself' (Gaillard & Gaillard, 1997; Welch, 1997). Circulation of ideas and academics has been at the core of knowledge creation and has become a massive phenomenon as the massification of higher education, as well as global competition for talent, has become more important to economies and universities. However, since the last decade of the twentieth century, influenced by various factors and occurring to a different degree between countries and regions, the cross-border movement of academics has significantly intensified. The main drivers include the following: globalization and marketization of higher education; increasing need of various countries to attract global talent from other countries or regions; the globally experienced necessity to build world-class universities, enhancing the level of internationalization of education and research at both system and institutional levels; and the urge to strengthen global competitiveness of national higher education and research (OECD, 2015).

In the past decades, internationalisation of higher education has been on the rise. In Europe, the Bologna process, as well as policy aims of the European Union (EU), strongly fostered the internationalisation of higher education. In this context, the mobility of academics has been increasingly on the agenda of policy makers and university managers, as the demand for attracting talents from abroad has, over time, increased due to increased competition for human capital. Such programs as Erasmus or Marie Curie mobility schemes have been central for fostering not only student but also academic staff mobility (Ackers, 2001; Teichler, 2015). Institutions have been increasingly engaged in mobility schemes funded through the EU, even though some countries and some institutions have been more engaged than others, while at the same time academic labour markets have remained nationally oriented (Enders, 2001). Competition via rankings has also fostered universities to recruit internationally mobile academic staff, especially the top-performing staff. Some countries have instigated a whole range of mobility schemes for academics, especially attracting expats back to their countries who have gained experience abroad, e.g., China, Japan, Korea (Yamashita & Yoshinaga, 2013), and Russia (Yudkevich et al., 2016).

While there are numerous studies of international mobility in specific countries and regions, as well as its factors and patterns (Rostan & Höhle, 2014; Kim, 2015; Huang & Welch, 2021), only a very limited number of comprehensive studies of

international academics as a group have been carried out, in terms of global and comparative perspectives. Much less research has been undertaken into the comparative study of internationally mobile faculty members who received their final degrees or conducted post-doctoral research in the countries different from the current countries in which they are hired, drawing on findings from national surveys. The Academic Profession in the Knowledge-Based Society (APIKS) project database gives such an opportunity. This chapter analyses the most striking characteristics of internationally mobile academics, and their engagement in teaching, research, and governance in seven countries.

According to the existing research, while international academic mobility is shaped by multiple factors and few factors can explain all types of mobility (Rostan & Höhle, 2014), there are some important factors affecting their movement from one place to another. For example, the international mobility of scholars or academics, including doctoral graduates, is affected by some economic factors such as salaries and professional conditions like working languages (Ackers, 2005). Moving, remaining, and returning of academics are also affected by some factors that are regional in nature (Jonkers & Cruz-Castro, 2013). For example, compared to other regions, the growing political and economic integration of the EU countries has made it easier for academics and doctoral holders to move from one country to another (Cañibano, 2017). The seven countries participating in the APIKS project were selected as case studies based on such characteristics as the level of income per capita and national languages, as well as regions or continents. These countries include the following: Argentina, Canada, Finland, Germany, Japan, Malaysia, and Russia. In terms of income per capita, Canada, Finland, Germany, and Japan belong to high-income countries, while Argentina, Malaysia, and Russia are categorized into middle-income countries. Regarding national languages, despite the fact that English is not a national language in Malaysia, it is widely used among academics and higher education and research. Similarly, although Canada is a bilingual country (English and French), it would be quite reasonable to state that English is the majority language, so both Canada and Malaysia are listed in the English-speaking case countries. In contrast, the remaining countries are all non-English-speaking ones with different levels of English proficiency in the population and academic community in particular. The seven case countries represent all participating country teams in the APIKS project from Asia, Europe, North America, and Latin America.

Regarding the definition of academics with international educational and research experiences in the study, as the data of respondents with foreign passports or citizenship in the seven case countries is too scant to be analyzed, it only refers to those receiving any of their final degrees or having research experience (from bachelor's degree to post-doctoral experience) in a country outside of current employment. Thus, our definition of academics with international educational and research experiences rather refers to the important international experiences than to legal characteristics of individuals. As the chapter is about a comparative study of academics with international educational and research experiences from countries in Asia,

Europe, North America, and Latin America, the terms *faculty members*, *academics*, *academic staff*, or even *staff* in the European context are used in the same sense. Concerning the structure of the chapter, the following section makes a review of literature. The third section is concerned with research design and instrumentation. The fourth section provides data analysis, followed by a comprehensive discussion. The chapter concludes by presenting the main findings.

Literature Review

Internationalisation literature has traditionally paid a lot of attention to the mobility of students, while the mobility of academics has been somewhat neglected (Enders, 1998; Pherali, 2012; Teichler, 2012, 2015). The literature on mobility of academic staff focuses on policy, at both the organizational and individual level. A range of studies have explored the overall dynamics of academic mobility between countries and studied the policies and practices of fostering mobility (Kim, 2009; Ferencz & Wächter, 2012; Yudkevich et al., 2015; Leišytė & Rose, 2016). From the policy point of view, key questions discussed in the literature have been on how to turn the brain drain into brain gain or brain circulation (Kostelecka et al., 2008; Van der Wende, 2015; Fangmeng, 2016) and how to recruit the best academics/researchers (Lepori et al., 2015; Carvalho et al., 2021).

Further, a range of studies at the micro level studied the experiences of the mobile academics, the motivations for academics to move, the challenges they face in adapting to the new country contexts, and their satisfaction with their work environments and conditions (Pherali, 2012; Austin et al., 2014; INOMICS, 2015; Huang, 2018). Recent studies have also explored the effects of mobility on academic careers, productivity, and the well-being of academics (Antoniadou & Quinlan, 2020).

Recent development of bibliometric techniques and data gave rise to a number of studies that track mobility using individuals' affiliations, as indicated in the articles registered in international databases such as Scopus or Web of Science (see Laudel, 2003; De Filippo et al., 2009; Aksnes et al., 2013; Deville et al., 2014; Moed & Halevi, 2014; among others). While such databases provide rich data allowing the study of academic productivity in the context of international mobility across large multi-country samples (with sample size reaching several million entries as in Robinson-Garcia et al., 2019), they only focus on individuals who are sufficiently integrated into the international academic community. In sum, despite the vast literature exploring different streams, systematized knowledge on academics with international educational and research experiences who engaged in teaching, research, and governance is still scant. This chapter thus attempts to bridge this gap, especially at a time when academic mobility is considered an indispensable element of academic career trajectories (Leemann, 2010).

Characteristics of Mobile Academics

There have been limited comparative studies of the characteristics of mobile academics (Huang et al., 2014) since the classical comparative study based on the Carnegie Study (Welch, 1997). The Carnegie Study, a comparative study of 14 countries, has shown that international staff characteristics vary significantly between countries based on gender and disciplines. Regarding gender, Welch (1997) identified that male academics were more mobile than female academics. Here he identified that Japan, Korea, and the Netherlands were among the more gender-segregated systems of all studied academic workforces (Welch, 1997). More recent studies have reinforced gendering and stratifying effects on transnational academic mobility in the postdoctoral period (Leemann, 2010).

Some studies have addressed the characteristics of international mobile academics. A study of Japanese academics, for instance, pointed out that the number of international academics has significantly increased over the past years in this self-contained system. The results of Huang's research show that foreign academics are largely male, work in private universities, and come from China, Korea, and then the United States (US), the United Kingdom (UK), and Australia. Most of them are in economics and management followed by linguistics, culture and literature, engineering, information science, and English. Most of the faculty appear to be in social sciences and humanities. Similar results seem to apply to former visiting researchers in Germany, with female researchers being less international than that of their male colleagues, particularly in the natural sciences (Jöns, 2011).

A study of CVs and short biographies looking at the productivity of internationally mobile academics who work in a foreign country has shown that the mobile academics produce more highly cited papers than those who were not mobile (Yamashita & Yoshinaga, 2013; Czaika & Orazbayev, 2018), similar to that of Aksnes et al. (2013), mirroring Norwegian researchers. At the same time, in China and Taiwan, returning researchers to their home country seem not to be producing higher rates of highly cited papers compared to domestic researchers, which suggests that outstanding researchers tend not to return to their home country.

Country Matters

Many earlier studies have shown that international mobility of academics varies significantly per country, even though some tendencies of global convergence have been observed. Welch (1997) identified three groups of countries that perform well in terms of attracting foreign academic staff, namely: (1) Countries with a major immigration program spanning many years, such as Israel and Australia; (2) Countries where international academics are a major source of staff in rapidly

expanding HE systems (e.g. Hong Kong); and (3) Countries that are more ethnically homogeneous and speak a language other than English (Germany, Russia, Sweden). The exporters of academic staff abroad include countries that are major producers and exporters of academic labour (US and UK) and countries that cannot offer competitive salaries or research opportunities compared to Europe and the USA (such as Chile or Brazil) (Welch, 1997, pp. 328–329). Cradden's (2007) study has shown that, in terms of patterns of academic mobility in the European context, the UK is by far the most popular destination for mobile academic staff. Kim and Locke (2010) have also shown that countries like Korea and Mexico are more the 'study or work abroad' countries, where doctorates are earned abroad and then academics return to their home country. The US, Hong Kong, and the UK, on the other hand, are magnets that attract academic staff from abroad. At the same time, Japan, China, and Italy seem so to be 'self-contained' systems where the majority of academics complete their studies in the country in which they are also working.

The study of Marie Currie fellowships shows significant imbalance in the geography of intra-EU flows (Ackers, 2001). The sending countries include Italy, Spain, France, Germany, and Greece. The UK is the most popular destination country, followed by France and Germany. Ackers (2004) pointed out the evolutionary nature of migration decision-making, rather than being a one-time event. Further, in the study of 601 higher education institutions (HEIs) in eight European countries, pointed out that country factors are more important than the HEI's characteristics in driving internationalisation. It also showed that research-oriented HEIs in attractive countries have a larger share of international staff, whereas this happens only to a limited extent with similar HEIs in less attractive countries. More recently, Van Der Wende (2015) argued that the brain circulation argument does not always hold, and that besides the traditional asymmetries between global south and north, east and west, one can see within the European context a concentration of mobile talents in specific regions and hubs, while other regions experience brain drain (Van der Wende, 2015).

Overall, the destinations for mobile academics can be divided into centres and peripheries, with the latter using one of the key academic languages, especially English. These centres of learning tend to be bigger and have leading research-oriented universities, largely in the North (Altbach, 2004). Notwithstanding, such divisions in academic mobility are becoming increasingly blurred, as the study by Czaika and Orazbayev (2018) demonstrated. Drawing on a global analysis of internationally mobile scientists for the period 1970 to 2014, they concluded that, in addition to the growing diversity of origin and destination countries in global scientific mobility, the centre of scientific knowledge production and "(…) scientist-attracting places has been moving continuously eastwards by about 1300 km per decade, (…) an increase in average migration distances of scientists reflecting integration of global peripheries into the global science system (…)" (Czaika & Orazbayev, 2018, p. 1).

Discipline Matters, Too

Academic mobility also varies per discipline. Already, Welch's (1997) study has shown that in the US, humanities and social sciences, as well as computing science and physics, had the most respondents with the highest degree earned abroad, while business administration, health, and the technical and education disciplines had their highest degrees being largely locally earned. Mahroum (2000) highlighted two main dynamics for scientific attraction: (1) he attraction of a country in a particular discipline, and (2) the prestige of an institution. Huang et al. (2019) also found that discipline matters for satisfaction with the mobility experience. They pointed out that, foreign junior academics, from humanities in particular, experienced more difficulties in the host country including uncertain career prospects, unstable employment, and serious competitive survival situations, in Japan.

Research Design and Instrument

As mentioned in Introduction, this study investigated how those academics who obtained their final academic degrees or conducted postdoctoral research in foreign countries viewed their teaching and research activities, and how they had influenced shaping academic policies in their affiliated universities at department, faculty, and institutional levels. Drawing on the literature review, the study focuses primarily on the two broad research questions below.

First, what is the overall portrait of academics with international educational and research experiences in the international database, in terms of their characteristics and academic activities, and their influence on shaping key academic policies at the different levels in their belonging institutions?

Second, how do these academics from the seven case countries differ in these aspects in relation to gender, their academic rank/generation, and discipline?

In order to address the two research questions, the study used respective variables and measurements of comparing this type of faculty with international educational and research experiences that are suggested in Table 6.1.

Data Analysis

The total number of respondents in the dataset of the seven countries was 20,259. Those faculty members with international education and research experiences (based on the criterion of the country of their last degree) was 3853 or 19%. This share is somewhat lower than the corresponding share of such faculty (28%) in the total APIKS database, with 32,464 qualifying responses. Out of the seven countries,

Table 6.1 Variables and measurement of comparing academics with international educational and research experiences

Independent		
Personal	Gender	Male = 1 Female =0
	Academic rank/ generation	Professor and associate professor (senior) = 1 others (junior) = 0
	Discipline	Hard discipline (natural sciences, engineering, life science, and medical and health science) = 1; Soft discipline (humanities, social sciences, and other soft sciences like arts, home economics, personal services, etc.) = 0
Dependent		
B2-1,2,3,4, Regarding your own preferences, do your interests lie primarily in teaching or research?		Check only one
B5-3, How do you rate your satisfaction with your current overall professional environment		Likert 5 scale (1 to 5)
C1, Please indicate the proportion of your teaching related activities (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work, curriculum development, etc.)		Multiple check
D1, Please characterize your research collaboration undertaken?		Yes or No
D3, How many of the following scholarly contributions have you completed in the past 3 years?		Number
D4, What percentage of your publications in the last 3 years were?		Number
F1, How influential are you in helping to shape key academic policies at your institution?		Likert scale (1 to 5)

the greatest share of the participants with international educational and research experiences was in Canada (1060 or 36%), followed by Malaysia (4368 or 35%), while the smallest representation of them was in Russia (1493 or 2%) and Japan (117 or 6%). In the remaining countries, their share varied between 11% (Germany, 803, Argentina, 108) and 14% (Finland, 195). The large presence of these faculty members in Canada is not surprising given that the country has a very aggressive high-skilled employment immigration policy (Green & Green, 2004). A similar share in Malaysia might be attributed to the fact that the country has many internationally educated returning scholars employed in academia. The small representation of them in Russia and Japan is also not surprising with the countries historically having closed academic labour markets. In general, based on the data from the seven countries analysed, one might distinguish between three degrees of internationalization in terms of share of faculty members with international educational and research experiences. Countries like Russia and Japan with their shares being

below 10% seem to be least open to hiring faculty with degrees from outside the country. Countries like Canada and Malaysia with the share above 30% seem to be aggressively hiring from abroad. Most of the countries seem to be somewhat open to internationally educated academics, with the share varying between 10% and 30%.

Table 6.2 provides a summary of the key characteristics of the faculty members who took part in the survey. In terms of academic rank or generation, in the total dataset of the seven countries analysed the share of junior faculty (46%) was lower than the share of senior faculty (54%) in the subgroup of faculty with international educational and research experiences. The reverse was true for the domestic faculty, with the junior faculty comprising 53% of the total number of domestic academics. This makes good sense, with universities probably trying to supplement lacking expertise at the senior level with those with international educational and research experiences.

With respect to disciplinary specialization, there seems to be a greater share of hard scientists among the faculty with international education and experience (56%) than among the faculty without such experience (52%) in the dataset of the seven countries. The greatest difference in the share of hard scientists between the faculty with and without international education and experience was in Finland (76% vs. 49%), Argentina (71% vs. 39%), and Malaysia (61% vs. 49%). In Japan, the situation was reversed: 71% of the academics without international education and experience were from hard sciences, while the share of hard scientists among faculty with international educational and research experiences was only 30%. In Russia, Germany, and Canada the shares of hard and soft scientists among the two different groups were approximately equal.

In terms of gender distribution, women (49%) were represented slightly less than men (51%) among the faculty with international educational and research experiences, mirroring the corresponding distribution among the academics without an international background. Women (36%) were the least numerous among the

Table 6.2 Characteristics of academics with international educational and research experiences

	Academic rank or generation		Broad discipline		Gender	
	Junior	Senior	Hard sciences	Soft sciences	Male	Female
Average	1779 (46%)	2065 (54%)	2151 (56%)	1702 (44%)	1951 (51%)	1711 (49%)
Argentina	37 (34%)	71 (66%)	77 (71%)	31 (29%)	45 (42%)	63 (58%)
Canada	37 (3%)	1023 (97%)	478 (45%)	582 (55%)	602 (58%)	432 (42%)
Finland	136 (70%)	58 (30%)	148 (76%)	47 (24%)	115 (59%)	72 (41%)
Germany	626 (78%)	170 (21%)	456 (57%)	347 (43%)	388 (48%)	263 (52%)
Japan	1 (1%)	115 (98%)	35 (30%)	82 (70%)	75 (64%)	37 (36%)
Malaysia	936 (61%)	599 (39%)	940 (61%)	595 (39%)	705 (46%)	830 (54%)
Russia	6 (17%)	29 (83%)	17 (49%)	18 (51%)	21 (60%)	32 (40%)

Note: The data shows academics with international educational and research experiences who received their final degrees from countries or conducted their post-doctoral research in the countries that are different from their currently employment countries

faculty with international education and experience in Japan. Russia can be noted for an overrepresentation of women among domestic academics comprising 52% of the total group. This pattern is reversed in the case of the faculty with international experiences, where males are overrepresented at 60%. Germany is a country where males dominate women among the domestic faculty at 62%. However, the share of women in the group of academics with international experience is only 48%.

Table 6.3 summarises the findings of the survey with respect to the views of the faculty with international educational and research experiences on teaching, research, and governance.

One question on the survey (B2) explored whether they are more oriented to teaching or research. Based on the responses to the question, it can be concluded that the key interest is in research (mean = 2.99 with the scale varying from 1—'More interested in teaching', to 4—'More interested in research'). It is important to note that while those in Japan and Russia were on the average more interested in research, the average response from the participants in the two countries was lower than in other contexts (2.5 in Japan and 2.31 in Russia). Notably, in Finland and Malaysia the mean was higher than in other contexts (3.15 in Finland and 3.19 in Malaysia).

Our analysis shows that across the seven countries, faculty seem to be mostly involved in teaching at the bachelor's level, devoting on the average 60% of their teaching time to teaching undergraduate students. Three countries, which contributed to the calculation of the mean to the greatest extent, are Canada (54%), Japan (69%) and Russia (60%). Finland is the only country where faculty members seem to be more involved into teaching at the graduate level (63% cumulatively at the master's and Ph.D. level). Interestingly, in Argentina, they indicated that they spend 28% of their teaching time on average on "Other" activities.

Another question in the survey looked at the level of satisfaction with their work and employment environment. As Table 6.3 suggests, the mean level of satisfaction is relatively high (above 3 on a scale from 1—Low, to 5—High). Argentina has the lowest level of satisfaction with their employment situation (mean—2.96), while Japan has the lowest level of satisfaction with work situation (mean—2.96).

The survey explored the kind of collaborations that they tend to pursue. Our analysis revealed that over 80% engage in collaborations with others on research projects in Canada, Finland, and Malaysia. Meanwhile, Russia has the lowest percentage of this group of faculty who pursue collaboration on research projects (25%), followed by Argentina (27%).

The faculty with international educational and research experiences in all the analysed countries are very productive in research, at least based on self-reported numbers of research publications produced within the last 3 years (14 on average). These numbers are highest in Argentina (19) and Finland (19), and lowest in Germany (11) and Japan (11). Finland has the highest percent of faculty collaborating with doctoral students (87%), while Argentina and Russia have less than 30% of such faculty. The Malaysian faculty are most likely to engage in collaborations at their own institutions (86%), while Argentinian faculty are least likely (27%). The highest share pursuing collaborative work with scholars in other universities in the country of current employment is in Finland at 84%, while the lowest is in Russia at

Table 6.3 Perceptions of teaching, research, and governance by academics with international educational and research experiences

	Orientation to teaching (1) vs. research (4)	Level of Satisfaction (from 1—low to 5—high) with			Distribution of time across teaching activities (in %)					Percent engaged in research collaboration						Average number of scholarly contributions in the past 3 years	Percent of publications in the past 3 years, which were…					Level of Influence (1—low, 4—high) on academic policies		
		Employment situation	Work situation	Overall professional environment	Bachelor's level	Master level	Ph.D. level	Continuing education	Other	On research projects	With Doctoral students	With researchers at the hiring institution	With researchers in other institutions in the country of employment	With international colleagues	Outside one's discipline		Solo authored	Published abroad	Co-authored with an author from the country	Co-authored with an author outside the country of employment	Peer-reviewed	At the level of department	At the level of faculty	At the level of institution
Average	2.99	3.44	3.36	3.34	60	18	4	2	4	66	49	59	64	60	57	14	18	47	45	24	61	2.48	2.05	1.67
Argentina	2.93	2.96	3.40	3.51	46	5	16	3	28	27	21	27	77	69	81	19	20	56	16	53	61	2.46	2.16	1.95
Canada	2.82	3.53	3.08	3.23	54	20	17	1	1	88	65	72	71	77	70	17	23	56	43	27	75	2.69	2.19	1.83
Finland	3.15	3.62	3.47	3.57	28	37	26	4	1	87	87	72	84	87	52	19	16	74	49	43	79	2.40	1.97	1.64
Germany	2.91	3.14	3.30	3.14	33	25	6	0	0	68	55	62	50	62	45	11	35	50	40	24	57	2.29	1.82	1.36
Japan	2.5	3.19	2.96	3.03	69	18	9	2	2	84	25	46	53	43	39	11	27	36	38	15	59	2.45	2.02	1.60
Malaysia	3.19	3.59	3.59	3.49	38	11	9	0	0	83	62	86	70	56	76	14	10	37	49	16	53	2.59	2.16	1.69
Russia	2.31	3.17	3.71	3.69	60	18	4	2	4	25	25	47	39	25	36	13	35	12	49	10	51	2.45	2.03	1.60

39%. The pattern is the same for collaborations with scholars located internationally, with Finland being at the top of the list and Russia remaining at the bottom. Interestingly, Argentina, which tends to have lower percentages of faculty involved in various types of collaborative work, has the greatest percent of faculty pursuing interdisciplinary collaborations (81%).

Faculty with international educational and research experiences in Argentina and Finland reported publishing the highest average number of papers (19) within the last 3 years. The lowest number of publications (11%) was in Germany and Japan. German and Russian faculty reported the greatest percentage of solo-authored published articles (35%). Finnish faculty publish the greatest number of papers abroad (74%) and in peer-reviewed journals (79%), while Russian faculty publish most of their papers domestically (only 12% abroad).

Across all seven countries, the group of faculty that felt the highest level of influence on academic policies at the departmental level and the lowest degree of influence at the institutional level. German faculty seem to feel the least empowered at all three levels compared with other countries, while Canadian faculty feel most engaged.

In terms of their preferences in teaching or research, the level of their satisfaction with their current overall professional environment, and time allocated to teaching-related activities by academic rank (Table 6.4), there are several clear differences

Table 6.4 Academics' preferences in teaching and research, level of satisfaction with their current overall professional environment, and time on teaching-related activities by academic rank/generation

Question	Academic rank	Argentina		Canada		Finland		Germany		Japan		Malaysia		Russia	
Focus of interests	Junior	2.21	n.s.	1.65	***	3.16	n.s.	3.13	***	2.80	n.s.	3.12	***	3.33	n.s.
	Senior	2.31		2.94		3.11		2.69		2.64		3.32		2.43	
B5_3	Junior	3.49	**	3.09	n.s.	3.61		3.25		3.25		3.44		4.00	
	Senior	3.69		3.32		3.54		3.60		3.23		3.75		3.66	
C1_1	Junior	66.29	*	78.27	***	32.17	*	45.42	n.s.	72.88		67.01		51.67	
	Senior	61.18		56.90		21.40		48.55		65.10		48.03		63.18	
C1_2	Junior	1.52	***	12.65	**	41.97	n.s.	40.20	**	15.31		17.42		10.00	n.s.
	Senior	4.19		22.05		42.90		33.98		21.11		21.85		26.43	
C1_3	Junior	3.72	**	2.77	***	19.86	**	9.63	***	10.04		11.44		1.67	n.s.
	Senior	6.56		17.70		31.10		15.27		8.44		24.77		7.84	
C1_4	Junior	4.64	n.s.	3.12	n.s.	3.57	n.s.	1.73	n.s.	0.83		1.85	**	3.33	
	Senior	4.27		1.50		4.50		1.98		2.71		2.84		2.25	
C1_5	Junior	23.83		3.19	n.s.	2.43		3.01	**	0.94		2.27	n.s.	33.33	***
	Senior	23.80		1.86		0.10		0.22		2.64		2.51		0.29	

Note:

1. Data of Focus of preferences refers to the arithmetic means of responses to "primarily in teaching", "in both, but leaning toward teaching", "primarily in research", and "in both, but leaning toward research"
2. Data of B5-3 refers to responses to the arithmetic means of responses to the level of their satisfaction with "their current overall professional environment"
3. Data of C1-1 to C1-5 refers to the arithmetic means of responses to the question "Please indicate the proportion of your teaching related activities (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work, curriculum development, etc.)." C1-1 refers to "Teaching leading to bachelor degree or equivalent", C1-2 refers to "Teaching leading to master degree or equivalent", C1-3 refers to "Teaching/training doctoral students", C1-4 refers to "Continuing education programs" and C1-5 refers to "Other".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

between the seven countries. Firstly, the greatest significant differences were found in Malaysian academics. In contrast, no significant differences were identified in both Japan and Russia. Secondly, roughly speaking, two groups can be identified in the seven case countries. In group one —Argentina, Canada, Germany, and Malaysia—more significant differences can be identified in their preferences in teaching or research, the level of satisfaction with their current professional environment, and their time spent on teaching-related activities. While in group two—Finland, Japan, and Russia—less significant differences could be confirmed. Thirdly, while no significant differences were found in their focus of preferences in teaching and research in Argentina, Finland, Japan, and Russia, significant differences were found in Canada and Germany. Regarding the level of satisfaction, senior academics were more satisfied with their current overall professional environments in Argentina, Canada, Finland, Germany, and Malaysia. Finally, and unsurprisingly, while junior academics spent a greater time on "Teaching leading to bachelor's degree or equivalent" in Argentina, Canada, Finland, and Malaysia, senior academics allocated a greater time to doctoral education.

According to Table 6.5, in terms of academic rank, firstly, there are no significant differences in research productivity (as in the case of teaching activities) between junior and senior faculty, or academics with international educational and research experiences, in both Japan and Russia. More significant differences were confirmed in the other five countries. Secondly, a greater number of junior academics have collaborators in any of their research projects with doctoral students in Argentina, Germany, and Malaysia. A greater number of them from Argentina, Canada, Finland, and Malaysia collaborate with their doctoral students, with scholars/researchers at other institutions in their countries, with international colleagues, and with colleagues outside their disciplines in Argentina, Canada, Finland, Germany, and Malaysia. Thirdly, overall, junior academics seem to be less academically productive than senior academics in their publications in a foreign country, publications co-authored with colleagues located in the countries of their current employment, publications co-authored with colleagues located in other countries, and publications in peer-reviewed journals in the past 3 years. For example, junior academics in Argentina, Germany, and Malaysia completed fewer scholarly books authored or co-authored in the past 3 years. Similarly, junior academics in Argentina, Canada, Finland, Germany, and Malaysia published fewer edited or co-edited scholarly books, and fewer published articles in academic books. This is especially true in the case of their articles published in an academic journal and papers presented at a scholarly conference in these countries. Finally, junior academics in Canada, Finland, Germany, and Malaysia also published less in a foreign country.

As for academics' influence in helping shape key academic policy at their institutions by academic rank, no significant differences were confirmed in both Japan and Russia; however, the differences are significant in Argentina, Finland, and Malaysia. For Germany, no questions were asked in this regard. Not surprisingly, junior academics are less influential at all the three levels in the three countries.

Concerning preferences in teaching and research, time allocated to teaching-related activities by discipline (Table 6.6), less significant differences can be found in the case countries compared to Germany, in which more significant differences

Table 6.5 Academics' research collaboration and numbers of publications in the past 3 years by academic rank

Question	Academic rank	Argentina		Canada		Finland		Germany		Japan		Malaysia		Russia	
D1_1	Junior	1.42	***	1.14	n.s.	1.03	n.s.	1.17	*	1.15	n.s.	1.07	**	1.00	n.s.
	Senior	1.21		1.07		1.04		1.11		1.12		1.03		1.30	
D1_2	Junior	1.60	**	1.64	***	1.24	*	1.33	n.s.	1.71		1.41	***	1.50	
	Senior	1.52		1.32		1.13		1.31		1.76		1.12		1.42	
D1_3	Junior	1.17	n.s.	1.31	n.s.	1.06	n.s.	1.24		1.56		1.02	n.s.	1.00	
	Senior	1.16		1.24		1.04		1.27		1.53		1.01		1.20	
D1_4	Junior	1.52	***	1.43	**	1.34	**	1.40	***	1.44		1.25	***	1.50	
	Senior	1.34		1.23		1.13		1.27		1.47		1.11		1.40	
D1_5	Junior	1.68		1.60	***	1.15	*	1.30		1.54		1.44		1.50	
	Senior	1.48		1.19		1.04		1.17		1.56		1.28		1.64	
D1_6	Junior	1.27	*	1.42	*	1.33	***	1.51		1.56		1.18		1.00	
	Senior	1.21		1.26		1.10		1.33		1.63		1.10		1.49	
D3_1	Junior	0.66	**	0.15	n.s.	0.22	n.s.	0.20		0.69		0.82		0.00	
	Senior	1.02		0.52		0.41		0.47		1.20		1.60		1.16	
D3_2	Junior	0.27	***	0.00	*	0.16	**	0.14		0.47		0.42		0.00	
	Senior	0.49		0.57		0.74		0.84		0.38		0.99		0.31	
D3_3	Junior	0.95		0.83	n.s.	0.82	***	0.85		1.51		1.13		1.00	
	Senior	1.60		2.47		3.34		2.81		1.33		3.39		1.11	
D3_4	Junior	2.44	**	2.63	**	6.65		4.37		6.27		8.35		14.00	
	Senior	3.32		9.30		15.30		9.03		4.84		25.43		8.63	
D3_5	Junior	1.27	***	1.21	n.s.	0.71	n.s.	1.18		0.82		1.48		1.00	
	Senior	2.14		1.78		0.61		2.17		0.66		3.39		0.29	
D3_6	Junior	3.98	**	4.24	**	3.21	**	3.65		3.78		5.19		6.00	
	Senior	5.14		11.07		6.57		6.35		4.52		13.63		5.25	

D3_7	Junior	0.18	***	0.58	n.s.	0.30	***	0.19		0.33		0.69		0.00	
	Senior	0.68		1.53		2.00		1.92		0.48		4.01		0.29	
D3_8	Junior	0.02	n.s.	0.06		0.07	***	0.11	n.s.	0.16		0.80	n.s.	2.50	
	Senior	0.04		0.27		0.39		0.17		0.27		0.80		0.55	
D3_9	Junior	0.08		0.24		0.23	n.s.	0.15		0.02		0.12		2.00	
	Senior	0.14		0.21		0.17		0.19		0.00		0.24		0.50	
D3_10	Junior	0.72		7.06	***	0.44		0.16	*	0.18		0.44		0.00	
	Senior	0.48		0.57		0.81		0.89		1.30		0.43		0.28	
D3_11	Junior	0.28		1.71	n.s.	0.19		0.29	n.s.			0.33	*	0.00	
	Senior	0.43		4.12		0.08		0.18				0.97		0.53	
D4_1	Junior	23.83		24.91		16.29		19.40	***	30.84		15.87	***	40.00	
	Senior	24.77		28.19		23.84		30.71		39.80		9.78		42.62	
D4_2	Junior	39.21		24.53	**	65.91	*	45.40	**	35.63		30.86		32.50	
	Senior	40.74		49.85		84.26		54.92		34.50		44.86		15.48	
D4_3	Junior	3.87	***	42.70	n.s.	46.34	n.s.	47.65	n.s.	43.31		42.88		57.50	
	Senior	8.64		40.52		57.16		44.08		36.09		54.67		45.13	
D4_4	Junior	21.15	n.s.	7.47	**	41.77		30.41		18.09		13.77	*	0.00	
	Senior	23.55		22.40		49.92		30.37		17.02		16.54		5.66	
D4_5	Junior	43.54	*	52.09	***	70.15	*	56.88		47.90		44.19	***	50.00	
	Senior	50.19		76.36		86.33		61.91		55.29		61.25		46.31	

Note:

1. Data of D1-1 to D1-6 refers to the arithmetic means of responses to the question “Do you have collaborators in any of your research projects?”, “Do you collaborate with doctoral students?”, “Do you collaborate with scholars/researchers at your institution?”, “Do you collaborate with scholars/researchers at other institutions in your country?”, “Do you collaborate with international colleagues?” and “Do you collaborate with colleagues outside your discipline?” respectively
2. Data of D4-1 to D4-5 refers to the arithmetic means of responses to the question “Scholarly books you authored or co-authored”, “Scholarly books you edited or co-edited”, “Articles published in an academic book”, “Articles published in an academic journal”, “Discussion paper, report/monograph written for a funded project”, “Paper presented at a scholarly conference”, “Completed doctoral dissertations you supervised”, “Patent or license secured on a process or invention”, “Computer program written for public use”, “Artistic work performed or exhibited, incl. video or film produced”, and “Other” respectively.
3. Data of D4-1 to D4-5 refers to the arithmetic means of responses to the question “Solo authored”,” Published in a foreign country”, “Co-authored with colleagues located in the country of your current employment”, “Co-authored with colleagues located in other (foreign) countries” and “Peer-reviewed” respectively
4. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 6.6 Academics' preferences in teaching and research, level of satisfaction with their current overall professional environment, and time on teaching-related activities by academic discipline

Question	Discipline	Argentina		Canada		Finland		Germany		Japan		Malaysia		Russia	
B2 focus of interests	Soft	2.19	*	2.80	***	2.90	**	2.79	***	2.62	n.s.	3.13	**	2.45	n.s.
	Hard	2.44		3.01		3.23		3.16		2.87		3.26		2.44	
B5_3	Soft	3.63	n.s.	3.28	*	3.58	n.s.	3.19		3.26		3.61	n.s.	3.42	*
	Hard	3.64		3.41		3.58		3.44		2.86		3.55		4.00	
C1_1	Soft	64.56		61.70	n.s.	33.74		55.86		74.48	*	57.68	*	61.62	n.s.
	Hard	62.58		61.01		23.49		39.18		59.48		62.16		66.04	
C1_2	Soft	3.49		20.89		44.41		34.91	**	16.63	n.s.	19.80	n.s.	22.34	
	Hard	2.94		19.44		45.02		41.42		24.56		17.63		26.88	
C1_3	Soft	3.21	***	14.87	*	14.05	**	5.27	***	5.64	*	18.16	*	8.28	
	Hard	8.47		17.87		27.95		15.35		12.81		15.85		6.46	
C1_4	Soft	4.66	n.s.	1.05	n.s.	5.02	n.s.	1.16	*	1.28	n.s.	2.17	n.s.	3.79	*
	Hard	4.11		1.24		3.07		2.63		0.85		1.83		0.63	
C1_5	Soft	24.08	n.s.	1.49	*	2.79		2.79	n.s.	1.98		2.19		3.97	n.s.
	Hard	21.90		0.45		0.46		1.42		2.30		2.53		0.00	

Note:
1. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$
2. Questions are the same as suggested in note of Table 6.4

are identified. The academics in hard disciplines from Argentina, Canada, Finland, Germany, and Malaysia are more interested in research. Only the academics from hard sciences in Canada and Germany showed greater satisfaction with their current overall professional environment than those from soft sciences, but no significant differences can be confirmed in other countries. Finally, compared to other levels, more significant differences are confirmed in their time on teaching/training doctoral students and a greater number of the academics in hard disciplines budgeted their time on this level in Argentina, Canada, Finland, Germany, and Japan, except for Malaysia.

There are several observations in relation to their research and publications by discipline (Table 6.7). Firstly, far fewer significant differences are found in their research collaboration and numbers of their publications in the past 3 years by discipline in Russia compared to Germany, Canada, and Japan. Secondly, a greater number of academics in soft disciplines have collaborators in their research projects in Argentina, Canada, Germany, and Malaysia. A greater number of the academics in soft disciplines collaborate with doctoral students in Argentina, Canada, Germany, and Malaysia. A greater number of them collaborate with scholars/researchers at their institutions in Canada, Finland, and Japan. A greater number of them in soft disciplines collaborate with scholars/researchers at other institutions in their countries in Argentina, Canada, Finland, and Malaysia. Different from other countries, a greater number of the academics in soft disciplines collaborate with international colleagues in Canada and Malaysia. Only a greater number of German academics in

Table 6.7 Academics' research collaboration and numbers of publications in the past 3 years by discipline

Question	Discipline	Argentina		Canada		Finland		Germany		Japan		Malaysia		Russia	
D1_1	Soft	1.34	**	1.13	***	1.08	n.s.	1.24	***	1.16	n.s.	1.07	*	1.26	n.s.
	Hard	1.24		1.03		1.03		1.11		1.10		1.04		1.33	
D1_2	Soft	1.59	***	1.46		1.38	***	1.50		1.89	***	1.32	**	1.50	
	Hard	1.44		1.18		1.15		1.23		1.43		1.24		1.35	
D1_3	Soft	1.16	n.s.	1.36		1.12	**	1.26	n.s.	1.65	**	1.01	n.s.	1.26	
	Hard	1.17		1.16		1.02		1.24		1.37		1.02		1.13	
D1_4	Soft	1.46	*	1.31		1.32	n.s.	1.39		1.47	n.s.	1.26	***	1.50	
	Hard	1.36		1.17		1.29		1.36		1.43		1.13		1.29	
D1_5	Soft	1.59	n.s.	1.23	**	1.09		1.27		1.56		1.48		1.73	
	Hard	1.52		1.16		1.14		1.28		1.53		1.30		1.54	
D1_6	Soft	1.25		1.29	n.s.	1.21		1.41	**	1.66		1.17	n.s.	1.57	
	Hard	1.22		1.31		1.30		1.50		1.53		1.14		1.38	
D3_1	Soft	1.16	***	0.72	***	0.52	**	0.37	**	0.84		1.48	***	1.07	
	Hard	0.47		0.21		0.19		0.21		0.93		0.93		1.00	
D3_2	Soft	0.54		0.84		0.88	***	0.65	***	0.36	*	0.94	n.s.	0.39	
	Hard	0.23		0.24		0.14		0.11		0.07		0.46		0.20	
D3_3	Soft	1.79		3.20		3.34		2.37		1.78	n.s.	2.70		1.10	
	Hard	0.73		1.24		0.74		0.70		0.80		1.81		1.11	
D3_4	Soft	2.51		5.27		5.27	*	3.37		3.02	***	12.18	*	6.29	
	Hard	3.47		12.93		9.84		6.73		10.83		18.54		9.00	
D3_5	Soft	1.79	n.s.	1.64	n.s.	1.12	n.s.	1.00	**	0.32	**	2.30	n.s.	0.34	
	Hard	1.82		2.05		0.56		1.64		1.20		2.41		0.16	
D3_6	Soft	4.82		9.45	**	6.55	*	4.97		2.68	***	8.66	*	5.16	
	Hard	4.46		11.85		3.58		3.82		7.80		8.88		5.43	
D3_7	Soft	0.48		1.31		0.75	n.s.	0.44	n.s.	0.15		2.40	**	0.36	
	Hard	0.47		1.86		0.77		0.69		0.93		1.88		0.15	
D3_8	Soft	0.02	*	0.11	*	0.03		0.01		0.00	**	0.40	n.s.	0.10	*
	Hard	0.06		0.49		0.19		0.21		0.83		1.25		0.81	
D3_9	Soft	0.10	n.s.	0.08	***	0.15		0.06	**	0.00	n.s.	0.06	*	0.43	n.s.
	Hard	0.16		0.46		0.24		0.21		0.00		0.26		0.52	
D3_10	Soft	0.86	**	1.14	*	1.93	**	0.47	n.s.	1.04		0.77	**	0.11	
	Hard	0.30		0.40		0.06		0.28		1.03		0.28		0.00	
D3_11	Soft	0.46	n.s.	3.57	n.s.	0.50		0.53		No data		0.92	n.s.	0.86	
	Hard	0.28		5.54		0.03		0.11				0.37		0.00	
D4_1	Soft	36.54	***	47.04	***	45.10	***	46.10	***	49.95	***	23.01	***	55.97	**
	Hard	10.19		8.14		6.20		8.17		7.90		7.74		25.66	
D4_2	Soft	28.80		45.51		72.42	n.s.	42.58	*	28.16		25.69		9.44	*
	Hard	54.86		59.24		70.43		50.09		64.05		44.19		24.68	
D4_3	Soft	2.90		27.20		41.74		32.71	***	25.36		38.99		33.90	
	Hard	11.85		54.09		50.13		54.09		66.65		53.26		58.89	
D4_4	Soft	12.08		16.16		40.44		17.88		15.56	n.s.	8.44		1.77	n.s.
	Hard	36.70		30.38		47.94		36.33		23.94		19.60		10.95	
D4_5	Soft	41.34		73.55	**	77.19		51.49	**	40.10	***	46.27		38.69	
	Hard	56.16		81.09		73.72		60.87		79.78		54.80		54.78	

Note:
1. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$
2. Questions are the same as suggested in note of Table 6.5

hard disciplines collaborate with colleagues outside their disciplines. Thirdly, in general, more variations can be found in their scholarly contributions and publications in a foreign country, publications co-authored with colleagues located in the countries of their current employment, and in other countries in peer-reviewed journals in the past 3 years, between the academics from soft discipline and hard discipline in the six countries compared to Russia, in which no significant differences are found in most cases. For example, the academics in soft disciplines completed more scholarly books they authored or co-authored in Argentina, Canada, Finland, Germany, and Malaysia. Similarly, they published more edited or co-edited scholarly books in Argentina, Canada, Finland, Germany, and Japan. They also published more of their articles in an academic book in Argentina, Canada, Finland, and Germany. However, the academics from soft discipline published far fewer articles in an academic journal in all the seven countries except for Russia, in which no significant differences were found. Not surprisingly, a greater number of the academics in hard disciplines contributed to patent or license secured on a process or invention in Argentina, Canada, Japan, and Russia, but a greater number of the academics from soft discipline in Argentina, Canada, Finland, and Malaysia contributed to artistic work performed or exhibited, including video or film produced. Finally, a much higher number of the academics' publications from soft disciplines were solo authored in all the seven countries, but much fewer of their publications were published in a foreign country and co-authored with colleagues located in the country of their current employment in the seven countries except for Finland, in which no significant differences are identified. Similarly, far fewer of their publications were co-authored with colleagues located in other (foreign) countries in Argentina, Canada, Germany, and Malaysia. Further, fewer of their publications were peer-reviewed in Argentina, Canada, Germany, Japan, and Malaysia. Finally, regarding academics' influence in helping shape key academic policies at their institution by discipline, no significant differences are found in any of the seven case countries.

Discussion

Although this analysis looked at the most striking characteristics of faculty or academics with international educational and research experiences regarding their engagement in teaching, research and governance in the seven countries, the data mostly refers to the division of academic work (engagement in teaching and research) and differences in these aspects in relation to their academic rank, discipline, and even gender. Noticeably, almost no significant differences among the countries of analysis could be found in terms of academics' influence on shaping key academic policies in the institutions where they work. This extends to the different levels in their belonging institutions. This is not particularly surprising for faculty with international educational and research experiences or internationally

mobile academics, as almost similar findings were found in the case of domestic academics (Huang, 2008).

The distribution of time and gender across teaching and research activities corroborates previous studies, with women being represented slightly less than men among them, and Japan being the country with the fewest number of female faculty with international educational and research experiences. Also, for the countries analysed, female faculty of this group tend to dedicate more time to teaching activities, while male faculty tend to be more dedicated to research, suggesting the perpetuation of segregation patterns of academic work by gender. Moreover, academic rank/generation differences are also visible in terms of research production, measured by the number of publications. For example, in most forms of research productivity, junior faculty reported a lower number of publications, while senior/established academics showed a higher number of publications.

While we do not have enough data for further rigorous analysis, even our rather simple exploration allows us to bring several important issues for discussion. First, it seems that faculty with international educational and research experiences do play an important and special role in many national academic systems. Indeed, they may be attracted to the universities in expectation of their important impact on the domestic academic community and training future scholars. So, their work with other colleagues at their departments and institutions, as well as with Ph.D. students, is a valuable contribution to the development of the community, changing transmission of academic norms and standards, as well as mere experience brought from outside. At the same time, as the data shows, they are rather inclined toward research which means greater potential impact on the development of the research capacity of their departments and institutions (especially more senior colleagues).

Second, international mobility is a phenomenon that is normally associated with a top segment of the academic profession. However, now that international experiences are getting more and more diverse (both in form and duration), in some countries we may see faculty with international educational and research experiences are not too different in their productivity from domestic faculty. Also, not all universities are willing and able to compete for foreign faculty, including academics with international educational and research experiences, in the international labour market, especially in the countries with rather poor financial conditions in academia. However, in many countries (including low-income ones), academic excellence initiatives have been launched in recent years (Salmi, 2016), with their design often assuming to attract the top talents from abroad.

Third, while some countries like Canada represent quite attractive places of academic employment and do not need to bother with any special conditions aiming to attract faculty with international educational and research experiences, or international faculty in a strict sense, other countries like Russia have to apply substantial effort and launch special programs and conditions to attract them from the international market. That difference affects the differences between characteristics of domestic faculty and faculty with international educational and research experiences or international faculty in these countries.

Finally, our data is only concerned with the type of academics with international educational and research experiences or internationally mobile academics who are different from international faculty with foreign passports or citizenship in a strict sense, but similar to the classical notion of faculty who move from one country to another physically. However, the phenomenon is getting, in recent times, far more complicated. Globalization and the rise of technologies allow people to consider multiple employment in several jurisdictions at the same time (Hottenrott et al., 2019), which substantially affects how academics are integrated into peer communities and what peer effects arise due to their mobility. In addition, the Covid-19 pandemic severely restricted current mobility, but at the same time triggered new forms of academic engagement (in teaching, research, or even service at a university in another location) that were previously associated with physical mobility only. Taking these recent trends into account, one may expect that the role of faculty with international educational and research experiences and/or international faculty may experience some long-term changes. While for the world-class universities, the classic battle for top talents will be intensified, mass universities will also explore new opportunities to join global academic market and attractive employers.

Conclusion

The main findings from the study on academics with international educational and research experiences can be summarized below.

First, the study depicts an overview of a portrait of key characteristics of academics from various backgrounds with international educational and research experiences in the seven case countries. Most importantly, as this is the first study focusing on these internationally mobile faculty in a comparative study based on the data analysis of seven national surveys, the study fills the gap in internationalisation of the academy and international mobility of academics.

Second, the study identified some typologies of hiring internationally mobile faculty in relation to their number (in absolute terms), gender, academic rank/generation, disciplines, final degree, status of employment, their engagement in teaching and research, and their influence on shaping key academic policies at the different levels in their affiliations within the seven case countries. This enables us to have a better understanding of similarities and differences in these regards between the various case countries. More importantly, the comparative study suggests that more differences and fewer similarities were confirmed in their engagement in teaching, research, and governance between the seven case countries.

Third, not only were the similarities and differences in these aspects identified based on the cross-country analysis in a more comprehensive way, but also more details of these aspects were analysed and classified into patterns among the seven case countries in terms of both academic rank/generation and disciplines. The

in-depth analysis of the data suggested that a wide variety of differences existed in internationally mobile faculty's engagement in teaching, research, and governance and management between junior and senior academics, and between "hard disciplines" and "soft disciplines", even within the same countries.

Fourth, although no relevant data was analysed and discussed regarding international faculty who hold foreign passports or citizenship, or faculty who did not obtain any of their final degrees from other countries that are different from their current employment countries, it seems that some findings from the study match with some previous research into the academic profession and international faculty with foreign passports or citizenship. For example, female academics have been found to be less internationally mobile than male academics (Aiston & Jung, 2015; Bauder, 2015; Jung, 2015), a greater number of academics in "hard disciplines" earned their final degrees from countries different from that of their current employment, senior internationally mobile faculty are more productive in research than junior ones, and so forth.

Finally, a special mention should be made that, even though seven case countries were selected according to their national income per capita and use of English as a national language, it is hard to say whether these backgrounds affected the characteristics of academics with international educational and research experiences or internationally mobile faculty in the seven countries. Namely, the differences in the degree of national wealth, the use of English as national or academic language, or regional differences between Asia, Europe, North America, and Latin America cannot fully and perfectly explain the complexities of internationally mobile faculty's engagement in teaching, research, and governance and management at both national and individual levels in the seven case countries. Rather, as the prior research in Introduction and Literature Review suggests, the distinctiveness of national higher education and research, and the labour market for the academic profession, seem to have a profound impact on internationally mobile faculty's involvement in teaching, research, and governance activities, and their disciplinary backgrounds also affect their activities. Therefore, a more comprehensive and comparative study needs to be undertaken on what key factors have affected the differences in these regards, in the future.

It should also be acknowledged that there is the possibility of biased results of analysis, as the case countries surveyed academics according to different criteria. For example, Canada and Japan primarily focused on full-time academics, while other countries like Argentina also included many part-time academics; it is difficult to compare the employment situation of academics with international educational and research experiences. Also, there was a small number of juniors compared with seniors in Japan and Russia. This may also produce a biased result of the analysis.

Acknowledgement We would like to thank Maria Yudkevich, Center for Institutional Studies, National Research University Higher School of Economics, Moscow, Russia, who co-authored the first draft of this chapter and particularly contributed to the part of the Discussion, as well as commented on the final version of this chapter.

References

Ackers, H. L. (2001). *The participation of women researchers in the TMR programme of the European Commission: An evaluation*. European Commission (DG Research).

Ackers, H. L. (2004). *Gender, mobility and career progression in the European Union: A case study of science careers*. Edward Elgar.

Ackers, L. (2005). Moving people and knowledge. scientific mobility in the European Union. *International Migration, 43*(5), 99–131.

Aiston, S. J., & Jung, J. (2015). Women academics and research productivity: An international comparison. *Gender and Education, 27*(3), 205–220.

Aksnes, D. W., Rørstad, K., Piro, F. N., & Sivertsen, G. (2013). Are mobile researchers more productive and cited than non-mobile researchers? A large-scale study of Norwegian scientists. *Research Evaluation, 22*(4), 215–223.

Altbach, P. G. (2004). Globalisation and the university: Myths and realities in an unequal world. *Tertiary Education and Management, 10*, 3–25. https://doi.org/10.1080/13583883.2004.9967114

Antoniadou, M., & Quinlan, K. M. (2020). Thriving on challenges: how immigrant academics regulate emotional experiences during acculturation. *Studies in Higher Education, 45*(1), 71–85.

Austin, A. E., Chapman, D. W., Farah, S., Wilson, E., & Ridge, N. (2014). Expatriate academic staff in the United Arab Emirates: The nature of their work experiences in higher education institutions. *Higher Education, 68*, 541–557.

Bauder, H. (2015). The international mobility of academics: A labour market perspective. *International Migration, 53*(1), 83–96.

Cañibano, C. (2017). Scientific mobility and economic assumptions: From the allocation of scientists to the socioeconomics of network transformation. *Science as Culture, 26*(4), 505–519.

Carvalho, T., Cardoso, S., Diogo, S., Sin, C., & Videira, P. (2021). Institutional policies to attract international academics in an adverse context. In F. Futao Huang & A. Welch (Eds.), *International faculty in Asia: In comparative and global perspective* (pp. 153–169). Springer.

Cradden, C. (2007). *Constructing paths to staff mobility in the European higher education area: From individual to institutional responsibility*. Education International.

Czaika, M., & Orazbayev, S. (2018). The globalisation of scientific mobility, 1970–2014. *Applied Geography, 96*, 1–10.

De Filippo, D., Casado, E. S., & Gómez, I. (2009). Quantitative and qualitative approaches to the study of mobility and scientific performance: A case study of a Spanish university. *Research Evaluation, 18*(3), 191–200.

Deville, P., Wang, D., Sinatra, R., Song, C., Blondel, V. D., & Barabási, A. L. (2014). Career on the move: Geography, stratification and scientific impact. *Scientific Reports, 4*(1), 1–7.

Enders, J. (1998). Academic staff mobility in the European community: The ERASMUS experience. *Comparative Education Review, 42*(1), 46–61.

Enders, J. (2001). *Academic staff in Europe. Changing contexts and conditions*. Greenwood Press.

Fangmeng, T. (2016). Brain circulation, diaspora and scientific progress: A study of the international migration of Chinese scientists, 1998–2006. *Asian and Pacific Migration Journal, 25*(3), 296–319.

Ferencz, I., & Wächter, B. (2012). *European and national policies for academic mobility. Linking rhetoric, practice and mobility trends*. Lemmens.

Gaillard, J., & Gaillard, M. (1997). Introduction: The international mobility of brains: Exodus or circulation? *Science, Technology and Society, 2*(2), 195–228.

Green, A. G., & Green, D. (2004). The goals of Canada's immigration policy: A historical perspective. *Canadian Journal of Urban Research, 13*, 102–139.

Hottenrott, H., Rose, M., & Lawson, C. (2019). *The rise of multiple institutional affiliations*. arXiv preprint, arXiv:1912.05576.

Huang, F. (2008). Preliminary findings and discussions about the characteristics of the changing academic profession in fifteen countries and regions: An international, comparative and

quantitative perspective. In *The changing academic profession in international comparative and quantitative perspectives* (RIHE International Seminar Reports No. 12) (pp. 401–403). Research Institute for Higher Education, Hiroshima University.

Huang, F. (2018). Foreign faculty at Japanese universities: Profiles and motivations. *Higher Education Quarterly, 72*, 237–249.

Huang, F., & Welch, A. (2021). *International faculty in Asia: In comparative global perspective*. Springer.

Huang, F., Finkelstein, M., & Rostan, M. (Eds.). (2014). *The internationalization of the academy: Changes, realities and prospects*. Springer.

Huang, F., Daizen, T., & Kim, Y. (2019). Challenges facing international faculty at Japanese universities: Main findings from the 2017 national survey. *International Journal of Educational Development, 71*, 102103.

INOMICS. (2015). *Academic Institutions Report 2015*. https://inomics.com/academic-institutions-report-2015

Jonkers, K., & Cruz-Castro, L. (2013). Research upon return: The effect of international mobility on scientific ties, production and impact. *Research Policy, 42*(8), 1366–1377.

Jöns, H. (2011). Transnational academic mobility and gender. *Globalisation, Societies and Education, 9*(2), 183–209.

Jung, J. (2015). Gender differences in research scholarship among academics: An international comparative perspective. In W. K. Cummings & U. Teichler (Eds.), *The relevance of academic work in comparative perspective* (pp. 163–178). Springer.

Kim, T. (2009). Transnational academic mobility, internationalization and interculturality in higher education. *Intercultural Education, 20*(5), 395–405.

Kim, E. (2015). International professors in China: Prestige maintenance and making sense of teaching abroad. *Current Sociology, 63*(4), 604–620.

Kim, T., & Locke, W. (2010). *Transnational academic mobility and the academic profession*. Centre for Higher Education Research and Information, The Open University.

Kostelecka, Y., Bernard, J., Patockova, V., & Kostelecky, T. (2008). *How to turn brain drain into brain gain. Policies to support return of researchers and scientists to their home countries*. Institute of Sociology.

Laudel, G. (2003). Studying the brain drain: Can bibliometric methods help? *Scientometrics, 57*(2), 215–237.

Leemann, R. J. (2010). Gender inequalities in transnational academic mobility and the ideal type of academic entrepreneur. *Discourse: Studies in the Cultural Politics of Education, 31*(5), 605–625.

Leišytė, L., & Rose, A.-L. (2016). The challenges of attracting and retaining academic talent. Central and Eastern European perspectives. *Journal of the European Higher Education Area, 04*, 61–82.

Lepori, B., Seeber, M., & Bonaccorsi, A. (2015). Competition for talent. Country and organizational-level effects in the internationalization of European higher education institutions. *Research Policy, 44*(3), 789–802.

Mahroum, S. (2000). Scientific mobility: An agent of scientific expansion and institutional empowerment. *Science Communication, 21*, 367–378.

Moed, H. F., & Halevi, G. (2014). A bibliometric approach to tracking international scientific migration. *Scientometrics, 101*(3), 1987–2001.

OECD (Organisation for Economic Co-operation and Development). (2015). *Which factors influence the international mobility of research scientists?* OECD.

Pherali, T. J. (2012). Academic mobility, language, and cultural capital: The experience of transnational academics in British higher education institutions. *Journal of Studies in International Education, 16*(4), 313–333.

Robinson-Garcia, N., Sugimoto, C. R., Murray, D., Yegros-Yegros, A., Larivière, V., & Costas, R. (2019). The many faces of mobility: Using bibliometric data to measure the movement of scientists. *Journal of Informetrics, 13*(1), 50–63.

Rostan, M., & Höhle, E. A. (2014). The international mobility of faculty. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 79–104). Springer.
Salmi, J. (2016). Excellence strategies and the creation of world-class universities. In N. C. Liu, Y. Cheng, & Q. Wang (Eds.), *Matching visibility and performance* (pp. 13–48). Brill Sense.
Teichler, U. (2012). International student mobility in Europe in the context of the bologna process. *Journal of International Education and Leadership, 2*(1), 34–49.
Teichler, U. (2015). Academic mobility and migration: What we know and what we do not know. *European Review, 23*(1), 6–37.
Van der Wende, M. (2015). International academic mobility: Towards a concentration of the minds in Europe. *European Review, 23*, 70–88.
Welch, A. R. (1997). The peripatetic professor: The internationalisation of the academic profession. *Higher Education, 34*, 323–345.
Yamashita, Y., & Yoshinaga, D. (2013). Influence of researchers' international mobilities on publication: A comparison of highly cited and uncited papers. *Scientometrics, 101*, 1475–1489.
Yudkevich, M., Altbach, P., & Rumbley, L. E. (2015). *Academic inbreeding and mobility in higher education: Global perspectives*. Palgrave Macmillan.
Yudkevich, M., Altbach, P. G., & Rumbley, L. E. (Eds.). (2016). *International faculty in higher education: Comparative perspectives on recruitment, integration, and impact*. Routledge.

Futao Huang is professor at the Research Institute for Higher Education, Hiroshima University, Japan. He earned his BA, MA, and PhD in Chinese universities. Before he came to Japan in 1999, he had taught in several Chinese universities. His major research fields are concerned with internationalization of higher education, designing university curriculum, the academic profession, and higher education in East Asia. Since the late 1990s, he has published widely in Chinese, English, and Japanese languages in many international, peer-reviewed journals.

Liudvika Leišytė is Professor of Higher Education and Vice-Director of the Center for Higher Education at the TU Dortmund University, Germany. Her research interests include higher education governance and management, changing academic work, and digitalisation of higher education. She received the 2018 Emerald Literati Award for the highly commendable article in Learning Organization. She was a postdoctoral fellow at the Center for European Studies at Harvard University in 2008–2009 and a visiting professor at Nagoya University in Japan in Spring 2018. To date, Liudvika Leišytė published five books, numerous chapters, and articles in journals like Higher Education, Studies in Higher Education, and Public Administration, and is a member of six editorial boards. She serves as a co-convenor of Higher Education Research section of the European Education Association conference, as a Board member of the German Higher Education Research Association and chairs the Board of the Lithuanian scientists abroad association, Futura Scientia.

Aliya Kuzhabekova is an Associate Professor at the Nazarbayev University Graduate School of Education, Kazakhstan. Aliya holds a Ph.D. in Higher Education Policy from the University of Minnesota. Aliya's research interests are in international and comparative higher education. Her work focuses on the analysis of the experiences of international and local faculty in Kazakhstan, on the barriers and factors contributing to university research capacity building in transitional economies, as well as on the process of research socialization and international mobility of junior scholars (doctoral students, postdocs, junior faculty). An important part of her research agenda is concerned with unique experiences of women leaders, faculty, and researchers in post-Soviet higher education.

Sara Diogo is an invited assistant Professor at the University of Aveiro (Portugal), at the Department of Social, Political and Territorial Sciences, and a Post-Doc Fellow at GOVCOPP–Governance, Competitiveness and Public Policies Unit. She is also a Researcher at CIPES–Research Centre on Higher Education Policies. She holds a joint-PhD from the University of Aveiro and the University of Jyväskylä in Finland, comparing policy changes in Portuguese and Finnish higher education systems. Her research focus on international comparative studies related to higher education governance, internationalization, public policy, gender, and international cooperation for development. She is a part-time consultant for the World Bank in Higher Education Policy and, since 2015, she cooperates with the Instituto Camões (Portuguese Institute for Cooperation) on International Cooperation for Development.

Chapter 7
Internationalization Across Global Divides: Comparison Between Core and Semi-Periphery Doctoral Holders in Chile, Malaysia, and Turkey

Sergio Celis, Fatma Nevra Seggie, and Norzaini Azman

Abstract Internationalization is often depicted as an instrument for disseminating educational values and practices of hegemonic powers for cultural influence and domination. Core countries in the "Global North" dictate what counts as knowledge creation and feed dependencies with semi-periphery countries, most in the "Global South." This divide creates global higher education hubs that distinguish systems at the core from those at the periphery. One of the mechanisms through which this divide solidifies is the training of future researchers. This chapter examines data from the perspectives of 5340 faculty members in Chile, Malaysia, and Turkey, three semi-periphery countries. We first ask to what extent do universities employ faculty with PhD training in core countries. We then test whether faculty's perspectives on internationalization differ between those trained in core systems and those trained elsewhere. Second, we explore differences in terms of time allocation, preferences, and overall satisfaction. In general, results indicate that differences across countries are more significant than those among faculty members, and all faculty members feel a strong pressure for publishing abroad. However, those trained in

S. Celis (✉)
School of Engineering and Sciences, FCFM, Universidad de Chile, Santiago, Chile
e-mail: scelis@uchile.cl

F. N. Seggie
Department of Educational Science, Faculty of Education, Boğaziçi University, İstanbul, Türkiye
e-mail: nevra.seggie@boun.edu.tr

N. Azman
Centre for Educational Leadership and Policy, Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia
e-mail: norzai12@ukm.edu.my

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_7

core countries collaborate more with colleagues abroad, are slightly more critical about internationalization resources at their institutions, and allocate more time to external activities.

Keywords Semi-periphery countries · International orientations · Faculty perceptions · Doctoral education · International comparative

Introduction

Internationalization policies and practices look different depending on our position around the globe. After all, encountering a diversity of cultures and perspectives makes internationalization attractive and necessary for higher education. However, these encounters do not occur in a plain field. Internationalization is often depicted as an instrument for neo-colonialism and disseminating educational values and practices of hegemonic and neoliberal powers for cultural influence and domination (Canto & Hannah, 2001; Vardhan, 2015). Thus, countries at the core of a world system (Chase-Dunn & Grell-Brisk, 2019), in the "Global North", dictate what counts as knowledge creation and feed dependencies with countries in the periphery, most commonly in the "Global South" (Connell, 2007). This divide creates global higher education hubs that clearly distinguish systems and institutions at the core from those at the periphery. Previous studies describe the mechanisms through which this divide solidifies or, in the best case, liquefies (e.g., Celis & Guzmán-Valenzuela, 2021; Knight, 2013). Among those mechanisms that solidify, the literature includes future researchers' training, English as an academic lingua franca, the publishing system's dominance, and other academic networks and mobility activities (e.g., Celis & Kim, 2018; Figueiredo et al., 2021).

Some scholars refer to the Global South as those countries located in the Southern hemisphere of the planet or those that suffered colonialism and continue with a strong economic and intellectual dependency from former colonial powers (Connell, 2007; Guzmán-Valenzuela, 2019). For instance, all Latin American and African countries are considered part of the Global South (Connell, 2007; Santos, 2014). Other scholars define Global South more broadly to include all the countries from both hemispheres where there is political and/or economic volatility, socioeconomic gaps between groups are large, industrialization is not complete, scientific and technological advancements are scarce, and indices of equalities, development, and democracy are unstable (Odeh, 2010; Dados & Connell, 2012). On the other hand, countries in the Global North are economic, scientific, and military powers. These countries have dominated the academic circuits for more than a century, establishing what is considered the legitimate forms of knowledge (Connell, 2007). Countries such as the United States (US), the United Kingdom (UK), France, and Germany fall in this category. These conceptualizations are appealing to account for differences among nations and global trends in the current knowledge society. Thus, the concept of Global South is seen not as a geographical definition, but as a global

imaginary that divides the globe as Global North and South based on economic welfare, development, and knowledge production (Connell, 2007; Müller, 2020).

However, categorizing countries on one side of the global divide is not a clear-cut task (Müller, 2020). According to Müller (2020), this binary idea of the world shadows many countries, most in the East, that fall in-between. Moreover, differences within or across countries mimic or exceed some larger trends (Marginson & Rhoades, 2002). The "glonacal"—global, national, and local —constitution of higher education systems worldwide adds multiple layers of hierarchies, resources, and contextual influences on the analyses (Marginson & Rhoades, 2002). Thus, comparing higher education systems from the global South and North risks misleading results. Economic and sociodemographic indicators are a traditional alternative to differentiate nations. Chase-Dunn et al. (2000) used longitudinal national economic trading measures to classify countries, using the network idea of core, semi-peripheral, and peripheral countries.

In network analysis, a core/periphery structure occurs when high-degree nodes, those with the larger number and higher density of connections, tend to stick together, surrounded by less connected and less dense periphery nodes (Newman, 2010). According to Chase-Dunn et al. (2000), "core countries have greater economic and political/military power [...], while peripheral countries are poor and have weak states" (p. 79). Higher education scholars have used these network concepts to investigate student and faculty mobility across nations (e.g., Glass & Cruz, 2022; Lee & Kuzhabekova, 2018) and international publications (Xu, 2020). Drawing on the core/periphery structure, Mulvey (2021) defines semi-peripheral countries as those "relatively well-connected to the global center but in some ways remain subjugated to it. They normally do not have colonies but are perceived to have civilizational superiority over the global periphery" (p. 441). Thus, semi-peripheral countries are those whose size or developing status gives them intermediate levels of power in the world system. In this chapter, although we refer to the Global North/South literature, we will frame our quest and results as a world system dominated by core countries while others belong to the periphery or semi-periphery. In particular, we will compare a group of semi-peripheral countries.

Still, classifying multiple countries into core, semi-peripheral, and peripheral nations is a challenge. In the field of higher education, we find examples of classification of national systems that follow economic and sociodemographic dimensions but add specific academic indicators. For instance, the initiative Universitas 21 ranks higher education systems instead of institutions based on multiple indicators grouped into overall resources, policy environment, connectivity, research, and teaching outputs (Williams & Leahy, 2020). At the top of the ranking are nations such as the U.S., Switzerland, and Singapore. Precursor projects to the Academic Professions in the Knowledge-Based Society (APIKS) collaboration, such as The Changing Academic Profession (CAP) project, classified higher education systems into developed (e.g., Japan, the UK, and Canada), recently developed (e.g., South Korea, Spain, and Australia), and developing (e.g., Chile, Poland, and India) nations (Shin et al., 2013). The distinction was primarily made between the former being high-income countries (using indicators on the economy, labor market, and

technology) and, in principle, self-sustainable in research training, and the latter being middle-income countries where large numbers of scholars are trained for the academic career abroad (Teichler et al., 2013). Shin et al. (2013) found that faculty members in advanced systems are more collaborative in research projects than their peers in developing ones. These authors suggest that, in advanced systems, faculty members' domestic and international networks, national funding mechanisms, and robust research society explain the higher levels of collaboration than scholars in developing systems.

Findings consistently show how advanced higher education systems establish hubs for research collaboration and for training future scholars (Celis & Kim, 2018; Shin et al., 2013, 2014; Williams & Leahy, 2020). Part of this research collaboration network reaches developing systems through the faculty hiring process of those trained in the core countries (Celis & Kim, 2018). However, we know little about how these faculty members carry expectations for international collaboration, support, and time allocation to the fundamental academic duties from the core to the periphery. This chapter examines data from the APIKS project to explore some of these assumptions from faculty members' perspectives in three nations whose higher education systems can be considered semi-peripheral: Chile, Malaysia, and Turkey. These three countries are categorized as semi-periphery countries (Babones, 2005) and were ranked 32nd, 27th, and 42nd respectively out of 50 nations in Universitas 21 rankings (Williams & Leahy, 2020).

Furthermore, Chile, Malaysia, and Turkey are countries with a centralized system and a clear binary structure of higher education. Among the seven semi-periphery or Global South higher education systems that participated in APIKS—Argentina, Chile, Kazakhstan, Malaysia, Mexico, Taiwan-China, and Turkey—we selected three cases (systems) based on purposeful sampling, whereby the main criterion of selecting the countries were predetermined based on the authors' familiarity with the higher education systems and their involvement in APIKS data collection for their countries. Other considerations include semi-periphery countries that had a sample size of more than 800. To reduce bias from imbalanced cases, the three countries had approximately 75% of academics with PhD or doctoral qualifications. Moreover, one country was chosen to represent each continent, i.e., Europe/transcontinental (Turkey), Asia (Malaysia), and South America (Chile), as it was assumed that the academic scholarship and internationalization pattern would be different according to the higher education context.

PhD Education Mobility and Faculty Hiring

Prestigious universities, mostly in affluent nations of the Global North, attract talents worldwide to enroll them in their PhD programs. Therefore, student mobility at the PhD level is one of the distinguishing features of the current knowledge-based economy (Franzoni et al., 2015; Peters, 2009). In 2017, about 5.3 million students left their home countries to enroll in higher education programs abroad (OECD,

2019). This massive mobility is notorious at the PhD level (OECD, 2019). From the host country perspective, international students represent 22% of enrollment in doctoral programs, compared with only 4% for bachelor's programs (OECD, 2019). At the doctoral level, student mobility across borders is profoundly asymmetrical, which, in turn, gives an account of an imbalance between higher education national systems at the core and the rest. The US attracts 26% of international doctoral students among OECD and partner countries (OECD, 2019). Moreover, the US, the UK, France, Australia, Canada, Germany, and Japan capture about 70% of international students (OECD, 2019). Regarding the total enrollment at the PhD level, Luxemburg, Australia, New Zealand, the UK, Switzerland, Canada, Netherlands, Denmark, France, and Sweden exhibit over 30% international enrollment. In terms of absolute numbers, "the PhD factory" (Cyranoski et al., 2011) has reached significant levels, especially in affluent countries of the Global North. In 2017, OECD countries had 276,800 PhD graduates. The US (71,000), Germany (28,000), and the UK (28,000) were the top suppliers among OECD countries.

Meanwhile, semi-peripheral countries are increasing their numbers of PhD programs and strengthening them, attracting primarily local students with a small share of international ones. For instance, Latin American nations such as Mexico and Chile enroll just over 5% of international students in their PhD programs (OECD, 2019). Overall, international students in PhD programs come from the same region (OECD, 2019).

One of the strategies that higher education institutions follow in the Global South to increase their global status is hiring faculty members who received their PhD education in core countries in the Global North (e.g., Celis & Kim, 2018; Müller et al., 2018). Most of these graduates come back to their home countries to fill positions as faculty members or postdoctoral researchers (e.g., Celis & Kim, 2018; Cowan & Rossello, 2018). In particular, through faculty hiring, universities shape their organizational culture and achieve their missions, including increasing their research capacities. There are two key assumptions: First, PhD education in core countries is a signal for attracting the most talented scholars in training (Franzoni et al., 2015; Müller et al., 2018) and implies access to cutting-edge knowledge (Shin & Harman, 2009). Second, faculty members with foreign PhD education bring with them their social capital, which anticipates international research collaboration with faculty in core countries and greater research productivity (Bozeman & Corley, 2004; Knobel et al., 2013). Celis and Kim (2018) found that Chilean faculty holding a PhD in prestigious institutions in core countries keep collaborating with peers in their alma mater and colleagues in multiple other nations, following the same patterns, although on a much smaller scale than their peers in Korea.

As a result, in these hiring strategies, each nation also mimics a global stratification pattern in which most prestigious institutions concentrate those faculty members trained in core countries (Celis & Kim, 2018). For instance, Cowan and Rossello (2018) investigate more than four decades of faculty hiring and mobility in South Africa, focusing on the interplay between institutional prestige and faculty research productivity. The authors found faculty members who arrived at prestigious institutions after completing their doctoral degree tend to remain in the same

institutions and have more productive careers than those who remain lower on the institutional ladder. Cowan and Rossello (2018) suggest that the small size and degree of development of South African higher education make institutions specialize in specific knowledge areas, which drives faculty to stay where they know the available resources and institutional support better. Their higher education institutions' size and scientific development is only one example of how faculty hiring processes in well-resourced nations differ from developing ones (Celis & Kim, 2018). What is less known is how faculty members with a core-country PhD perceive the internationalization orientations in their institutions, and how they allocate time to the multiple university missions. This chapter asks to what extent Chilean, Malaysian, and Turkish universities employ faculty with PhD training in core countries. Overall, we test whether a greater concentration of faculty trained in core countries means a stronger internationalization orientation. A positive relation would indicate that internationalization is built by those with a hegemonic or core perspective. On the other hand, a weak or nonexistent relationship would suggest a more nuanced picture, where a diverse range of regional views weaves internationalization. We first explore differences in terms of time allocation, and preferences between research and other university missions. Second, we test whether the faculty's perspectives on the internationalization of their institutions differ between those with PhD training in core higher education systems from those trained elsewhere, including the host country. Third, we explore differences in terms of affiliation to the department or the discipline, and overall satisfaction. These questions allow us to understand how internationalization orientations and networks may also influence local relationships and the use of faculty time.

The Academic Profession Context in Chile, Malaysia, and Turkey

Before we continue with the analyses of the APIKS survey to answer our research questions, we provide a brief academic context for each of the three studied countries. As mentioned in the introduction, Chile, Malaysia, and Turkey are semi-peripheral nations with developing higher education systems. Despite sharing these conditions, their higher education systems differ profoundly, such as global region, size, and proximity with core countries. It may be the case that these national differences are as significant as faculty characteristics in our attempts to answer our research question. Thus, these contexts offer some clues to understand substantial differences.

Chile went through a rapid massification of its higher education system between 1990 and 2015. Currently, it enrolls about 1,300,000 students, and employs approximately 83,000 faculty members of whom approximately 45,000 are women, and 46,000 full-time equivalent faculty (Servicio de Información de Educación Superior

[SIES], 2021). In terms of age, the average is 44.5 years (45.7 for men and 42.9 for women).

Among the higher education institutions, 60 are universities, of which 18 are public. The enrolment expansion at both public and private institutions was one of the forces that contributed to the rapid professionalization of faculty members through the increase of full-time appointments and institutional resources to support research activities (Brunner, 2015). However, Chilean faculty still lag in academic training and research productivity compared with peers in developed higher education systems. For instance, only 25.6% of full-time faculty hold a doctorate degree (SIES, 2021). Internationalization among faculty ranks is also low, with about 4% being foreign born (SIES, 2021), although among all doctoral degree holders in Chile, more than half received their degrees abroad (CONICYT, 2014). The high numbers of Chilean faculty members who trained abroad resulted from an aggressive policy for graduate education scholarships overseas (Chiappa & Finardi, 2021). Universities and their faculty members comprise much of the country's research workforce. Faculty research productivity has increased in the past decade, with Chile ranking among the first in Latin America according to the number of publications per faculty member (De Moya Anegón et al., 2021). Even though public and private institutions have pushed for a robust national knowledge and innovation system, Chile's investment in research and development remains remarkably low, representing less than 0.4% of the gross domestic product.

Malaysian higher education is a centralized, binary system consisting of private and public higher education institutions divided into university and non-university sectors. Of 558 higher education institutions in total, 81 are universities, 39 are university colleges, and the rest are colleges and polytechnics (Ministry of Higher Education [MOHE], 2020; Department of Higher Education [DHE], 2021). In 2020, approximately 1,222,098 students were enrolled, and 66,388 academics were employed in the system. In the university sector, there are 20 public universities, 51 private universities, and 10 are foreign university branch campuses.

The academic profession in Malaysia is relatively large and not very competitive (Azman et al., 2016). The number of academics employed in both public and private universities in Malaysia rose from 39,153 in 2007 to 66,627 in 2015; however, but this declined to 56,235 in 2020. Between 2007 to 2015, private universities had a total increase of 53.2%, increasing from 16,270 academics employed in 2007, to 34,750 in 2015 (MoHE, 2015). As of December 2020, 31,508 academic staff were employed in public universities and 24,727 academic staff in private institutions. While part-time employment is rare in public universities, private universities retain a moderate association between full-time and part-time employment. Academics in the private HEIs are employed on a tenure basis, while academics in the public sector hold permanent appointments as civil servants. As civil servants, academic salaries are similar across all universities and are not considered high.

Full time academics in Malaysian HEIs generally hold one of four academic ranks: lecturer, senior lecturer, associate professor, and professor. The academic population has a relatively bottom-heavy structure as nearly three quarters of academics (77.0%) are of lecturer and senior lecturer status. For the 2020 academic

year, women comprised 55.7% percent of all academics. However, the number of female academics at public universities is growing; more than half (56.6%, or 17,818) are women. Conversely, women academics are not well represented in the private universities; only 54.5% of academics (13,480) are female (MoHE, 2020). In most public universities, only candidates with doctoral degrees can be hired directly as lecturers.

The number of academics with PhD qualifications is approximately 75.5%in the five research universities and 48.7%in the other 15 public universities. While part-time employment is rare in public universities, private universities retain a moderate association between full-time and part-time employment. In 2020, 4.1% and 9.4%of the academic staff in public and private institutions were non-Malaysian citizens. More than 90,000 international students' enrollment was recorded in the private higher education institutions and 30,000 in the public universities in 2019 (MOHE, 2020; DHE, 2021). However, these numbers have substantially decreased in the private universities in 2020 due to the COVID-19 pandemic. Malaysia continues to prioritize internationalization strategies as a national agenda and dedicate resources to planning and regulating cross-border higher education through the Malaysian Education Blueprint: Higher Education (MEBHE, 2015) 2015–2025 and the 12th Malaysia Plan (MP) 2021. The substantial aim of the MEBHE and the MP12 is to rank the Malaysian higher education system amongst the top higher education systems in the world and to empower the Malaysian higher education system to survive in the globalized world.

Turkish higher education is a centralized system where The Council of Higher Education (CoHE, YÖK in Turkish) is the governing body. CoHE's primary responsibilities include strategic planning, coordination, and quality assurance of higher education institutions, among others (Akbulut Yıldırmış & Seggie, 2018). The system has faced a vast expansion in the last two decades regarding the number of higher education institutions. There were 77 higher education institutions in 2003 (Calikoglu et al., 2020), which increased to 207 in 2020, with 129 public and 74 foundation universities together with four foundation vocational schools (YÖK, 2021). A foundation higher education institution is a non-profit organization that is established by a Turkish foundation. The first foundation university was founded in 1984 in Ankara, the capital city. The massification is also reflected in the number of students attending these institutions, with 7.94 million students—3.83 million of whom were female, and 4.1 million males—in the 2019–2020 academic year. In 2020, there were 174,494 academicians (78,687 females and 95,807 males) employed at universities. Around 28.5 thousand were professors, 16.6 thousand associate professors, 41 thousand assistant professors, 37.6 thousand lecturers with or without PhD, and 50 thousand research assistants (YÖK, 2021).

In this dynamic context, internationalization has always been an attractive topic in Turkish higher education—especially with government scholarships for Turkish students who would like to pursue their graduate studies abroad—particularly over the last decade. In 2018, the CoHE published a five-year strategy for the internationalization of higher education. In the document, some of the main aims included an increase in the number of qualified international students and academics, further

collaboration and cooperation with target countries, multinational institutions, international universities, a higher number of academic programs with foreign language education, and more universities in the top 500 in global rankings (YÖK, 2017). According to 2020 data (YÖK, 2021), there were 185,047 international students (65,436 females and 119,611 males) from around 180 different countries in Turkey. According to 2018 data (YÖK, 2019), there were 3121 international faculty members from several countries. The US, UK, Iran, Azerbaijan, and Syria are the five top countries of origin in the Turkish higher education system.

Methods

Sample

The study draws on comparable data from Chile, Malaysia, and Turkey, three semi-peripheral or emerging countries, as a basis for the discussion. We first determine the sample size of the APIKS survey in each of the countries. In all three countries, the desired minimum of 800 samples was reached. The sample size for the three countries combined consists of 8015, specifically 1837 in Chile, 4368 in Malaysia, and 1810 in Turkey. In Malaysia, the number of respondents surpassed the required number strived for, and it is approximately twice as many respondents than the numbers in Chile and Turkey. Table 7.1 presents the sample size according to the status of the employment contract. The majority of academics employed in the three countries are permanently employed, particularly in Malaysia and Turkey. Extensive use of temporary employment is evident in Chile (37%), compared to Malaysia (2%) and Turkey (2.8%).

Next, we reduce the sample to full-time faculty who hold a PhD degree. Thus, the final sample consists of 5340 faculty members. In the case of Chile, the sample was significantly reduced to 705 participants, which is representative of the total number of PhD holders among faculty members (about 40%). We then determined the country in which academics earned their doctoral degrees, either in the country of current employment (home) or abroad. This analysis allows to determine which higher education systems rely more on foreign training than homegrown faculty. It is assumed that the country of current employment is highly related to the home country. The pattern holds that, as a whole, the percentage of foreign doctoral degree

Table 7.1 Academics' employment status in Chile, Malaysia and Turkey in the APKIS sample

Country	Part time	Full time	Total (100%)
Chile	680 (37.0%)	1157 (63.0%)	1837
Malaysia	88 (2.0%)	4280 (98.0%)	4368
Turkey	50 (2.8%)	1760 (97.2%)	1810
Total	818 (10.2%)	7197 (89.8%)	8015

holders is relatively low. More than half (65.2%) of the Chilean sample earned their doctoral degree from the host country. The figure for the Malaysian sample is similar to Chile, as approximately 61.2%of academics received their doctoral training from local universities. In contrast, Turkey appears to have the highest level of homegrown doctoral academics (87.9%). These descriptive statistics show that the three higher education systems prefer to hire local doctoral degree holders. Turkey is more reliant on local doctorates than the other two countries (Table 7.2).

We then classified the countries where faculty received their doctoral training into the following: core or advanced countries, typically industrialized and economically developed countries; and semi-periphery countries, typically economically developing countries. We based this classification on Shin et al.'s (2013) typology, the Universitas 21 higher education system ranking, and socioeconomics such as gross domestic product per capita. Thus, the list of core or advance countries includes Australia, Belgium, Canada, Taiwan, Denmark, Finland, France, Germany, Hong Kong, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, the UK, and the US. All other countries included the three studied countries were classified as semi-peripheral ones. We acknowledge that several of these countries may be called peripheral; however, they represent a minimal share of graduates, and our analyses focus on the difference between the core and the rest.

Analyses

The following analyses consist of our primary research interests, namely how academics' workloads, preference for teaching and research, affiliation, perceptions on institutional orientation to internationalization, international collaboration, and job satisfaction differ based on the patterns of their doctoral education background. The assumption is that academics with doctoral training from the core and semi-periphery countries may vary in certain academic activities and, hence, on the internationalization of the academic profession. We used frequencies and bivariate analyses to test these differences.

Table 7.2 Doctoral degree obtained in country of current employment and abroad by Chilean, Malaysian and Turkish academics

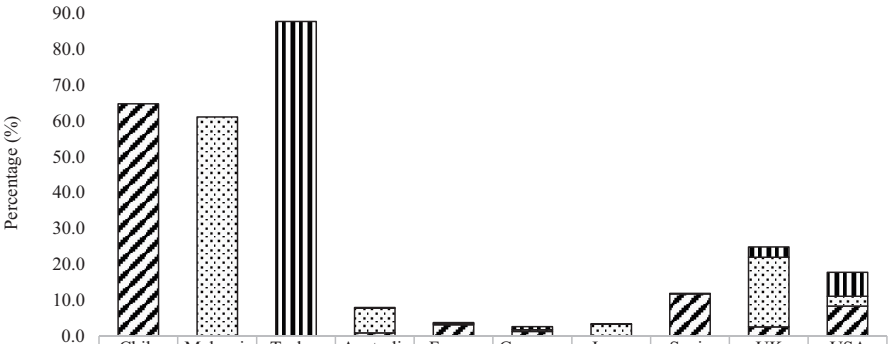
Country	At home	Abroad	Total (100%)
Chile	457 (64.82%)	248 (35.18%)	705
Malaysia	1959 (61.18%)	1243 (38.82%)	3202
Turkey	1259 (87.86%)	174 (12.14%)	1433
Total	3675 (68.82%)	1665 (31.18%)	5340

Limitations

The findings of this study should be interpreted with caution. Response rates varied across countries and the samples are biased in different ways (e.g., gender, types of institutions; geographical locations). There is also a significant proportion of incomplete data, and self-report could induce errors. We reduce these variations by focusing on full-time faculty with PhD education. The overall sample is representative of the percentage of faculty members with these characteristics in each country.

Findings

Figure 7.1 shows the top countries where academics obtained doctoral degrees from the three systems. Other than the three home countries, Chile, Malaysia, and Turkey, the other seven top destinations reported by the academics include all core or advanced countries, some of which have been world economic leaders for some time (e.g., the US, the UK, Germany). Of these seven countries, the UK and the US are the most preferred destinations for graduate training of Turkish academics. More Malaysian academics gained their doctoral qualifications from the UK and Australia. As expected, Spain (because of their shared language) and the US are among the countries favored by Chilean academics for their doctoral education. While the Malaysian trends in doctoral training are the same as the other two countries, i.e., from home and economically developed, Anglophone, and Anglo-Saxon higher education systems, we see Japan as a new Asian hub, emerging among the preferred doctoral training destinations for the Malaysian academics.



	Chile	Malaysia	Turkey	Australia	France	Germany	Japan	Spain	UK	USA
Turkey	0.0	0.0	87.9	0.1	0.2	0.8	0.1	0.1	2.9	6.7
Malaysia	0.0	61.2	0.0	6.9	0.4	0.5	3.3	0.0	19.4	2.7
Chile	64.8	0.0	0.0	0.9	3.1	1.3	0.0	11.8	2.6	8.4

Fig. 7.1 Top 10 countries where doctoral training was obtained by Chilean, Malaysian and Turkish Academics (percentage)

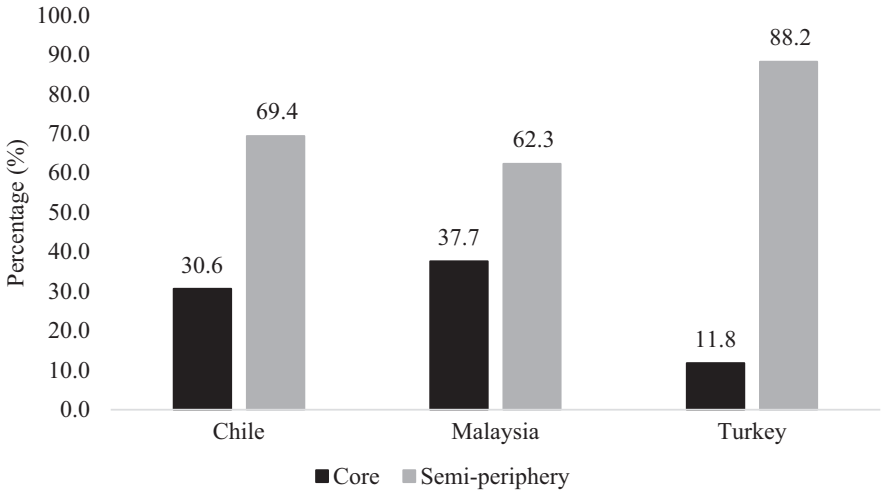


Fig. 7.2 Doctoral degree obtained from core (advanced) and semi-periphery countries of academics in Chile, Malaysia and Turkey (percentage)
Note: Core/Advanced Countries—Australia, Belgium, Canada, Taiwan, Denmark, Finland, France, Germany, Hong Kong, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, United Kingdom, and USA

When the destinations for doctoral training are further divided into core and semi-periphery countries, we see a similar pattern whereby in all the three higher education systems, more academics have been trained in semi-periphery countries (69.4%, 62.3%, and 88.2% for Chile, Malaysia, and Turkey, respectively) than in the core or advanced countries. These percentages mean that the three systems employ relatively large proportions of local degree holders as their academics. Turkey seems to place a higher priority in hiring local degree holders than Chile and Malaysia (Fig. 7.2).

Time Allocation

Academic experiences during doctoral education may impact the role or inclination towards multiple academic duties (Rostan & Hohle, 2014). Table 7.3 shows the mean number of hours academics reported spending in their week when an academic semester is in session. There are clear patterns of differences between the systems for academics in the three countries and the two clusters of academic's doctoral training backgrounds (doctoral degree from core countries versus doctoral training from semi-peripheral ones). Academics in Chile logged the most hours in administration (12.9 h), but the least hours in teaching (14 h) and research (11.5 h)

Table 7.3 Time allocation (mean hours weekly) for professional work when classes are in session: by country—Chile, Malaysia, and Turkey; by academics with doctoral training from core countries and with doctoral training from semi-periphery countries

Professional work	Country	N	Mean	SD
Teaching	Chile	578	14.1	8.23
	Malaysia	3130	17.9	10.79
	Turkey	1394	19.1	11.72
	Training from core countries	1533	17.4	9.84
	Training in semi-periphery countries	3569	18.0	11.31
Research	Chile	496	11.5	8.20
	Malaysia	3131	12.7	9.37
	Turkey	1394	12.4	9.82
	Training from core countries	1517	12.9	8.94
	Training from semi-periphery countries	3504	12.3	9.57
External oriented activities	Chile	443	4.32	3.96
	Malaysia	3135	4.64	5.42
	Turkey	1394	2.25	4.77
	Training from core countries	1497	4.44	5.13
	Training from semi-periphery countries	3475	3.73	5.27
Administration	Chile	526	12.9	10.93
	Malaysia	3135	9.45	8.47
	Turkey	1394	5.65	6.38
	Training from core countries	1521	9.71	8.69
	Training from semi-periphery countries	3534	8.35	8.44

per week compared to their counterparts. Malaysian academics, on the other hand, spend the most hours per week on research (12.7 h) and service (4.64). In comparison, the academics in Turkey logged most hours in teaching (19.1 h) and logged the least hours in externally oriented activities (2.25 h).

The differences in the four focal role activities by doctoral training background—from core/advanced countries vs. semi-peripheral countries—is minimal for weekly hours allocated to research. The data in Table 7.3 shows that those with doctoral training from core countries spend more hours per week in externally oriented activities (4.43 h) and administration (9.71 h), but fewer hours on teaching (17.4 h), than their colleagues with doctoral degrees from semi-peripheral countries. These findings suggest that, except for research, background doctoral training differences in weekly hours devoted to teaching, externally oriented activities, and administration are evident. There is a gap in weekly professional efforts between core countries and semi-peripheral countries.

Teaching or Research Orientation and International Collaboration

The respondents' stated preferences for teaching and research were calculated on a scale of 1–4, with 1 indicating a preference for education and 4 indicating a preference for research. Figure 7.3 shows the means for teaching or research preference from the respondents in the three countries. Faculty members in Malaysia showed an overall preference towards research, with an average mean preference of 3.28. There is little appreciable difference between academics in Chile and Turkey in their orientation for teaching or research. Their means for research preference are lower than Malaysia and are hover slightly closer to research than teaching orientation. Academics with doctoral degrees from core countries are slightly more inclined towards research (mean = 3.17) than their counterparts (mean = 3.02), a difference that is statistically significant ($t = -5.711$, $p < .001$).

While international research collaboration is expected to be widespread within the three higher education systems, we tested differences between those who earned their doctoral degree from the core and semi-periphery countries. A significantly higher proportion of respondents with doctoral training from core countries (68.8%) collaborated with international colleagues than respondents with doctoral degrees from semi peripheral countries (54.6%). In other words, this difference means that a higher proportion of academics with doctoral training in semi-peripheral countries do not collaborate with international colleagues than academics with doctoral degrees from core countries. These findings seem to indicate that doctoral training experience from core countries provides better opportunities for international scientific collaboration than those who gained doctoral training in semi-peripheral countries. Nevertheless, in aggregate, we note that about 57% of respondents in the three

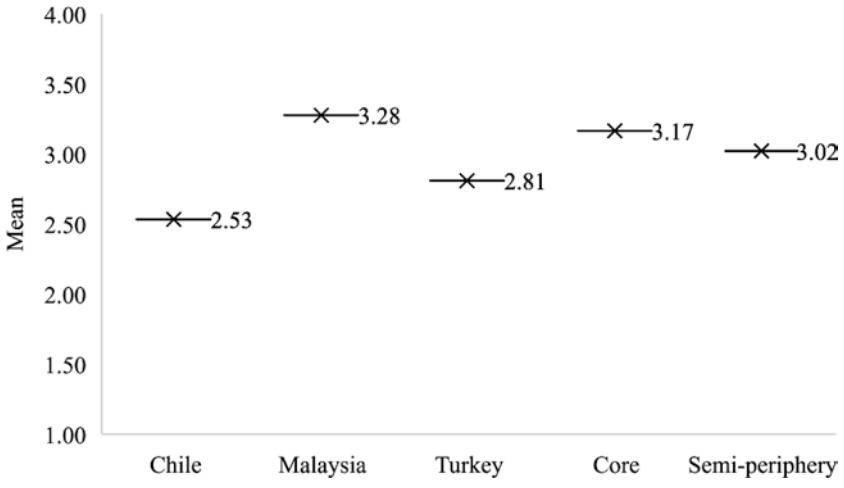


Fig. 7.3 Mean of preferences in teaching (towards 1) versus research (towards 4)

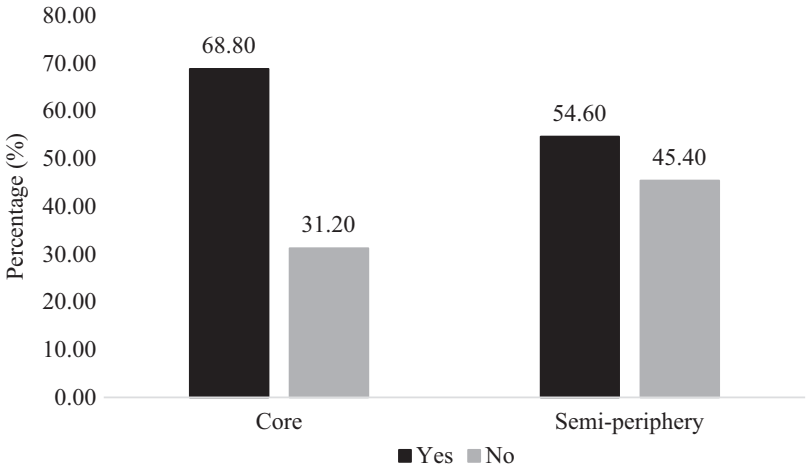


Fig. 7.4 Percent reporting research collaboration with international colleagues (Yes/No) by academics with doctoral training from core countries and with doctoral training from semi-periphery countries (n = 4534)

countries reported collaboration with colleagues abroad, which is similar to or higher than indicators found in advanced or core nations in terms of international collaboration in research (e.g., White, 2021) (Fig. 7.4).

Institutional Orientation to Internationalization

We next considered to what extent academics with doctoral training from the core and semi-periphery countries perceived institutional factors, such as strategies and support that drive internationalization activities. Table 7.5 displays the means, standard deviations, and results of the independent t-test of the two clusters of academic training background on the eight items of institutional strategies and support for internationalization. A glance at the table suggests two broad types or patterns as follows. The findings from academics with doctoral degrees from core countries showed higher means than their counterparts on four aspects related to institutional strategies, programs, and encouragement: (1) institution has a clear strategy for internationalization; (2) institution provides various international exchange programs for a student; (3) institution encourages the recruitment of faculty members from foreign countries; and (4) institution encourages faculty members to publish internationally. On the other hand, they had lower means than their semi-periphery colleagues in all aspects related to opportunities/funding: available opportunities/funding for faculty members to undertake research abroad; for visiting international students; for visiting international scholars; and faculty members to attend conferences abroad. Except for one aspect related to encouragement to publish

internationally, all other seven aspects had a range of means between 2.83 and 3.77, indicating that faculty members generally do not perceive their institutional strategies and support as highly receptive to internationalization.

Results of the t-test for differences in academics' responses between core countries' and semi-peripheral countries' faculty holding doctorates (Table 7.4) indicate differences in the mean scores of six of the survey items: (1) institution provides various opportunities/ funding for faculty members to undertake research abroad ($t = 2.927$, $p < .01$); (2) institution provides various opportunities/funding for visiting international students ($t = 5.918$, $p < .001$); (3) institution provides various opportunities/ funding for visiting international scholars ($t = 4.019$, $p < .001$); (4) institution encourages the recruitment of faculty members from foreign countries ($t = -3.822$, $p < .001$); (5) institution provides various opportunities/funding for faculty members to attend conferences abroad ($t = 3.651$, $p < .001$); and (6) institution encourages faculty members to publish internationally ($t = -10.604$, $p < .001$).

Table 7.4 Differences in the perception of institutions' internationalization orientation by academics with doctoral training from core and semi-periphery countries

Perception	N	Mean	SD	t	p
Institution has a clear strategy for internationalization					
Core countries	1514	3.53	1.03	−0.950	
Semi-periphery countries	3563	3.50	1.17		
Institution provides various international exchange programs for student					
Core countries	1514	3.77	0.95	−1.191	
Semi-periphery countries	3563	3.73	1.01		
Institution provides various opportunities/funding for faculty members to undertake research abroad					
Core countries	1514	2.83	1.16	2.927	**
Semi-periphery countries	3563	2.94	1.19		
Institution provides various opportunities/funding for visiting international students					
Core countries	1514	2.86	1.09	5.918	***
Semi-periphery countries	3563	3.06	1.07		
Institution provides various opportunities/funding for visiting international scholars					
Core countries	1514	2.91	1.09	4.019	***
Semi-periphery countries	3563	3.04	1.09		
Institution encourages the recruitment of faculty members from foreign countries					
Core countries	1514	3.10	1.11	−3.822	***
Semi-periphery countries	3563	2.97	1.18		
Institution provides various opportunities/funding for faculty members to attend conferences abroad					
Core countries	1514	2.88	1.21	3.651	***
Semi-periphery countries	3563	3.02	1.24		
Institution encourages faculty members to publish internationally					
Core countries	1514	4.33	0.95	−10.604	***
Semi-periphery countries	3563	3.97	1.19		

Significant at *p < 0.05; ** p < 0.01; *** p < 0.001

These results mean that there are differences between how the academics perceived their institutional support for internationalization based on where they received their doctoral training.

Affiliation and Satisfaction

Figure 7.5 portrays academics' perceptions of the importance of their affiliations across the three countries. On the whole, academics feel a very strong affiliation with their discipline, and there is very little difference in response between academics in the three systems. Their institutional affiliation is the weakest of the three for Turkish academics. The gap between the Turkish academics' mean responses on institutional affiliation (mean = 3.66) and the rest (mean = 4.36 for Chile and mean = 4.61 for Malaysia) is slightly greater. Conversely, the academics from Chile and Malaysia rated their lowest means for department affiliation.

Breaking down the responses according to doctoral subgroups yielded a similar pattern of generalization across the three systems (Table 7.5). There is very little difference in response of academics with a doctoral degree from the core and semi-periphery countries. Although the academics with doctoral training from semi-periphery countries rated a higher mean (4.75) than their counterparts (4.73) for affiliation with academic discipline, the difference is minimal. Similarly, academics with degrees from core countries rated slightly higher mean for institutional affiliation (4.39) than their counterparts (4.29), but results of the t-test indicate significant differences ($t = -3.491$, $p < .001$) (Table 7.5).

We also analyzed whether semi-peripheral doctoral graduates were more satisfied with their job than doctoral degree holders from core countries, and whether there are significant differences between them in their job satisfaction. Figure 7.6 shows a surprising similarity in the extent of professional academic satisfaction reported across the three countries (means between 2.96 and 3.69). Generally,

Table 7.5 Differences in the importance of affiliation by doctoral degree holders from core and semi-periphery countries

Perception	N	Mean	SD	t	p
Academic discipline					
Core countries	1553	4.73	0.54	0.995	
Semi-periphery countries	3663	4.75	0.55		
Department					
Core countries	1562	4.36	0.85	−0.220	
Semi-periphery countries	3680	4.36	0.87		
Institution					
Core countries	1562	4.39	0.88	−3.491	***
Semi-periphery countries	3680	4.29	0.99		

Significant at *p < 0.05; ** p < 0.01; *** p < 0.001

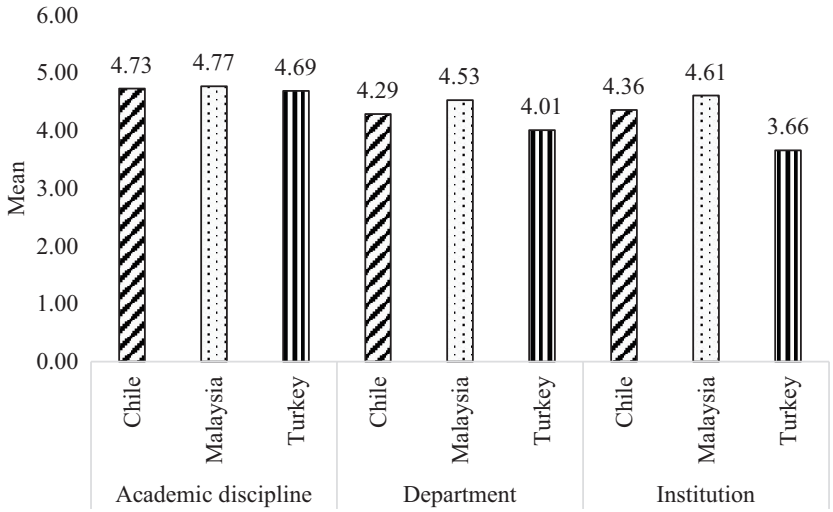


Fig. 7.5 The importance of affiliation by academics in Chile, Malaysia, and Turkey

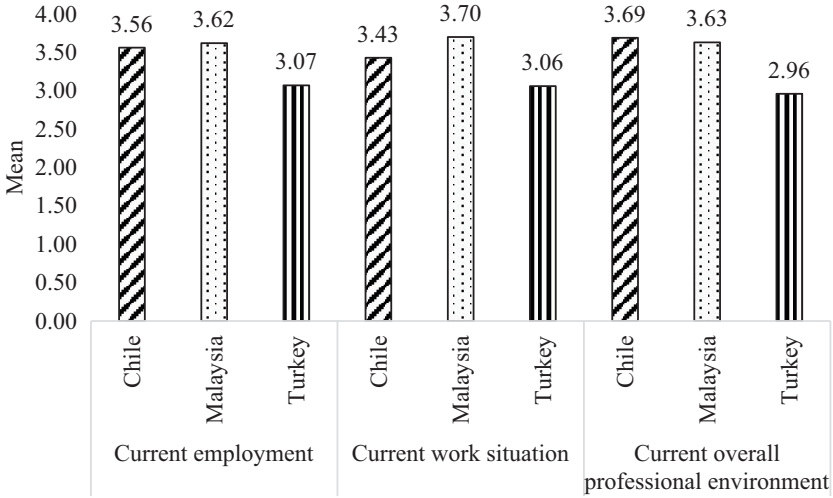


Fig. 7.6 Academics' job satisfaction by country: Chile, Malaysia, and Turkey

academics from all three systems are moderately satisfied with their current employment, work situation, and professional environment. Malaysian and Chilean academics are slightly more satisfied on average than Turkish academics.

Table 7.6 illustrates the results of the t-tests looking at differences between core and semi-peripheral doctorates' responses to survey items relating to professional satisfaction. Overall, the academics from both groups showed a considerable positive level of job satisfaction. Doctorates from core countries were slightly more

Table 7.6 Differences in job satisfaction of academics with doctoral degree obtained in core and semi-periphery countries

Perception	N	Mean	SD	t	p
Current employment					
Core countries	1562	3.51	1.07	−2.083	*
Semi-periphery countries	3680	3.44	1.09		
Current work situation					
Core countries	1562	3.48	1.10	0.288	
Semi-periphery countries	3680	3.49	1.09		
Current overall professional environment					
Core countries	1562	3.44	1.04	0.630	
Semi-periphery countries	3680	3.46	1.07		

*p < 0.05; ** p < 0.01; *** p < 0.001

satisfied with their current employment than doctorates from semi-periphery countries ($t = -2.083$, $p < .05$). On the other hand, semi-periphery doctorates are slightly more satisfied with their current work situation and overall professional development than doctorates from core countries. However, the differences in means are not significant.

Discussion

Overall, we found an evident reliance on doctoral training from semi-peripheral higher education systems in all three countries, mainly from their national institutions. However, the percentage of faculty educated in core or advanced higher education systems for their PhD degrees is significant, more than 30% in Chile and Malaysia, and about 12% in Turkey. Consistent with other international reports, most PhD holders in these countries were educated in the UK and the US (Shin et al., 2014). Nevertheless, Japan is gaining popularity in Malaysia due to the Look East policy (Furuoka, 2007) which sought to have Malaysians emulate the Japanese work ethic and business management techniques, and acquire Japanese expertise and capital through aid, investment, and trade cooperation. PhD holders from Japan and Korea are also in faraway countries such as Chile (Celis & Kim, 2018).

The percentage of PhD holders from core countries in the three countries is significant enough to influence or shape institutional policies towards the multiple university missions. Even though the difference in weekly professional efforts of those from core and semi-periphery countries was minimal in teaching, research, and administration, faculty members trained in core higher education systems dedicate significantly more time engaging in external activities. This finding contradicts previous research that suggests locally trained faculty (mostly from institutional inbreeding) would be more inclined to engage in service or activities with local parties. We speculate that the global forces towards the knowledge society pushed

the private and public sectors to collaborate with highly research-trained professionals. Top administrators and policymakers should further examine these results.

One result that confirms the expectations and the results of previous studies is that academics with doctoral degrees from core countries collaborate more with international colleagues than their counterparts. This fact supports the institutional and national policies for hiring faculties trained in core countries. However, faculty members trained in the host or semi-peripheral countries also report significant levels of collaboration. This activity may be a point of leverage. A more complex and diverse collaboration network might emerge if policies support faculty collaboration in both studied clusters.

Another key result for institutions is the slightly more critical perspective on the international orientation of faculty trained in core or advanced countries. This finding supports earlier views by Shin et al. (2014) that the institutions' academic culture, infrastructure, and funding mechanisms may be different than that in the core countries where they gained their doctorate education. It seems that the internationalization discourse at the institutional level may lag to those trained in advanced nations. Integrating their visions and supporting the maintenance of their networks seem a fundamental piece to keep them at their institutions, manage their expectations, and maximize their international social capital. The expectations of those educated in core nations resemble the issue of international faculty in STEM fields, whose expectations are managed by their institutions that actively try to retain them (Lawrence et al., 2014).

Finally, there are high levels of job satisfaction with mostly non-significant differences between faculty trained in core and semi-peripheral countries. However, the finding that both faculty clusters perceive considerable pressure for publishing in international journals is striking. Regardless of the country of PhD training, the forces of the academic society unleashed from countries in the core are felt for all types of faculty members. This finding may also indicate that faculty members working in Chile, Malaysia, and Turkey, perceive, work, and engage in an international environment which can shape their respective regions as well.

In general, our findings indicate that differences across countries are more extensive than those among faculty members trained in core and periphery higher education systems. Thus, scholars of the academic professions should be cautious of generalizing a global condition to full-time faculty members trained at the PhD level. For instance, the Global South's notion does not much influence the perspectives on internationalization studied here. Although the share of academics with PhDs from countries at the core of the knowledge society is significant in the three studied countries, national and local conditions define how academics conduct and perceive their work (Marginson & Rhoades, 2002). As suggested by Müller (2020), when we observe sectors, such as the academic profession, the world system acts in more ways than in a binary fashion.

Nevertheless, we observe interesting similarities between Chile and Malaysia, countries with a similar share of faculty trained at core countries, much higher than in the case of Turkey. Our findings suggest that Chile and Malaysia are attractive candidates to advance comparative studies on how internationalization influences

what institutions and faculty members do. Turkey is a much larger nation which has never been colonized, so it does not have colonial legacies like Chile, Malaysia, and other countries in their regions. Also, different from Chile and Malaysia, Turkey is also considered to be one of the "middle powers" (Gilley, 2015), sometimes in the Global South or linkages with the Global South in the literature, other times in between the Global South and Global North as a result of its geopolitical situation (Cakici, 2016), and as part of the Global East after Müller's (2020) conceptualization. Turkish faculty members also indicate lower levels of job satisfaction and lower importance of institutional affiliation than their Chilean and Malaysian colleagues. Further studies could explore how the population of international faculty or faculty trained abroad interact and influence perceptions on internationalization.

Conclusion

Internationalization is often depicted as an instrument for neocolonialism disseminating educational values and practices of hegemonic powers for cultural influence and domination Thus, countries at the core of the world system of knowledge production dictate what counts as knowledge creation and feed dependencies with countries in the periphery, or what is often called the "Global South." This divide creates global higher education hubs that clearly distinguish systems and institutions at the core of the world order from those at the periphery. Some of the mechanisms through which this divide solidifies or, in the best case, liquefies include English as academic lingua franca, future researchers' training, the publishing system's dominance, among others. This chapter examines data from the APIKS project to explore some of these assumptions from 5340 faculty members perspectives in Chile, Malaysia, and Turkey, three nations whose higher education systems can be considered semi-peripheral. We first ask to what extent their universities employ faculty with PhD training in core countries. We then test whether the faculty's perspectives on the internationalization of their institutions differ between those with PhD training in central higher education systems from those trained elsewhere, including the host country. Second, we explore differences in terms of time allocation, preferences between research and other university missions, and overall satisfaction. In general, differences across countries are larger than those among faculty members. However, those trained in core countries collaborate more with colleagues abroad, are slightly more critical about internationalization resources at their institutions and allocate more time for research and external activities than their peers. These results suggest that training in higher education hubs in core countries, influence the research, engagement activities, and expectations of internationalization in semi-periphery nations. Despite the particularities of this group, all faculty members feel a strong pressure for publishing and collaborating with colleagues abroad, and national singularities still have a strong say in how faculty members perceive and allocate time for their work.

Acknowledgments This research was supported by ANID-Fondecyt project 1220839 in Chile, by TÜBİTAK (Project No: 117 K917) and COMU-BAP (Project No: SBA-2017-1093) in Turkey, and by the Ministry of Higher Education (UKMGG-2019-069) in Malaysia.

References

Akbulut Yıldırmış, M., & Seggie, F. N. (2018). Yükseköğretim çalışmalarının akademik bir alan olarak gelişimi: Uluslararası ve ulusal düzeyde alanyazın incelemesi [The development of higher education studies as an academic field: A literature review at international and national levels]. *Yükseköğretim Dergisi, 8*(3), 357–367.

Azman, N., Che Omar, I., Md Yunus, A. S., & Zain, A. N. M. (2016). Academic promotion in Malaysian public universities: A critical look at issues and challenges. *Oxford Review of Education, 42*(1), 71–88.

Babones, S. (2005). The country-level income structure of the world-economy. *Journal of World-Systems Research, 11*, 29–55.

Bozeman, B., & Corley, E. (2004). Scientists' collaboration strategies: Implications for scientific and technical human capital. *Research Policy, 33*(4), 599–616.

Brunner, J. J. (2015). Medio siglo de transformaciones de la educación superior Chilena: Un estado del arte [Half a century of transformations in Chilean higher education: A state of the art]. In A. Bernasconi (Ed.), *La educación superior de Chile: Transformación, desarrollo y crisis* [Chilean higher education: Transformation, development and crisis] (pp. 21–107). Pontificia Universidad Católica de Chile.

Cakici, H. (2016). Getting to the roots of evaluation capacity building in the global south: Multiple streams model to frame the agenda status of evaluation in Turkey. *Canadian Journal of Program Evaluation, 30*(3), 277–295.

Calikoglu, A., Seggie, F. N., & Uslu, B. (2020, March). The teaching and research nexus in Turkish academia: Lessons from an international survey. In *Higher education forum* (Vol. 17, pp. 115–134). Research Institute for Higher Education, Hiroshima University.

Canto, I., & Hannah, J. (2001). A partnership of equals? Academic collaboration between the United Kingdom and Brazil. *Journal of Studies in International Education, 5*(1), 26–41.

Celis, S., & Guzmán-Valenzuela, C. (2021). Internationalisation and the global south. *Scholarship of Teaching and Learning in the South, 5*(1), 1–5.

Celis, S., & Kim, J. (2018). The making of homophilic networks in international research collaborations: A global perspective from Chilean and Korean engineering. *Research Policy, 47*(3), 573–582.

Chase-Dunn, C., & Grell-Brisk, M. (2019). World-System Theory. *obo* in *International relations.* doi: https://doi.org/10.1093/obo/9780199743292-0272.

Chase-Dunn, C., Kawano, Y., & Brewer, B. D. (2000). Trade globalization since 1795: Waves of integration in the world-system. *American Sociological Review, 65*(1), 77–95.

Chiappa, R., & Finardi, K. R. (2021). Coloniality prints in internationalization of higher education: The case of Brazilian and Chilean international scholarships. *Scholarship of Teaching and Learning in the South, 5*(1), 25–45.

Comisión Nacional Científica y Tecnológica (CONICYT). (2014). *Actualización de directorios y estudio de movilidad de PhD en Chile: Brain exchange* [Directory update and PhD mobility study in Chile: Brain Exchange]. https://www.conicyt.cl/wp-content/uploads/2014/07/Resumen-Ejecutivo-Brain-Exchange-2014.pdf

Connell, R. (2007). *Southern theory: The global dynamics of knowledge in social science*. Polity.

Cowan, R., & Rossello, G. (2018). Emergent structures in faculty hiring networks, and the effects of mobility on academic performance. *Scientometrics, 117*(1), 527–562.

Cyranoski, D., Gilbert, N., Ledford, H., Nayar, A., & Yahia, M. (2011). Education: The Ph.D. factory. *Nature, 472*, 276–279. https://doi.org/10.1038/472276a

Dados, N., & Connell, R. (2012). The global south. *Contexts, 11*(1), 12–13.
De Moya Anegón, F., Herrán Páez, E., Bustos González, A., Corera Álvarez, E., Tibaná Herrera, G., & Rivadeneyra, F. (2021). Ranking iberoamericano de instituciones de educación superior 2021 (SIR Iber). *Granada: Ediciones Profesionales de la Información.* https://doi.org/10.3145/sir-iber-2021
Department of Higher Education (DHE), Malaysia. (2021). *Senarai Daftar IPTS 31 Julai 2021*. https://jpt.mohe.gov.my/portal/index.php/ms/ipt/ipt-swasta/25-senarai-daftar-dan-statistik-ipt-swasta
Figueiredo, E. H. D., Jordão, C. M., Antunes, B. P., Emmerich, A., & Cons, T. R. (2021). Perspectives of postgraduate professors and students on internationalization and English language use at a university in the south of Brazil. *Scholarship of Teaching and Learning in the South, 5*(1), 6–24.
Franzoni, C., Scellato, G., & Stephan, P. (2015). Chapter 2: International mobility of research scientists: Lessons from GlobSci. In A. Geuna (Ed.), *Global mobility of research scientists* (pp. 35–65). Academic.
Furuoka, F. (2007). Malaysia-Japan relations under the Mahathir administration: Case studies of look east policy and Japanese investment in Malaysia. *Asian Survey, 47*(3), 505–519.
Gilley, B. (2015). Turkey, middle powers, and the new humanitarianism. *Perceptions: Journal of International Affairs, 20*(1), 37–58.
Glass, C. R., & Cruz, N. I. (2022). Moving towards multipolarity: Shifts in the core-periphery structure of international student mobility and world rankings (2000–2019). *Higher Education, 85*, 1–21.
Guzmán-Valenzuela, C. (2019). Values and the international collaborative research in higher education: Negotiating epistemic power between the global south and the global north. In P. Gibbs, J. Jameson, & A. Elwick (Eds.), *Values of the university in a time of uncertainty* (pp. 137–153). Springer.
Knight, J. (2013). The changing landscape of higher education internationalisation – For better or worse? *Perspectives: Policy and Practice in Higher Education, 17*(3), 84–90.
Knobel, M., Simoes, T. P., & de Brito Cruz, C. H. (2013). International collaborations between research universities: Experiences and best practices. *Studies in Higher Education, 38*(3), 405–424.
Lawrence, J. H., Celis, S., Kim, H. S., Lipson, S. K., & Tong, X. (2014). To stay or not to stay: Retention of Asian international faculty in STEM fields. *Higher Education, 67*(5), 511–531. http://www.jstor.org/stable/43648672
Lee, J. T., & Kuzhabekova, A. (2018). Reverse flow in academic mobility from core to periphery: Motivations of international faculty working in Kazakhstan. *Higher Education, 76*(2), 369–386.
Marginson, S., & Rhoades, G. (2002). Beyond national states, markets, and systems of higher education: A glonacal agency heuristic. *Higher Education, 43*(3), 281–309.
MEBHE. (2015). *Malaysian education blueprint: Higher education 2015–2025*. Ministry of Higher Education Press.
Ministry of Higher Education (MoHE), Malaysia. (2015). *Higher education statistics 2015*. Ministry of Higher Education Press.
Ministry of Higher Education (MoHE), Malaysia. (2020). *Statistics of higher education 2020*. Ministry of Higher Education Press.
Müller, M. (2020). In search of the global east: Thinking between north and south. *Geopolitics, 25*(3), 734–755.
Müller, M., Cowan, R., & Barnard, H. (2018). On the value of foreign PhDs in the developing world: Training versus selection effects in the case of South Africa. *Research Policy, 47*(5), 886–900.
Mulvey, B. (2021). Conceptualizing the discourse of student mobility between "periphery" and "semi-periphery": The case of Africa and China. *Higher Education, 81*(3), 437–451.
Newman, M. E. J. (2010). *Networks: An introduction*. Oxford University Press.

Odeh, L. E. (2010). A comparative analysis of global north and global south economies. *Journal of Sustainable Development in Africa, 12*(3), 338–348.
OECD. (2019). *Education at a glance 2019: OECD indicators*. OECD Publishing.
Peters, M. A. (2009). Education and the knowledge economy. In M. Peters, S. Marginson, & P. Murphy (Eds.), *Creativity and the Global Knowledge Economy* (pp. 51–70). Peter Lang.
Rostan, M., & Hohle, E. A. (2014). The international mobility of faculty. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 79–104). Springer.
Santos, B. (2014). *Epistemologies of the south: Justice against epistemicide*. Routledge.
Shin, J. C., & Harman, G. (2009). New challenges for higher education: Global and Asia-Pacific perspectives. *Asia Pacific Education Review, 10*(1), 1–13.
Shin, J. C., Lee, S. J., & Kim, Y. (2013). Research collaboration across higher education systems: Maturity, language use, and regional differences. *Studies in Higher Education, 38*(3), 425–440.
Shin, J. C., Jung, J., Postiglione, G. A., & Azman, N. (2014). Research productivity of returnees from study abroad in Korea, Hong Kong, and Malaysia. *Minerva: A Review of Science, Learning and Policy, 52*(4), 467–487.
SIES. (2021). *Informe personal académico en educación superior 2021* [Academic personal report in higher education 2021]. Chilean Ministry of Education. https://www.mifuturo.cl/informes-personal-academico/
Teichler, U., Arimoto, A., & Cummings, W. K. (2013). *The changing academic profession. Major findings of a comparative survey*. Springer.
Vardhan, J. (2015). Internationalization and the changing paradigm of higher education in the GCC countries. *SAGE Open, 5*(2), 1–10.
White, K. (2021). *Publications output: U.S. trends and international comparisons*. National Science Foundation. https://ncses.nsf.gov/pubs/nsb20214/international-collaboration-and-citations
Williams, R., & Leahy, A. (2020). *U21 ranking of national higher education systems 2020*. Universitas 21. https://universitas21.com/what-we-do/u21-rankings/u21-ranking-national-higher-education-systems-2020
Xu, X. (2020). China "goes out" in a centre–periphery world: Incentivizing international publications in the humanities and social sciences. *Higher Education, 80*(1), 157–172.
YÖK. (2017). *Yükseköğretimde Uluslararasılaşma Strateji Belgesi: 2018–2022* [Strategy document for the internationalization in higher education: 2018–2022]. YÖK.
YÖK. (2019). *Yükseköğretim bilgi yönetim sistemi* [Knowledge management system for higher education]. https://istatistik.yok.gov.tr/
YÖK. (2021). *Yükseköğretim bilgi yönetim sistemi* [Knowledge management system for higher education]. https://istatistik.yok.gov.tr/

Sergio Celis is an Assistant Professor in the School of Engineering and Sciences at Universidad de Chile. He conducts research on higher education, with a focus on organizational change, faculty work, and teaching and learning in STEM fields. His primary research interest is in how multiple forces, internal and external to the institution, influence what colleges and universities do. He also serves as vice president of the Chilean Society for Engineering Education (Sociedad Chilena de Educación en Ingeniería [SOCHEDI]). Sergio received his professional degree in industrial engineering at Universidad de Chile and his Ph.D. in higher education at the University of Michigan.

Fatma Nevra Seggie is a professor in the Department of Educational Sciences at the Faculty of Education, Boğaziçi University, Istanbul, Turkey. She completed her PhD in the Higher Education, Adult Education, and Lifelong Education (HALE) program at the Department of Educational Administration at Michigan State University in 2007. Her research interests include organizational climate and leadership in higher education, internationalization of higher education, qualitative research methods, and higher education policy analysis. She is also one of the founding members of the Higher Education Studies Association (YÖÇAD). She has published numerous articles in national and international journals and has presented her work at several conferences including ASHE, AERA and IHEC.

Norzaini Azman is Professor of Higher Education at the Faculty of Education, Universiti Kebangsaan Malaysia. She is also an Associate Research Fellow at the National Higher Education Research Institute (IPPTN), Universiti Sains Malaysia. She is currently serving her third term as Chair/President of the Malaysian Society for Research and Higher Education Policy Development. She has collaborated with the Malaysian Ministry of Higher Education, AKEPT, International Educational Planning, Paris; International Association of Universities (IAU), the Asian Development Bank, The World Bank, SEAMEO-RIHED, UNESCO Bangkok and the Malaysia-Australia Institute in various projects. Her main research interests include higher education policy and governance, the academic profession, higher education and sustainability, and leadership in higher education.

Chapter 8
Internationalization of Research Across Disciplines in Practice: Global Similarities and Differences

Sebastian Kocar, Daniela Véliz, Lars Geschwind, and Pío Marshall

Abstract Discipline has proved to be one of the most powerful factors in both shaping and explaining different aspects of internationalization, including academic research. Country-related characteristics such as country size, geographical position, and the use of English as the main language can also explain differences in internationalization of research. This chapter uses survey data for 20 countries from the Academic Profession in the Knowledge-Based Society (APIKS) project to showcase both disciplinary and country differences. The results suggest that there are significant differences between the studied countries and disciplines in research aspects of internationalization in higher education. In the vast majority of countries and for most indicators of internationalization of research, hard disciplines (especially hard-pure) show higher levels of international research activities than soft disciplines. We present the same evidence for North European and smaller European transition countries which have higher levels of international research and collaboration, especially in comparison to larger non-European non-English speaking countries, which stand out as those with little internationalization.

Keywords Academic profession · Internationalization · Academic research · Academic discipline · Research collaboration · Research funding

S. Kocar (✉)
University of Tasmania, Hobart, Australia
e-mail: sebastian.kocar@utas.edu.au

D. Véliz · P. Marshall
Pontificia Universidad Católica de Chile, Santiago, Chile
e-mail: dvelizc@uc.cl; pmarshall1@uc.cl

L. Geschwind
KTH Royal Institute of Technology, Stockholm, Sweden
e-mail: larsges@kth.se

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_8

Introduction

What role does scientific area play in internationalization? Are certain disciplines more likely to be involved in internationalization activities, especially those related to academic research? How consistent are any disciplinary differences across countries? These are issues addressed in this chapter, in which the links between internationalization and disciplinary areas are analysed across The Academic Profession in the Knowledge-Based Society (APIKS) countries from four continents.

In the general discussion (see Altbach & Knight, 2007) scholars have suggested that internationalization has become crucial for higher education institutions (HEI) due to political, economic, and cultural reasons (de Wit, 2019). HEIs compete for revenues, talents, and reputation, reflected in global rankings that emphasize research and international publications (Hazelkorn, 2015). Scholars have proposed several reasons why HEIs engage in internationalization, such as increased commitment to global issues and adjustment of the curriculum to international standards. Furthermore, quality enhancement of teaching and learning, increased research capacity, and stronger and expanded networks for academic staff are essential drivers of internationalization (Knight, 2004; Seeber et al., 2016). In the case of revenues, some studies have stated that international co-publications are positively associated with universities' extra budgetary incomes whereas national partnerships are negatively related to this revenue source (Sandler & Gladyrev, 2020). Additionally, internationalization has been coupled with international mobility, partly described in terms of *brain gain* and *brain drain* (Sierkierski et al., 2018).

From the academic profession's perspective, internationalization has had important implications regarding research activities, since international research collaboration has been found to be a critical factor for research productivity, recognition, and access to research funding (Kwiek, 2015, 2020). Research collaboration and co-authoring has expanded all over the world as a common practice, replacing a predominant part of single authorship and national collaboration in global science (Kwiek, 2023). This has helped academics not only by giving them more opportunities to develop their research, but also by letting them overcome the growing pressure for publishing (Yemini, 2019). Authors have found that not only is international collaboration related to overall research productivity, but also that international and overall productivity are individually related to the same researcher's characteristic that literature describe as productivity predictors, namely national-level factors, institutional-level factors, and individual-level factors (Heng et al., 2020; Kwiek, 2020). Individual-level factors associated with research productivity and international collaboration include, but are not limited to: male over female, older over younger, higher or lower academic rank, the width and breadth of research networks, level of academic degree, a balance between teaching and research, as well as psychological factors such as intrinsic motivation and self-efficacy (Heng et al., 2020).

There are two other main contextual factors affecting academics' internationalization engagement. Clark (1987) has described academic work as a matrix in which "niches are defined for individuals by their dual memberships in institutions and subjects" (p. 42). Since ancient times, and furthermore, since the foundation of universities in the eleventh and twelfth centuries, knowledge has been divided by areas. *Trivium* and *quadrivium* were later separated into Theology, Law, Medicine, and Arts, the four classic faculties (de Ridder-Symoens & Rüegg, 2003). Even later, in the nineteenth century, the philosophical faculty was split into natural sciences and humanities, which was subsequently split into specific social science faculties as late as the latter part of the 1900s. In particular, during the nineteenth century, new areas were developed withinengineering, agriculture, business and education for example, either as part of universities or as specialized higher education institutions (Rüegg, 2004; also see Augier & March, 2011; Geschwind et al., 2020). These historical developments provide the foundations for subjects and disciplines and epistemic cultures to emerge, grow, and develop over time. More recently, there have been attempts to capture and classify different types of disciplines. Arguably, the most cited contribution comes from Biglan (1973) in his proposal not only to distinguish "the two cultures" (Snow, 1959), but also to combine the hard and soft disciplines with either being applied or pure, as well as life and non-life. This was further considered by Becher (1989) who discussed the academic disciplines in terms of "tribes and territories".

In the predecessor to the APIKS project, the Changing Academic Profession (CAP) study, it was concluded that disciplines play an important role when we discuss internationalization: "Discipline has proved to be one of the most powerful factors in shaping internationalization" (Rostan et al., 2014b, p. 270). The CAP data showed that academics from the hard disciplines were twice as likely to be highly engaged in international activities. More specifically, the survey showed a clear divide regarding research collaboration and publishing abroad between natural and medical sciences on the one hand, and social sciences, business, law and humanities on the other. As for teaching, natural scientists were less likely to teach abroad than academics from other fields, and academics from the medical sciences were less likely to have studied abroad than all other disciplines. Furthermore, disciplines did not have any impact on other types of international mobility, neither migration nor short-term professional circulation (Rostan et al., 2014b).

However, this acknowledgement in the concluding CAP volume of a variety of approaches to internationalization across scientific areas was not addressed in any specific contribution. In this chapter, we address the issue by looking concurrently at general disciplinary differences, differences between countries, and disciplinary differences within countries in internationalization of research, while attempting to group both disciplines and countries using empirical evidence on international research collaboration, publishing, and funding.

Literature Review

Disciplinary Differences on Internationalization

Although there are many personal, institutional and contextual factors, one of the most determinant in predicting productivity and internationalization at the individual level is researchers' academic discipline. Despite a positive association between internationalization and productivity for all academic fields, hard disciplines tend to be more productive and internationalized than soft disciplines in terms of international publishing, research collaboration, and co-authorship (Heng et al., 2020; Kwiek, 2020). Following the ISCED classification, Rostan and Ceravolo (2020) observed that international collaboration was closely related to publishing for all disciplines. However, the first two broad categories of (1) education and humanities, and (2) social sciences, business, and law were less sensitive to the effect of the international collaboration on publishing than (3) sciences, (4) engineering, manufacturing, construction, and architecture, and (5) medical sciences, health related sciences, and social services. Other studies in European countries observed that the volume of publications per researcher is higher in (1) life and medical sciences, and (2) physical sciences and mathematics than in (3) engineering, (4) humanities and social sciences, and (5) professional disciplines (Kwiek, 2019). Although hard sciences tend to be more productive and more collaborative internationally, some disciplines are particularly dominant in terms of international collaboration. In fields such as space science, immunology, geosciences, microbiology, and genetics collaboration with researchers abroad starts early in doctoral training of researchers (Célis & Véliz, 2020).

These differences in publication patterns could be explained by the collaboration dynamics between disciplines. Piro et al. (2013) analyzed publication patterns and observed that natural sciences, medicine, and technology had higher numbers of publications per person than social sciences and humanities, but the last two had slightly higher means for article equivalents such as books, book chapters, and monographs, as well as in the fractionalized publications per person, that is the number of publications divided by the number of authors. Similarly, Franceschet and Costantini (2010) observed not only a considerable gap between hard sciences, social sciences, and humanities in terms of the total number of published articles and research collaboration through co-authorship, but also a notorious difference in terms of the volume of authors per publication. The authors conclude that international collaboration is of great importance in sciences such as physics and medicine, moderate in mathematics and engineering, small in social sciences, and almost negligible in arts and humanities (Franceschet & Costantini, 2010). Rostan et al. (2014a) illustrate these differences by the inherent characteristics of the work in each discipline, explaining that in natural sciences collaboration is both necessary and desirable for research process, while in social science and humanities collaboration is less important than other factors such as individual expertise.

Internationalization in Different Countries

Although internationalization of higher education is a global phenomenon, it has certain differences due to a diversity of institutional contexts. There are several initiatives around the world, whether from governments or universities, which are encouraged by either profit, cultural growth, quality enhancement, or other motivations and that are looking for the collaboration of institution and its participation in student mobility, research collaboration, and program creation. However, developed countries such as those from North America and Europe remain the biggest providers of higher education services and continue to receive the most financial benefits of international flows and programs. In contrast, Asian and Latin American middle-income countries lack the capacity to meet growing demand of their students, some of which have to study at foreign institutions (Altbach & Knight, 2007).

Research activities have also been affected by internationalization of higher education. In an era of collaborative science, internationalization of research through international collaboration has acquired major importance in literature since collaboration and productivity are growing in quantity and quality (Wagner et al., 2015). The main metric illustrating the effect of internationalization on research is the volume of international collaboration through co-authorship. All over the world, international co-authorship has increased in the last couple of decades. While in developed countries and regions such as Europe and North America this increase in international co-authorship has resulted in a decrease in domestic collaboration over the years, this does not appear to be the case for developing countries (Adams, 2013; Kwiek, 2020).

Research efforts have been made to understand country-related characteristics explaining or driving internationalization of research activities from the researcher's perspective. In line with the relationship between the development level of the country and the internationalization of research activities within, studies have observed a positive relationship of academic internationalization indicators and other variables such as the Human Development Index (Sierkierski et al., 2018) and the development of the economy (Cummings et al., 2014; Rostan & Ceravolo, 2020). Other country related characteristics associated with international collaboration are the size of the country combined with its geographical location, and the use of English as the country's main language (e.g., Altbach, 2007; Martinez & Sá, 2020; Rostan et al., 2014a; Rostan & Ceravolo, 2020).

Regarding the geographical location of countries and their participation in the internationalization of higher education research, Martinez and Sá (2020) discuss a global asymmetry in the scientific production, in which the global North is positioned as the core of production and collaboration while the South occupies a peripheral position trying to follow imported norms. With a more detailed worldwide analysis, Huang et al. (2014) observed that Asian countries are generally less internationalized than European and North American countries. They collaborate less with international colleagues, including publishing in co-authorship, and receive lower proportions of international research funding. Asian academic researchers also publish less in foreign countries than their European colleagues, but in some cases more in comparison to North American researchers. Canada is the most internationalized in terms

of international collaboration, international co-authoring, and publishing abroad among all North American countries. While the United States of America (USA) is the least internationalized in all these indicators, Mexico represents a middle ground between the English-speaking countries (Canada and USA). An exception to this rule is the proportion of international research funding for which Mexico surpasses Canada and the USA by equaling the sum between both (Huang et al., 2014). Finally, Cummings et al. (2014) analyzed differences between countries and found that European countries, Australia, and China have a higher percentage of academics collaborating with foreign colleagues, in contrast to the USA, Mexico, Brazil, Japan, and South Korea. The same pattern applies to the proportion of academics publishing in foreign countries, except for Mexico with levels comparable to those in European countries. The highest percentage of academics receiving international funding were previously reported in European countries, México, and Australia.

Differences across countries are also related to language. The most significant is the transition from national languages to English as the lingua franca of the scientific world (Lillis & Curry, 2010). Sørensen et al. (2019) discuss how small non-English speaking countries are expected to balance between international publications, contributing to a global science system, and national and local responsibilities. With Denmark as the case in point, they also show how disciplinary differences play out; whereas 86% of all publications are currently published in English, the most dramatic changes have taken place in the humanities and social sciences (Sørensen et al., 2019). Over the last 20 years, there has been a shift from Danish to English. However, the transition to English can also be a challenge for bigger countries, such as Germany, Russia, China, and Brazil, with strong traditions to publish in their respective national language. Furthermore, other global modern languages like Spanish, French, and German have declined as the language of scholarly communication (Altbach, 2007). Formerly colonized countries or countries with a history of being under strong political and cultural influence from other nation-states balance their legacies from the past with current national/local languages and the global pressure to become internationally recognized (Jowi, 2009; Oleksiyenko, 2021).

Methods

Data

The data used in this chapter are from the Academic Profession in the Knowledge-Based Society Project (APIKS). We included data for all 20 countries[1] in the analysis of internationalization of research (out of 31 included in the project[2]; APIKS-IDB,

[1] For South Korea, data were available for two out of the four studied research-related internationalization themes, i.e., *international research collaboration* and *funding received from international research agencies.* For *publishing in a foreign country* and *co-authoring publications with foreign researchers*, data were available for 19 countries.

[2] When writing this chapter, data for the remaining 11 countries were not available for research purposes.

2021). APIKS was a cross-national comparative project focusing on different aspects of academic profession, including internationalization, teaching, research, external activities, governance, and other relevant topics (University of Lapland, n.d.).

The core population of the APIKS project were regularly employed academics on ongoing or fixed-term basis who were holding contracts of at least a 25% full-time equivalent basis. They were employed in higher education (HE) institutions awarding at least a bachelor's degree and held an academic function involving primarily teaching and/or research (APIKS-IDB, 2021).

National surveys for the APIKS project were conducted quite differently in the studied countries following a general methodological direction of the project. In practice, they applied various survey designs and methodological solutions. In terms of sampling, some countries used simple random and stratified sampling, some purposive nonprobability sampling, and other countries total coverage (no sampling). In terms of the data collection method, various modes including the online mode were used. As a result, sample sizes and reported response rates differed substantially. Data collection characteristics are summarized by participating countries in Table 8.1 (APIKS-IDB, 2021).

Classifications

In our analyses, we use classifications of disciplines and a grouping of countries. While classifications of disciplines were predominantly based on the existing literature, we group countries based on empirical evidence from the APIKS survey data.

The question from the international APIKS questionnaire on academic discipline included 13 categories which closely resembled (but did not match) ISCED13-F classification. For the first part of the analysis, i.e., multiple linear and binary logistic regressions, we include original APIKS classification with 13 groups of disciplines (see Table 8.2) in the models. Using this more detailed classification will help us directly compare internationalization of research practices between narrower groups of disciplines; this way we will be able to determine internal disciplinary homogeneity in hard and soft sciences as well.

In the second part of the analysis, i.e., relating disciplinary and country differences, we combine disciplines into hard-soft classes of disciplines (see Biglan, 1973). The main purpose of this grouping is to (visually) showcase some key differences in internationalization of research practices between the analyzed countries. The decision to group disciplines was also based on empirical evidence from APIKS data, which confirmed moderate levels of internal disciplinary homogeniety. Interpreting the results, we also use the pure-applied dimension of the classification where applicable[3] (Biglan, 1973; also see Stoecker, 1993). We have to note that

[3] APIKS disciplines were not created based on Biglan's classification of disciplines and certain categories include both pure and applied disciplines, e.g., *Business and administration, and economics* (pure: economics, applied: finance).

Table 8.1 Countries, samples and data collection[a]

Country	Country code	Sampling method	Final sample size	Response rate
Argentina	AR	Simple random sampling	1025	19%
Canada	CA	Total coverage	2966	10%
Chile	CL	Purposive sampling (selection of 14 universities)	1837	24%
Croatia	HR	Total coverage	1038	11%
Estonia	EE		861	
Finland	FI	Stratified random sampling	1377	21%
Germany	DE	Stratified random sampling on organizational level, total coverage on individual level	7283	28%
Japan	JP	Purposive sampling on organizational level, random sampling on individual level	2136	24%
Kazakhstan	KZ	Stratified random sampling	1019	
South Korea	KR		847	7%
Lithuania	LT	Total coverage	389	11%
Malaysia	MY		4368	
Mexico	MX	Purposive sampling (quota sampling by HEI type)	4668	16%
Portugal	PT	Stratified random sampling	3199	20%
Russia	RU	Purposive sampling	1512	
Slovenia	SI	Total coverage	1035	17%
Sweden	SE	Simple random sampling	2408	29%
Switzerland	CH		1411	
Taiwan	TW	Purposive sampling	1224	56%
Turkey	TR	Random sampling of academics from participating universities (30% of all consented)	1810	4%
Total			**42,413**	

[a]Partial information on methodology is available for Estonia, Kazakhstan, South Korea, Malaysia, Russia, and Switzerland

Medical sciences, health related sciences, and social services was the only category which could not be grouped into either hard or soft sciences, as well as later used in the second part of the analysis, as it is consisting of both hard (medical science) and soft (social services)[4] disciplines.

On the other hand, countries were not grouped based on their size, cultural, or geographical characteristics, which has been common in the existing literature on

[4]Also, descriptive analysis shows that *Medical sciences, health related sciences, and social services* is relatively average in regards to internationalization of research; hence, we will use it as a reference group in regression modelling (see Results and Appendix).

Table 8.2 Classification of academic disciplines

No.	APIKS classification from the questionnaire	Biglan's classification	
		Hard–soft	Pure–applied
1	Teacher training and education science	Soft	Applied
2	Humanities and arts	Soft	Pure and applied
3	Social and behavioral sciences	Soft	Pure and applied
4	Business, administration, and economics	Soft	Pure and applied
5	Law	Soft	Applied
6	Life sciences	Hard	Pure
7	Physical sciences and mathematics	Hard	Pure
8	Chemistry	Hard	Pure
9	Computer sciences	Hard	Applied
10	Engineering, manufacturing and construction, and architecture	Hard	Applied
11	Agriculture and forestry	Hard	Applied
12	Medical sciences, health related sciences, and social services	Hard and soft	Applied
13	Personal services, transport services, and security services	Soft	Applied

academic profession and internationalization. Instead, we grouped them based on empirical evidence on country-level differences in internationalization of research.

Statistical Analysis and Weighting

We use bivariate and multivariate statistical analysis to answer research questions. First, we identify four survey variables as indicators of internationalization of research. In the APIKS questionnaire, the following items were included to measure research-related internationalization domains/themes (see relevant questions from APIKS questionnaire and descriptive statistics in Table 8.7 in the Appendix):

- *international research collaboration* (binary outcome variable, yes-no),
- *publishing in a foreign country* (continuous outcome variable, % of publications, range 0–100%),
- *co-authoring publications with foreign researchers* (continuous outcome variable, % of publications, range 0–100%),
- *funding received from international research agencies* (continuous outcome variable, % of funding, range 0–100%).

The listed variables measuring research-related internationalization are dependent variables in multivariate regression models. To determine the disciplinary effect on indicators of internationalization of research, we carry our logit and multiple linear

regression (OLS) modelling. Due to potential structural differences between samples from different academic environments, we include gender, academic rank, and country as control variables.[5] We also test for assumptions of regression analysis, including heteroscedasticity, multicollinearity, normality or residuals, and outlier detection (for OLS). In the end, we calculate differences/distances for the two broad groups of disciplines (hard-soft) for each of the analyzed countries and present them visually.

As there are notable differences in sample sizes between countries, we weight the data in a way that every country has an equal contribution in statistical analyses—Lithuania was the country with the largest and Germany with the smallest weighting factor (see sample sizes in Table 8.1). Post-stratification weight was not included in the international APIKS data set (APIKS-IDB, 2021).

Results

To showcase disciplinary and country differences in internationalization, the results are presented by indicators of internationalization of research, i.e., (a) *international collaboration,* (b) *publishing in a foreign country,* (c) *co-authoring publications with foreign researchers*, and (d) *funding received from international research agencies*. For descriptive statistics, see Table 8.7 in the Appendix.

In all regression models, *Medical sciences, health related sciences, and social services* category is used as the reference group for disciplines. Based on the results of our bivariate analysis (see Table 8.7 in the Appendix), this category is fairly average in the four themes of internationalization of research, and the subsample is of sufficient size (required for statistical power).

International Research Collaboration

First, we investigate the effect of discipline as a predictor variable on *international research collaboration* as a binary outcome variable, controlling for country, gender, and academic rank. The results presented in Table 8.3 show substantial disciplinary differences in international research collaboration.

The disciplines with the largest coefficients are *Life Sciences, Physical sciences and mathematics,* and *Agriculture and forestry*. Academics from those disciplines are more involved in international research collaboration than academics from the reference group, i.e., *Medical sciences, health related sciences, and social services* ($p < 0.05$). The two groups of disciplines standing out with the highest levels of

[5] Flander et al. (2022) reported a substantial effect of those individual characteristics on internationalization of research.

Table 8.3 Binary logistic regression analysis, outcome variable = international research collaboration[a]

Academic discipline[b]	Coefficient	Standard error	Significance
Medical sciences, health related sciences, and social services	0		
Life sciences	0.561	0.059	0.000***
Physical sciences and mathematics	0.535	0.061	0.000***
Agriculture and forestry	0.212	0.079	0.007**
Chemistry	0.139	0.076	0.070
Social and behavioral sciences	0.137	0.053	0.010*
Humanities and arts	0.012	0.051	0.808
Engineering, manufacturing and construction, and architecture	−0.038	0.052	0.468
Teacher training and education science	−0.120	0.061	0.050
Personal services, transport services, and security services	−0.299	0.144	0.038*
Computer sciences	−0.310	0.067	0.000***
Business, administration, and economics	−0.374	0.058	0.000***
Law	−0.458	0.091	0.000***
Pseudo R^2 (Nagelkerke)	*0.225*		

*p < 0.05, **p < 0.01, ***p < 0.001

[a]Controlled for country, gender, academic rank

[b]Disciplines are ranked by regression coefficients

international research collaboration (coefficients >0.5) are hard-pure disciplines, i.e., *Life Sciences* and *Physical sciences and mathematics*.

On the other hand, the disciplines with the largest negative coefficients are *Law, Business, administration, and economics, Computer sciences,* and *Personal services, transport services, and security services*. Academics from those disciplines are less involved in international research collaboration than academics from the reference group. Three of those four categories are soft disciplines.

The other disciplines are quite average in involvement in international research collaboration—there are no statistically significant differences in comparison to the reference group. Those disciplines are both soft (*Humanities and arts* and *Teacher training and education science*) and hard (*Chemistry* and *Engineering, manufacturing and construction, and architecture*).

Generally speaking, we can observe notable differences between the broad groups of disciplines, i.e., hard and soft. To present differences between countries, and to relate them to the broad disciplinary differences, we combined the APIKS disciplines into soft disciplines and hard disciplines (excluding *Medical sciences, health related sciences, and social services*, as explained in section "Internationalization in different countries") (see Biglan's classification in Table 8.2).

Furthermore, Fig. 8.1 shows a map of the analyzed APIKS countries, and unweighted bivariate results are presented based on (1) international research collaboration and (2) hard-soft disciplinary differences, calculated at the national level

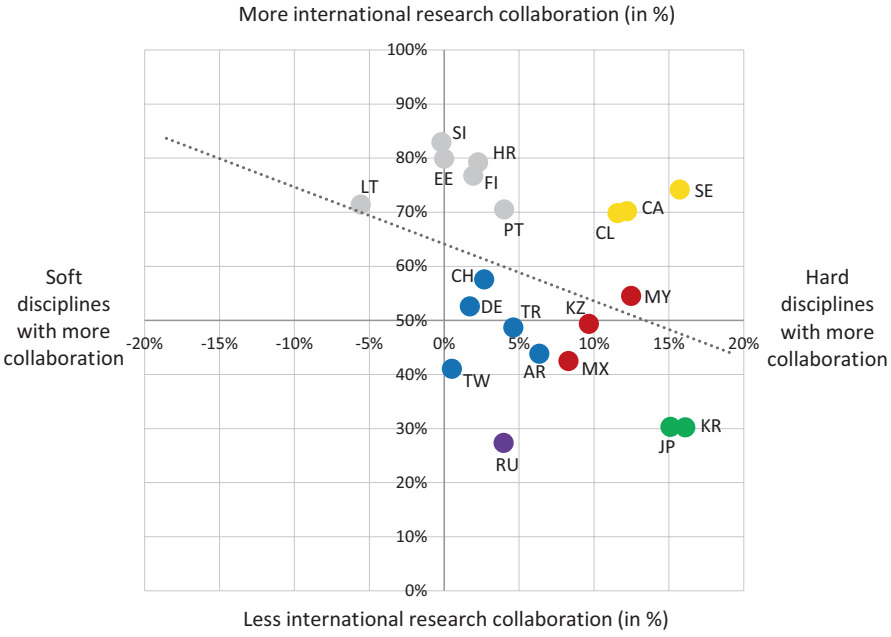


Fig. 8.1 Map of countries[a] for international research collaboration and hard-soft differences (in %)
[a]*AR* Argentina, *CA* Canada, *CL* Chile, *HR* Croatia, *EE* Estonia, *FI* Finland, *DE* Germany, *JP* Japan, *KZ* Kazakhstan, *KR* South Korea, *LT* Lithuania, *MY* Malaysia, *MX* Mexico, *PT* Portugal, *RU* Russia, *SI* Slovenia, *SE* Sweden, *CH* Switzerland, *TW* Taiwan, *TR* Turkey

as: *'international research collaboration % in hard disciplines* minus *international research collaboration % in soft disciplines'*. A positive proportion value of hard-soft difference indicates that hard disciplines are more involved in international research collaboration, and a negative proportion value of hard-soft difference indicates that soft disciplines are more involved in international research collaboration in a particular country.

The results in Fig. 8.1 show high heterogeneity of countries in terms of the involvement of their academic researchers in international research collaboration, as well as in their disciplinary differences. We can identify five clusters of countries:

- countries with high levels of international research collaboration (>70%) and little differences between disciplines (Lithuania, Estonia, Slovenia, Croatia, Finland, Portugal),
- countries with high levels of international research collaboration (>70%) and relatively large differences in favor of hard disciplines (Sweden, Canada, Chile),
- countries with moderate levels of international research collaboration (40–60%) and relatively little differences between disciplines, in favor of hard disciplines (Germany, Turkey, Argentina, Taiwan, Switzerland),

- countries with moderate levels of international research collaboration (40–60%) and relatively large differences between disciplines, in favor of hard disciplines (Mexico, Kazakhstan, Malaysia),
- countries with low levels of international research collaboration (about 30%) and relatively large differences between disciplines, in favor of hard disciplines (Japan, South Korea).

The only country which does not belong to any of those clusters, is Russia with the lowest level of international research collaboration and little differences between hard and soft disciplines.

Publishing in a Foreign Country

Second, we study the effect of academic discipline as a predictor variable on *publishing in a foreign country* as a continuous outcome variable, again controlling for country, gender, and academic rank. The results presented in Table 8.4 show substantial disciplinary differences and an even clearer division into two broad groups of disciplines.

Table 8.4 OLS regression, outcome variable = publishing in a foreign country[a]

Academic discipline[b]	Coefficient	Standard error	Significance
Medical sciences, health related sciences, and social services	0		
Physical sciences and mathematics	14.76	0.97	0.000***
Chemistry	12.20	1.27	0.000***
Life sciences	10.81	0.94	0.000***
Computer sciences	4.17	1.10	0.000***
Engineering, manufacturing and construction, and architecture	0.00	0.86	0.943
Agriculture and forestry	−0.61	1.28	0.621
Business, administration, and economics	−7.34	0.95	0.000***
Social and behavioral sciences	−8.49	0.87	0.000***
Humanities and arts	−14.15	0.85	0.000***
Teacher training and education science	−15.35	1.02	0.000***
Personal services, transport services, and security services	−19.20	2.50	0.000***
Law	−23.35	1.49	0.000***
Constant	48.03	1.17	0.000***
Adjusted R^2	*0.266*		

*p < 0.05, **p < 0.01, ***p < 0.001

[a]Controlled for country, gender, academic rank

[b]Disciplines are ranked by regression coefficients

The disciplines with the largest coefficients are *Physical sciences and mathematics, Chemistry, Life Sciences,* and *Computer sciences*; academics from those disciplines are substantially more involved in publishing in a foreign country than academics from the reference group, i.e., *Medical sciences, health related sciences, and social services*. The three categories with far the largest coefficients are all hard disciplines, and more specifically, hard-pure disciplines. They are followed by hard-applied disciplines.

On the other hand, the disciplines with the largest negative coefficients are all soft disciplines: *Law, Personal services, transport services, and security services, Teacher training and education science,* and *Humanities and arts.* Academics from those disciplines are less involved in publishing in a foreign country than academics from the reference group.

Generally speaking, we see a clear division between hard and soft disciplines. Taking into account regression coefficients and the constant which equals to 48.03 (%), we can calculate and confirm substantial differences between disciplines. For example, while academic from hard-pure sciences publish about 60% of their publications in a foreign country (e.g., *Physical sciences and mathematics*, 48.03 + 14.76 = 62.79%, *ceteris paribus*), the expected proportion is on average much lower for *Law* (about 25%) or *Personal services, transport services, and security services* (about 30%) as soft-applied disciplines. Researchers from entirely applied disciplines seem to be less involved in publishing in a foreign country, and that applies to both hard (e.g., *Agriculture and forestry* as applied) and soft disciplines (e.g., *Law* as applied). To present differences between countries, and to relate them to the broad disciplinary differences, we again combined the APIKS disciplines into hard disciplines and soft disciplines as explained in section "International research collaboration".

The results in Fig. 8.2 show high heterogeneity of countries regarding publishing of their academics in a foreign country, as well as substantial hard-soft disciplinary differences. This time we can observe how hard academics publish more than their colleagues from soft disciplines in all studied countries, and we present evidence that more publishing in a particular country generally leads to greater differences between the two broader groups of disciplines (see the linear trendline). We can identify four clusters of countries with mostly low internal homogeneity:

- countries with high levels of publishing in a foreign country (about 80%) and moderate differences between hard-soft disciplines (Sweden, Estonia),
- countries with above-average levels of publishing in a foreign country and relatively large differences in favor of hard disciplines (Slovenia, Lithuania, Croatia, Turkey),
- countries with moderate levels of publishing in a foreign country (30–50%) and moderate differences in favor of hard disciplines (Canada, Chile, Malaysia, Germany, Argentina, Taiwan)
- countries with low levels of publishing in a foreign country (<25%) and moderate differences between the broad groups of disciplines (Portugal, Russia, Mexico).

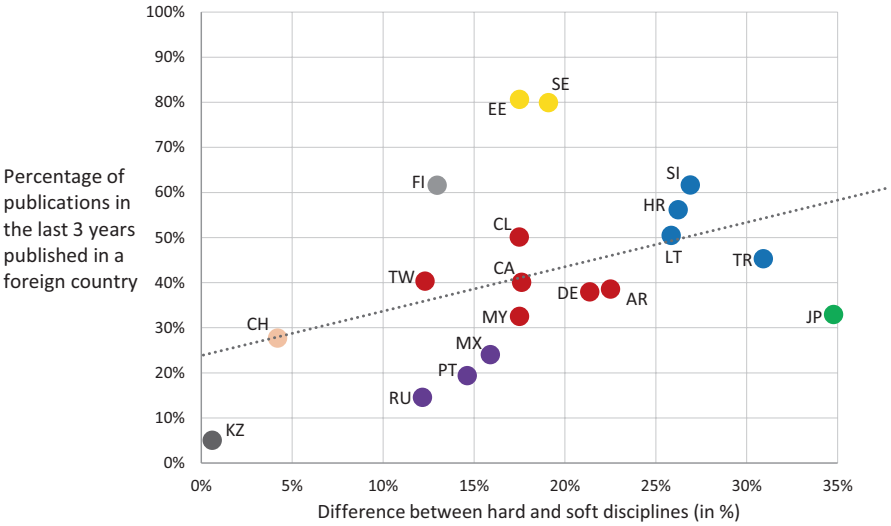


Fig. 8.2 Map of countries[a] for publishing in a foreign country and hard-soft disciplinary differences

[a]*AR* Argentina, *CA* Canada, *CL* Chile, *HR* Croatia, *EE* Estonia, *FI* Finland, *DE* Germany, *JP* Japan, *KZ* Kazakhstan, *LT* Lithuania, *MY* Malaysia, *MX* Mexico, *PT* Portugal, *RU* Russia, *SI* Slovenia, *SE* Sweden, *CH* Switzerland, *TW* Taiwan, *TR* Turkey

The countries outside these four clusters are quite specific—Kazakhstan is with almost no publishing in a foreign country, Switzerland is with very little differences between hard and soft disciplines, Japan is with low levels of publishing and the largest differences in favor of hard disciplines, and Finland is with above average levels of publishing and moderate differences between the broad groups of disciplines.

Co-authoring Publications with Foreign Researchers

Third, we study the effect of discipline as a predictor variable on co-authoring publications with foreign researchers as a continuous outcome variable, controlling for structural characteristics. The results presented in Table 8.5 show substantial disciplinary differences and, just like for publishing in a foreign country theme, a clear division into two broad groups of disciplines, hard and soft.

The disciplines with the largest coefficients are *Physical sciences and mathematics, Life Sciences,* and *Chemistry*; academics from those disciplines are more involved in co-authoring publications with foreign researchers than academics from the reference group. The three groups of disciplines with the largest coefficients are all hard, and more specifically, hard-pure disciplines. They are followed by hard-applied disciplines*: Agriculture and forestry, Computer sciences,* and *Engineering,*

Table 8.5 OLS regression, outcome variable = co-authoring publications with foreign researchers[a]

Academic discipline[b]	Coefficient	Standard error	Significance
Medical sciences, health related sciences, and social services	0		
Physical sciences and mathematics	12.76	0.74	0.000***
Life sciences	11.39	0.71	0.000***
Chemistry	6.79	0.96	0.000***
Agriculture and forestry	1.12	0.97	0.253
Computer sciences	−0.84	0.84	0.314
Engineering, manufacturing and construction, and architecture	−2.93	0.66	0.000***
Business, administration, and economics	−3.55	0.73	0.000***
Social and behavioral sciences	−4.72	0.67	0.000***
Teacher training and education science	−7.64	0.78	0.000***
Law	−7.95	1.15	0.000***
Personal services, transport services, and security services	−8.90	1.92	0.000***
Humanities and arts	−9.05	0.65	0.000***
Constant	24.99	0.86	0.000***
Adjusted R^2	*0.194*		

*p < 0.05, **p < 0.01, ***p < 0.001

[a]Controlled for country, gender, academic rank

[b]Disciplines are ranked by regression coefficients

manufacturing and construction, and architecture. The distinction between pure and applied dimensions is quite clear in hard sciences for both research publishing dimensions—publishing in a foreign country and co-authoring with foreign researchers.

On the other hand, the disciplines with the largest negative coefficients are all soft disciplines: *Humanities and arts, Personal services, transport services, and security services, Law,* and *Teacher training and education science.* Academics from those disciplines are less involved in co-authoring publications with foreign researchers than academics from the reference group.

Generally speaking, a clear division between hard and soft disciplines can be observed for co-authoring publications with foreign researchers as well. Taking into account regression coefficients and the constant which equals to 24.99 (%), we can calculate and confirm substantial differences between disciplines. For example, while academics from hard-pure sciences on average publish roughly 30–40% with co-authors abroad (e.g., *Physical sciences and mathematics,* 24.99 + 12.76 = 37.75%, *ceteris paribus*), the expected proportion is much lower for soft disciplines; for most of them, below 20%. To present differences between countries and to relate them to the broad disciplinary differences we again combined the APIKS disciplines into hard disciplines and soft disciplines.

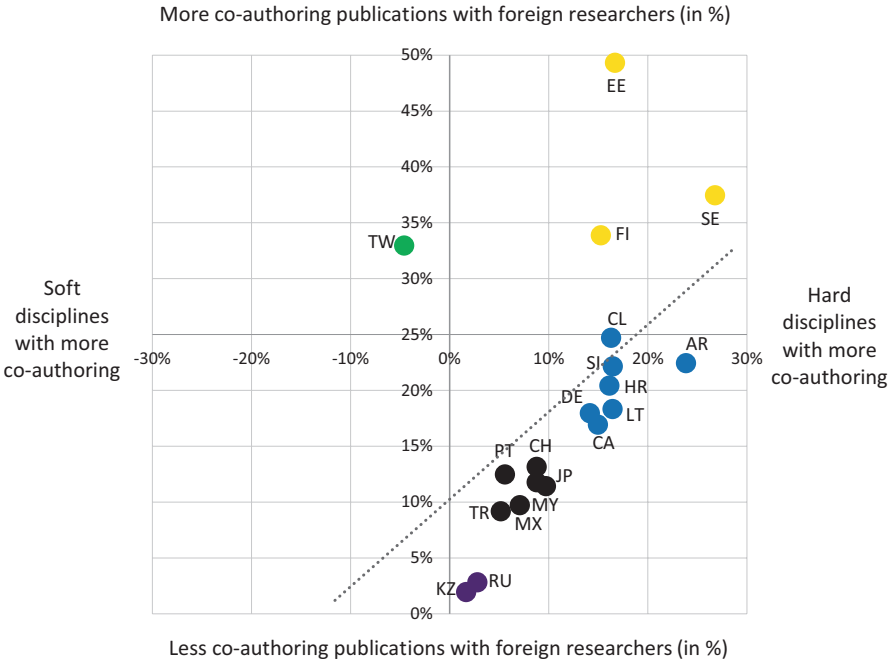


Fig. 8.3 Map of countries[a] for co-authoring publications with foreign researchers and hard-soft differences

[a]*AR* Argentina, *CA* Canada, *CL* Chile, *HR* Croatia, *EE* Estonia, *FI* Finland, *DE* Germany, *JP* Japan, *KZ* Kazakhstan, *LT* Lithuania, *MY* Malaysia, *MX* Mexico, *PT* Portugal, *RU* Russia, *SI* Slovenia, *SE* Sweden, *CH* Switzerland, *TW* Taiwan, *TR* Turkey

The results in Fig. 8.3 show substantial differences between the analyzed countries regaring the involvement in co-authoring publications with foreign researchers, as well as in their disciplinary differences. This time, Taiwan as an "outlier" is the only of the analyzed countries in which academics in soft disciplines co-author with foreign researchers more than those from hard disciplines. Generally, we can identify four clusters of countries:

- countries with relatively high levels of co-authoring publications with foreign researchers (especially Estonia) and notable differences between disciplines (Estonia, Finland, Sweden),
- countries with moderate levels of co-authoring publications with foreign researchers and notable differences in favor of hard disciplines (Chile, Slovenia, Croatia, Lithuania, Germany Canada, Argentina),
- countries with low levels of co-authoring publications with foreign researchers and little differences in favor of hard disciplines (Portugal, Malaysia, Switzerland, Japan, Mexico, Turkey)
- countries with extremely low levels of co-authoring publications with foreign researchers (Russia, Kazakhstan).

From Fig. 8.3, we can observe a strong association between co-authoring publications with foreign researchers and differences in favor of hard disciplines (see the linear trendline), which means that more publishing generally increases the absolute gap between the two broad groups of disciplines.

International Research Funding

Lastly, we study the effect of discipline as a predictor variable on *international research funding* as a continuous outcome variable, controlling for the same structural characteristics of samples as for the other three themes. This time, the results presented in Table 8.6 show fairly minor absolute disciplinary differences. We can conclude that for international research funding, we cannot observe a clear division into hard-soft broad groups of disciplines.

The disciplines with the largest coefficients are *Social and behavioral sciences, Life Sciences, Computer sciences,* and *Teacher training and education science.* Those disciplines are from both sides of the disciplinary aisle. The lowest coefficient can be observed for *Humanities and arts,* and *Personal services, transport*

Table 8.6 OLS regression, outcome variable = international research funding[a]

Academic discipline[b]	Coefficient	Standard error	Significance
Medical sciences, health related sciences, and social services	0		
Social and behavioral sciences	2.92	0.44	0.000***
Life sciences	2.03	0.46	0.000***
Computer sciences	1.95	0.55	0.000***
Teacher training and education science	1.76	0.51	0.001**
Engineering, manufacturing and construction, and architecture	1.74	0.42	0.000***
Physical sciences and mathematics	1.29	0.49	0.008*
Chemistry	0.96	0.63	0.130
Agriculture and forestry	0.84	0.63	0.182
Law	0.58	0.74	0.430
Business, administration, and economics	0.46	0.48	0.336
Personal services, transport services, and security services	0.02	1.22	0.990
Humanities and arts	−0.33	0.42	0.436
Constant	1.97	0.58	0.001**
Adjusted R^2	*0.093*		

*p < 0.05, **p < 0.01, ***p < 0.001

[a]Controlled for country, gender, academic rank

[b]Disciplines are ranked by regression coefficients

services, and security services, and academics from the reference group (with a coefficient of 0) also receive below average funding from international sources.

To present differences between countries and to showcase any differences between hard and soft disciplines in individual countries we are presenting bivariate results in Fig. 8.4 graphically. The observed differences between countries are much more apparent than the observed differences between disciplines in international research funding.

The results in Fig. 8.4 show some interesting differences between the analyzed countries regarding international research funding they receive. In a limited number of countries, notable differences between hard and soft disciplines exist. All in all, we can identify four clusters of countries:

- countries with relatively high levels of international research funding and little hard-soft disciplinary differences (Estonia, Croatia, Chile and Portugal),
- countries with low levels of international research funding and very little hard-soft disciplinary differences (such as Argentina, Canada, Mexico, Russia, and Japan),
- countries with low levels of international research funding and more funding in hard disciplines (Germany, Switzerland)

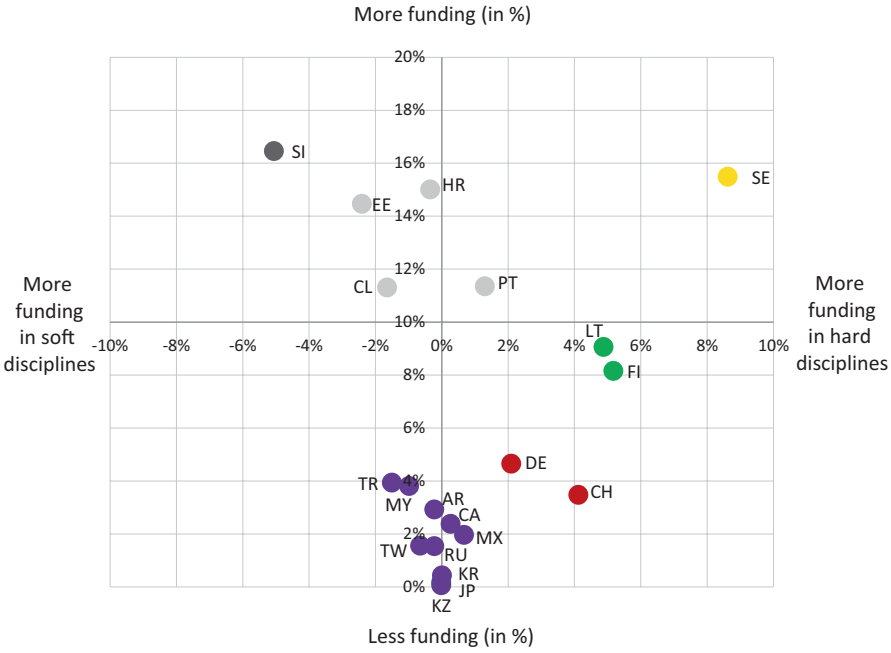


Fig. 8.4 Map of countries[a] for international research funding and hard-soft disciplinary differences
[a]*AR* Argentina, *CA* Canada, *CL* Chile, *HR* Croatia, *EE* Estonia, FI Finland, *DE* Germany, *JP* Japan, *KZ* Kazakhstan, *KR* South Korea, *LT* Lithuania, *MY* Malaysia, *MX* Mexico, *PT* Portugal, *RU* Russia, *SI* Slovenia, *SE* Sweden, *CH* Switzerland, *TW* Taiwan, *TR* Turkey

- countries with moderate levels of international research funding and moderate hard-soft differences (Lithuania, Finland).

Two countries which do not belong to any of those clusters are both with relatively high levels of international research funding, but with contrasting differences. Slovenia stands out as a country with notably more funding in soft than hard disciplines, and Sweden as a country with substantially more funding in hard than soft disciplines.

Discussion

Internationalization and globalization of higher education have develop significantly in the last decades and have evolved into a sub-field of higher education studies (Lee & Stensaker, 2021). Internationalization now cuts across broad areas as policy, institutional governance, quality, teaching and learning, curriculum design, student experience, and not least, the academic profession. Earlier research has focused extensively on strategies, drivers, politics, and the role of reputation and status for internationalization (Seeber et al., 2016). However, less has been written about the role of differences across scientific fields, and this is where this chapter is intended to contribute. We know from earlier research that scientific fields, or disciplines, play an important role for the academic profession. The literature also explains how there are notable differences in terms of identity and traditions, financial conditions, object of study, and practices in core academic activities such as how and where to publish and collaborate in research.

In the following paragraphs, we will present our main findings in the light of earlier research and discuss possible ways forward as well as implications. The APIKS survey included 13 scientific areas categorized as hard or soft and partially as pure or applied, roughly following the categorisation from Biglan (1973). Regarding internationalization of disciplines, we identified a fairly clear division into soft and hard groups of disciplines. The hard disciplines are more international than the soft disciplines, which is in line with the results from the CAP survey (cf. Rostan et al., 2014b) and other extensive research in the field. In particular, the natural sciences and the life sciences are more international across the four studied themes. Interestingly, some hard disciplines like *Computer sciences* are much less international than some other natural sciences (such as *Physical sciences and mathematics).* Instead, they are placed in the middle with soft sciences such as *Business, administration, and economics,* and *Social and behavioral sciences*. This is only partially consistent with findings from Biglan (1973) and Stoecker (1993), but there are several possible explanations for this. One is heterogeneity of HEIs where these disciplines are taught. In some national systems, they are typically based at less research-active HEIs with weak international ties. Another reason might be publication traditions within these areas, focusing more on application and publications in other outlets than international journals.

Disciplinary differences are the most significant for publishing in a foreign country and co-authoring with foreign researchers. With the APIKS data, we can observe a clear disciplinary trend for those two outcome variables: hard-pure sciences are with the highest levels of internationalization of research, followed by hard-applied sciences and soft sciences including both pure and applied subdisciplines (such as *Business, administration, and economics*); soft-applied sciences (such as *Law*) are with the lowest levels of internationalization of research. This persistent difference is worth noting these days when many soft disciplines, even within the humanities, increasingly publish in international fora and engage in more international work (Airey et al., 2017). Still, the "normal sciences" of *physics or mathematics* are the disciplines far ahead of the others, with a scientific language being understandable and communicative across different national contexts. In contrast with the other measured themes of internationalization of research, the differences between countries were much greater that the differences between disciplines for *international research funding*.

Generally speaking, we can observe notable differences between countries consistent across most themes—Northern European countries (Sweden and Finland) and smaller European transition countries (Estonia, Slovenia, Lithuania, and Croatia) stand out as the countries the most involved in internationalization of research. Countries like Chile, Argentina, and Portugal are also above average in internationalization of research. In contrast, larger non-European non-English-speaking countries were identified as those with the lowest levels of engagement in international research—those are Russia and Kazakhstan, Japan and South Korea, and Mexico. This is again in line with the results from the CAP survey (cf. Huang et al., 2014). Moreover, we can observe more substantial differences between hard and soft disciplines for internationalization of research in certain countries than in some others. The best example of a country with major disciplinary differences is Japan; in their national context, little internationalization of research in soft disciplines notably decreases the overall internationalization level, although internationalization of research in their hard disciplines is comparable with many European countries. Another similar example worth mentioning is Argentina, where internationalization of research is above average in hard disciplines, but below average in soft disciplines. Lastly, with the highest levels of internationalization in general, Sweden shows the largest absolute differences between hard and soft disciplines as well. It would be interesting to see if particular national or institutional higher education policies are the main source of those differences by being purposely designed to promote internationalization activities within their HEIs, or even within or between disciplines. This is an area requiring further research and in-depth analysis.

Although this study has produced some exciting results, there are apparent limitations related to the data and our analytic approach. Aware of various national differences in how the APIKS data were collected, we decided to include all countries available, regardless of the higher education system, selected population, or sampling strategies. This has provided us with a general view, but further more focused research should also recognize these national differences and country specifics, and attempt to explain the most relevant phenomena. Furthermore, a study based on

traditional classifications of disciplines also has limitations. With the APIKS data, we could not fully utilize Biglan's classification. Also, disciplines may have changed nature over time and do not necessarily play the role we still assume they do (Whitley, 2000). In this study, we showed how some hard-applied sciences are no different in certain internationalization practices than many soft disciplines. There are new scientific areas constantly emerging—some traditionally soft disciplines now include many 'hard' aspects following the development of technology (such as archeology, modern languages) and traditionally hard disciplines integrate 'soft' aspects (such as human computer interaction). For a long time, science studies scholars have discussed 'post-disciplinary' science where disciplines operate outside the limitations imposed by disciplinary traditions and conventions (Jessop & Sum, 2001). Future research could explore the disciplinary differences in internationalization activities through qualitative data, including content analysis, to present evidence on how these differences could be reduced to expand internationalization to disciplines across HEIs and not just specific academic fields.

Appendix

Table 8.7 Descriptive statistics for internationalization of research by disciplines, unweighted

No.	Academic discipline	International research collaboration[a]		Publishing in a foreign country[b]		Co-authoring publications with foreign researchers[c]		International research funding[d]	
		% of yes	Rank	Mean	Rank	Mean	Rank	Mean	Rank
1	Teacher training and education science	48.6%	10	23.0%	12	8.5%	12	4.2%	9
2	Humanities and arts	56.8%	5	27.4%	10	8.7%	11	4.0%	10
3	Social and behavioral sciences	59.5%	3	34.2%	8	13.9%	8	6.4%	1
4	Business, administration, and economics	43.5%	12	28.6%	9	13.0%	9	3.4%	11
5	Law	42.2%	13	14.9%	13	6.5%	13	3.3%	13
6	Life sciences	65.9%	1	49.1%	2	27.2%	2	6.0%	2
7	Physical sciences and mathematics	64.9%	2	53.2%	1	29.1%	1	4.3%	7
8	Chemistry	54.3%	6	48.6%	3	21.7%	3	3.3%	12
9	Computer sciences	45.0%	11	40.2%	5	16.3%	5	4.8%	5
10	Engineering, manufacturing and construction, and architecture	51.0%	8	39.0%	6	14.1%	7	5.6%	3

(continued)

Table 8.7 (continued)

No.	Academic discipline	International research collaboration[a]		Publishing in a foreign country[b]		Co-authoring publications with foreign researchers[c]		International research funding[d]	
		% of yes	Rank	Mean	Rank	Mean	Rank	Mean	Rank
11	Agriculture and forestry	51.9%	7	36.3%	7	15.8%	6	4.6%	6
12	Medical sciences, health related sciences, and social services	57.0%	4	45.5%	4	19.2%	4	4.8%	4
13	Personal services, transport services, and security services	50.4%	9	25.6%	11	9.1%	10	4.3%	8
Total		**55.0%**		**37.5%**		**16.4%**		**4.8%**	

[a]Please characterize your research collaboration undertaken? - Do you collaborate with international colleagues?
[b]What percentage of your publications in the last 3 years were: published in a foreign country?
[c]What percentage of your publications in the last 3 years were: co-authored with colleagues located in other (foreign) countries?
[d]In the current (or previous) academic year, which percentage of the funding for your research came from: international funding agencies? (APIKS-IDB, 2021)

References

Adams, J. (2013). The fourth age of research. *Nature, 497*, 557–560. https://doi.org/10.1038/497557a

Airey, J., Lauridsen, K. M., Räsänen, A., Salö, L., & Schwach, V. (2017). The expansion of English-medium instruction in the Nordic countries: Can top-down university language policies encourage bottom-up disciplinary literacy goals? *Higher Education, 73*(4), 561–576.

Altbach, P. G. (2007). The imperial tongue: English as the dominating academic language. *Economic and Political Weekly, 42*, 3608–3611.

Altbach, P. G., & Knight, J. (2007). The internationalization of higher education: Motivations and realities. *Journal of Studies in International Education, 11*(3–4), 290–305. https://doi.org/10.1177/1028315307303542

APIKS-IDB. (2021). *Academic Profession in the Knowledge-based Society (APIKS).* International Database version 1.2 (APIKS-IDB 1.2). https://www.ulapland.fi/APIKS. Accessed 16 May 2021.

Augier, M., & March, J. G. (2011). *The roots, rituals, and rhetorics of change. North American business schools after the Second World War*. Stanford University Press.

Becher, T. (1989). *Academic tribes and territories: Intellectual enquiry and the culture of disciplines*. The Society for Research into Higher Education and Open University Press.

Biglan, A. (1973). The characteristics of subject matter in different academic areas. *Journal of Applied Psychology, 57*(3), 195–203.

Célis, S., & Véliz, D. (2020). A decade of Chilean graduate program accreditation: A push for internationalization and issues of multidisciplinarity. *Higher Education Policy, 35*, 1–22. https://doi.org/10.1057/s41307-020-00198-7

Clark, B. (1987). *The academic life*. Carnegie Foundation.

Cummings, W., Bain, O., Postiglione, G., & Jung, J. (2014). Internationalization of the academy: Rhetoric, recent trends, and prospects. In F. Huang, M. J. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 55–77). Springer.

de Ridder-Symoens, H., & Rüegg, W. (2003). *A history of the university in Europe: Volume 1, universities in the middle ages* (Vol. 1). Cambridge University Press.

de Wit, H. (2019). Internationalization in higher education, a critical review. *SFU Educational Review, 12*(3), 9–17. https://doi.org/10.21810/sfuer.v12i3.1036

Flander, A., Kocar, S., Culum, B., Leisyte, L., Roncevic, N., & Peksen, S. (2022). Impact of internationalisation strategies on academics' international research activities. Case study of the three HE peripheries: Slovenia, Croatia and Lithuania. In M. Klemenčič (Ed.), *From actors to reforms in higher education – Festschrift for Pavel Zgaga* (pp. 313–336). Springer International Publishing.

Franceschet, M., & Costantini, A. (2010). The effect of scholar collaboration on impact and quality of academic papers. *Journal of Informetrics, 4*(4), 540–553. https://doi.org/10.1016/j.joi.2010.06.003

Geschwind, L., Broström, A., & Larsen, K. (2020). *Technical universities. Past, present and future*. Springer.

Hazelkorn, E. (2015). *Rankings and the reshaping of higher education: The battle for world-class excellence*. Springer.

Heng, K., Hamid, M., & Khan, A. (2020). Factors influencing academics' research engagement and productivity: A developing countries perspective. *Issues in Educational Research, 30*(3), 965–987.

Huang, F., Teichler, U., & Galaz-Fontes, J. (2014). Regionalisation of higher education and the academic profession in Asia, Europe and North America. In F. Huang, M. J. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 145–181). Springer.

Jessop, B., & Sum, N. L. (2001). Pre-disciplinary and post-disciplinary perspectives. *New Political Economy, 6*(1), 89–101.

Jowi, J. O. (2009). Internationalization of higher education in Africa: Developments, emerging trends, issues and policy implications. *Higher Education Policy, 22*(3), 263–281.

Knight, J. (2004). Internationalization remodeled: Definition, approaches, and rationales. *Journal of Studies in International Education, 8*(1), 5–31. https://doi.org/10.1177/1028315303260832

Kwiek, M. (2015). The internationalization of research in Europe: A quantitative study of 11 national systems from a micro-level perspective. *Journal of Studies in International Education, 19*(4), 341–359. https://doi.org/10.1177/1028315315572898

Kwiek, M. (2019). Social stratification in higher education: What it means at the micro - level of the individual academic scientist. *Higher Education Quarterly, 73*, 419–444. https://doi.org/10.1111/hequ.12221

Kwiek, M. (2020). What large-scale publication and citation data tell us about international research collaboration in Europe: Changing national patterns in global contexts. *Studies in Higher Education, 46*(12), 2629–2649. https://doi.org/10.1080/03075079.2020.1749254

Kwiek, M. (2023, forthcoming). The globalization of science: The increasing power of individual scientists. In P. Mattei, X. Dumay, E. Mangez; & J. Behrend (Eds.), *The Oxford handbook of education and globalization.* Oxford University Press.

Lee, J. J., & Stensaker, B. (2021). Research on internationalisation and globalisation in higher education—Reflections on historical paths, current perspectives and future possibilities. *European Journal of Education, 56*(2), 157–168.

Lillis, T., & Curry, M. J. (2010). *Academic writing in a global context*. The Politics and Practices of Publishing in English.

Martinez, M., & Sá, C. (2020). Highly cited in the south: International collaboration and research recognition among Brazil's highly cited researchers. *Journal of Studies in International Education, 24*(1), 39–58. https://doi.org/10.1177/1028315319888890

Oleksiyenko, A. V. (2021). World-class universities and the Soviet legacies of administration: Integrity dilemmas in Russian higher education. *Higher Education Quarterly, 76*(2), 385–398. https://doi.org/10.1111/hequ.12306

Piro, F., Aksnes, D., & Rørstad, K. (2013). A macro analysis of productivity differences across fields: Challenges in the measurement of scientific publishing. *Journal of the American Society for Information Science and Technology, 62*(2), 1852–1863. https://doi.org/10.1002/asi.22746

Rostan, M., & Ceravolo, F. (2020). The internationalisation of the academy: Convergence and divergence across disciplines. *European Review, 23*(1), 38–54. https://doi.org/10.1017/S1062798714000763

Rostan, M., Cevarolo, F., & Meltcalge, A. (2014a). The internationalization of research. In F. Huang, M. J. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 119–143). Springer.

Rostan, M., Huang, F., & Finkelstein, M. (2014b). The internationalization of the academy: Findings, open questions, and implications. In F. Huang, M. J. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 259–280). Springer.

Rüegg, W. (2004). *A history of the university in Europe: Volume 3, universities in the nineteenth and early twentieth centuries (1800–1945)* (Vol. 3). Cambridge University Press.

Sandler, D., & Gladyrev, D. (2020). Analysis of the relations between scientometric and economic indicators of Russian universities' performance. *Business, Management and Economics Engineering, 18*(2), 331–343.

Seeber, M., Cattaneo, M., & Huisman, J. (2016). Why do higher education institutions internationalize? An investigation of the multilevel determinants of internationalization rationales. *Higher Education, 72*(5), 685–702. https://doi.org/10.1007/s10734-015-9971-x

Sierkierski, P., Correia, M., & Mendes, F. (2018). International mobility of academics: Brain drain and brain gain. *European Management Review, 15*(3), 329–339. https://doi.org/10.1111/emre.12170

Snow, C. P. (1959). Two cultures. *Science, 130*(3373), 419.

Sørensen, M. P., Young, M., & Pedersen, P. B. (2019). Lost in transition? On the migration to English language research publications. In M. P. Sørensen, L. Geschwind, J. Kekäle, & R. Pinheiro (Eds.), *The responsible university: Exploring the Nordic context and beyond* (pp. 87–114). Palgrave Macmillan.

Stoecker, J. L. (1993). The Biglan classification revisited. *Research in Higher Education, 34*(4), 451–464.

University of Lapland. (n.d.). *Academic Profession in the Knowledge-Based Society (APIKS)*. Retrieved August 8 2021, from https://www.ulapland.fi/EN/Webpages/Academic-Profession-in-the-Knowledge%2D%2DBased-Society-(APIKS)

Wagner, C., Park, H., & Leydesdorff, L. (2015). The continuing growth of global cooperation networks in research: A conundrum for national governments. *PLoS One, 10*(7), 1–16. https://doi.org/10.1371/journal.pone.0131816

Whitley, R. (2000). *The intellectual and social organization of the sciences*. Oxford University Press.

Yemini, M. (2019). Collaborations as perceived by top-performing scholars. *Journal of Studies in International Education, 25*(1), 3–18. https://doi.org/10.1177/1028315319887392

Sebastian Kocar is a Postdoctoral Researcher at the Institute for Social Change (University of Tasmania). He holds a PhD in Survey Methodology and Statistics from The Australian National University, a Master of Science degree in Statistics and a Bachelor's degree in Communication Sciences from the University of Ljubljana. He specializes in survey methodology and statistics, wellbeing research, and data analytics. He has also been involved in higher education research projects as a data collection and analytics consultant for the Centre of the Republic of Slovenia for Mobility and European Educational and Training Programmes.

Daniela Véliz, Assistant professor and Director of Academic Development at the School of Education at the Pontificia Universidad Católica de Chile, and an associate researcher at the Center for Research on Educational Policy and Practice of the same University, in Santiago, Chile http://www.ceppe.cl/. Her research interests relate to the academic profession, internationalization, and gender. She has worked on research projects to promote women faculty in the STEM fields, sponsored by the National Science Foundation (ADVANCE). She also had worked developing student exchange programs at the University of Rhode Island and is one of the founders of the Network of Researchers on Chilean Education (RIECH). Ph.D in Higher Education from the University of Maine and MA in Student Development in Higher Education from the same university.

Lars Geschwind is Professor in Engineering Education Policy and Management, coordinator of the research group HEOS (Higher Education Organization Studies) and Head of Division at Learning in STEM at KTH Royal Institute of Technology, Stockholm, Sweden. His main research interests are higher education policy, institutional governance, academic leadership and management and academic work. He is currently involved in a number of projects focusing on change processes in higher education institutions, including e.g. governance and steering, quality assurance, academic careers and partnership with external stakeholder. Most studies include a comparative component and a historical perspective.

Pío Marshall, Research assistant at the School of Education in the Pontificia Universidad Católica de Chile. Currently works in projects regarding studies in Higher Education, specifically on issues about internationalization, rankings, academic career and university governance. He has also worked at the Institute of Sociology in the same university in projects regarding older population well-being both before and during the COVID-19 pandemic. He is a sociologist and MA in Sociology from the Pontificia Universidad Católica de Chile.

Chapter 9
International Research Collaboration Practices and Outcomes: A Comparative Analysis of Academics' International Research Activities

Olivier Bégin-Caouette, Timo Aarrevaara, Anna-Lena Rose, and Akira Arimoto

Abstract As scientific research is increasingly the product of international collaborations, this chapter aims at examining the relationship between international research collaboration practices and outcomes in Canada, Finland, Germany, Japan, and Lithuania. Relying upon the theory of scientific and technical human capital, and proceeding to correlations and logistic and multiple regressions, findings suggest that collaboration practices and outcomes are correlated but the strength of the relationship is weak. Findings also point to the influence of degrees being obtained abroad, with institutional incentives and international funding on both research collaboration practices and outcomes.

Keywords International research activities · Collaboration practices · Collaboration outcomes · Scientific and technical human capital

O. Bégin-Caouette (✉)
Université de Montréal, Montreal, QC, Canada
e-mail: olivier.begin-caouette@umontreal.ca

T. Aarrevaara
University of Lapland, Rovaniemi, Finland
e-mail: timo.aarrevaara@ulapland.fi

A.-L. Rose
TU Dortmund University, Dortmund, North Rhine-Westphalia, Germany
e-mail: anna-lena.rose@tu-dortmund.de

A. Arimoto
Hyogo University, Kakogawa, Hyōgo, Japan

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_9

Introduction

Scientific research is increasingly the product of international collaborations. Witze (2016) observed that, between 2000 and 2013, the proportion of scientific papers that were internationally co-authored rose from 13.2% to 19.2%. The multiplication and densification of these networks can also be seen by the fact that the average number of co-authors per article has doubled in the last forty years and that the average distance between the location of co-authors has increased (Olechnicka et al., 2018). The documentation suggest that international collaborations contribute to the number of papers (Gazni et al., 2012) and citations (Glänzel & Schubert, 2001). The internationalization of research has also increasingly become a field of strategic intervention (Lee & Haupt, 2019) as governments and higher education institutions (HEIs) increasingly promote international collaborations and partnerships to enhance productivity, research impact, and countries' knowledge diplomacy (Barbosa & Neves, 2020). In a study of 35 countries, Wagner et al. (2018) confirmed that countries that had the most impact in terms of scholarly production were the most involved in terms of collaboration and international mobility.

Although several authors equate academics' international collaborations with the number of international co-publications (Newman, 2004), both Laudel (2001) and Katz and Martin (1997) pointed out that co-authorship is a partial indicator that, by itself, cannot account for the multidimensionality of collaborative practices. If co-publication as the formal recognition of at least two researchers on a scholarly contribution can be considered as an outcome of research collaborations (Adams, 2013), the practice of collaboration includes contacts, meetings, co-operational work, exchange of information (Melin & Persson, 1996), and may include the organization of international activities or the exchange of researchers (Raan, 1997). In addition to the formal recognition of co-publication, collaboration practices are also informal and may include unacknowledged collaborators (Katz & Martin, 1997). A study on international research collaborations should therefore examine the relationship between international research collaboration practices and outcomes.

The literature also suggests that collaboration practices and outcomes are not equally distributed and vary according to academics' discipline, seniority, gender, and institutional affiliation. Abramo et al. (2013) noted that while women researchers relied on collaboration more than their male colleagues, the proportion of international collaborations was smaller. AlShebli et al. (2018) revealed patterns of homophily in terms of race, gender, and affiliation in academic collaborations. Kwiek and Roszka's (2020) study of 25,463 Polish university professors also shows interactions between collaboration, discipline, and seniority. Payumo et al. (2019) revealed that collaboration practices and outcomes varied by institutional type and higher education systems (HES). Like the predictive model developed by Finkelstein and Sethi (2014) for the internationalization of the academy, a study on focusing on international research collaborations should examine the influence of individual, professional, institutional, and national factors on collaboration practices and outcomes.

Scientific and Technical Human Capital

This chapter is based upon Bozeman and Boardman's (2014) theory of scientific and technical human capital (STHC). According to this theory, STHC constitutes a reservoir of skills that individuals mobilize to solve scientific and technological problems. This reservoir includes individuals' human, social, organizational, and material capital, such as formal and informal learning, intellectual capacity, social networks, and links they maintain with organizations that produce, support, consume, and disseminate knowledge. At the base of this STHC reservoir would be the organizational capital (Bozeman & Boardman, 2014) which designates the culture, know-how, and codified processes by which organizations transform the tangible and intangible resources to which they have access into a product that has value.

In the same way as increasing access to higher education, increased funding for research or the free dissemination of knowledge can increase a society's STHC; international activities such as the mobility of researchers or research collaborations contribute to this reservoir and, ultimately, to scientific and technological production (Jonkers & Cruz-Castro, 2013). In STHC theory, collaborations refer to the social processes by which individuals pool their experiences and expertise to produce new knowledge (Bozeman & Boardman, 2014). Research collaborations are institutionalized in networks that frame a common university social space around the same research object (Leite & Pinho, 2017).

Bozeman and Boardman (2014) present a logic model to explain how international research collaborations – as a form of social capital – contribute to research inputs (personnel, training, social networks, materials, and labour), research processes (collaborative projects, leadership, and resource seeking), and research outcomes (publications, patents, citations). In other words, informal and formal networks established between academics are an input, while group meetings, the co-writing of grant proposals, and the sharing of skills and tools would relate to processes, and scholarly contributions could be assimilated to outcomes.

According to the STHC theory, people, prior knowledge, and labour represent inputs (Bozeman & Boardman, 2014) that universities can mobilize through the international recruitment of professors or students. The recruitment of international professors (or professors who obtained their doctoral degrees abroad) is, for several large universities, a key objective of their international strategy since their presence is an indicator in several international rankings (Altbach & Yudkevich, 2017). These researchers contribute to STHC because they are more likely to collaborate with international colleagues (Melkers & Kiopa, 2010), which Scellato et al. (2015) named the diaspora effect. In addition to this cross-border social capital, they increase the prestige of the institution, broaden the range of publications and journals to which articles are submitted, and, in non-English speaking circles, increase the proportion of publications in English, which are more often cited (Altbach & Yudkevich, 2017).

International research funding is a form of material capital that would contribute to the number and proportion of articles written with an international partner

(Checchi et al., 2019). On average, in the OECD (2021), 7% of the research funding comes from foreign sources. Defazio et al. (2009) studied 294 researchers from 39 European research networks over a period of 15 years and found that international funding had increased research collaborations, but that the effects on research output were weak. Other studies (König, 2017) would nonetheless suggest that the multiple funding incentives of the European Union (EU) have had notable influence on the research ecosystem and collaborations.

Bozeman and Boardman's (2014) theory suggest that researchers' personal and professional characteristics could also interact with their institution's STHC. These include age, gender, academic rank, and discipline. While according to Bozeman and Boardman (2014), who considered age as a proxy for research experience, there are inconclusive findings about the effect of age on research collaborations; findings could be different in some higher education systems (HES) (such as in former Soviet republics) where senior scholars were socialized during Soviet times and younger scholars would be more proficient in English. As pointed out above, gender seems to play an important role in research collaboration, where women collaborate more overall but are less active in international collaborations (Abramo et al., 2013). Researchers' disciplinary areas could also influence collaborations. Leahey's (2016) literature review reports that if collaboration rates have increased for all disciplines, they remain higher in the natural and health sciences. The objective of this chapter is therefore to analyze the influence of individual, professional, institutional, and national factors on international research collaborations as practices and outcomes, in five countries on three continents: Canada, Finland, Germany, Japan, and Lithuania.

International Variations in Collaboration Practices and Outcomes

This chapter compares five countries that were selected through a maximum variation sampling method, which consists of collecting data from entities whose diversity is relevant to the research question (Cohen & Crabtree, 2006). Since the literature suggests that internationalization is influenced by countries' language and geographic location (Hughes, 2008) as well as their political-economic structure (Graf, 2009), funding, and international policies (Hong, 2020), we selected five small-to-medium-sized countries located on three continents (Asia, Europe, and North America) which differ in terms of language (English and French, Finnish, German, Japanese, and Lithuanian), political organization (Canada and Germany being federations) and welfare regimes (liberal, conservative and social-democratic; Esping-Andersen, 1999). Since this chapter examines research collaborations, it is worth noting that the five countries differ by higher education research and development (HERD) expenditures (HERD representing 1% of the GDP in Lithuania and 3.20% in Japan; OECD, , 2021), the proportion of different research funding

mechanisms (Reale, 2017), and research productivity (Japan producing 777 papers per capita and Canada 1617; World Bank, , 2018). Taken together, these national variations will allow for a careful contextualization of findings and, if some observations appear relevant across contexts, to propose more robust generalizations.

Since our objective is to analyze the influence of individual, professional, institutional, and national factors on international research collaborations, the following subsection will describe those levels of factors in each country.

Canada

Canada is a sparsely populated North American country. The constitution establishes a federation and divides authority over policy issues between federal and provincial levels of government. While institutions of higher education are created, regulated, and funded by the provinces, international relations are of federal jurisdiction (Tamtik & Sá, 2020) and the proportion of research funding allocated by the federal government is larger than that allocated by provincial governments (Statistics Canada, , 2017). Canada produces 3.8% of global research publications (52 publications per researcher), and these publications are cited 43% more frequently than world average (CCA, 2018). In terms of national factors, if the government and business sectors contribute a smaller proportion of the gross expenditures in research and development (GERD) than the OECD average, HEIs contribute 50% of the national total, 37.14% of all researchers work in the higher education sector, and HERD increased by 30.16% over 20 years and is above the OECD average. The relative weakness of the business sector is seen in Canada's share of patent applications, which represents around 1% of the world's total, placing Canada only 18th in the world (CCA, 2018).

Federal support for international academic relations was politically motivated until the 1990s and then economically motivated, with the signature of General Agreement on Trade in Services (Knight, 2008). The first internationally oriented science and technology policy was proposed in 2001 and, since then, in addition to being part of Canada-United States-Mexico Agreement (CUSMA), Canada signed eight bilateral agreements with other countries. Canadian research funding agencies have also adopted various policies to increase the international dimension of research, as well as implemented programs such as the Canada Research Chairs, the CFI International Funds, or the Canada First Research Excellence Funds (Tamtik & Sá, 2020). It is worth noting that a lack of co-funding mechanisms limits Canadian academics' participation to international programs, such as those of the European Union. As a result, only 0.9% of research and development (R&D) expenditure performed by the HESs are internationally funded (Statistics Canada XE "Canada" , 2021), and 7% of Canadian academics' external research funding comes from foreign sources (Huang et al., 2014).

In terms of institutional factors, it is worth noting that, although 95% of Canadian universities mention internationalization in their strategic plan (AUCC, 2014), international research collaborations are more frequent in research intensive than in comprehensive or primarily undergraduate institutions (Lacroix & Maheu, 2015). Regarding professional and individual factors, in Canada, academics who are hired into full-time, tenure-stream positions move through three ranks: assistant, associate, and full professor. Women are under-represented at the ranks of assistant (42.3%), associate professor (46.6%), and full professor (26.8%) (Statistics Canada, 2017). About 40% of university professors were born outside of Canada (CAUT, 2017), and universities actively recruit professors from abroad to strengthen research capacity, alleviate brain-drain, and enhance diversity (Barbaric & Jones, 2017).

This is the context in which collaboration practices and outcomes take place. In 2007, 57% of academics characterized their research as international in scope and 64% claimed to collaborate with international colleagues in research projects (Rostan et al., 2014). Huang et al. (2014) suggested that senior and junior academics did not differ substantially in the frequency of international research activities, but that the proportion of mobile or migrant academics was higher among senior than junior faculty.

Finland

Finland is a small northern country whose population accounts for around 1% of the population of the European Union. Its economy traditionally relied on its forest, raw material, food, and chemical industries. For the past few decades, information technology has increasingly played a key role in the national economy. The principles of the welfare state have required a strong service sector and extensive production of social and health services, which are supported by the education system and the research and innovation system. In terms of national factors potentially influencing research collaborations, Finland has been one of the top OECD countries in GERD investments in the twenty-first century, but investments have dropped since 2009 and are now close to the OECD average (OECD, 2021). While references to the education and innovation systems were omnipresent in Finnish policymaking during the 1990s and 2000s, Alaja and Sorsa (2020) argued that it would have lost part of its place in government programs. It is nonetheless worth highlighting that Finnish scientific production rose from 32,900 to 43,2000 publications between 2005 and 2018, and that 72% of these were produced by universities (Academy of Finland, 2021).

Internationalization has been seen as way to develop a highly productive innovation system since the 1980s (Puuska et al., 2014). In a study conducted in 2005, 96% of research units' respondents in Finland characterized internationalization as somewhat important or very important for research, especially to learn about scientific methods, conduct comparative projects, and promote research careers (Ahonen et al., 2009). It was also found that university departments agreed that international

research collaborations were essential to obtain international funding. In Finland, more than 21% of the total research funding granted to universities and universities of applied sciences comes from international sources, and 85% of that international funding comes from European sources (Vipunen, 2021). The total sum of external funding of universities is five times higher than in universities of applied sciences. However, the difference is that the universities of applied sciences benefit more from the European Regional Development Fund and European Social Fund than universities do. For the EU Framework and Horizon programs, universities are almost 15 times more successful than the volume of universities of applied sciences.

Regarding institutional factors, international research funding and peer-reviewed publications are indicators in the competitive funding formula. Finland counts 10 universities and although they all offer bachelor's degrees to the PhDs (Aarrevaara & Pekkola, 2010), an institution's size, history, and disciplinary emphasis would explain why some institutions count more international co-publications (Ahonen et al., 2009).

In terms of individual and professional factors, as foreign funding programs require applications from research teams and large international consortia, the primary responsibility for implementation lies with senior academics. One should also consider the influence of professors' academic discipline since science, technology, engineering, and mathematics tend to be more successful in obtaining international research funding than other disciplines. In the year that the Academic Profession in the Knowledge-Based society (APIKS) was implemented in 2018, the share of external research funding was more than 60%in medicine and health sciences, more than 55% in technology and natural sciences, more than 40% in social sciences, and about 35% in humanities (OSF, 2019). Women represented 52% of the Finnish academic staff (UIS-UNESCO, 2021), but represent a larger proportion of junior academics. In 2020, 27% of the total number of teaching and research staff were other than Finnish nationals (Academy of Finland, 2021).

The various factors mentioned above contribute to international research collaborations practices and outcomes. In 2007–2008, 59% of academics were characterizing their research as international in scope, 69% reported collaborating with international colleagues, and 58% were publishing in a language (often English) other than the one of their institutions (Rostan et al., 2014). According to the Academy of Finland (2021), international co-publications increased from 42% of all publications in 2005–2008 to 63% in 2015–2018. Finland, however, had a lower integration of international collaboration networks (Puuska et al., 2014).

Germany

The Federal Republic of Germany is the most populous and richest (in terms of gross domestic product [GDP]) Western European country. Like Canada, Germany is a federal system but, although the 16 Länder have local research policies, the central government has greater influence on research policy coordination through

the intervention of the Federal Ministry of Education and Research, the EFI agency (Christensen & Serrano Velarde, 2019), and the Excellence initiative (Edler et al., 2003).

Regarding international and national factors influencing academic research collaborations, we must consider the sums invested in research and development. According to the OECD (2021), both Germany's GERD and HERD (as a percentage of the GDP) are relatively higher than the OECD average, and the proportion of HERD financed by the business sector is also higher in Germany than most OECD countries. Despite obtaining a large share of the Horizon Europe program (Abbott, 2020), however, the percentage of GERD financed by international sources in Germany remains lower than the OECD average. Just as for Lithuania, European research funding fosters international research collaborations (Defazio et al., 2009).

In terms of institutional, professional, and individual factors, it is important to note that evaluation, performance-based measures, and government incentives have further separated research and teaching (Müller & Schneijderberg, 2020), and increased vertical and horizontal stratification which influence international research opportunities for academics (Ananin & Kreckel, 2020). Within universities, statistics from 2016 reveal that, although women represent 45% of PhD students, they represent only 30% of academics who reach habilitation and 23% of professors (Statista, 2017). Around 7% of all faculty members are foreign-born.

These factors might influence how German academics collaborate and co-publish with international colleagues. Studies have shown that Germany takes a central position in collaboration networks both in Europe and worldwide (Gui et al., 2019). Germany is among the most frequently cited partners in a majority of European countries, irrespective of the size of their higher education and research systems (Kwiek, 2021). Kwiek (2021) found that, between 2009 and 2019, the proportion of intra-institutional collaborations and single-authored papers had decreased, whereas the share of national collaborations had remained stable at a level of 57% (Kwiek, 2021; White, 2019). The countries with which the professors collaborate the most are the United States, the United Kingdom, China, France, and Italy (DAAD, 2021).

Japan

The Japanese modern university system was established in 1977 with the objective of catching up with HESs in the advanced countries. The following national factors have influenced international research collaborations in Japan from 1868 to today: Japanese universities attempted to emulate their world-leading counterparts (Arimoto, 1996; Ben-David, 1977); high ranking bureaucrats in Japan focused on building a "University of Nation" rather than a "University of Learning" (Clark, 1983); and modern institutions carried forward a research orientation, rather than to

teaching and service orientation, not only in research-intensive universities but also in teaching-focused universities (Ushiogi, 1997). On the one hand, it is argued that a value of particularism (rather than universalism) would have sustained a climate of academic inbreeding, impeding academic productivity from a national and international perspective (Parsons & Platt, 1970) and reducing the rate of internationalization (Arimoto, 2015). On the other hand, funding for research could contribute positively to research collaboration. While HERD in Japan is around the OECD average (0.39 compared to 0.40), the country does invest more into R&D than the average; its GERD was 3.24 in 2019, compared to the OECD average of 2.47, but the percentage of GERD performed by the HESs is below the OECD average (12.01 compared to 17.16).

Regarding institutional factors, it is first important to consider that national, public, and private universities provide different internationalization opportunities to their academics (Huang, 2017). Ota (2018) notes that government's competitive funding (such as the Global 30 project) for international projects has increased national competition between Japanese universities but might not have improved internationalization overall. The author also characterizes many Japanese universities' initiatives as superficial. As Leydesdorff and Sun (2009) indicated, Japan is the opposite of Canada in the sense that university-industry collaborations appear much stronger than international academic collaborations. This trend of collaboration style sloping toward applied science rather than basic science coincides with Clark's (1995) characterization of the Japanese university as an "applied" university. In terms of individual factors, 82% of the 70,000 university professors are men (Kakuchi, 2019), and 4% are international, mostly coming from China, South Korea, the Unites States, the United Kingdom, and Australia (Huang, 2017).

Data suggest a decline in the proportion of Japanese academics engaged in international collaborations. In 2007, 24% of Japanese academics reported collaborating with international partners, 8% internationally co-authored a paper, and 20% published in a foreign country (Huang et al., 2014). Japanese academics collaborate with their colleagues from the United States, but it is worth noting the increasing level of collaboration with Chinese academics (Yarime et al., 2010). Like for China, Taiwan, and South Korea, the proportion of domestic collaborations in Japan exceeds the proportion of international collaborations (Chinchilla-Rodríguez et al., 2019). Intending to promote internationalization and international collaboration, the Japanese government has established a "promotion package" for all universities and colleges as well as a "university fund" in 2022. However, previous governmental investment into the top 13 Japanese HE institutions has not been successful in improving internationalization, as indicated by their positions in THEWUR2022 ranking. Considering international collaboration to be of utmost importance, not only for academics in top-level institutions but in all institutions, the success of these new policies remains to be seen. For the authors, Japan, like the United States, has a well-developed scientific system that relies less frequently on international relations.

Lithuania

Lithuania is a small Central-Eastern European country, one of the three Baltic States, inhabited by less than three million and shows a demographic decline. Since 1999, Lithuania has been a full member of the Bologna Process, a mechanism promoting intergovernmental cooperation between European states in higher education. In 2004, the country joined the European Union, thus becoming part of the European Higher Education Area. Although the country has a longstanding higher education tradition, the Lithuanian HES has been subject to turbulent historical and political developments. During the Soviet era, the HES was restructured according to a Soviet model with a high degree of centralization and serving the needs of the agricultural and industrial sectors. University teaching followed a state-imposed curriculum, whereas research activities took place in research institutes and the Academy of Sciences (Leišytė et al., 2018). After the restoration of independence in 1990, the autonomy of universities was restored, and they began to conduct research again.

The internationalization of the Lithuanian higher education (HE) and research system were strongly influenced by supranational actors such as the World Bank, the OECD, and the European Union and embedded in processes of Europeanization. Processes of European integration and modernization of the HES remain supported through European funding schemes, such as the Tempus (trans-European cooperation scheme for higher education) program in the early days (Leišytė et al., 2015), and European Union Structural Funds, which have been crucial for updating the infrastructure of universities in Lithuania more recently. The literature attributes the increase of international research collaborations within the European Research Area to the increasing role of European research funding (Defazio et al., 2009; Gui et al., 2019; Hoekman et al., 2013).

In terms of national factors, it is worth noting that Lithuania is one of the fastest-growing economies in the European Union. Yet, despite vast investments through European Union Structural Funds, its innovation performance is relatively low (OECD, 2021). While research expenditure as percentage of GDP has increased rather slowly in Lithuania, absolute expenditures have grown significantly over the past decade. It is to be noted that approximately 22% of research and development funds in Lithuania come from abroad, while the EU-average is only 9%(Eurostat, 2021). Research funds allocated to Lithuanian researchers by national agencies tend to result in collaborations with international partners (Urbanovic & Wilkins, 2013). Multiple national grant programs and mobility schemes also tend to recognize and prioritize candidates' international co-publications.

In terms of individual and professional factors, while European mobility programs enable the short-term mobility of students and academic staff, incoming and especially long-term academic mobility remain scarce, one of the main reasons being low salaries and language barriers (Leišytė et al., 2018). Consequently, the proportion of international academic staff remains low (Eurostat, 2021). In Lithuania, more women than men obtain a PhD degree, and they form almost half

of the R&D personnel in the governmental and higher education sectors (European Commission, 2021).

In 2018, the share of international co-publications for journal articles in Lithuania was close to 40% (Kwiek, 2021). Between 2009 and 2019, international co-publications increased by 21%, whereas institutional and national collaborations and single authorship decreased. Yet, Lithuania is among the three countries within the European Union in which intra-institutional collaborations exceeded 25%. Previous research has shown that research collaborations in Lithuania are highly dependent on personal relationships (Leišytė & Rose, 2016). In a study of research collaborations in Europe, Kwiek (2021) found that international co-publications were particularly attractive for researchers in the Eastern and Southern European member states. In these countries, including Lithuania, co-authorship with partners from abroad leads to substantial citation premiums, especially in the social sciences and humanities.

The five countries chosen for this study therefore present sufficiently different geographical, historical, linguistic, political, and economic contexts to verify the influence of national, institutional, professional, and personal factors on the practices and results of international collaborations.

Research Questions

This chapter analyzes international research collaborations, as practices and outcomes in Canada, Finland, Germany, Japan, and Lithuania. More precisely, it aims at answering the two following research questions:

RQ1. What is the relationship between international research collaboration practices and international research collaboration outcomes?

RQ2. What are the individual, professional, institutional, and national factors explaining the practices and outcomes of international research collaborations?

Methodology

Data Collection

This chapter is based on the study *Academic Profession in the Knowledge Society* (APIKS), and data for analysis is based on the APIKS international database (APIKS-IDB, 2020) reported in the contextual framework (Aarrevaara et al., 2021). A 54-question survey was translated into the national languages of the participating countries and disseminated to academics. The sample for the five countries consists of n = 10,405 respondents.

In Canada, an invitation was emailed to professors at 64 publicly funded universities across Canada's 10 provinces. A total of 2968 surveys were valid, a response rate of 9.4%. In the sample, 50.6% were female professors and 49.4% male; 16% were assistant professors, 37.7% associate professors, and 41.2% full professors. The Finnish data was collected in 10 universities and 23 universities of applied sciences. The 1377 respondents from universities (13% response rate) were selected from each institute following simple random sampling without replacement. The sample included both junior and senior academics. In Japan, the number of respondents was 2124 and in Germany, 3547. In Japan, the sample included 81.1% male professors and 18.9% female professors, as well as 43.1% full professors, 24.2% associate professors, 21.2% assistant professors, 9.4% lecturers,and 1.8% others. In Lithuania, the survey was distributed by e-mail to all academic staff via the rectorates of the 10 largest public universities, which employed more than 90%of the total population of academic staff at public universities at the time of data collection. The survey was offered in Lithuanian and rendered 787 responses, out of which 389 responses were considered valid (5.3% response rate after cleaning). Among the respondents, 58% of the respondents were female and 42% were male; 57.7% were senior researchers (full and associate professors as well as senior and associate senior researchers) and 42.2% were early- and mid-career researchers (lecturers, assistants, researchers, junior researchers). It is worth noting that, for the purpose of this chapter, we only used responses from academics in the university sector to facilitate comparison (Kyvik & Lepori, 2010).

Data Analysis

To meet the research objective, we identified three dependent variables (DVs), one accounting for collaboration practices and two for collaboration outcomes: (1) Do participants collaborate with international colleagues (dichotomous variable); (2) To what extent participants characterize their research as international in scope or orientation (discrete variable that we transformed into a dichotomous variable); (3) The percentage of scholarly contributions co-authored with colleagues located in other countries (continuous variable). We then identified 15 independent variables (IVs) accounting for individual, professional, institutional, and national factors (see Table 9.1). To answer RQ1, we conducted correlations between the three DVs. To answer RQ2, we ran two logistic regressions (including the five countries) for the DVs that were dichotomous. For the third DV, we ran a multiple regression. We then ran the same analyzes for each country separately to examine if the national context influenced findings.

Table 9.1 Academics' international research collaboration and descriptive statistics

Variables		Canada	Finland	Germany	Japan	Lithuania
Dependent variables						
Do you collaborate with international colleagues?	Yes % No % N/A %	65.6 27.9 6.5	51.9 15.8 32.3	43.7 39.5 16.8	31.1 69.3 0.6	59.6 23.9 16.5
Would you characterize your primary research as international in scope or orientation?	Much or very much %	49.3	42.6	38.1	36.2	37.2
What percentage of your co-authored publications with colleagues located in other (foreign) countries in the last three years?	%	17.7	35.1	19.2	12.2	19.2
Independent variables						
Gender	Man % Woman % N/A %	49.0 49,.2 1.8	45.2 52.2 2.7	49.3 30.3 20.4	78.6 18.4 3.0	38.3 54.0 7.7
Academic rank	Senior % Junior % N/A	93.9 6.1 0	20.8 78.5 0.7	22.8 76.3 0.9	96.5 2.5 2.0	56.3 43.7 0
Disciplinary area	Natural and medical sciences % Humanities and social sciences %	41 59	57 43	60 40	72 28	54 46
Employment status	Full-time % Part-time %	96 2	95 5	72 28	99 1	73 27
Bachelor's degree obtained abroad	Yes % No %	26 74	25 75	21 79	1 99	3 97
Master's degree obtained abroad	Yes % No %	25 75	14 86	9 91	3 97	3 97
Doctoral degree obtained abroad	Yes % No %	34 66	13 87	13 87	5 95	10 90
The proportion of time dedicated to research per week	%	31.7	51.7	48.9	39.6	33.2
Research funding from government entities	%	5.7	9.8	15.3	18.0	6.8
Research funding from business firms or industry	%	3.2	3.76	4.9	6.6	5.1
Research funding from private not-for-profit agencies	%	4.9	8.7	3.7	3.7	1.1
Research funding from international funding agencies	%	2.5	8.8	4.2	0.2	8.5

(continued)

Table 9.1 (continued)

Variables		Canada	Finland	Germany	Japan	Lithuania
Your institution has a clear strategy for internationalization	5 = strongly agree; 1 = strongly disagree	3.0	3.4	3.6	3.4	3.4
Your institution provides opportunities/funding for faculty members to undertake research abroad	5 = strongly agree; 1 = strongly disagree	2.5	3.7	3.5	3.4	2.6
Your institution encourages faculty members to publish internationally	5 = strongly agree; 1 = strongly disagree	3.6	4.3	2.9	3.0	3.9

Findings

This chapter's objective was to analyze the influence of individual, professional, institutional, and national factors on international research collaborations, as practices and outcomes in five countries. Table 9.1 presents the descriptive statistics and reveals that, when taken together, 58% of academics collaborate with colleagues in other countries, around half of them characterize their research as "international" in scope or orientation, and academics report that almost 19% of their co-authored publications are with colleagues located in other countries. Findings would also suggest that the propensity to collaborate is higher in Finland, Lithuania, and Canada than in Germany or Japan. Finnish academics also count a greater proportion of scholarly contributions co-authored with international colleagues, followed by Lithuania and Germany.

Before analyzing how different factors influence those two DVs, it is worth noting that a similar proportion of academics reported having obtained their bachelor's and doctoral degree abroad, but there are apparent variations between countries. While Canada, Finland, and Germany present similar rates regarding the bachelor's degree, the proportion of PhD degrees obtained abroad is lower in Finland and Germany, while it is higher in Canada. Academics in the five countries tend to agree that their institution encourages them to publish internationally but appear generally more neutral regarding the clarity of their institution's international strategy or funding opportunities for conducting research abroad.

If there seems to be little variation between countries regarding institutional factors, one should note that the proportion of research funding allocated through international funding agencies is notably higher in Finland and Lithuania than in Canada, Germany, or Japan. This finding is consistent with previously presented data, as Finnish universities have been successful in attracting funding from the European Research Council and the Framework Funding (Vipunen, 2019), while Lithuania has been an important beneficiary of the European Structural Funds (Leišytė et al., 2015). Being outside Europe, Canada and Japan do not have access to equivalent international funding sources.

The Relationship Between Research Collaboration Practices and Outcomes

Some authors (e.g., Katz & Martin, 1997; Laudel, 2001) have suggested that co-authorship alone could not capture the complexity of research collaborations. The first research question was therefore to examine correlations between the three DVs (1 related to practices and 2 to outcomes). Table 9.2 presents a correlation matrix which suggests that collaboration practices and outcomes are correlated, but that the strength of the relationship is weak ($r < 0.5$). Collaborating with international colleagues is positively correlated the proportion of internationally co-authored papers, but large proportion of the variance in one variable is not related to the variance in the other variable. We also calculated correlations for each of the five countries separately and obtained similar results. It concurs with the authors who pointed out that co-publications were only a partial indicator of collaborations, which tend to be informal and include other components such as meetings, exchange of information, or the co-organization of research activities (Melin & Persson, 1996).

The relationship between co-authorship and one's characterization of research as international in scope is even weaker, and that could be explained by the fact that, in some disciplines (such as the natural and medical sciences), the research is conducted with international peers but is not necessarily considered as "international" in scope. There is also a "country effect" where in some countries there is a stronger tendency to consider research as international in scope than others, notwithstanding the proportion of co-publications (Kwiek, 2017).

The Influence of Individual, Professional, Institutional, and National Factors on International Research Collaborations

The second research questions required identifying the individual, professional, institutional, and national factors that had an influence on academics' practices and outcomes of international research collaborations, as well as to compare the relative

Table 9.2 Correlations between collaboration practices and outcomes

	Collaborate with international colleagues	Characterize research as international	Percentage of international co-authored publications
Collaborate with international colleagues	1.00	0.39[a]	0.39[a]
Characterize research as international	0.39[a]	1.00	0.21[a]
Percentage of international co-authored publications	0.39[a]	0.21[a]	1.00

[a]p. < 0.001

influence of each factor. Table 9.3 presents two logistic regressions and one multiple regression, performed on the three DVs. Four IVs appear to explain both research practices and outcomes: (1) the country in which they obtained their bachelor's and (2) doctoral degrees, (3) the proportion of research funding coming from international sources, and (4) the institutions' expectation to publish internationally. Data

Table 9.3 Factor's influence on research collaborations, characterization of research and proportion of internationally co-authored publications

	Collaborate with international colleagues			Characterize research as international			% of international co-authored publications	
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.
Gender	−0.09	0.09	0.92	0.21[a]	0.09	1.23	0.16[c]	0.01
Academic rank	0.38[c]	0.11	1.46	0.04	0.11	1.04	0.00	0.01
Disciplinary area	−0.13	0.09	0.87	−0.58[c]	0.09	0.56	0.57[c]	0.01
Employment status	−0.31	0.28	0.73	−0.54[a]	0.27	0.58	−0.06[a]	0.03
Bachelor's degree obtained abroad	0.80[c]	0.16	2.22	0.43[b]	0.15	1.54	0.14[c]	0.02
Master's degree obtained abroad	0.11	0.17	1.11	0.05	0.16	1.05	0.22[c]	0.02
Doctoral degree obtained abroad	0.54[c]	0.14	1.72	0.42[c]	0.13	1.52	0.30[c]	0.01
The proportion of time dedicated to research per week	0.01[c]	0.00	1.01	0.01[a]	0.00	1.01	0.00	0.00
Research funding from government entities	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Research funding from business firms or industry	0.00	0.00	1.00	0.00	0.00	1.00	−0.01[c]	0.00
Research funding from private not-for-profit agencies	0.01[b]	0.00	1.01	0.00	0.00	1.00	0.00	0.00
Research funding from international funding agencies	0.06[c]	0.01	1.06	0.03[c]	0.01	1.03	0.01[c]	0.00
Your institution has a clear strategy for internationalization	−0.03	0.04	0.97	−0.04	0.04	0.96	−0.07[c]	0.00
Your institution provides opportunities/funding for faculty members to undertake research abroad	−0.04	0.04	0.96	0.12[b]	0.04	1.12	0.02[c]	0.00
Your institution encourages faculty members to publish internationally	0.27[c]	0.04	1.31	0.15[c]	0.03	1.16	0.12[c]	0.00
Constant	−0.65	0.35	0.52	−0.33	0.34	0.72	1.92	0.04

[a]$p < 0.05$; [b]$p < 0.01$; [c]$p < 0.001$

suggest that academics who obtained their doctoral degree abroad (whether they are citizens of the country or not) are 1.72 times more likely to collaborate with international colleagues, 1.52 times more likely to characterize their research as "international" in scope or orientation and count a proportion of internationally co-authored publications 30 percentage points higher than those who obtained their doctoral degree in the country where they are working. The literature suggests that researchers who come from abroad are more likely to participate in a diaspora effect (Scellato et al., 2015) and to continue collaborating with international colleagues (Melkers & Kiopa, 2010). In non-English speaking circles, academics who have completed degrees abroad would also increase the proportion of publications in English (Altbach & Yudkevich, 2017). Some countries (such as Canada and Lithuania) have developed funding programs (such as the Lithuanian Research Council's Brain Gain and Reintegration scheme) to bring back to their country academics who would have completed and/or be working abroad (Rose & Leišytė, 2017; Tamtik & Sá, 2020). In our sample, the three foreign countries most frequently cited by professors who had completed a doctorate outside of Canada were the US, the UK, and France.

Similarly, when the five countries under study are taken together, academics who report that their institution expects them to publish internationally are 1.31 times more likely to collaborate with international colleagues, 1.16 times more likely to characterize their research as "international" in scope or orientation and count a greater proportion of internationally co-authored publications. Studies have shown that universities – and especially research-intensive institutions – put pressure on academics to publish in internationally recognized journals (Xu et al., 2021), for which one strategy is to collaborate with international colleagues (Gazni et al., 2012). The proportion of research funding from international agencies is statistically significantly related to the three DVs, but the effect size is very small. In Europe, Defazio et al. (2009) studied 294 researchers from 39 research networks over a period of 15 years and found that international funding meant increased research collaborations, but that the effects on research output were weak.

It is worth noting that some factors have an influence on collaboration practices but not on outcomes, or vice-versa. For instance, our findings regarding gender might nuance some previous observations. Studies employing co-authorship as a proxy for collaborations have suggested that national (or domestic) research collaborations were more frequent among women, that international collaborations were more frequent among men, and that this difference could partly explain the gender productivity gap (Kwiek & Roszka, 2020; Padilla-Gonzalez et al., 2011). Our findings suggest that men count a higher percentage of internationally co-authored publications, but that the propensity to collaborate with international colleagues is not statistically different from female academics. We might hypothesize that the collaborative networks in which men and women participate are different, and that male academics are more frequently granted recognition (co-authorship) for their partition in these networks. As Jadidi et al. (2018) suggested, compared to their male colleagues, female academics are more frequently integrated into smaller and more clustered research networks that are more short-lived and contain fewer

brokerage opportunities. Moreover, the "Matilda Effect" (Knobloch-Westerwick et al., 2013) relates to this phenomenon according to which there is generally lower recognition and misattribution of work by female academics. Studies have shown that bias may influence how colleagues perceive men and women's contributions to science (Knobloch-Westerwick et al., 2013) and their papers' citation rates (Sá et al., 2020).

On the contrary, senior academics are more likely to collaborate with international colleagues (Bozeman & Boardman, 2014), but it is not necessarily reflected in internationally co-authored publications. Regarding disciplinary areas, academics in the natural and medical sciences are less likely to consider their research as "international" in scope or orientation (Kwiek, 2017) but count a higher proportion of internationally co-authored publications than their colleagues in the social sciences and humanities (Leahey, 2016). Regarding institutional factors, while the perception of universities' international strategies seems to have little effect, the opportunities provided for academics to conduct research in other countries is positively (although weakly) associated with one's likelihood to characterize research as "international" and one's internationally co-authored publications. The literature suggests that academics being experts in their field, they can identify by themselves the most promising partners (Kato & Ando, 2016), but that institutional support is often required to consolidate and reinforce those collaborations (Ulnicane, 2021).

International Collaborations as a Converging Phenomenon That Transcends Geographic Idiosyncrasies

Since the objective of this chapter was also to examine how national contexts might inform findings, we conducted the three regressions for each country. Overall, the model remained robust in each country but, in Lithuania, considering the small number of participants (n = 389) and the 15 IVs, some relationships became statistically insignificant. Our interpretation is that, despite notable differences in the five countries' political economy, language, historical development, population size, or investments into R&D, collaboration practices and outcomes can be explain by similar factors. This suggests that the internationalization of higher education is a global, possibly converging, phenomenon (Sonnenwald, 2007) that would follow disciplinary norms (Larivière et al., 2006) and transcend geographic idiosyncrasies (Egron-Polak, 2014).

It is nonetheless important to point out that some individual, professional, institutional, and national factors differed in some countries. In Germany, for instance, the influence of both gender and rank on the percentage of internationally co-authored publications was not significant, and in Finland, disciplinary area did not have a significant impact on academics' characterization of research as "international". In Japan and Lithuania, the proportion of academics who reported having obtained their bachelor's degree abroad was too small to bear an influence.

Regarding institutional factors, institutional support for research activities abroad did not significantly influence international co-authorship in Canada nor Finland. In Canada, Bégin-Caouette and Zambo Assembé (forthcoming) have found that academics tended to perceive institutional incentives as having a smaller influence on publications than other international activities. Institutional expectations would contribute to international co-authorship in the five countries, but in Finland, they would also be related to academics' likelihood to collaborate and to characterize their research as international. One could explain this finding by the type of institutional management implemented in Finnish universities since the 2010 reform (Kohtamäki, 2019). Finally, although our findings suggested that the proportion of research funding academics receive from government sources had no significant impact on collaboration practices or outcomes, country-specific calculations suggest the relationship with international co-authorship was statistically significant in all countries but Japan, suggesting that academics who succeed in obtaining research grants from national agencies would count a greater proportion of co-publications (Checchi et al., 2019).

Concluding Remarks: International Collaborations as Social Capital

In 2014, Finkelstein and Sethi had developed a model that predicted if academics would have a low or high level of internationalization based on 19 individual, professional, organizational, and national variables. Their model suggested that a country's size, language (English vs non-English), and location (Asian vs non-Asian), as well as the institution type, professional characteristics (discipline, rank, research preference), and personal characteristics (age, gender and degree obtain abroad) all had an influence on the overall level of faculty's internationalization (including research collaborations, but also mobility, language of instruction, and teaching international content). In addition to using more recent data, the model presented in this chapter complements Finkelstein and Sethi's model. Logistic and multiple regressions performed on the responses of n = 10,405 academics from Canada, Finland, Germany, Japan, and Lithuania show that, when we focus on collaboration practices and outcomes, the most influential factors are academics' degrees being obtained abroad, the proportion of research funding they obtained from international sources, and institutions' expectation to publish internationally.

In Bozeman and Boardman's (2014) logic model, degrees from abroad represent, in addition to a human capital (i.e., the degree itself), a social capital in the form of social relationships established with previous supervisors or colleagues from abroad. This social capital constitutes an input that may support the research process (i.e., propensity to collaborate), which is partly related to research outcomes (i.e., co-authorship). The conversion of input into outcome may be facilitated by organizational capital, such as institutions' clear expectations to publish in

international journals, and incentive schemes to support academics who conduct research activities abroad. International research funding also represents a material capital that would have a larger influence on research processes and outcomes than would other forms of (domestic) research funding.

Our findings suggest that academics' individual or professional characteristics may undermine their capacity to convert processes (or collaboration practices) into outcomes. For instance, although academics' gender and disciplinary area have no significant effect on their propensity to collaborate with international colleagues, academics who identify as men or who work in the natural and medical sciences count of a higher percentage of publications co-authored with international colleagues. In sum, this chapter indicates that the capacity to participate in and to benefit from international research collaborations is part of a complex system of inter-influences between personal, professional, institutional, and national factors.

Acknowledgement The authors would like to acknowledge the contribution of Nicolai Göetze, who participated in the planning of this chapter and analyses.

References

Aarrevaara, T., & Pekkola, E. (2010). *Muuttuva akateeminen professsio Suomessa – Maaraportti* (the changing academic profession in Finland – Country report). Higher Education Finance and Management Series. Tampere University Press.

Aarrevaara, T., Finkelstein, M., Jones, G. A., & Jung, J. (2021). The academic profession in the knowledge-based society (APIKS): Evolution of a major comparative research project. In T. Aarrevaara, M. Finkelstein, G. A. Jones, & J. Jung (Eds.), *Universities and the knowledge society: The nexus of National Systems of innovation and higher education. The changing academy: The changing academic profession in international comparative perspective* (Vol. 22, pp. 49–64). Springer.

Abbott, A. (2020). Farewell to Europe's horizon 2020. *Nature, 588*(371). https://doi.org/10.1038/d41586-020-03516-6

Abramo, G., D'Angelo, C. A., & Murgia, G. (2013). Gender differences in research collaboration. *Journal of Infometrics, 7*(4), 811–822.

Academy of Finland. (2021, November 16). Finnish science more international than before, standard of research better than world average. https://www.aka.fi/en/about-us/whats-new/press-releases/2021/finnish-science-more-international-than-before-standard-of-research-better-than-world-average/

Adams, J. (2013). The fourth age of research. *Nature, 497*, 557–560. https://doi.org/10.1038/497557a

Ahonen, P.-P., Hjelt, M., Kaukonen, E., & Vuolanto, P. (2009). Internationalisation of Finnish scientific research. Publications of the Academy of Finland, 7/09. https://www.aka.fi/globalassets/awanhat/documents/tiedostot/julkaisut/7_09-internationalisation-of-finnish-scientific.pdf

Alaja, A., & Sorsa, V. P. (2020). The evolution of the national innovation system as programmatic policy idea in Finland. *Science and Public Policy, 47*(6), 834–843.

AlShebli, B. K., Rahwan, T., & Woon, W. L. (2018). The preeminence of ethnic diversity in scientific collaboration. *Nature Communications, 9*(1), 5163.

Altbach, P. G., & Yudkevich, M. (2017). International faculty in 21st-century univerisities. In M. Yudkevich, P. Altbach, & L. Rumbley (Eds.), *International faculty in higher education: Comparative perspectives on recruitment* (pp. 1–14). Routledge.

Ananin, D. P., & Kreckel, R. (2020). Hierarchy of higher education system in Germany: Historiographical analysis. *University Management: Practice and Analysis, 24*(1), 9–27.

APIKS-IDB. (2020). The Academic Profession in the Knowledge-based Society (APIKS). International Database version 1.0. Accessed on October 14, 2020. https://www.ulapland.fi/APIKS

Arimoto, A. (1996). *Study on Center of Learning: Conditions of academic productivity in the world and Japan*. Toshindo Publishing.

Arimoto, A. (2015). Introduction. In A. Arimoto, W. K. Cummings, F. Huang, & J. C. Shin (Eds.), *The changing academic profession in Japan* (pp. 1–26). Springer.

AUCC – Association of universities and colleges of Canada (2014). Canada's universities in the world: AUCC internationalization survey. https://www.univcan.ca/wp-content/uploads/2015/07/internationalization-survey-2014.pdf.

Barbaric, D., & Jones, G. A. (2017). International faculty in Canada. In M. Yudkevich, P. G. Altbach, & L. E. Rumbley (Eds.), *International faculty in higher education* (pp. 51–75). Routledge.

Barbosa, M. L. O., & Neves, C. B. (2020). Internationalization of higher education: Institutions and knowledge diplomacy. *Sociologias, 22*(54).

Bégin-Caouette, O., & Zambo Assembé, E. S. (forthcoming). *L'influence des activités internationales sur la production de recherche universitaire au Canada*. Comparative and International Education.

Ben-David, J. (1977). *Centers of learning*. Routledge.

Bozeman, B., & Boardman, C. (2014). *Research collaboration and team science*. Springer.

CAUT - Canadian Association of University Teachers. (2017). 2016–2017 Age distribution of full-time university teachers by sex. https://www.caut.ca/content/24-age-distribution-full-time-university-teachers-sex

CCA. (2018). *Competing in a global innovation economy: The current state of R&D in Canada*. Council of Canadian Academies. http://new-report.scienceadvice.ca/assets/report/Competing_in_a_Global_Innovation_Economy_FullReport_EN.pdf

Checchi, D., Malgarini, M., & Sarlo, S. (2019). Do performance-based research funding systems affect research production and impact? *Higher Education Quarterly, 73*(1), 45–69.

Chinchilla-Rodríguez, Z., Sugimoto, C. R., & Larivière, V. (2019). Follow the leader: On the relationship between leadership and scholarly impact in international collaborations. *PLoS One, 14*(6), e0218309.

Christensen, J., & Serrano Velarde, K. (2019). The role of advisory bodies in the emergence of cross-cutting policy issues: Comparing innovation policy in Norway and Germany. *European Politics and Society, 20*(1), 49–65.

Clark, B. R. (1983). *The higher education system: Academic Organization in Cross-National Perspective*. University of California Press.

Clark, B. R. (1995). *Places of inquiry: Research and advanced education in modern Universities*. University of California Press.

Cohen, D., & Crabtree, B. (2006). Qualitative research guidelines project. http://www.qualres.org/index.html.

DAAD. (2021). *Wissenschaft weltoffen: Daten und Fakten zur Internationalität von Studium und Forschung in Deutschland und weltweit* (cosmopolitan science: Data and facts on the international nature of higher education and research in Germany and around the world). German academic. *Exchange Service (DAAD)*.

Defazio, D., Lockett, A., & Wright, M. (2009). Funding incentives, collaborative dynamics and scientific productivity: Evidence from the EU framework program. *Research Policy, 38*(2), 293–305.

Edler, J., Kuhlmann, S., & Behrens, M. (Eds.). (2003). *Changing governance of research and technology policy: The European research area*. Edward Elgar Publishing.

Egron-Polak, E. (2014). Internationalization of higher education: Converging or diverging trends? *International Higher Education, 76*, 7–9.

Esping-Andersen, G. (1999). *Social foundations of Postindustrial economies*. Oxford Press.

Eurostat. (2021). Researchers by sector of performance. Country of citizenship and sex. https://ec.europa.eu/eurostat/databrowser/view/rd_p_perscitz/default/table?lang=en

Finkelstein, M., & Sethi, W. (2014). Patterns of faculty internationalization: A predictive model. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes. Realities and prospects. The changing academy – The changing academic profession in international comparative perspective* (Vol. 10, pp. 237–257). Springer.

Gazni, A., Sugimoto, C. R., & Didegah, F. (2012). Mapping world scientific collaboration: Authors. Institutions. And countries. *Journal of the American Society for Information Science and Technology, 63*(2), 323–335.

Glänzel, W., & Schubert, A. (2001). Double effort= double impact? A critical view at international co-authorship in chemistry. *Scientometrics, 50*(2), 199–214.

Graf, L. (2009). Applying the varieties of capitalism approach to higher education: Comparing the internationalisation of German and British universities. *European Journal of Education, 44*(4), 569–585.

Gui, Q., Liu, C., & Du, D. (2019). Globalization of science and international scientific collaboration: A network perspective. *Geoforum, 105*, 1–12.

Hoekman, J., Scherngell, T., Frenken, K., & Tijssen, R. (2013). Acquisition of European research funds and its effect on international scientific collaboration. *Journal of Economic Geography, 13*(1), 23–52.

Hong, M. (2020). A comparative study of the internationalization of higher education policy in Australia and China (2008–2015). *Studies in Higher Education, 45*(4), 768–779.

Huang, F. (2017, October 6). Japan needs to open up to international faculty. University World News. https://www.universityworldnews.com/post.php?story=20171004134252 11

Huang, F., Teichler, U., & Galaz-Fontes, J. F. (2014). Regionalisation of higher education and the academic profession in Asia. Europe and North America. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes. Realities and prospects* (pp. 145–181). Springer.

Hughes, R. (2008). Internationalisation of higher education and language policy: Questions of quality and equity. *Higher Education Management and Policy, 20*(1), 1–18.

Jadidi, M., Karimi, F., Lietz, H., & Wagner, C. (2018). Gender disparities in science? Dropout, productivity, collaborations, and success of male and female computer scientists. *Advances in Complex Systems, 21*(3–4), 1750011.

Jonkers, K., & Cruz-Castro, L. (2013). Research upon return: The effect of international mobility on scientific ties. Production and impact. *Research Policy, 42*(8), 1366–1377.

Kakuchi, S. (2019, October 5). Frustrated international academics sense discrimination. University World News. https://www.universityworldnews.com/post.php?story=20190930115905942

Kato, M., & Ando, A. (2016). National Ties of international scientific collaboration and researcher mobility found in nature and science. *Scientometrics, 110*(2), 673–694.

Katz, J. S., & Martin, B. R. (1997). What is research collaboration? *Research Policy, 26*(1), 1–18.

Knight, J. (2008). *Higher education in turmoil: The changing world of internationalization*. Sense Publishers.

Knobloch-Westerwick, S., Glynn, C. J., & Huge, M. (2013). The Matilda effect in science communication: An experiment on gender bias in publication quality perceptions and collaboration interest. *Science Communication, 35*(5), 603–625.

Kohtamäki, V. (2019). Academic leadership and university reform-guided management changes in Finland. *Journal of Higher Education Policy and Management, 41*(1), 70–85.

König, T. (2017). *The European research council*. John Wiley & Sons.

Kwiek, M. (2017). International research collaboration and international research orientation: Comparative findings about European academics. *Journal of Studies in International Education, 22*(2), 136–160.

Kwiek, M. (2021). What large-scale publication and citation data tell us about international research collaboration in Europe: Changing national patterns in global contexts. *Studies in Higher Education, 46*(12), 2629–2649.

Kwiek, M., & Roszka, W. (2020). Gender disparities in international research collaboration. *Journal of Economic Surveys, 35*(5), 1344–1380.

Kyvik, S., & Lepori, B. (2010). *Research in higher education institutions outside the university sector* (pp. 3–21). Springer.

Lacroix, R., & Maheu, L. (2015). *Leading research universities: Autonomous institutions in a competitive academic world*. McGill-Queen's Press-MQUP.

Larivière, V., Gingras, Y., & Archambault, É. (2006). Canadian collaboration networks: A comparative analysis of the natural sciences. Social sciences and the humanities. *Scientometrics, 68*(3), 519–533.

Laudel, G. (2001). *What do we measure by co-authorships? Proceedings of the eighth international conference on Scientometrics and*. Informetrics.

Leahey, E. (2016). From sole investigator to team scientist: Trends in the practice and study of research collaboration. *Annual Review of Sociology, 42*, 81–100.

Lee, J., & Haupt, J. P. (2019). Winners and losers in US-China scientific research collaborations. *Higher Education, 80*(1). https://doi.org/10.1007/s10734-019-00464-7

Leišytė, L., & Rose, A.-L. (2016). The challenges of attracting and retaining academic talent. Central and eastern European perspectives. *Journal of the European Higher Education Area, 4*, 61–82.

Leišytė, L., Želvys, R., & Zenkienė, L. (2015). Re-contextualization of the Bologna process in Lithuania. *European Journal of Higher Education, 5*(1), 49–67.

Leišytė, L., Rose, A.-L., & Schimmelpfenning, E. (2018). Lithuanian higher education: Between path dependence and change. In J. Huisman, A. Smolentseva, & I. Froumin (Eds.), *25 years of transformations of higher education systems in post-soviet countries: Reform and continuity* (pp. 285–310). Palgrave Macmillan.

Leite, D., & Pinho, I. (2017). Science geography and international research collaboration. In D. Leite & I. Pinho (Eds.), *Evaluating collaboration networks in higher education research* (pp. 1–9). Springer.

Leydesdorff, L., & Sun, Y. (2009). National and international dimensions of the triple helix in Japan: University-industry-government versus international coauthorship relations. *Journal of the American Society for Information Science and Technology, 60*, 778–788.

Melin, G., & Persson, O. (1996). Studying research collaboration using co-authorships. *Scientometrics, 36*(3), 363–377.

Melkers, J., & Kiopa, A. (2010). The social Capital of Global Ties in science: The added value of international collaboration. *Review of Policy Research, 27*(4), 389–414.

Müller, L., & Schneijderberg, C. (2020). The emergence of the organizational academic profession: Vertical differentiation of Germany universities and the research-teaching nexus. *Higher Education Forum, 17*(1), 43–68.

Newman, M. E. (2004). Coauthorship networks and patterns of scientific collaboration. *Proceedings of the National Academy of Sciences, 101*(1), 5200–5205.

OECD. (2021). *OECD Science. Technology and Innovation Outlook 2021*. In *Times of crisis and opportunity*. OECD Publishing.

Olechnicka, A., Ploszaj, A., & Celińska-Janowicz, D. (2018). *The geography of scientific collaboration*. Routledge.

OSF. (2019). *Official statistics of Finland: Government R&D funding in the state budget [e-publication]*. Government R&D funding on the increase. http://www.stat.fi/til/tkker/2019/tkker_2019_2019-02-21_kat_001_en.html

Ota, H. (2018). Internationalization of higher education: Global trends and Japan's challenges. *Educational Studies in Japan, 12*(2018), 91–105.

Padilla-Gonzalez, L., Metcalfe, A. S., Galaz-Fontes, J. F., Fisher, D., & Snee, I. (2011). Gender gaps in north American research productivity: Examining faculty publication rates in Mexico, Canada, and the US. *Compare: A Journal of Comparative and International Education, 41*(5), 649–668.

Parsons, T., & Platt, G. M. (1970). Age, social structure, and socialization in higher education. *Sociology of Education, 43*(1), 1–37.
Payumo, J., Moore, D., Evans, M., & Arasu, P. (2019). An evaluation of researcher motivations and productivity outcomes in international collaboration and partnerships at a U.S. research-intensive university. *Interdisciplinary Journal of Partnership Studies, 6*(2), 4.
Puuska, H.-M., Muhonen, R., & Leino, Y. (2014). International and domestic co-publishing and their citation impact in different disciplines. *Scientometrics, 98*(1), 823–839.
Raan, V. (1997). Science as an international enterprise. *Science and Public Policy, 24*(5), 290–300.
Reale, E. (2017). *Analysis of National Public Research Funding-PREF*. Publications Office of the European Union.
Rose, A.-L., & Leišytė, L. (2017). Integrating academic staff into the local academic context in Lithuania and Estonia. In M. Yudkevich, P. G. Altbach, & L. E. Rumbley (Eds.), *International faculty in higher education: Comparative perspectives on recruitment, integration, and impact* (pp. 101–123). Routledge.
Rostan, M., Ceravolo, F. A., & Metcalfe, A. S. (2014). The internationalization of research. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes. Realities and prospects. The changing academy – The changing academic profession in international comparative perspective* (Vol. 10, pp. 119–144). Springer.
Sá, C., Cowley, S., Martinez, M., Kachynska, N., & Sabzalieva, E. (2020). Gender gaps in research productivity and recognition among elite scientists in the U.S., Canada, and South Africa. *PLoS One, 15*(10), e0240903.
Scellato, G., Franzoni, C., & Stephan, P. (2015). Migrant scientists and international networks. *Research Policy, 44*(1), 108–120.
Sonnenwald. (2007). Scientific collaboration. *Annual Review of Information Science and Technology, 41*(1), 643–681.
Statista. (2017). Ratio of women among professors in Germany 1999–2016. https://de.statista.com/
Statistics Canada. (2017, November 14). Table 37-10-0108-01 number and salaries of full-time teaching staff at Canadian universities. https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3710010801
Statistics Canada. (2021). Postsecondary enrolments, by registration status, institution type, status of student in Canada and gender. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710001801&request_locale=en
Tamtik, M., & Sá, C. (2020). The elusive pursuit of internationalization in Canadian research. In M. Tamtik, R. D. Trilokekar, & G. A. Jones (Eds.), *International education as public policy in Canada* (pp. 90–110). McGill-Queen's University Press.
UIS-UNESCO. (2021). Higher Education. http://uis.unesco.org/en/topic/higher-education
Ulnicane, I. (2021). Self-organisation and steering in international research collaborations. In K. Kastenhofer & S. Molyneux-Hodgson (Eds.), *Community and identity in contemporary Technosciences*. Springer.
Urbanovič, J., & Wilkins, S. (2013). Internationalisation as a strategy to improve the quality of higher education in small states: Stakeholder perspectives in Lithuania. *Higher Education Policy, 26*, 373–396.
Ushiogi, M. (1997). Japanese graduate education and its problems. *Higher Education, 34*(1), 237–244.
Vipunen. (2019). *Opetushallinnon tilastopalvelu* [Statistical service of the Education Administration]. https://vipunen.fi/fi-fi.
Vipunen. (2021). Education statistics Finland. https://vipunen.fi/en-gb
Wagner, C. S., Whetsell, T., Baas, J., & Jonkers, K. (2018). Openness and impact of leading scientific countries. *Frontiers in Research Metrics and Analytics, 3*, 10.
White, K. (2019). Publications output: U.S. trends and international comparisons. https://ncses.nsf.gov/pubs/nsb20206/international-collaboration

Witze, A. (2016). Research gets increasingly international: Big US report documents increases in international collaboration and Chinese science output. Nature News. https://www.nature.com/news/research-gets-increasingly-international-1.19198

World Bank. (2018). Scientific and technical journal articles. https://data.worldbank.org/indicator/IP.JRN.ARTC.SC?year_low_desc=true

Xu, X., Oancea, A., & Rose, H. (2021). The impacts of incentives for international publications on research cultures in Chinese humanities and social sciences. *Minerva, 59*(4), 469–492.

Yarime, M., Takeda, Y., & Kajikawa, Y. (2010). Towards institutional analysis of sustainability science: A quantitative examination of the patterns of research collaboration. *Sustainability Science, 5*, 115.

Olivier Bégin-Caouette, Ph.D. is assistant professor of comparative higher education at the Department of Administration and Foundations of Education, at Université de Montréal. His research focuses on the interactions between higher education systems and political-economic structures, as well as on the internationalization of higher education. He is a founding member of the Laboratory for Interdisciplinary Research on Higher Education (LIRES), and an associate member of the Interuniversity Research Center on Science and Technology (CIRST).

Timo Aarrevaara is Professor of Public Management at the University of Lapland and has professional experience in public administration as well as in research and teaching. Aarrevaara has participated in and conducted several evaluating and auditing projects and has acted as the principal investigator of several projects in higher education. Aarrevaara is a co-editor of Springer's The Changing Academy series and author or co-author of several papers and book chapters.

Anna-Lena Rose (MSc, MA) is a researcher at the Professorship of Higher Education, Center for Higher Education (zhb), and a PhD student at the Faculty of Business and Economics at TU Dortmund University, Germany. Her PhD project focuses on the emergence of interdisciplinary structures in academic project settings. Her research interests further include organizational change in universities, changing academic work, academic mobility, and entrepreneurship education.

Akira Arimoto is the Advisor to the President at Hyogo University and Director and Professor of RIHE; Professor Emeritus of Hiroshima University and Kurashiki Sakuyo University; President of the National Association of RIHE; Representative of HERA. Dr. Arimoto was UNESCO's Global Scientific Committee Member and Chair in Asian and Pacific Region; Springer's editorial board member of the Changing Academy (series editor); President at KSU; Director and Professor at RIHE of Hiroshima University; Associate Member of the Japan Council of Science; President of JAHER and JSSES. His recent book is International Comparison of Academic Profession (Ed.,In Japanese,Toshindo Pub.Co., 2020).

Chapter 10
The Comparative Study of Internationalization and the Academic Profession: Challenges and Possibilities

Yangson Kim, Glen A. Jones, and Alper Çalıkoğlu

Abstract This chapter provides a summary of the key findings of the thematic core chapters and discusses how these findings contribute to the existing literature on internationalization and the academic profession and to the broader literature on comparative higher education. The main findings are summarized in two sections: internationalization at home, focusing on curriculum and governance, and internationalization of and in the academic profession. The first part covers the internationalization of the curriculum, relationships between international practices and curriculum, and the influence of governance and management on internationalization activities. The second part discusses findings related to the internationalization of the academic profession and the perceptions of international academics, or those with international education and experience. The possible implications of the global pandemic and other recent geopolitical shifts are considered, and several important methodological questions concerning the comparative study of internationalization and the academic profession are raised.

Keywords Internationalization · Academic profession · Internationalization at home · Center-peripheral approach · Higher education

Y. Kim (✉)
Research Institute for Higher Education, Hiroshima University, Higashi-Hiroshima, Japan
e-mail: yskim@hiroshima-u.ac.jp

G. A. Jones
Ontario Institute for Studies in Education, University of Toronto, Toronto, ON, Canada
e-mail: glen.jones@utoronto.ca

A. Çalıkoğlu
Borsa Istanbul Vocational School, Ministry of National Education, Canakkale, Turkey
e-mail: alpercalikoglu@gmail.com

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_10

Introduction

Internationalization has evolved as an important sub-theme in higher education research in the last several decades (Lee & Stensaker, 2021; Horta & Jung, 2014). Research on internationalization in higher education has been extended to include its influences on diverse perspectives and topics (Kehm & Teichler, 2007). Internationalization crosses various issues of policy, governance, teaching and learning, curriculum, and student experience, though previous studies have mainly explored strategies, drivers, politics, and the role of reputation in internationalization (Seeber et al., 2016). Moreover, previous studies on internationalization in higher education have traditionally focused more on the mobility of students than academics (Pherali, 2012; Teichler, 2015). Scholarship on the mobility of academic staff has tended to analyze policies and practices associated with increasing and supporting foreign academics in home countries (Barbaric & Jones, 2016; Leišytė & Rose, 2016; Van der Wende, 2015; Yudkevich et al., 2016).

In the last three decades, through international comparative projects such as the Carnegie Foundation Survey of the Academic Profession (Carnegie AP), the Changing Academic Profession (CAP), other regional initiatives, as well as, most recently, the Academic Profession in Knowledge-based Society (APIKS) project, comparative studies about the academic profession have evolved to include a broad range of conceptual foundations and perspectives. Through this collaborative effort, a large number of studies have explored data obtained from international surveys of academics, including detailed analyses of their activities, their educational background, their perceptions of governance, and so on. Internationalization was identified as a key theme in the CAP project, and several questions focusing on international activities and perceptions of internationalization were included in the questionnaire. The volume edited by Huang et al. (2014) entitled *The Internationalization of the Academy: Changes, Realities and Prospects* made a formative contribution to the study of internationalization and the academic profession, drawing on the CAP data. The book's contributors provided a comprehensive review of key issues based on the perceptions of academics in the mid-2000s. Since the contexts of higher education have been changing rapidly in the last decade, the APIKS project provides a unique opportunity to provide a contemporary analysis of internationalization and the academic profession, and to explore many of the complex issues and changing perceptions associated with this important area of inquiry.

The first volume of scholarship emerging from the APIKS project, entitled *Universities in the Knowledge Society: The Nexus of National Systems of Innovation and Higher Education* (Aarrevaara et al., 2021), was designed to provide a foundational role for the continuing program of comparative studies. The book introduced the APIKS project, reviewed key conceptual elements, and provided an overview of 18 jurisdictions by focusing on policies related to research and development, and the ways in which higher education and the academic profession were positioned within these research and innovation systems.

The current volume focuses on internationalization and the academic profession as a core theme within the broader program of research within the APIKS project. This international survey project provides a unique dataset, including responses from academics in more than twenty countries, for analyzing the perceptions and experiences of the academic profession related to issues of internationalization. Given the almost ubiquitous emphasis placed on internationalization within higher education, the book makes an important contribution to our understanding of similarities and differences among higher education systems with different historical, cultural, and geographical backgrounds.

The objective of this chapter is to provide a summary of the key findings of the thematic core chapters and discuss how these findings contribute to the existing literature on internationalization and the academic profession, and to the broader literature on comparative higher education. From the perspective of internationalization, the academic profession can be seen as both an active contributor and, in some ways, an agent of resistance. From the perspective of the academic profession, internationalization can be seen as both a movement of problems and possibilities, thus reinforcing existing power and structural inequities in certain ways, as well as opening up new opportunities for the transformation of higher education systems, institutions, research, and educational experiences.

Internationalization at Home: Curriculum and Governance

Internationalization of Curriculum

The internationalization of the curriculum is the main element of internationalization at home. In Chap. 2, Ho, Klemenčič, and Bello focused on the internationalization of the curriculum from the perspectives of academics. They explored international perspectives and contents in academics' teaching and relationships between international practices and curriculum. Their findings illuminate differences between countries; academics in most countries focused only on some aspects of internationalization of the curriculum, while academics in several countries prioritized the introduction of internationalized perspectives and contents. Another finding from the chapter was an unequivocal positive correlation between a clear institutional strategy of internationalization and the internationalization of the curriculum. Furthermore, there was a clear positive correlation between perceptions of internationalization of the curriculum and of hiring foreign academics. Their results have important implications for considering the roles and efforts of academic staff, as agents of internationalization, for internationalization at home through an internationalized curriculum.

There is no doubt that student and academic mobility are among the critical dimensions in the internationalization of higher education, but the cost of mobility can be a challenge for individuals, and there are dramatic economic disparities

between higher education institutions and countries (Soria & Troisi, 2014). However, activities for internationalization at home provide more opportunities for students and academics when a lack of resources, or most recently, a global pandemic, makes international travel challenging, if not impossible. Internationalization of the curriculum, as one of the activities of internationalization at home, has been emphasized to expand students' learning and development outcomes in terms of global or international perspectives, and intercultural competencies (Burnett & Huisman, 2010; Deardorff, 2006; Greenhotlz, 2000).

While the importance of internationalization at home has received some attention within higher education scholarship, there has been limited research on this issue from a comparative perspective. The international comparative findings of the original research in this volume reinforce the importance of institutional strategy; the authors demonstrate that there are clear relationships between internationalization as a perceived institutional priority and the initiatives of academic staff in internationalizing the curriculum, as well as the perceived importance place on the recruitment of international academic staff. The emphasis on curriculum has potential benefits related to exploring diverse perspectives in the classroom, while international staff, who may bring their distinctive background and perspectives to their teaching, may contribute to the diverse experiences and understandings of domestic students. Further research might focus attention on the outcomes of these activities and whether academic staff perceive institutional strategies are leading to positive student outcomes in terms of international perspectives and intercultural competencies. It is also important to note that the emphasis here, as in most of the broader literature on internationalization at home, is on the formal curriculum. Research has focused primarily on the development and delivery of courses within the structured curriculum – the formal requirements and expected outcomes – of the academic program. Far less emphasis has been placed on the informal or hidden curriculum (Leask, 2009). As Leask (2015) has noted, internationalization at home requires attention to both the informal as well as formal curriculum, and we know little about how members of the academic profession understand or perceive their role in, or engage with, this broader range of informal educational activities and student experiences.

Influence of Governance and Management on Internationalization Activities

In many countries, universities have been repositioned as central institutions within knowledge economies, though their specific role within national research and innovations systems varies considerably given differences in government policies and socio-economic contexts (Jung et al., 2021). Reforms to support the development of world-class status and leading positions in the global market have been emphasized at both the institutional and national levels in many systems. One of the important

areas of reform has been university governance, and changes have tended to emphasize increasing managerial authority and market features, frequently influenced by new managerial and neoliberal ideas. These changes have important implications for the academic profession and traditional collegial forms of decision-making (Austin & Jones, 2016; Enders et al., 2009; Marginson, 2017; Seeber et al., 2016). However, there is a dearth of studies on the relationship between internationalization and managerial governance in universities, although a substantive assumption of a positive relationship between the two has been made. There are certainly scholars who have provided strong arguments in support of this assumption. Internationalization is regarded as an opportunity for the growth of the managerial and entrepreneurial culture or competitiveness of universities (Maringe & Foskett, 2010). Moreover, it is frequently argued that shifts toward managerial governance and strategic internationalization are prerequisites for the development of world-class research universities (King, 2010; Marginson, 2017; Yonezawa & Shimmi, 2016).

Chapter 3 provided evidence for the relationship between managerial governance and the internationalization of institutional strategies based on perceptions of faculty members in Argentina, Canada, Lithuania, Portugal, and Taiwan; the analyses showed a significant relationship. Even though certain levels of managerial and collegial governance coexisted in higher education institutions in the case countries, institutional policies of internationalization, especially the existence of institutional strategies and incentives, were positively associated with managerial, rather than collegial, governance. The fact that Karram Stephenson, Pekşen, Reznik, Manatos, and Chen found similar relationships across five quite different systems has important implications for both scholarship and practice. They provide empirical evidence in support of the relationship between faculty perceptions of managerial governance and their perceptions of institutional practices supporting internationalization. Additional research in this area might focus on the relationships between managerial governance practices and specific initiatives and outcomes related to internationalization; is the relationship primarily between managerialism and perceived institutional supports for internationalization, or is the relationship deeper and associated with actual practices and outcomes?

Internationalization of and in the Academic Profession

Internationalization of the Academic Profession with Diverse Backgrounds

Socialization is an important component of the early career of academics as they transition into new roles and begin to develop plans for new initiatives. However, important differences in the structure of academic careers and pathways between systems mean that these initial experiences involve working within quite different

national career systems and arrangements (Finkelstein & Jones, 2019). Notably, early-career academics often have different experiences and perceptions of their profession in the rapidly changing environment of academia compared to senior or established colleagues, a phenomenon sometimes referred to as generational change (Marquina & Jones, 2015). In the context of internationalization, international experiences and the development of competencies in the early career period are seen as valuable given the importance placed on working within global research networks and international collaboration and partnerships. Therefore, in Chap. 4, Flander, Guzman, Schilter, Tuppo, and Wan analyzed the internationalization trends of early-career academics, focusing on their international training backgrounds and current academic activities of teaching, research, and external engagement compared with their senior colleagues in 16 case countries. The data were analyzed by categorizing countries as advanced, emerging European, and emerging non-European. Early-career academics in emerging countries were more likely to obtain doctoral degrees from universities outside of their countries. The greatest differences between senior and junior academics were found in emerging European countries, while more junior academics in non-emerging European countries trained in doctoral degree programs abroad than those in advanced and emerging European countries. Overall, juniors responded at lower rates on aspects of internationalization of teaching and research than seniors, while both groups reported similar rates of participation in external activities. The findings suggest important differences between junior and senior colleagues in terms of international doctoral training and academic activities, but also between country groups. The findings reinforce the importance of recognizing generational differences in experience and perceptions, and how these differences vary between distinct national and regional contexts.

Internationally mobile academics can be defined in various ways. In general, internationally mobile academics work in different countries, either different from where they were born or sometimes the country from which they obtained a passport or citizenship. Moreover, international academics are frequently expected to contribute to research excellence, university reputation, and new approaches to teaching and research, although there has been some debate on the significant differences between international and domestic academics. In this regard, Beerkens, Panova, and Vasari (Chap. 5) focused on internationally mobile academics and compared differences between domestic and international academics associated with academic excellence and international competitiveness. They found that international academics were more oriented toward research and less toward teaching, both in terms of preference and time spent. However, international academics were actively involved in research and other activities of teaching and administration. Their findings raise important questions on whether there are differences in how universities engage and support domestic and international academics, including whether there are differences between national contexts or in other key factors (such as in academic discipline or rank).

While the study presented in Chap. 5 defined international academic mobility in terms of citizenship, Chap. 6 focused on academics who obtained their doctoral education or postdoctoral experience in a country that is different than the country

where they are currently employed. This focus on international education or experience has received far less attention in the literature than more traditional definitions of international mobility in terms of citizenship. The authors analyzed differences in academic activities among internationally experienced academics by gender, discipline, and academic rank. Their findings based on internationally experienced academics reveal similarities with previous studies of the academic profession. For example, female academics are less internationally active than male academics (Aiston & Jung, 2015), and senior academics are more internationally collaborative and productive than juniors (Jung et al., 2014). Since the international experiences of academics are diversified in form and duration, Huang, Leisyte, Kuzhabekova, and Diogo provided insightful implications for comprehensive policy approaches to the internationalization of higher education to recruit academics who have an international background, not only by nationality but also by their experiences and education.

Recruiting international academics who are foreign citizens, are internationally educated, or have international experiences may be a good way to enhance internationalization at home. Celis, Seggie, and Azman contribute to this same discussion but in a quite different way by exploring the perceptional differences between academics who obtained doctoral degrees in the "Global North" compared with the "Global South" in Chile, Malaysia, and Turkey (Chap. 7). The authors used the classification of countries based on the perspective of core and semi-periphery. The results showed that academics who had doctoral degrees from core countries tended to collaborate more with international colleagues than academics who had degrees from semi-periphery countries. The academic culture, infrastructure, and funding mechanisms associated with the higher education systems where academics were educated and trained for their doctoral degrees can be quite different (Shin et al., 2014). Moreover, the findings from this chapter reinforce the conclusions of previous studies suggesting that an international doctoral degree is perceived as a strategic and efficient tool to collaborate on research by accessing international research networks, especially in developing countries (Eduan, 2019). This phenomenon is also related to the fact that academics in advanced higher education systems collaborate internationally more than academics in developing nations (Shin et al., 2013). However, the findings also point toward the continuing inequities between systems, including possible differences in the opportunities, prestige, and experience of academics with different educational backgrounds. Does the employment of academics with doctorates from core countries raise the level of internationalization within peripheral or semi-peripheral countries in terms of student outcomes? Does it contribute to real or perceived hierarchies of prestige based on educational background and related differences in international connections and relationships?

Diverse Factors Influencing the International Activities of Academics

Finkelstein and Sethi (2014) predicted that various factors influence internationalization at the individual, professional, organizational, and national levels. A country's characteristics, such as size, geographical location, and language, can have important implications for the internationalization of research activities. Chapters 8 and 9 discussed the internationalization of research activities and outcomes across systems while considering national/regional differences.

In Chap. 8, Kocar, Véliz, Geschwind, and Marshall explored the differences in internationalization of research across disciplines in 20 countries and regions. Aligning with previous studies (Heng et al., 2020; Kwiek, 2021), academics from (pure-) hard disciplines reported higher levels of international research activities than academics working in soft disciplines. Previous studies from the Changing Academic Profession (CAP) project noted the critical role discipline differences play in internationalization, including research activities and outcomes. The analyses from the CAP data showed that there were significant differences in international research collaboration and publication between hard (natural and medical) and soft disciplines (humanities and social sciences) (Rostan et al., 2014). The authors of Chap. 8 also found that academics in northern European and smaller European transition countries are more actively collaborating with international colleagues than those in large non-European and non-English-speaking countries. Therefore, this chapter contributed to extending the approaches to the internationalization of diverse aspects of research in terms of disciplinary differences, differences between countries, and differences integrated with discipline and country. The authors noted that understanding the more substantial differences between hard and soft disciplines within country contexts requires further in-depth studies to see whether there are special policies or reasons at the institutional and national levels. They also note the limitations of using traditional discipline classifications in the context of shifting epistemological and methodological boundaries.

Bégin-Caouette, Aarrevaara, Rose, and Arimoto investigated the relationship between international research collaboration practices and outcomes in five countries (Canada, Finland, Germany, and Japan) based on the theory of scientific and technical human capital (STHC) in Chap. 9. The findings suggested that collaboration practices and outcomes were correlated, although the correlation was not very strong. Moreover, various factors at different levels were associated with international research collaboration and outcomes. There were differences in international collaboration and research outcomes between male and female academics. Furthermore, senior academics were more likely to collaborate on international research activities, though the difference with junior academics was not necessarily reflected in international co-authored publications. However, even though the five countries have very different histories, languages and policies, the authors found that both collaboration practices and outcomes can be explained by common factors, suggesting that the internationalization of research may be a converging, global

phenomenon. These common factors included international education (foreign credential), their university's expectations for publishing in international journals, and international research funding. There were some country differences related to national, institutional, and individual factors. The paper makes a significant contribution to our understanding of the complex network of inter-influences of national, institutional, professional, and personal factors related to international research collaboration and outcomes.

Discussion and Conclusions: Challenges and Possibilities

Impacts of the Global Phenomenon on Internationalization and the Academic Profession

Each chapter in this volume discussed the changing contexts of internationalization and the academic profession in higher education in the case countries. The timing of the collection of data for the APIKS project means that the authors could not cover the recent, unexpected environmental changes due to the COVID-19 pandemic and shifting international relationships, such as Russia's attack on Ukraine, the political tension between the USA and China, and Brexit. The global COVID-19 pandemic led to dramatic shifts in international activity, both in terms of student and faculty mobility but also in terms of internationalization "at home." The impact of COVID-19 has been complex and multifaceted, including changes in academic lives and practices in higher education institutions (de Wit & Altbach, 2021). Faculty and student mobility dramatically decreased within and across countries, and most academic activities related to teaching and research have been carried out online. Scholars have noted an increasing emphasis on internationalization at home during the last 30 years (de Wit & Altbach, 2021), a trend that was undoubtedly reinforced by the pandemic. Strategies and approaches to enhance internationalization at home are becoming more critical for countries that are trying to internationalize in the context of current environmental shifts. Academics are asked to develop an international curriculum to address students' needs, meet the requirements of national or institutional quality assurance mechanisms, and increase teaching and learning outcomes (Knight, 2008; Sá & Sepra, 2020).

Furthermore, while the literature on the internationalization of higher education in recent decades has frequently been framed by an analysis of the neo-liberal pressures underscoring reforms, there is now considerable evidence that "government is back" as the state is reasserting its role in establishing the economic and social conditions for the "new normal." Given their core role within national research and innovation systems, universities are increasingly subject to, rather than isolated from, major shifts in government direction, including the re-emergence of more active and expansive government initiatives in response to international crises and global geo-political shifts. Will recent crises lead to major changes in the

relationships between universities and government? Will our understanding of internationalization shift in the context of what appears to be a rapidly changing global dynamic?

The re-emergence of "big government" may have important implications for higher education governance. Neoliberal ideas played a critical role in many national governance reforms designed to increase global competitiveness and financial efficiency (Austin & Jones, 2016). A greater emphasis on markets and new public management, and a pulling-back of direct government control, became key themes in many systems. However, as Gaus (1947) noted, public administration and policy systems are reshaped by catastrophe, and higher education governance and policy systems have been influenced by the COVID-19 crisis. The pernicious influences of COVID-19 have been far-reaching, including political, economic, cultural, and psychological dimensions. It has impacted student and faculty mobility in higher education, but it has also impacted higher education funding, the mental health of faculty, students, and staff, and illuminated systemic inequities within higher education. What are the implications of this catastrophe for the complex relationships between government and institutions of higher education? Will we simply return to governance arrangements that valorized neo-liberal ideals and markets over direct government control? Or will governments that have recently intervened in dramatic ways at a time of crisis assume a greater continuing role in the spirit of recovery and stabilization, including a greater role in the governance of higher education? Will the pandemic and recent geo-political shifts lead to new forms and approaches to higher education governance?

The assumptions and rationales underscoring internationalization may be shifting in the face of a new global politics involving elements of knowledge protectionism, the repositioning of the international dimension of higher education in the context of national research and innovation systems, shifting trade, and soft power relationships and alliances. These changes may signal major transformations in internationalization and the academic profession.

The Center-Peripheral Approach in The Comparative Study: Limitations or Alternatives

One of the challenges in comparative studies is to recognize or categorize countries or national systems appropriately. One of the approaches used in this volume was to categorize regions as advanced, emerging, and emerging non-European. Another approach was to apply center and periphery perspectives. Both approaches proved useful. For example, junior academics in emerging non-European countries tended to obtain their doctoral degree abroad, although the differences between juniors and seniors are relatively few compared to emerging European countries (Chap. 4). Moreover, international research collaboration in the non-European emerging countries tended to be the least internationalized (chap. 4). The results showed that

academics in peripheral countries must cope with difficulties and challenges to catch up with academics in advanced higher education systems (Zgaga, 2018). As the authors of Chap. 4 mentioned, various factors of history, language, cultural traditions, population, and economic status may influence and explain national variations.

In terms of the internationalization of research, the authors of Chap. 3 note differences among groups between European countries and non-European countries and within European countries. Non-European and non-English-speaking countries showed much lower international research and collaboration levels, and northern or smaller European countries had relatively highly developed international research, collaboration, and outcomes. Since academic communities are long established, large, and wealthy in the centers compared to their counterparts (Altbach, 2003), the results from this volume are often similar to the findings of previous studies.

The concept of internationalization of higher education needs to be considered beyond a Westernized and English-speaking paradigm (Jones & de Wit, 2014), but the broader contextual approach is still limited in terms of increasing our understanding of internationalization and the academic profession. Although the centers of learning tended to be leading research-oriented universities in the "North" (Altbach, 2004), the origin and destination countries have diversified in the global scientific community (Czaika & Orazbayev, 2018). Moreover, there are obvious differences between and within the center and periphery countries and diverse efforts to compare higher education systems with country size, economic status, language, cultural background, and geographic location. However, the categorizations are still significantly related to the center–periphery idea because developing countries have imported educational systems from the North (Altbach, 2003). Furthermore, while information regarding the conditions of the academic profession may not be positive and is limited, there are various contextual differences in higher education systems and countries. Chapters in this volume tried to provide contextual details related to the case countries and find similarities and differences between and within the groups to overcome the limitations of the theory. However, further studies on new approaches to categorizing countries beyond the center–periphery theory in internationalization and the academic profession are required. Such efforts can also contribute to expanding the conceptual background in internationalization research, which still tends to embrace binary classifications (e.g., center-periphery, global-local) more than contextual elements (Larsen, 2016).

Contextualizing Perceptions of Academics

The contributors to this volume provide diverse perspectives on internationalization and the academic profession. The APIKS project, involving data obtained from a common questionnaire administered in more than 20 countries, provides a unique opportunity to look at differences and common trends in the perceptions, experiences, and reported activities of academics related to internationalization. The

strengths of the project are its focus on the "shop floor" of academic work and the ability to engage in international comparative scholarship based on data obtained from a sample of academic staff located within different institutions, within different jurisdictional systems.

The challenge, however, is to analyze these data recognizing the dramatic differences in the contexts in which they work. All the contributors have been mindful of this challenge, either by using different categorizations of countries or systems, or by illuminating key and relevant system differences that may explain some findings. Our contributors have also analyzed key background variables such as citizenship, international experience, gender, and discipline and looked at differences across systems in terms of internationalization.

One of the methodological challenges is to explore ways of furthering the comparative analysis of the academic profession within the context of incredibly complex and distinctive institutions and systems. There are important differences in what a professor may observe and perceive in their day-to-day work compared with what one might observe if focusing on the broader experiences of the system and institution. One interesting example concerns faculty perceptions of the prevalence of international students when they respond to survey questions, compared with national data on student mobility (both incoming international students and outbound student mobility). International data on student mobility in some APIKS-participating countries is provided in Table 10.1. According to UNESCO data from 2019 (or the latest available data), the total number of inbound international students is more than 200,000 in both Canada and China, but the rates of inbound students are dramatically different (16.2 percent in Canada and 0.5 percent in China). However, academics may perceive that the number of inbound international students has grown because it has increased relative to their past experiences, while other academics may not perceive an increase at all because international students have always been part of their professional experience. Interpreting responses may be challenging without findings ways of contextualizing perceptions within local or national contexts. According to Gürüz (2008), major and emerging host countries, such as Canada, Germany, Japan, and Russia, show high inbound mobile student rates, although Table 10.1 indicates that outbound student rates were much lower for these countries in 2019. Moreover, European countries have relatively higher ratios of outbound and inbound students than other areas, while China, Kazakhstan, and Lithuania tend to have higher rates of outbound mobile students than inbound students.

To further illustrate the contextual differences between countries, the gross expenditure on research and development (GERD) in higher education from UNESCO Institute for Statistics and the Internationally Collaborative Publication (ICP) ratio based on the publications from Web of Science Core Collection are also included in Table 10.1. Research funding is one of the major critical factors for international and collaborative academic activities. The level of expenditure on research and development in higher education varies by country and regional context. Canada and the United States (within North America) and European countries invest much greater amounts (and percentages of their gross domestic product) in

Table 10.1 Inbound and Outbound Tertiary Student Mobility and Research Activities: APIKS Jurisdictions Included in the International Dataset

	Students Abroad (Outbound Rate)	Students Hosted (Inbound Rate)	GERD in HE (% of GDP)	Publication (ICP Rate)
Argentina	9,283 (0.3)	116,330 (3.5)	1,406,101 (0.14)	18,385 (46.0)
Canada	49,074 (2.3)	279,168 (16.2)	12,103,349 (0.65)	129,849 (56.3)
Chile	17,522 (1.4)	7,216 (0.6)	713,326 (0.16)	17,781 (64.1)
China	1,061,511 (2.3)	225,100 (0.5)	34,462,554 (0.16)	632,218 (26.7)
Estonia	3,626 (8.0)	5,043 (11.1)	300,654 (0.63)	3,497 (71.6)
Finland	11,364 (3.9)	23,794 (8.1)	1,892,788 (0.70)	22,340 (67.0)
Germany	112,445 (3.7)	333,233 (10.1)	25,064,866 (0.56)	184,705 (56.9)
Hong Kong	36,100 (12.1)	47,301 (16.2)	2,026,998 (0.44)	–
Japan	32,365 (0.8)	202,907 (5.2)	19,800,989 (0.38)	127,966 (34.0)
Kazakhstan	82,292 (13.0)	40,742 (5.5)	89,014 (0.02)	3,822 (61.7)
Korea (South)	101,493 (3.3)	98,857 (3.3)	8,096,731 (0.37)	92,240 (32.2)
Lithuania	10,463 (9.4)	5,697 (6.0)	339,722 (0.34)	4,614 (55.2)
Malaysia	59,144 (4.8)	81,953 (6.7)	3,938,044 (0.44)	25,209 (57.6)
Mexico	34,319 (0.7)	33,271 (0.7)	4,071,738 (0.16)	29,928 (43.3)
Portugal	20,633 (5.6)	35,755 (9.7)	1,996,555 (0.57)	30,311 (56.1)
Russia	48,160 (0.8)	282,922 (5.0)	4,016,227 (0.10)	76,126 (32.1)
Sweden	14,412 (3.3)	30,912 (7.2)	4,598,619 (0.84)	47,363 (68.8)
Turkey	47,628 (0.6)	154,505 (2.0)	7,294,891 (0.32)	63,224 (25.4)
Uganda	11,364 (3.9)	23,794 (8.1)	50,571 (0.07)	2,551 (84.2)

Data Source: UNESCO (2018, 2019), Web of Science (2020)

research and development in higher education, while other areas invest less, although the variation among those countries is large. There is a high correlation between the amount of gross domestic expenditure on research and experimental development (GERD) in higher education and the number of publications, the latter based on data extracted from the Web of Science, using the country of affiliation of authors. However, international collaborative publications tend to be higher in English-speaking and European countries, while Northeast Asian countries (China, Japan,

and Korea) and Russia have relatively lower rates of international collaborative publications.

Therefore, it is necessary to understand the findings in this volume as important contributions to the study of internationalization and the academic profession as a complex, multidimensional phenomenon. While many studies of internationalization have focused on student mobility and the student experience, the APIKS project has provided a unique opportunity to explore important questions from the perspective of academic staff, a perspective that is clearly important in almost every dimension of internationalization. However, it continues to be important to interpret these perceptions within local contexts. The fact that all the chapters in this volume involved studies undertaken by international research teams was an attempt to include multiple perspectives and recognized at least some of the contextual differences that need to be considered in comparative international research in higher education. Higher education systems in the case countries face common global challenges and are influenced by their own cultural and historical characteristics. Continuing to explore new methodological approaches and conceptual tools that will add additional depth to the interpretation and understanding of these types of comparative analyses is extremely important.

Policy Implications and Conclusions

The chapters in this volume provide several policy implications while recognizing the multidimensional nature of internationalization and the academic profession. First, the roles of prominent actors in internationalization in higher education should be reconsidered. In particular, the role of the government in internationalization is a key factor, and there are signals that the role of government may be shifting. Neoliberal ideas that decrease government roles and apply market principles are not guaranteed to work well in the "new normal." Chapters also highlight the importance of institution leaders and governance processes in terms of the development of strategic approaches, incentives, and support for internationalization. It is clear governments, institutions, and individual academics will need to adjust to shifting conditions to advance internationalization. Second, it is not enough to encourage the mobility of students and academics (and related metrics) for the internationalization of higher education. It is critical to understand how internationalization can be "at home" and explore various strategies and innovative approaches to further internationalization at the institutional and national levels. Moreover, as agents that play a central role in driving internationalization through their interactions with students, academics are key to the development of innovative initiatives and institutional change. Those making policy and implementation decisions must consider how individual academic efforts and institutional supports can be integrated into furthering the development of internationalized curricula and experiences on campus. Third, policies for academics recognizing their diverse backgrounds are needed to support their orientation and transition within academia and national innovation

systems. International academics, internationally trained academics, and junior academics are facing different challenges and experiences, and they need support and assistance to be successful.

The application of comparative perspectives in internationalization and the academic profession is a meaningful approach to studies in higher education. Issues in the academic profession and the internationalization of higher education have been studied based on the *Carnegie Foundation Survey of the Academic Profession* in 1992, the *Changing Academic Profession project* in 2007/08, and the Academic Profession in Knowledge-based Society 2017/18. Numerous excellent quantitative and qualitative studies on the academic profession based on projects with comparative perspectives have been published in distinguished journals and peer-reviewed books over the last three decades. Although there are variations among countries and higher education systems depending on national circumstances, history, culture, and tradition, academics share similarities in their academic activities and experiences related to internationalization as a global trend. Therefore, this volume contributed to arguments and discussions of internationalization and the academic profession within higher education from the perspectives of academics vis-à-vis the dynamics of national and global contexts.

References

Aarrevaara, T., Finkelstein, M., Jones, G. A., & Jung, J. (2021). *Universities in the knowledge society: The nexus of national systems of innovation and higher education*. Springer.

Aiston, S. J., & Jung, J. (2015). Women academics and research productivity: An international comparison. *Gender and Education, 27*(3), 205–220.

Altbach, P. G. (2003). *The Decline of the Guru*. Palgrave Macmillan.

Altbach, P. G. (2004). Globalisation and the university: Myths and realities in an unequal world. *Tertiary Education and Management, 10*, 3–25.

Austin, I., & Jones, G. A. (2016). *Governance of higher education: Global perspectives, theories and practices*. Routledge.

Barbaric, D., & Jones, G. A. (2016). International faculty in Canada: Recruitment and transition processes. In M. Yudkevich, P. Altbach, & L. Rumbley (Eds.), *International faculty in higher education: Comparative perspectives on recruitment, integration, and impact* (pp. 51–75). Routledge.

Burnett, S.-A., & Huisman, J. (2010). Universities' responses to globalization: The influence of organizational culture. *Journal of Studies in International Education, 14*(2), 117–142.

Czaika, M., & Orazbayev, S. (2018). The globalisation of scientific mobility, 1970–2014. *Applied Geography, 96*, 1–10.

de Wit, H., & Altbach, P. G. (2021). Internationalization in higher education: global trends and recommendations for its future. *Policy Reviews in Higher Education, 5*(1), 28–46.

Deardorff, D. K. (2006). The identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies in International Education, 10*, 241–266.

Eduan, W. (2019). Influence of study abroad factors on international research collaboration: evidence from higher education academics in sub-Saharan Africa. *Studies in Higher Education, 44*(4), 774–785.

Enders, J., de Boer, H., & Leišytė, L. (2009). New public management and the academic profession: The rationalisation of academic work revisited. In *The changing face of academic life* (pp. 36–57). Palgrave Macmillan.

Finkelstein, M. J., & Jones, G. A. (2019). *Professorial pathways: Academic careers in a global perspective*. Johns Hopkin University Press.

Finkelstein, M., & Sethi, W. (2014). Patterns of faculty internationalization: A predictive model. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes. Realities and prospects* (Vol. 10, pp. 237–257). The changing academy – the changing academic profession in international comparative perspective). Springer.

Gaus, J. M. (1947). The ecology of public administration. In R. J. Stillman II, (Ed.), *Public administration: Concepts and cases* (pp. 80–85). Wadsworth Cengage Learning.

Greenhotlz, J. (2000). Assessing cross-cultural competence in transnational education: The intercultural development inventory. *Higher Education in Europe, 25*(3), 411–416.

Gürüz, K. (2008). *Higher Education and International Student Mobility in the Global Knowledge Economy*. State University Of New York Press.

Heng, K., Hamid, M., & Khan, A. (2020). Factors influencing academics' research engagement and productivity: A developing countries perspective. *Issues in Educational Research, 30*(3), 965–987.

Horta, H., & Jung, J. (2014). Higher education research in Asia: an archipelago, two continents or merely atomization? *Higher Education, 68*(1), 117–134.

Huang, F., Finkelstein, M., & Rostan, M. (2014). *The internationalization of academy: Changes, realities and prospects*. Springer.

Jones, E., & H. de Wit. (2014). Globalized internationalization: Implications for policy and practice. *IIEnetworker* (Spring 2014): 28–29.

Jung, J., Kooij, R., & Teichler, U. (2014). Internationalization and the new generation of academics. In F. Huang, M. Finkelstein, & M. Rostan (Eds.), *The internationalization of the academy: Changes, realities and prospects* (pp. 207–236). Springer.

Jung, J., Jones, G. A., Finkelstein, M. J. & Aarrevaara, T. (2021). Comparing systems of research and innovation: Shifting contexts for higher education and the academic profession. In T. Aarrevaara, M. J. Finkelstein, G.A Jones. & J. Jung (eds.), *Universities and the knowledge society: The nexus of national systems of innovation and higher education* (pp. 415–428). Springer.

Kehm, B. M., & Teichler, U. (2007). Research on internationalization in higher education. *Journal of Studies in International Education, 11*(3–4), 260–273.

King, R. (2010). Policy internationalisation, national variety and governance: global models and network power in higher education states. *Higher Education, 60*(6), 583–594.

Knight, J. (2008). *Higher Education in Turmoil: The Changing World of Internationalization*. Sense Publishers.

Kwiek, M. (2021). What large-scale publication and citation data tell us about international research collaboration in Europe: changing national patterns in global contexts. *Studies in Higher Education, 46*(12), 2629–2649.

Larsen, M. (2016). *Internationalization of higher education: An analysis through spatial, network, and mobilities theories*. Palgrave Macmillan.

Leask, B. (2009). Using formal and informal curricula to improve interactions between home and international students. *Journal of Studies in International Education, 13*(2), 205–221.

Leask, B. (2015). *Internationalizing the curriculum*. Routledge.

Lee, J. J., & Stensaker, B. (2021). Research on internationalisation and globalisation in higher education—Reflections on historical paths, current perspectives and future possibilities. *European Journal of Education, 56*(2), 157–168.

Leišytė, L., & Rose, A.-L. (2016). The challenges of attracting and retaining academic talent. Central and Eastern European perspectives. *Journal of the European Higher Education Area, 4*, 61–82.

Maringe, F. & Foskett, N. (2010). *Globalization and internationalization in higher education: Theoretical, strategic and management perspectives*. Continuum International Publishing Group.
Marginson, S. (2017). The world-class multiversity: Global commonalities and national characteristics. *Frontiers of Education in China, 12*(2), 233–260.
Marquina, M., & Jones, G. A. (2015). Generational change and academic work: An introduction. *Studies in Higher Education, 40*(8), 1349–1353.
Pherali, T. J. (2012). Academic mobility, language, and cultural capital: The experience of transnational academics in British higher education institutions. *Journal of Studies in International Education, 16*(4), 313–333.
Rostan, M., Huang, F., & Finkelstein, M. (2014). The internationalization of the academy: Findings, open questions, and implications. In F. Huang, M. J. Finkelstein, & M. Rostan (Eds.), *The Internationalization of the Academy: Changes, Realities and Prospects* (pp. 259–280). Springer.
Sá, M. J., & Sepra, S. (2020). Cultural dimension in internationalization of the curriculum in higher education. *Education Sciences, 10*(12), 375.
Seeber, M., Cattaneo, M., Huisman, J., & Paleari, S. (2016). Why do higher education institutions internationalise? An investigation of the multilevel determinants of internationalisation rationales. *Higher Education, 72*(5), 685–702.
Shin, J. C., Lee, S. J., & Kim, Y. (2013). Research collaboration across higher education systems: maturity, language use, and regional differences. *Studies in Higher Education, 38*(3), 425–440.
Shin, J. C., Jung, J., Postiglione, G. A., & Azman, N. (2014). Research productivity of returnees from study abroad in Korea, Hong Kong, and Malaysia. *Minerva: A Review of Science, Learning and Policy, 52*(4), 467–487.
Soria, K. M., & Troisi, J. (2014). Internationalization at home alternatives to study abroad: Implication for students' development of global, international, and intercultural competencies. *Journal of Studies in International Education, 18*(3), 261–280.
Teichler, U. (2015). Academic mobility and migration: What we know and what we do not know. *European Review, 23*(S1), S6–S37.
UNESCO (2018). *Gross domestic expenditure on R & D (GERD) and percentages of GDP performed by Higher Education (in '000 current PPP$)* [Data set]. UNESCO Institute for Statistics. Retrieved 6 May 2022, from http://data.uis.unesco.org/#
UNESCO (2019). *Global Flow of Tertiary-Level Students* [Data set]. UNESCO Institute for Statistics. Retrieved 12 April 2022, from http://uis.unesco.org/en/uis-student-flow
Van der Wende, M. (2015). International Academic Mobility: Towards a Concentration of the Minds in Europe. *European Review, 23*, 70–88.
Web of Science (2020). *Web of science core collection* [Data set]. Clarivate. Retrieved 6 May 2022, from https://www.webofscience.com/wos/woscc/basic-search
Yonezawa, A., & Shimmi, Y. (2016). Transformation of university governance through internationalisation: Challenges for top universities and government policies in Japan. In *Matching visibility and performance* (pp. 101–118). Brill Sense.
Yudkevich, M., Altbach, P., & Rumbley, L. (Eds.). (2016). *International faculty in higher education: Comparative perspectives on recruitment, integration, and impact*. Routledge.
Zgaga, P. (2018). Autonomy and accountability in higher education, Eastern Europe. In P. Teixeira & J. Shin (Eds.), *Encyclopedia of international higher education systems and institutions*. Springer.

Yangson Kim is Associate Professor of Research Institute for Higher Education at Hiroshima University in Japan. Her research focuses on the academic profession, internationalization of higher education, research productivity and collaboration, institutional context and governance of higher education, and comparative higher education in Asia-Pacific countries. Her recent co-authored articles and book chapters include *Being Academic: How Junior Female Academics in*

Korea Survive in the Neoliberal Context of a Patriarchal Society (Higher Education, 2021), *Junior Female Academics: Experiences and Challenges* (Japan Documents, 2021), and *International Faculty Members in China, Japan, and Korea: Their Characteristics and the Challenges Facing Them* (Edward Elga, 2022). She had co-edited a special issue on *the Research and Teaching Nexus of Academics in the New Era* (Higher Education Forum, 2020).

Glen A. Jones is Professor and Director of the Centre for the Study of Canadian and International Higher Education, Ontario Institute for Studies in Education (OISE), University of Toronto. His research focuses on higher education governance, systems, policy and academic work. Recent co-edited or co-authored books include *Professorial Pathways: Academic Careers in a Global Perspective* (Johns Hopkins, 2019), *International Education as Public Policy in Canada* (McGill-Queen's, 2020), *Universities and the Knowledge Society: The Nexus of National Systems of Innovation and Higher Education* (Springer, 2021), and *University Governance in Canada: Navigating Complexity* (McGill-Queen's, 2022). He is a former dean of OISE, and he has received numerous awards for his research, including an honorary doctorate (University of Manitoba).

Alper Çalıkoğlu is a researcher in Turkey. His research interests include the internationalization of higher education, the academic profession, and higher education governance and management. His recent articles related to internationalization and the academic profession include Faculty international engagement: Examining rationales, strategies and barriers in institutional settings (with Jenny J. Lee and Hasan Arslan, *Journal of Studies in International Education*, 2022) and Changing patterns of international academic mobility: Experiences of Western-origin faculty members in Turkey (with Fatma Nevra Seggie, *Compare: A Journal of Comparative and Inter*national Education, 2021). Based on articles from the Academic Profession in the Knowledge-Based Society (APIKS) project, he has also co-edited a special issue on internationalization in the *Journal of Higher Education*, Turkey. He has also served as an administrative board member of the Association for Higher Education Studies (YÖÇAD) in Turkey.

Correction to: Early Career Academics and Internationalization

Alenka Flander, Pamela Guzmán, Carole Probst Schilter, Paula Tulppo, and Chang Da Wan

Correction to:
Chapter 4 in: A. Çalıkoğlu et al. (eds.),
***Internationalization and the Academic Profession*,**
The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24,
https://doi.org/10.1007/978-3-031-26995-0_4

Owing to an oversight, the original version of the book was inadvertently published without incorporating the part "Slovenia" in Figure 4.1 of Chapter 4. The concerned figure has been approved and corrected now.

The updated original version for this chapter can be found at
https://doi.org/10.1007/978-3-031-26995-0_4

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*,
The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0_11

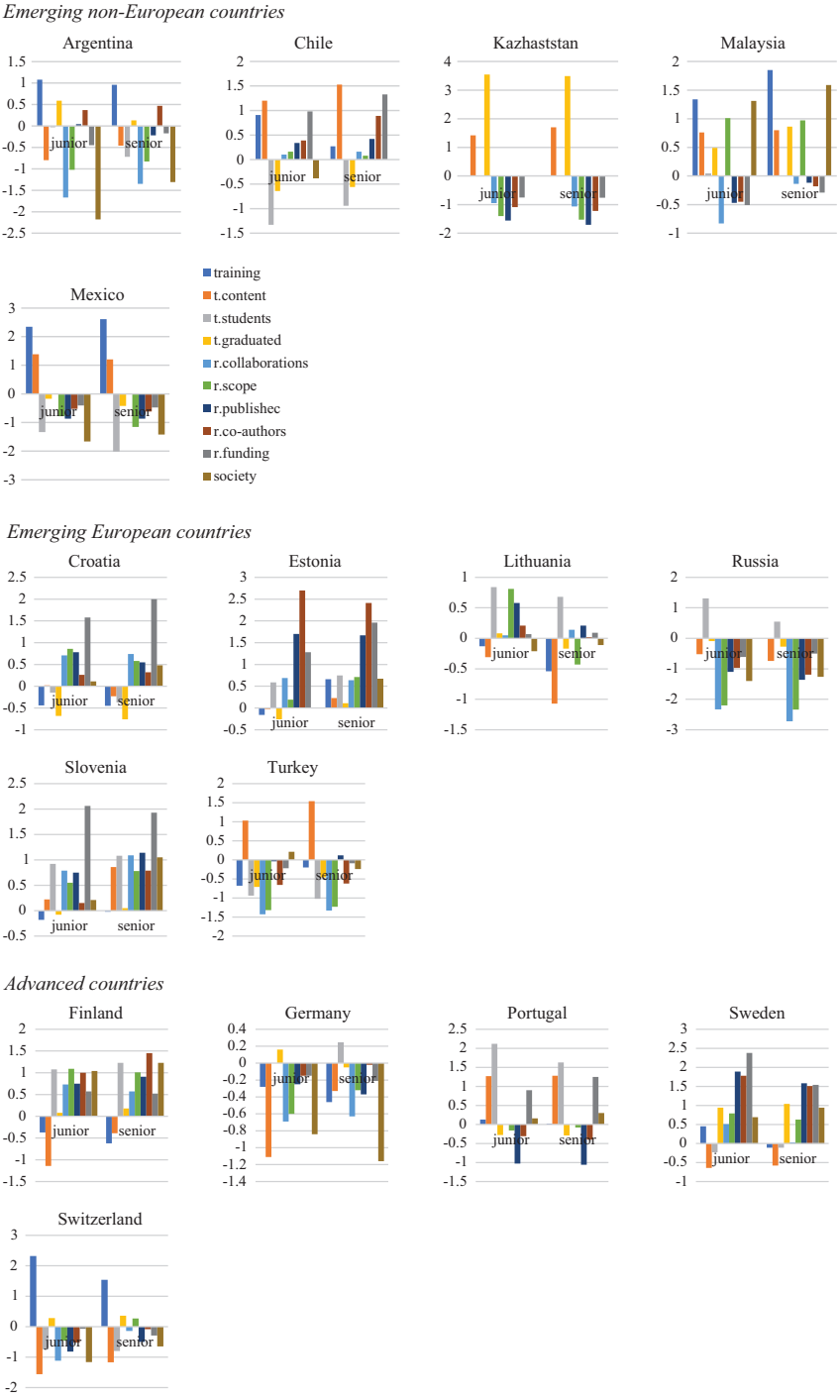


Fig. 4.1 Profiles of the countries in the international comparison

Index

A. Çalıkoğlu et al. (eds.), *Internationalization and the Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 24, https://doi.org/10.1007/978-3-031-26995-0