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Internationalisation in the Digital Transformation

A study on the strategies, drivers, priorities, and challenges of virtual internationalisation at German higher education institutions

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Executive Summary

In conducting a comparative analysis of two research projects on the internationalisation of higher education, this publication focuses on selected results of the 6th Global Survey on Internationalisation of Higher Education by the International Association of Universities (IAU) and the Internationalisation in the Digital Transformation: Strategies from German Higher Education Institutions (INDISTRA) project to gain insights into ▸ **virtual internationalisation (VI)** within German higher education institutions (▸ **HEIs**) .

The findings indicate significant shifts in the operations of HEIs due to digitalisation. Notably, the COVID-19 pandemic has intensified the focus on ▸ **internationalisation of the curriculum (IoC)** and ▸ **internationalisation at home (IaH)**, and ▸ **Blended Intensive Programs (BIPs)**, expanding access for students traditionally excluded from mobility pathways. While physical international student mobility remains relevant, the COVID-19 pandemic spurred a shift in mindset that recognises internationalisation beyond physical mobility. Even though the use of digital tools has decreased since the peak of the pandemic, digital formats remain vital for enhancing accessibility, inclusion, and sustainability in internationalisation. In addition, digitalisation has improved communication and strengthened international collaboration among HEIs, while being a synonym with competitive advantage, particularly in the context of the European University Alliances. One major transformation is the emergence of specialised roles dedicated to supporting VI processes, bringing to the spotlight the relevance of internal networks, as well as the changes in the work conditions of administrative staff resulting from the growing adoption of digital technologies.

Nonetheless, this study also underlines persistent challenges hindering the systematic adoption of ▸ **VI**. Unclear regulations and ▸ **data protection** issues impose considerable hurdles, chiefly for international partnerships. At the same time, financial challenges arise as HEIs leaders are compelled to align their goals with funding opportunities available (e.g., from the EU and DAAD)– generally competitive and, arguably, unequally distributed across the different types of HEIs. To address these and other challenges, the concluding chapter of this study offers recommendations for advancing VI, addressing key stakeholders, including HEIs, the German federal states (*Länder*), the German federal government, and the European Union. Key recommendations include adopting European standards such as the ▸ **European Student Card Initiative (ESCI)** and the ▸ **Erasmus Without Paper (EWP)**, developing a digital campus that integrates all educational processes, and establishing clear guidelines for internationalisation practices. Additionally, it encourages HEIs to promote virtual opportunities and recognise virtual learning outcomes. In turn, federal authorities should adapt regulations for virtual students, reassess student fees, and introduce a new 'international part-time student' status to facilitate access to courses. Furthermore, the provision of ongoing and reliable funding models by federal authorities is paramount to support digitalisation efforts, particularly by attracting and retaining qualified staff, and allowing for the pursuit of institutional long-term goals and autonomy.

In conclusion, this study provides insights into the evolving landscape of VI in German higher education, highlighting the need for sustainable funding and strategic measures to tackle regulatory challenges, support administrative staff development, and promote inclusive international opportunities. A comprehensive approach to integrating digitalisation with internationalisation strategies is essential for maximising their effectiveness. Furthermore, institutional support and committed leadership remains crucial to fostering openness to change, driving innovation, and empowering teams with the necessary resources to overcome barriers in adopting digital technologies.

1

Introduction: Research Goals, Study Design, and Methods

The digitally enhanced internationalisation of higher education is of high relevance in today's higher education world. It is discussed, promoted, and implemented in different forms and at times even criticised, but certainly not ignored anywhere in the world. The trend towards digitalisation in the administration of study courses is on the rise, with European and international standards increasingly being established. Notable initiatives such as the ▸ **European Student ID Card** (**ESCI**), the ▸ **Erasmus Without Paper** project, and the Erasmus+ App exemplify this shift. As these developments unfold, higher education institutions (▸ **HEIs**) are tasked with ensuring the interoperability of systems and software solutions. The European Student Card Initiative aims to facilitate digital management of all phases of international mobility, necessitating concrete steps towards realising a comprehensive digital campus.

To better understand current and future developments in the area of internationalisation and its transformation due to the increased use of digital tools, both research projects presented in this report, the *6th Global Survey of the International Association of Universities* and the *Internationalization in the Digital Transformation: Strategies of the German Higher Education Institutions* (INDISTRA) project conducted by the German Centre for Higher Education Research and Science Studies (DZHW) aim at providing insights into the complex phenomenon of internationalisation of HEIs. The two projects focus on the topic of internationalisation from the viewpoint of higher education institutions (▸ **HEIs**). In this study, we compare selected results from both.

Before providing a detailed explanation of the two projects and the structure of this study, it is essential to clarify some terminology. Since ▸ **virtual internationalisation** is a relatively new area within internationalisation research, many of the terms used in this report may be unfamiliar to some readers. To facilitate understanding, technical terms, definitions, constructs, and abbreviations are highlighted in ▸ **purple** throughout this study and elaborated upon in the glossary and list of abbreviations at the end of this report (Chapter 7).

This chapter is organised as follows: We begin by outlining this study's designs and methodologies of the two projects previously mentioned. Next, we clarify the comparative focus of the current study, followed by a detailed explanation of the overall structure of the research.

1.1 Survey of the International Association of Universities (IAU)

1.1.1 Goals and Research Question

Since 2003, the International Association of Universities (▸ **IAU**) has conducted global surveys on the internationalisation of higher education. In line with previous surveys, the 6th edition, conducted in 2023, aims to understand the current state of internationalisation and its recent changes and possible future development from an institutional perspective. The 6th IAU Global Survey provides invaluable information on the current state of internationalisation at a global level as well as insightful comparisons between public and private ▸ **HEIs** and among different regions of the world.

The goal of the 6th IAU Global Survey is to draw a holistic picture of the internationalisation of higher education around the world in a cross-sectional manner. The survey was conducted between January and June 2023 through an online questionnaire available to respondents in three languages (English, French, and Spanish), and responses from 722 HEIs from 110 countries and territories were collected. The answers were analysed during 2023, and the report was published at the beginning of 2024. The report is an open access electronic publication, which can be freely downloaded from the IAU website.

The questionnaire consisted of 66 close-ended questions of different types (e.g., multiple choice and checkboxes), and other than collecting data on the profile of the responding institutions, it investigated specific aspects of internationalisation divided into the seven sections listed below:

- A. Importance, benefits, and challenges to internationalisation;
- B. Internationalisation governance;
- C. Internationalisation of teaching and learning: activities;
- D. Internationalisation of teaching and learning: internationalisation of the curriculum at home;
- E. Internationalisation of research;
- F. Internationalisation and societal/community engagement;
- G. Emerging issues and the future of internationalisation.

All sections of the questionnaire were compulsory except section E, which was conditional based on the reply to a question on the nature of the institutions in terms of research focus: HEIs that identified themselves as 'Teaching-only institution (no research conducted at all)' were not required to reply to section E.

Internationalisation is a wide-reaching topic, and the 6th IAU Global Survey wished to cover all aspects of it; however, it could not go into great depth in all areas, which explains why the sections in the questionnaire differ in length (number of questions per section). It is for this reason that the 6th IAU Global Survey report should be considered as a starting point for further research. The present report, a result of the collaboration between IAU and DZHW, is one example of such research emerging from the 6th IAU Global Survey.

1.1.2 Methodological Design and Sample Description

The 6th IAU Global Survey followed an established methodology used in previous editions and especially for the 5th and 4th editions. The first step was to invite all partner organisations from the 5th IAU Global Survey to renew their partnership for the 6th edition. Out of those contacted, the *Agence Universitaire de la Francophonie* (AUF), NAFSA: the Association of International Educators, and the Belgian Academy for Research and Higher Education (ARES) agreed to renew the partnerships. Other organisations were contacted and decided to become partners in the survey; some of them even decided to become sponsoring partners. The full list of partner organisations is as follows:

Sponsoring partners:
- Agence Universitaire de la Francophonie (AUF);
- Association of Commonwealth Universities (ACU);
- Council of Europe (CoE);
- German Rectors' Conference (HRK);
- NAFSA: Association of International Educators;
- Qatar Foundation (QF);
- UNIMED – Mediterranean Universities Union;
- Unión de Universidades de América Latina y el Caribe (UDUAL).

Partners with in-kind contributions:
- Academy for research and higher education (ARES);
- Association of African Universities (AAU);
- Erasmus Student Network (ESN);
- European University Association (EUA);
- German Centre for Higher Education Research and Science Studies (DZHW);
- Global Student Forum (GSF);
- Inter-American Organization for Higher Education (OUI-IOHE);
- National Interuniversity Council of Argentina (CIN).

In addition, the Center for International Higher Education (CIHE) at Boston College and the Ontario Institute for Studies in Education (OISE) at the University of Toronto were partners in the survey in the framework of the Future of Internationalisation Partnership (FIP) Project, a three-year project funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), which began in May 2021.

Having secured the support of numerous partners, the second step was to establish the Advisory Committee of Experts. Six of the

twenty-one members of the 5th IAU Global Survey were invited to renew their engagement for the 6th IAU Global Survey; all replied positively. One representative per partner organisation was included in the Advisory Committee, which was complemented by eight new experts to make a total of thirty-two (six experts from the 5th edition, eight new experts, and eighteen representatives from partner organisations). The list of Advisory Committee members is available on the IAU website.[1] Terms of Reference for the Advisory Committee were developed and distributed to the members of the Advisory Committee.

The third step in the process was the preparation of the questionnaire. The starting point was the questionnaire of the 5th IAU Global Survey, which was submitted to the members of the Advisory Committee for suggestions on which questions to remove, add, and change. The questionnaire was modified, with new questions being added to reflect recent developments and others being retained to allow for an analysis of evolution over time. Based on comments from the Advisory Committee, a first draft of the questionnaire was prepared.

The fourth phase of the project was to invite a group of pilot institutions to provide feedback on the questionnaire, and 14 institutions from different regions accepted the invitation. The institutions were asked to comment on ease of completion, length, and appropriateness of questions. The feedback from the pilot institutions helped identify questions to be removed or modified. A new version of the questionnaire was then developed and distributed to the members of the Advisory Committee for validation. Once validated, the final questionnaire was sent to the relevant partners responsible for translation into French and Spanish.

The final versions of the questionnaire in English, French, and Spanish were created online using the Survey Monkey software and were used to collect data between 16 January and 16 June 2023. The survey was promoted via various communication channels of IAU and partners. No sampling selection was performed; the survey was distributed via email to all HEIs having an email address listed in IAU's World Higher Education Database – (WHED). The total number of HEIs listed in the WHED when the survey was launched was 20,903.

HEIs were asked to provide data related to the academic year that started in 2021. HEIs were also asked to carry out an internal consultation before submitting one reply only. This was to ensure that replies to the IAU Global Survey represented an institutional perspective and not a personal point of view.

Overall, HEIs adopted this approach; nonetheless, the survey did produce 123 double (in some cases, triple or even quadruple) replies from the same HEI out of the total number of 782 replies received. The survey underwent a cleaning process to remove these double/multiple replies, counterfeit responses (replies not originating from genuine HEIs), and incomplete responses.

The final number of institutions that took part in the survey is 722. The validated responses are those that were analysed in the survey report. Multiple rounds of consultations with the Advisory Committee contributed to the improvement and development of the final version of the overall survey report.

1 https://iau-aiu.net/IMG/pdf/annex_1_-_advisory_committee_-_iau_6th_global_survey.pdf

1.2 Internationalisation in the Digital Transformation: Strategies of German Higher Education Institutions (INDISTRA)

1.2.1 Project Duration and Funding

INDISTRA is a research project funded by the German Academic Exchange Service (DAAD) that was conducted by the DZHW between December 2021 and January 2025.

1.2.2 Goals and Research Question

▸ Digitalisation is driving profound changes in structures and processes within higher education institutions, with internationalisation being no exception to its influence. Digitalisation can open new possibilities for international student mobility, higher education collaboration, and curriculum internationalisation. Additionally, it can also provide students with international experience on campus, while virtual course formats can make classes available independent of time and physical location (Bruhn-Zass, 2021; Buchmüller et al., 2021; Caniglia et al., 2018; Chang & Gomes, 2022; Clauss et al., 2019; Cordova et al., 2021; O'Dowd, 2022; Q. Yang et al., 2022). Digitalisation makes it possible to increase the efficiency and quality of existing processes, and central issues such as the organisation of academic programmes, higher education teaching, and the administration of student and academic mobility can be fundamentally rethought due to digitalisation (Berg & Ferreira Santos, 2024). The corresponding structural adjustments also affect the area of internationalisation of higher education. Before the upheavals brought about by the COVID-19 pandemic, the opportunities offered by digitalisation for internationalisation in higher education were only used hesitantly. Currently, there is a significant gap in understanding how the substantial surge in digitalisation driven by the pandemic has affected and will continue to shape the internationalisation strategies of public higher education institutions in Germany.

The research agenda of the INDISTRA project focuses on the question of how internationalisation strategies and their implementation are evolving through the increased use of digital technologies in teaching and learning, administration, collaboration, and decision-making processes. It examines what goals, opportunities, and risks higher education institutions associate with digitalisation in this context.

1.2.3 Sample Selection

The INDISTRA part of this study is based on the analysis of 24 semi-structured expert interviews with heads of international offices (▸ IOs) of public German HEIs. Originally, 63 HEIs were contacted, of which 27 accepted the invitation for an interview and 24 HEIs finally participated in the expert interviews (Table 1). The 24 German HEIs (eight technical universities, eight universities, and eight universities of applied sciences) were selected based on their size and state of digitalisation, as well as internationalisation. Size was based on the number of enrolled students (above and below 20,000 enrolled students). The state of ▸ digitalisation (advanced and newcomer) was based on participation in networks, training, and programmes and the existence of digitalisation strategies. The state of internationalisation (advanced and newcomer) was based on the number of international students and staff, the existence of an internationalisation strategy, as well as participation in networks, training, and programmes (Table 2).

Aiming at a diverse regional distribution, the 24 HEIs included in this analysis are based in 11 different German states (*Länder*). At each HEI, a virtual semi-structured interview was conducted with the head of the international office. The interview guidelines covered topics such as the influence of the COVID-19 pandemic; digitalisation of administration, leadership, teaching, learning, and international cooperations; and hopes and risks associated with virtual internationalisation. One interview was conducted and analysed in German; all other interviews were conducted in English.

TABLE 1 Overview of contacted higher education institutions and selected sample

	No.	%
Contacted HEIs	63	
Accepted interview requests	27	42.9
Declined interview requests	9	14.3
No reply to interview request	27	42.9
Conducted expert interviews	24	100
Interviews sought	24	
Interviews achieved	24	100

TABLE 2 Sample selection criteria and final sample

HEI type and size	Digitalisation		Internationalisation	
	Advanced	Newcomer	Advanced	Newcomer
University (large)	U1-1	U1-2	U1-3	U1-4
University (small)	U2-1	U2-2	U2-3	U2-4
Technical University (large)	TU1-1	TU1-2	TU1-3	TU1-4
Technical University (small)	TU2-1	TU2-2	TU2-3	TU2-4
University of Applied Sciences (large)	UAS1-1	UAS1-2	UAS1-3	UAS1-4
University of Applied Sciences (small)	UAS2-1	UAS2-2	UAS2-3	UAS2-4

Categorisation of higher education institutions according to type of institutions, size of the institutions (in student numbers), and degree of involvement in the field of digitalisation and internationalisation.

An informed consent form was signed by the interview partners. We used the F4X tool for automated transcription. The transcripts were then proofread and compared to the recordings to ensure quality and accuracy.

1.2.4 Data Analysis

A thematic analysis (Miles, Huberman & Saldaña, 2014; Braun & Clarke, 2006) of the strategic documents and interview data was conducted, and the software MaxQDA was used for the analysis.

In the first cycle of coding, we developed a provisional coding scheme (deductive coding) based on the INDISTRA research questions and findings from our previous investigations (scoping review and content analysis of strategic document (see Chapter 3). This served as an outline for structural coding, focusing on the topics 'Actors and Networks (Who)'; 'Relevance and Risks (Why)'; 'Implementation (How)'; and 'Future Development: Plans, Wishes, Risks (What's next)'. To avoid restricting our data to our initial framework, the provisional coding scheme evolved as new inductive codes were identified and progressively incorporated. Definitions of the codes and categories were either pre-established or drafted along the inductive coding process, and the definitions were recorded in memos. Any difficulties were discussed among the three project members (project coordinator, PhD student, and student assistant) involved in the coding process, ensuring a uniform understanding and consistent application of the codes to enhance intercoder reliability.

In the second cycle (pattern coding), after merging the individually coded MaxQDA files into a single dataset, we connected the codes into meaningful threads, grouping them under fewer themes and categories, based on recurring topics, similarities, and differences across participants' reports. At this stage, definitions were reviewed and refined, particularly in cases where inaccuracies in the selection of coded segments were found.

For the study at hand, we concentrated on the categories aligned with the IAU questionnaire that could offer complementary insights into virtual internationalisation. For example, the IAU question no. 44 on the 'Role of COVID-19 on the changes in importance in virtual internationalisation opportunities' was connected to categories such as 'COVID-19 impact' and 'changes in international student mobility'. Similarly, questions 13 and 14 of the IAU questionnaire on 'key internal and external drivers of internationalisation', respectively, were examined considering the category 'leadership/decision making' and the sub-categories 'internal sources of influence', 'external sources of influence', 'who is involved in decision making', and 'changes in decision-making processes in virtual internationalisation'.

By coding the data according to the INDISTRA research questions prior to examining the IAU survey topics, we ensured a comprehensive understanding of the interview data. This method facilitated the establishment of significant connections and fostered a more nuanced interpretation between the two datasets. Moreover, it allowed for a more targeted analysis, considering that the extensive interview materials we gathered encompassed topics that extended beyond those covered in the IAU survey.

As part of the analysis, the themes identified in the INDISTRA interviews were aligned with selected IAU survey questions that could benefit from additional insights, complementary explanations, or alternative perspectives provided by the interview material. Analytic memos, forming the foundation of the INDISTRA results section and chapters six and seven of this report, documented common threads and highlighted key extracts that effectively encapsulated the core ideas within each category. These memos also established connections with the IAU survey and contextualised the findings against the backdrop of existing literature on the topic.

1.2.5 Limitations of this Study's Design

Both internationalisation and ▸ **digitalisation** are broad and complex processes that span multiple stakeholder networks at different levels and organisational units. To explore the state of virtual internationalisation strategies in German HEIs, the INDISTRA project conducted expert interviews with heads of international offices at German HEIs. This, however, presents certain limitations. First, given the importance of individual departments, faculties, and even individual staff members for both ▸ **comprehensive internationalisation** and digitalisation, conducting multi-perspective case studies could provide a deeper understanding of multi-level and multi-stakeholder dynamics. Additionally, since the current analysis only accounts for public German HEIs, future studies could benefit from extending the sample to public and private HEIs for a more comprehensive understanding of both processes across diverse types of higher education institutions.

1.3 Focus of Comparison

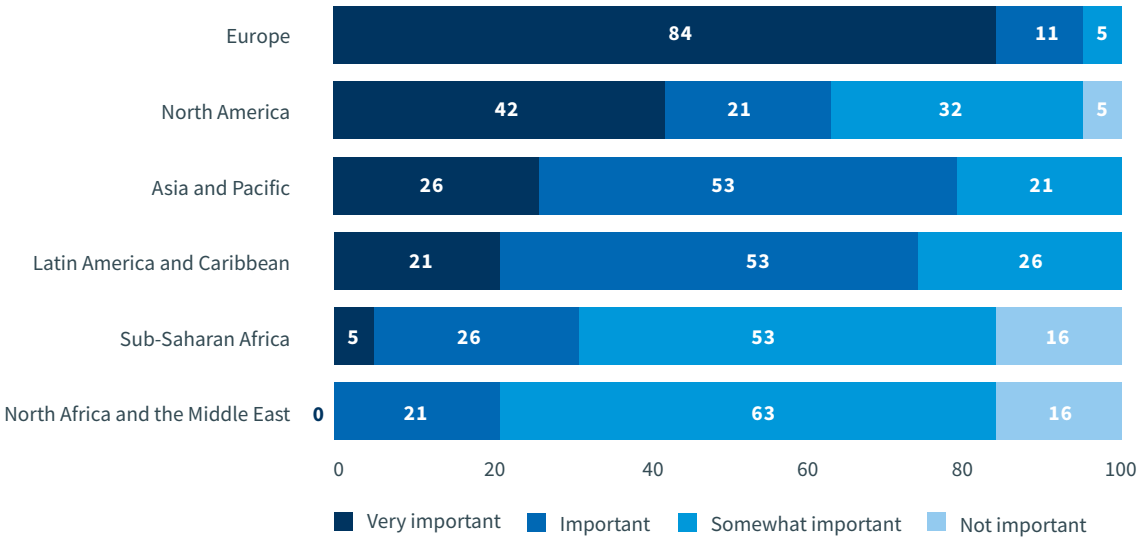
The INDISTRA results presented in this study concentrate on aspects that are comparable to related questions in the quantitative Global IAU Survey. Similarly, the focused analysis of the IAU data from the 6th Global Survey addresses only selected questions concerning internationalisation, including strategic approaches to ▸ **VI**, internal governance of these strategies within higher education institutions, key internal and external drivers of internationalisation and ▸ **VI**, priorities related to both, challenges faced, and shifts in collaboration and networks among higher education institutions. The comparison specifically emphasises the impact of digitalisation on internationalisation rather than internationalisation itself.

The data presented in this study are unique to this study and cannot be found in the report of the 6th Global IAU Survey (Marinoni & Pina Cardona, 2024), but they can be compared to its results (e.g., for other regions of the world). Our intention is to focus on results for German HEIs while delving deeper into those topics of the IAU survey that cover aspects of ▸ VI, following Bruhn-Zass (2021; 2023). Europe (without Germany) was chosen as a reference category, since both INDISTRA expert interviews and IAU survey results show that (the rest of) Europe is the most important reference category for German HEIs regarding (further) institutional cooperation (Fig. 1). In terms of priority of regions, both European and German HEIs clearly consider Europe as the most important region (91% and 84% of HEIs consider Europe very important, respectively) (Fig. 1). Likewise, the experts interviewed in the INDISTRA project often refer to European measures and initiatives such as ERASMUS+, Erasmus Without Paper, and European Universities alliances and to European partners for joint and ▸ **double degree programmes**.

Thus, the IAU data for Germany and Europe were completely reanalysed for this study. In a first step, the data were separately analysed just for German HEIs and Germany had to be calculated out of the European sample. Since the INDISTRA project focuses on public German higher education institutions, the IAU survey data for Germany and Europe were analysed just for the public HEIs even though the original sample of the 6th IAU Global Survey contains data of both public and private institutions.

While the IAU data and analyses offer a quantitative overview, the INDISTRA project materials provide a more in-depth exploration of the relationships between the topics and items addressed in the survey questions. For example, the IAU survey includes questions about collaborations and institutional partnerships that inquire about changes in the number of an institution's international partnerships over recent years. In the expert interviews conducted as part of INDISTRA, it was possible not only to determine whether or not the number of partnerships increased, decreased, or remained stable

FIGURE 1 **Geographic priorities for internationalisation of German HEIs** (in per cent)
Question 25: If yes, what is the level of priority of the following regions for your institution?(One answer per row)



but also to provide insights into changes in quality and identify if certain partnerships have been more significantly impacted than others (section 4.4). Consequently, although both projects were developed and conducted in parallel, their results can be analysed in a way that compares and contrasts broader developments in internationalisation with the more specific context of virtual internationalisation.

1.4 Structure of this Study

This introductory part is followed by a summary of a scoping review of international literature on virtual internationalisation, which will serve as a reference point for understanding the developments within German higher education institutions. Following this, we present the key results of a content analysis of the internationalisation and digitalisation strategies of German higher education institutions. This part is a condensed presentation of the results published in Berg and Ferreira Santos (forthcoming), where the results of the content analysis are also triangulated with the expert interviews. The results chapter provides an in-depth examination of the findings, comparing and contrasting the results of the IAU data analysed for this study and the interview material of the INDISTRA project, leading into a core results and discussion section that connects our results to the insights gleaned from the scoping review. Furthermore, we will offer recommendations aimed at the higher education institutions, federal states (*Länder*), federal government, and European Union. Finally, this study will conclude with overall conclusions and reflections on the implications of our findings. A glossary and a comprehensive list of references are also included to assist readers in navigating the terminology and sources cited throughout this study.

2

An Overview of International Scientific Literature on Virtual Internationalisation

This chapter builds on a scoping review conducted at the preliminary stages of the INDISTRA research project (Ferreira Santos, 2023). The review corpus included 45 scientific journal articles and conference papers from an initial selection of 648 sources, providing an overview of current research on COVID-19-driven digitalisation and its systematic integration into the internationalisation strategies of HEIs across different regions (Ferreira Santos, 2023). With the primary aim being to set the context for the subsequent empirical study on German higher education, the review mapped the current state of research, identified knowledge gaps, and connected existing debates with the related German scientific literature.

The ▸ **digital transformation** encompasses 'all digital processes necessary to achieve a change process that enables HEIs to successfully leverage the use of digital technologies' (Kopp et al., 2019, p. 1449). Debates surrounding the impact of the ▸ **digital transformation** on higher education are not new (Bayne, 2015; Kergel et al., 2018; Selwyn, 2014). According to the Global Education Monitoring Report (UNESCO, 2024), information and communication technology has been applied to education for the past 40 years and, to some extent, all countries have invested in the use of digital technology in education. However, this gained significant momentum in the wake of the COVID-19 pandemic. Challenges posed by mobility restrictions during the COVID-19 pandemic compelled HEIs into a rapid and massive adoption of information and communication technology (ICT), leading to significant shifts in internationalisation discourses (Buschkamp & Seidenschnur, 2023) and practices (Sziegat, 2022; Zawacki-Richter, 2021).

This rapid adaptation contradicts the common perception of universities as slow-moving organisations when it comes to adapting to changes (Sherwood, 2021). Even if ill-equipped and lacking the necessary planning (Zawacki-Richter, 2021), HEIs had to quickly rethink long-standing practices and purposes and advance alternative forms of internationalisation to continue their operations in a virtual environment (Chang & Gomes, 2022; IAU, 2023; Mussina et al., 2022; Rizvi, 2020). It is not surprising that some say that digitalisation 'saved the day' (Chang & Gomes, 2022, p. 120). Despite the evident impacts of the COVID-19 pandemic on internationalisation strategies and implementation, intentional strategic change was not always brought about (Huang et al., 2022). As a result, it remains somewhat unclear to which extent HEIs have systematically integrated digitalisation into their broader internationalisation strategies (Bedenlier & Stöter, 2022; Zawacki Richter, 2021).

This condensed literature review examines COVID-19-driven digitalisation and its integration into HEI internationalisation strategies, focusing on teaching, learning, cooperation, support structures, and leadership processes. We understand ▸ **virtual internationalisation (VI)** as using ▸ **information and communication technology (ICT)** to support cooperation and partnership, leadership and decision making, teaching and learning, and administration in international higher education (Bruhn-Zass, 2021; 2023). These dimensions derive from the components of the ▸ **comprehensive internationalisation (CI)** model advanced by Brajković and Helms (2017), which Bruhn-Zass (2021) applied to (▸ **VI**). This literature reviewed suggests a shift appears to be underway, where HEIs are moving from an emergency response to a phase where lessons from the COVID-19 pandemic are being used to develop new, socially impactful models of internationalisation.

2.1 Teaching and Learning

In the international literature analysed, there is wide agreement that internalisation should be taken as an institution-wide approach (Ciubancan et al., 2021; Ciurea, 2020; Fan et al., 2021; Jacobs et al., 2021; Kobzhev et al., 2020; Mussina et al., 2022; Wimpenny et al., 2022; Woicolesco et al., 2022; Zawacki-Richter, 2021). Aspects most prevalently mentioned in the literature are '▸ **comprehensive virtual internationalisation**', '▸ **internationalisation at home (IaH)**', '▸ **internationalisation of the curriculum (IoC)**', '▸ **virtual mobility**' and '▸ **emergency remote learning**', '▸ **competence acquisition**',

'inclusion', and '▸ **service to society**'. Teaching and learning activities empowered by ▸ **ICT** are generally addressed in conjunction with collaboration processes (Ferreira Santos, 2023). Such processes are often enacted through ▸ **collaborative online international learning – COIL** (also referred to as virtual collaborative learning – VCL) (Altmann et al., 2019; Buchmüller et al., 2021; Clauss et al., 2019; Guimarães & Finardi, 2021; Jacobs et al., 2021; Kolm et al., 2021). Digitally assisted instruction gained prominence in the context of the COVID-19-driven emergency in the form of remote learning, while prompting reflections about challenges and opportunities associated with the use of digital technologies in international higher education (Chang & Gomes, 2022; Hurria, 2021; Minaeva & Taradina, 2022; Mussina et al., 2022; Rizvi, 2020; Zawacki-Richter, 2021).

Beelen and Jones (2015) described ▸ **internationalisation at home** (**IaH**) as 'the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments' (Beelen & Jones, 2015, p. 69); the concepts of '▸ **IaH**' and ▸ **internationalisation of the curriculum** (**IoC**) are often seen in association. While ▸ **IoC** entails a broader, all-encompassing institutional strategy to infuse comparative perspectives into institutions' values and practices – which may include physical mobility programmes or transnational collaborations – IaH essentially pursues the same goals within the home environment and targets all students (Beelen & Jones, 2017, p. 1). This interest is evident in claims that IaH and IoC have promoted greater access, inclusion, and content co-creation (Fan et al., 2021), fostering sustainable internationalisation in the Global South (Woicolesco et al., 2022) and decolonial approaches to teaching and learning (Jacobs et al., 2021; Guimarães & Finardi, 2021; Phùng & Phan, 2021; Huang et al., 2022). In this vein, authors maintain that ▸ **COIL** can bring about other ways of knowing and act as a Third Space, meaning shared environment for mutual exchange and negotiation among diverse participants (Buchmüller et al., 2021; Caniglia et al., 2018; Wimpenny et al., 2022).

There has been extensive debate about the potential for ▸ **ICT** to foster the inclusion of individuals, institutions, languages, and diverse knowledge pathways in internationalisation practices. For instance, COIL activities can lead to a more equitable and inclusive model of internationalisation, insofar as it expands access to international experiences for students and staff regardless of financial endowments, time availability, geographical location, disabilities (Bruhn-Zass, 2021; Ciurea, 2020; Huang et al., 2022; Josefsson et al., 2022), or political constraints (Ciubancan et al., 2021; Kobzhev et al., 2020; Liu & Gao, 2022). Some authors stress that aside from providing for academic qualifications, ▸ **HEI**s should tap into ▸ **MOOC**-based ▸ **micro-credentials** to support non-traditional students and employees in need of flexible and affordable pathways for skills training and lifelong learning opportunities (Hines & Dockiao, 2021; Kanwar & Carr, 2020; Lazarou & Trifan, 2018). On the part of the institutions, integrating ▸ **ICT** can significantly ease the impact of limited funding availability (Hurria, 2021; Rizvi, 2020) and legal and administrative bottlenecks (Clauss et al., 2019).

The COVID-19 crisis increased demands for greater social engagement of HEIs and fuelled the discussion about universities' Third Mission (Kanwar & Carr, 2020; Perrotta, 2021; Stolze et al., 2021). HEIs are expected to produce an impact beyond the academic sphere by engaging with the wider community to craft solutions to societal issues, such as those stemming from geopolitical tensions (Huang et al., 2022; Liu & Gao, 2022) and climate emergency (Guimarães & Finardi, 2021; Jack & Glover, 2021; Liu & Gao, 2022).Thus, part of VI efforts involve taking action towards the achievement of the ▸ **Sustainable Development Goals of the United Nations** (Jack & Glover, 2021; Josefsson et al., 2022; Pedersen et al., 2020; Woicolesco et al., 2022). This is in line with the conceptualisation of higher education governance by Jungbauer-Gans et al. (2023), who suggest adding values-based governance to the model of higher education governance, as social values are becoming important drivers of higher education innovation and policy.

Mastering the complexities of the digital era requires students and staff to acquire certain ▸ **knowledge, skills, and attitudes**. In the international literature on the topic, the following competences believed to be furthered by digital means were identified: intercultural and global competences (Bruhn-Zass, 2021; Buchmüller et al., 2021; Fan et al., 2021; Korotkova et al., 2021; Ndubuisi & Slotta, 2021); collaborative competences (Altmann et al., 2019; Clauss et al., 2019; Kolm et al., 2021; Stolze et al., 2021); professional competences (Kanwar & Carr, 2020; Ndubuisi & Slotta, 2021); ▸ **digital competences** (Ciurea, 2020; Guimarães & Finardi, 2021; Josefsson et al., 2022; Wimpenny et al., 2022); soft skills (Altmann et al., 2019; Clauss et al., 2019); language skills (Altmann et al., 2019; Bruhn-Zass, 2021; Gezici et al., 2021; Jantassova et al., 2021); citizenship awareness (Caniglia et al., 2018; Fan et al., 2021; Guimarães & Finardi, 2021); environmental awareness (Caniglia et al., 2018; Jack & Glover, 2021); economic awareness (Kobzhev et al., 2020); cultural self-confidence (Liu, 2019); communication (Korotkova et al., 2021); and media literacy (Ciurea, 2020).

2.2 Cooperation Processes

Cooperation processes are widely discussed in connection with online learning and its implementation through ▸ **COIL** and/or ▸ **MOOCs** (Altmann et al., 2019; Bruhn-Zass, 2021; Buchmüller et al., 2021; Caniglia et al., 2018; Clauss et al., 2019; Cordova et al., 2021; Fan et al., 2021; Gezici et al., 2021; Guimarães & Finardi, 2021). Topics addressed include universities' Third Mission (Kanwar & Carr, 2020; Perrotta, 2021; Stolze et al., 2021); commitment to sustainability (Caniglia et al., 2017, 2018; Jack & Glover, 2021); competence acquisition (Altmann et al., 2019; Buchmüller et al., 2021; Ndubuisi & Slotta, 2021); and content co-creation (Fan et al., 2021; Stolze et al., 2021).

Another topic widely discussed in the literature on the topic is partnerships involving ▸ **HEIs**, industry, government, and civil society as part of joint efforts to build community engagement, foster innovative solutions for societal issues, and realise universities' Third Mission (Buchmüller et al., 2021; Kanwar & Carr, 2020; Pedersen et al., 2020; Perrotta, 2021; Stolze et al., 2021). Two studies (Hines & Dockiao, 2021; Kanwar & Carr, 2020) propose that universities engage in international partnerships to explore the niche of MOOC-based ▸ **micro-credentials**.

2.3 Support Structures

A central issue regarding the use of digital infrastructures to support internationalisation is the allocation of resources. As a resource-intensive endeavour, ▸ **VI** demands investments in time, human, and financial capital (Clauss et al., 2019; Kobzhev et al., 2020) to leverage ▸ **ICT** structures and digital connectivity (Bruhn-Zass, 2021; Caniglia et al., 2017; Djakona et al., 2021); ensure cost-effectiveness (Kobzhev et al., 2020); and safeguard transparency and build trust among stakeholders (Djakona et al., 2021). Effective ▸ **VI** strategies use ▸ **ICT** to support the professional development of administrative and academic staff (Clauss et al., 2019; Hurria, 2021; Jantassova et al., 2021; Korotkova et al., 2021), and considerable attention is given to digital teaching competences that are seen as key to advancing pedagogical innovation (Bruhn-Zass, 2021; Ciurea, 2020; Hurria, 2021; Josefsson et al., 2022; Lazareva et al., 2022; Zawacki-Richter, 2021).

Administrative processes can also largely benefit from the use of digital infrastructures. Among recognized benefits, ICT has the potential to optimise administrative services by enhancing efficiency, scalability, data security, transparency, and system interoperability (Bedenlier & Stöter, 2022; Brienza, 2022; Clauss et al., 2019) and guiding data-driven decision making (Alshammari, 2023; Kopp et al., 2019; Sherwood, 2021). Studies report on a range of student support services made available through ICT, such as online applications (Djakona et al., 2021); enrolment procedures; virtual graduation ceremonies; access to online library resources; communication with faculty members and peers (Kobzhev et al., 2020); online examinations (e-assessment) (Ciurea, 2020; 2022; Mussina et al., 2022; Zawacki-Richter, 2021); and student advice and training to facilitate integration within the host

institutions (Bruhn-Zass, 2021; Djakona et al., 2021; Minaeva & Taradina, 2022). In addition, ICT tools (e.g., big data, artificial intelligence, and cloud computing) have become an essential to advance internationalisation marketing strategies, informing decisions regarding institutional branding, prospective market niches (Djakona et al., 2021), and student recruitment processes (Ciurea, 2020; Kobzhev et al., 2020; Mussina et al., 2022).

2.4 Regulatory Frameworks

Regulatory frameworks related to ▸ VI have received only scant attention among the literature analysed in the scoping review (Ferreira Santos, 2023) and in the literature chosen for this condensed review. Only one source deals with the issue of quality assurance, where authors introduce guidelines for attaining, assessing, and recognising ▸ virtual mobility skills of students and faculty members (Buchem et al., 2018). Credit transfer is only marginally discussed by authors who acknowledge that more agile (Kobzhev et al., 2020; Mussina et al., 2022) and 'student-friendly' procedures for credit transfer can be attained with the use of ▸ ICT tools, such as blockchain technologies (Djakona et al., 2021). The ▸ UNESCO Global Convention on the Recognition of Qualifications, conceived in 2019, illustrates such developments (Djakona et al., 2021). Curiously, none of the studies reviewed is devoted to the issue of ▸ data protection.[2] At most, authors note the need for regulatory frameworks to safeguard the 'right to information self-determination' and 'protection of personal sphere' (Mussina et al., 2022, p. 47).

2.5 Leadership

The literature reviewed acknowledges leadership as key to implementing comprehensive strategies (Bruhn-Zass, 2021; Caniglia et al., 2017; Jacobs et al., 2021; Jantassova et al., 2021; Stolze et al., 2021). However, it only receives peripheral attention, with no studies addressing leadership as a central topic. One study conducted in Kazakhstan mentions how an analytics dashboard can provide indicators to assist decision-making processes (Jantassova et al., 2021). Generally, studies support that leadership is vital for driving a joint vision, fostering innovation, and maintaining sustainable relationships with stakeholders (Caniglia et al., 2017; Jacobs et al., 2021; Stolze et al., 2021), while also ensuring adequate conditions and resources for staff involved in ▸ VI (Bruhn-Zass, 2021).

While the importance of leadership in driving organisational change and innovation is widely recognised, the reviewed sources do not adequately explore the impact of digitalisation on decision making or how it might shift power dynamics within and across HEIs. However, the frequent mention of ▸ COIL initiatives, aimed at promoting ▸ IaH and ▸ IoC, suggests a growing prominence of academic leadership in this context. Beelen and Jones (2015) previously highlighted how changes in internationalisation strategies can either facilitate or hinder faculty involvement. They recommended prioritising learning outcomes over administrative concerns and empowering teachers to take leadership roles, particularly in the context of ▸ IaH.

2.6 Summary and Key Findings

In the international context, it is agreed that the inclusion of ▸ VI has become a necessity for ▸ HEIs, justified on the grounds of cost-efficiency, inclusivity, accessibility, flexibility, and environmental sustainability (Chang & Gomes, 2022; Ciubancan et al., 2021; Woicolesco et al., 2022). These discussions are reminiscent of authors who suggested that the COVID-19 pandemic would reshape internationalisation objectives by prioritising intercultural learning, research, and outcomes over physical mobility (Hudzik, 2020). In addition, more inclusive and equitable internationalisation approaches guided by the principles of IaH and IoC (de Wit & Altbach, 2021) are envisioned in the reviewed literature. Even though widely perceived as a

2 Even though it is a major topic for administrative personnel working in international offices, as our data presented in Chapter 4 demonstrate.

necessity, ▸ **VI** is viewed with scepticism (Hines & Dockiao, 2021; Liu, 2019; Phùng & Phan, 2021; Zawacki-Richter, 2021), and some authors claim that it cannot replace traditional physical mobility (Chang & Gomes, 2022; Liu & Gao, 2022). This contradicts O'Dowd (2021), who is critical about the comparison of virtual and physical mobility, as these two different learning experiences can be complementary but not mutually exclusive. The issue of equity and IaH is also controversial, with some arguing that IaH is relegated to those who cannot afford physical mobility (Habib, 2022; Phùng & Phan, 2021).

Kergel et al. (2018) believe that the digital turn in ▸ **HE** requires institutions to strengthen ▸ **data protection** and security mechanisms and provide training and support to promote ▸ **digital literacy** among students and staff. Considering the risks of ubiquitous contact with the virtual environment (Ciurea, 2020), the importance of digital citizenship (Guimarães & Finardi, 2021), and the informational self-determination (Mussina et al., 2022), addressing ▸ **digital competences** should not be viewed as a minor issue. Studies looking at support structures point out that not enough attention is paid to the role of ▸ **ICT** in supporting 'the underlying processes that enable universities to function', such as staff training and development, pedagogical innovation, student support services, marketing, communication, and budget allocation (Kergel et al., 2018; Kobzhev et al., 2020, p. 81; Liu & Gao, 2022). The examination of funding structures to support ▸ **VI** is conspicuously absent from the literature reviewed, possibly overshadowed by arguments about the perceived affordability of digitally supported teaching (O'Dowd, 2021). In this context, the German Council of Science and Humanities (2018) advocates adequate funding for digital infrastructures and expresses concerns about project-based funding models that hinder long-term planning and sustainability of internationalisation efforts. Therefore, in addition to a commitment to implementation, securing adequate funding is crucial to making these initiatives a success (Brennan et al., 2021). The studies acknowledged the role of leadership in change and innovation but lacked insights on digitalisation's impact on decision making or power dynamics in ▸ **HEIs** (Ferreira Santos, 2023). However, recurring ▸ **COIL** initiatives for IaH and IoC suggest academics are central to advancing digital offerings. Despite the call for institution-wide strategies, most of the studies reviewed refer to initiatives implemented at the faculty level, with some exceptions noted in the works of Buchem et al. (2018), Ciurea (2020), Fan et al. (2021), Jacobs et al. (2021), Jantassova et al. (2021), Mussina et al. (2022), and Wimpenny et al. (2022).

Comprehensive ▸ **VI** strategies are not yet common practice, and a gap remains between their perceived importance and practical application. Overall, the scientific literature on the topic of comprehensive ▸ **VI** tends to be largely normative, predominantly focused on what is desirable, rather than on concrete solutions for institutional implementation. However, research is now moving from an emergency response mode and towards assembling the lessons learned from the COVID-19 pandemic with efforts to develop guiding concepts and socially impactful models of internationalisation (Ferreira Santos, 2023).

3

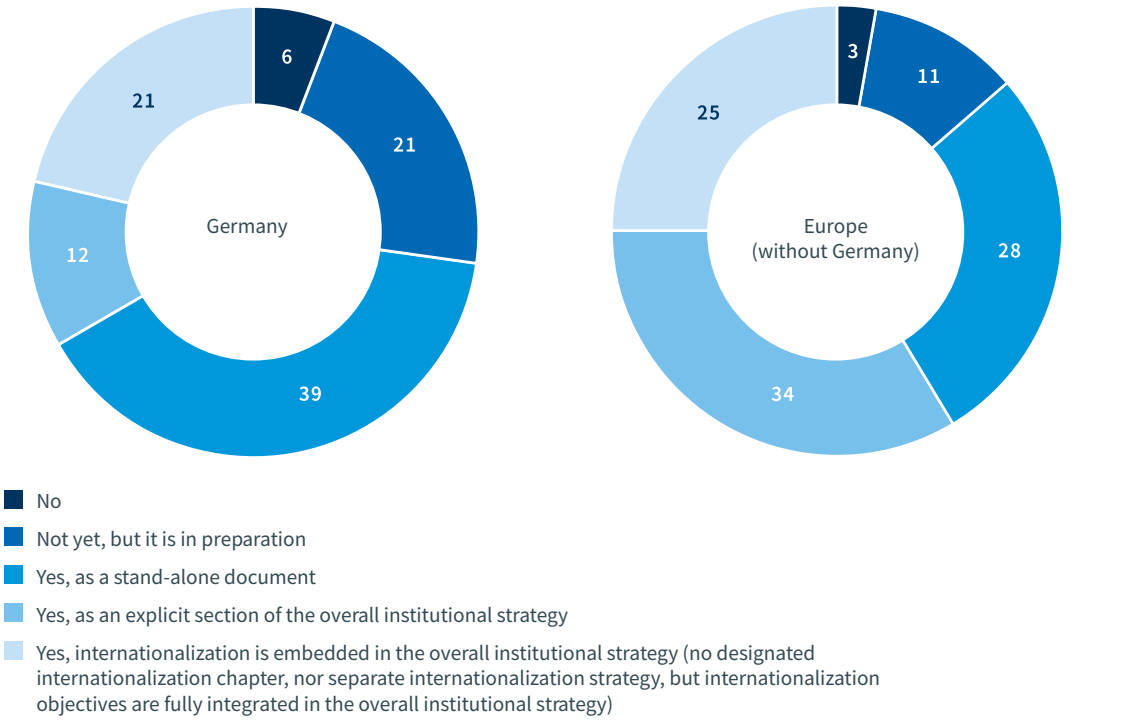
Format and Content of Internationalisation Strategies of German HEIs

In this chapter, we present the data from the IAU survey addressing the presence and content of formal policies or strategies for internationalisation. By presenting the relevant data for Germany alongside that of other European countries, we offer a quantitative overview of this aspect. Following this, we delve into the content of the internationalisation strategies for German HEIs, contrasting our findings with international literature on the topic as referenced in Chapter 2. It is essential to emphasise that the selected quotes from strategy documents presented in this chapter are not connected to our interview sample discussed in Chapter 1; instead, these results are presented in Chapter 4. This chapter aims to briefly highlight the broad themes that emerge in internationalisation strategies of German HEIs, particularly concerning digitalised or ▸ **virtual internationalisation**.

3.1 Formal Status and Objectives of Internationalisation Strategies

A formal institutional policy/strategy for internationalisation is common in Germany (73% of HEIs have one) and even more in other parts of Europe (86%). Europe without Germany has a much higher percentage of ▸ **HEI**s, indicating internationalisation as an explicit section of the overall institutional strategy (34%) compared to Germany (12%). In contrast, Germany shows greater presence of a stand-alone documents specifically dedicated to internationalisation (39% vs. 28% in Europe). Nonetheless, the percentage of ▸ **HEI**s embedding internationalisation in the overall institutional strategy is similar in Germany and the rest of Europe (21% and 25%, respectively) (Fig. 3.1).

FIGURE 3.1 Presence of a formal institutional policy/strategy for internationalisation Germany (in per cent)
Question 20: Does your institution have a formal policy/strategy for internationalization? (Please select only one)



In terms of the status of a formal policy for internationalisation, Germany and the rest of Europe show similar results, with minor differences: At the European level, almost half of the respondents (49%) stated that their institutions' policy/strategy or plan has been recently revised, while in Germany, this indicator is somewhat lower (42%). On the contrary, the percentage of ▸ HEIs whose policy/strategy is currently under revision is somewhat higher in Germany (29%) than in Europe other than Germany (21%) (Fig. 3.2).

Both in Germany and in the rest of Europe, the internationalisation policy/strategy, provided one exists, is institution wide. Most faculties, schools, and departments at German ▸ HEIs (54%) have developed their own internationalisation policies/strategies, while at the European level, they have done so only at 38% of HEIs. Targets and benchmarks to be reached are defined in the internationalisation policy/strategy at the majority of HEIs both in Europe and in Germany, even if they are more frequently defined in Europe (76%) than in Germany (67%) (Fig. 3.3). Almost all European HEIs (91%) have established dedicated offices or teams to oversee effective implementation of the policy/strategy. While in Germany the presence of an office or team is common, they are not yet established at all institutions (71%). A monitoring framework is also present at the majority of HEIs both in Europe and in Germany but more so in Europe (71% vs. 63%). Almost half of HEIs in Europe (48%) have allocated specific budgetary provisions for the implementation of their policy/strategy, while this is true only for roughly a third of HEIs in Germany (29%). An international dimension is included in other institutional policies/strategies at the vast majority of HEIs both in Europe (84%) and in Germany (88%). The involvement of students (student organisations and/or student representatives) is more present in Europe (63%) than in Germany (50%). Finally, both in Europe and in Germany, institutional policies for internationalisation are in line with national policies (in countries that have a national policy for internationalisation) (Fig. 3.3).

FIGURE 3.2 Status of a formal policy/strategy or plan for internationalisation (in per cent)
Question 21: If a formal policy, strategy or plan for internationalization has been elaborated, what is its current status? (Please select only one)

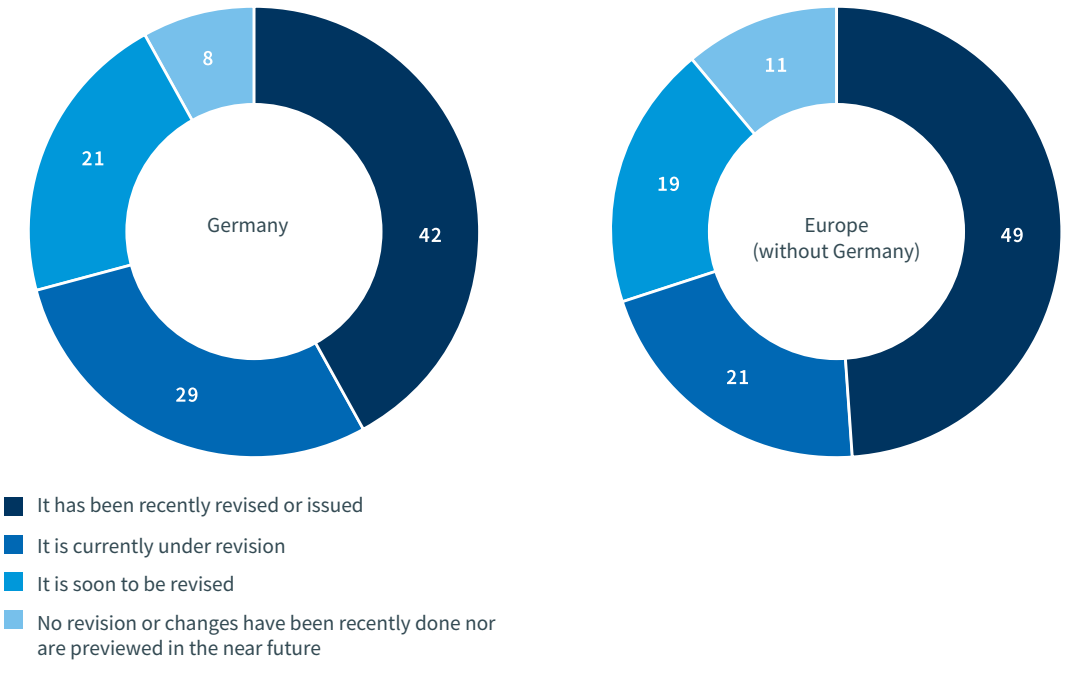
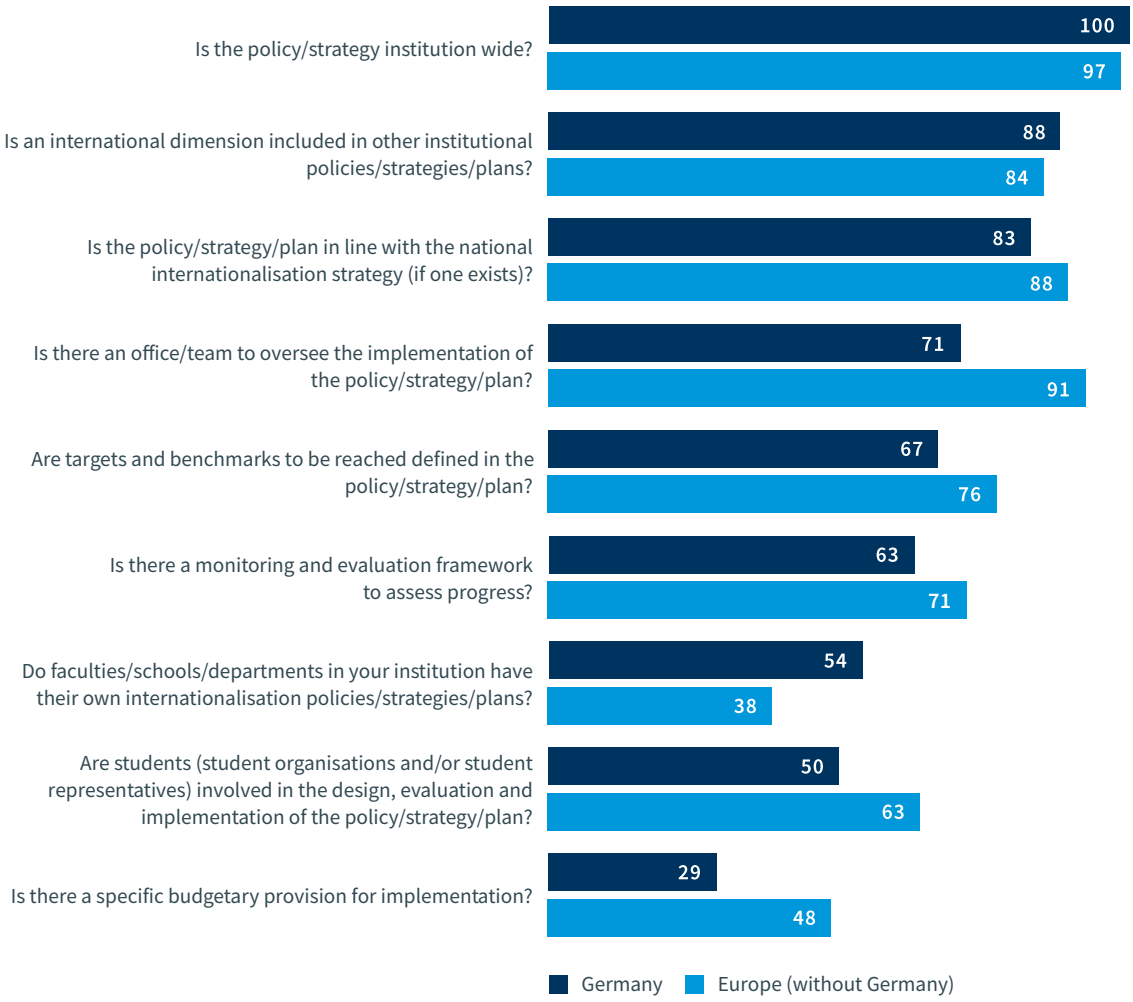


FIGURE 3.3 Internationalisation policy/strategy and activities (in per cent)
Question 23: Please answer the following questions related to your institution's internationalisation policy/strategy and activities. (One answer per row)



Overall, these results show an internationalisation that is well developed both in Germany and in the rest of Europe. However, in Germany, some progress is still to be achieved in terms of establishing offices or teams to oversee effective implementation of the policy/strategy, the definition of targets and benchmarks to be reached, and the creation of monitoring frameworks. Particularly worrying is the fact that only 29% of HEIs in Germany have a dedicated budget for internationalisation, unless funding for internationalisation activities is coming from different sources. To conclude on a positive note, HEIs in Germany are more advanced in terms of establishing internationalisation policies/strategies at faculties, schools, and departments (Fig. 3.3).

3.2 Content Analysis of Internationalisation Strategies

To explore the nature of internationalisation and digitalisation strategies on a strategic level, the INDISTRA project conducted a document analysis (see Chapter 1 on project description and project goals and also Berg and Ferreira Santos, 2024). The document analysis focused on internationalisation strategies and the internationalisation sections of ▸ **HEI**s' development plans. A total of 133 documents were analysed using MAXQDA software. To identify the key objectives and factors influencing the implementation of ▸ **VI** in German HE, a coding scheme was developed, covering the following topics: Actors and Networks (Who); Relevance and Risks (Why); Implementation (How); and Future Development: Plans, Wishes, and Risks (What's next), along with additional ad hoc codes. Axial coding was used to categorize codes, concentrating on 'Relevance and Risks (Why)' and 'Implementation (How)' (Mey & Mruck, 2009; Saldaña, 2021). Codes were grouped to create categories (e.g., 'student services' and 'efficiency'), and these were discussed comparatively among team members to enhance intercoder reliability. These categories were linked and differentiated to separate motivations for digitalisation from factors shaping ▸ **VI** implementation. Finally, the categories were aligned with Jungbauer-Gans et al.'s (2023) framework of HE governance and contextualised with the existing literature on the topic.

Regarding the objectives, the content analysis of the internationalisation strategies showed that virtual internationalisation in German higher education is guided by the following objectives: a) commitment to social responsibility; b) commitment to equity, diversity, and inclusion; c) enhancement of competitiveness and collaboration; and d) efficiency of information management and communication processes. Further, its implementation is shaped by a) stakeholder expectations; b) resource availability and allocation; and c) (inefficient) digital infrastructures (Berg & Ferreira Santos, 2024).

3.2.1 Social Responsibility

The ▸ **HEI**s recognise and address the goal of assuming social responsibility in their internationalisation strategies. 'Modern challenges in this area include the pressing issues of climate neutrality and sustainability, digitalisation and participation, and responsible co-existence in society and with the natural environment' (Bauhaus Uni Weimar Strategy Document). Digitalisation has introduced this objective into the international higher education landscape, and it is seen as an opportunity for further inclusive solutions. Digital offers are used to complement traditional internationalisation formats, either by facilitating ▸ **internationalisation at home** (Beelen & Jones, 2015) or by serving as a teaser or pipeline for actual mobility (Lazarou & Trifan, 2018; J. Lee et al., 2022). This is consistent with O'Dowd (2022), who argues that digital offers should be discussed in terms of their potential to complement traditional formats, rather than substitutes or in opposition to each other.

In response to expectations in ▸ **HEI**s to tackle the climate crisis, the strategies emphasise a 'green' development and the integration of more environmentally friendly internationalisation practices, such as reducing business travel. In addition, digital offers are expected to broaden participation in internationalisation. They can help to provide an international experience for students who are unable to go abroad and could motivate previously underrepresented groups, such as refugee students, to participate in international higher education (Castaño Muñoz, J. C., Colucci, E., Smidt, H., 2018; Drolia et al., 2022). This commitment is in line with a broader trend observed in the related literature, particularly post-COVID-19, which highlights an increase in stakeholder expectations for ▸ **HEI**s to engage in social and cultural issues beyond academia (Brennan et al., 2021; Huang et al., 2022; Liu & Gao, 2022; Wimpenny et al., 2022). Brandenburg's concept of the Internationalisation of Higher Education for Society (IHES) aims in the same direction, stating that universities must 'restore their social contract with society and take responsibility for it' (Brandenburg, 2020, p. 12).

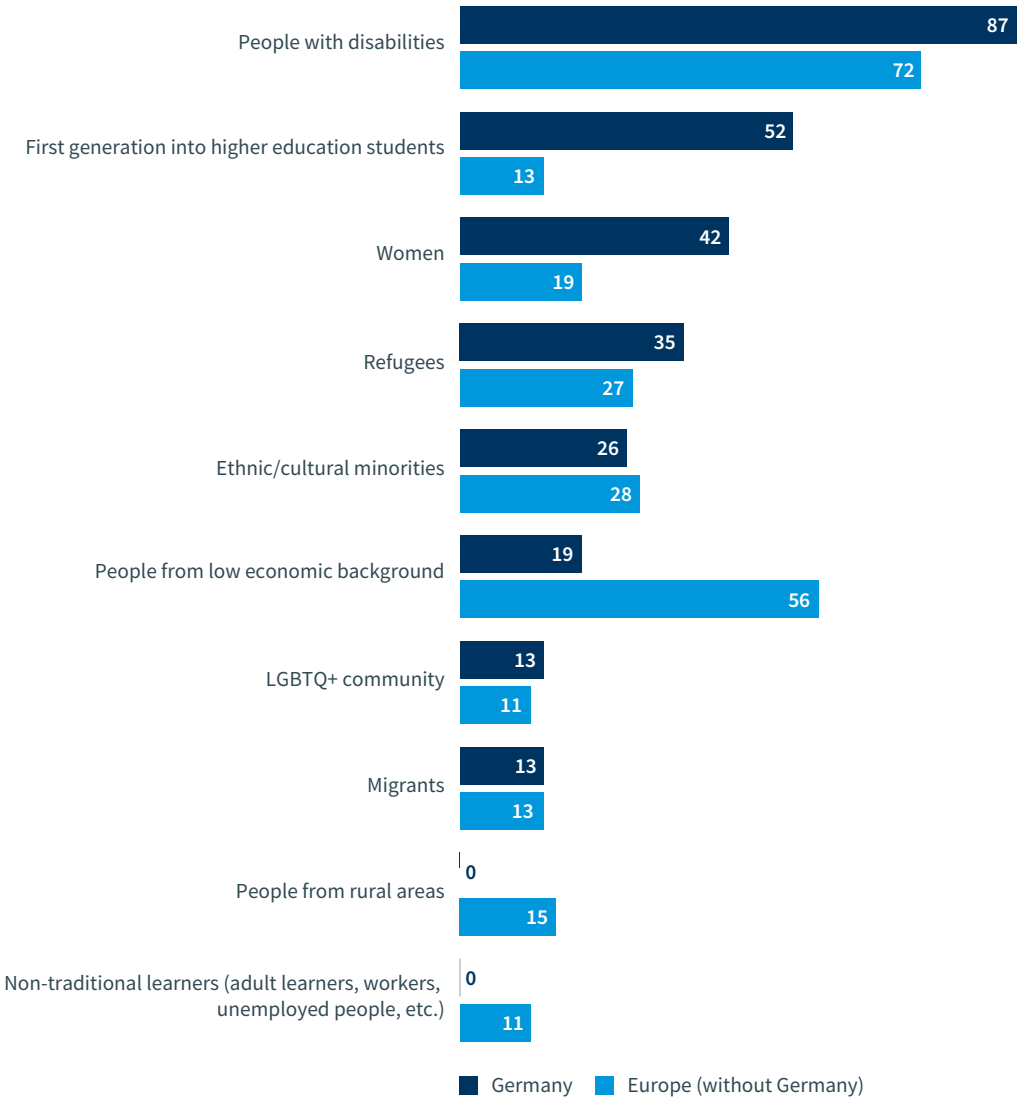
3.2.2 Equity, Diversity, and Inclusion in Internationalisation Strategies

The strategies of German ▸ HEIs emphasise initiatives to promote diversity and inclusion (Bruhn-Zass, 2021; Huang et al, 2022; Josefsson et al, 2022; Kobzhev et al, 2020; Liu & Gao, 2022; Woicolesco et al, 2022) as well as environmentally sustainable approaches to virtual internationalisation (Ahel & Lingenau, 2020). This commitment of German HEIs to equity, diversity, and inclusion is also confirmed by the results of the 6th IAU Global Survey.

Almost all German ▸ HEIs that replied to the IAU survey consider diversity, equity, and inclusion in their internationalisation policy/strategy and related activities (94%). This result is even higher than the one for the rest of Europe (86%). In Europe other than Germany, and even more so in Germany, the priority target group for inclusion is people with disabilities, selected by 87% of HEIs (72% in Europe). However, unlike the rest of Europe, first-generation higher education students are also considered a priority target group at the majority of ▸ HEIs in Germany (52%), while only 13% of European HEIs consider this group a priority. On the contrary, people from low economic backgrounds, who are considered a priority target group at the majority of ▸ HEIs in Europe (56%), are not considered as such in Germany; only 19% of German ▸ HEIs considered them a priority target group (Figs. 3.4 and 3.5).

FIGURE 3.4 Content of internationalisation strategies (in per cent)
Question 59: Do internationalisation policy/strategy and related activities at your institution take into account diversity, equity, and inclusion?

FIGURE 3.5 **Priority target groups for equity and inclusion** (in per cent)
Question 60: If yes, who are the priority target groups for equity and inclusion? (Please choose a maximum of three.)



3.2.3 Competition and Collaboration

The internationalisation strategies of universities are directly aimed at the 'increasing competition for the best minds and ideas and attract top researchers as well as talented, promising, and competent students' (Paderborn University Strategy Document), prestigious collaborations, and resources (Chan, 2004, p. 35). The pursuit of competitive advantages is closely linked to marketing strategies aimed at strengthening the online presence and visibility of HEIs 'as an attractive science location' (Paderborn University Strategy Document).

"Successful research needs international partners for transnational research topics, for the regular exchange of current results, for cooperation based on the division of labour, for the generation of synergies, and for the acquisition of third-party funding for joint research projects. The Köln University wants to be permanently perceived as a globally leading research university and uses adequate analogue and digital measures for this purpose."
Köln University Strategy Document

In all strategies, easier communication and the standardised exchange of information with strategic partners are cited as the main benefits of ▸ **ICT**. Virtual internationalisation is perceived as both a cooperation and a competitive objective, and the interactions between these seemingly contradictory dynamics are evident (Berg & Ferreira Santos, 2024). This convergence is also evident in the terminology found in contemporary scholarship, such as coopetition (Nyemba et al., 2021); competitive advantage (Chan, 2004); and collaborative advantage (Gunn, 2020), which, put simply, summarise the idea that ▸ **HEI**s collaborate to compete (Chan, 2004). Nevertheless, there are ongoing concerns about the 'global industry' and the continuing risks associated with market-driven approaches to internationalisation, which pose a threat to collaboration as a fundamental value for internationalisation (IAU, 2012).

HEIs' focus on competitiveness also extends to their objectives for students, which is reflected in the aim to improve their competitive advantage in the labour market. Through a 'glocal' (global + local) approach to internationalisation (Caniglia et al., 2018; Jacobs et al., 2021), HEIs aim to improve the employability of their students and their integration into a global labour market (Ciurea, 2020; Dehtjare et al., 2022), without losing sight of their potential to contribute to regional development.

> *"The international activities of TH Köln should enable students and doctoral candidates from Germany and abroad to position themselves successfully on the regional, national, and international labour markets and make a sustainable contribution to internationalisation in Cologne and the metropolitan region."*
> *TH Köln Strategy Document*

3.2.4 Knowledge and Process Management

Another goal of virtual internationalisation is to optimise administrative processes (IAU, 2023). Easier digital communication can impact decision-making processes and increase transparency by providing information and best practices and building relationships with stakeholders (Esteve-Mon et al., 2023). Digital communication can also support data-driven decision making in relation to data management and sharing and resource allocation (Sherwood, 2021); staff training and development; student support services and recruitment (Ferreira Santos, 2023; Bruhn-Zass, 2021; Djakona et al., 2021; Korotkova et al., 2021); and teaching methods (Alshammari, 2023). Overall, information sharing, decision making, and administration can become much more time-efficient if the necessary infrastructure and ▸ **digital competences** are well maintained, which in turn requires personnel, resources, and time (Berg & Ferreira Santos, 2025).

In addition, ▸ **ICT** should improve services for students by offering different formats for communicating with them. This includes information for incoming and outgoing students, such as virtual pre-arrival meetings, pre-mobility networking sessions, and better access to information on course schedules and recognition procedures. Finally, as mentioned above, they are designed to provide international experiences for all students, including those who are unable to participate in physical mobility.

3.2.5 Stakeholder Expectations, Resources, and Inefficient Digital Infrastructures

This aspect touches on expectations, regulations, provision of third-party funding, and general quality of IT infrastructures. There is an expectation from network partners, funders, political bodies (EU), students, and academics to digitalise processes such as cooperation agreements and information exchange, but also the assessment and acknowledgement of students' credits. However, this is a continuous and time- and resource-intensive process that is perceived

as a burden if the expectations of those involved are linked to inefficient or incompatible systems (Berg & Ferreira Santos, 2024).

The strategies emphasise the importance of sufficient funding to maintain digital offerings. On the other hand, digital offerings can provide cost-efficient solutions, e.g., by avoiding travelling costs. In addition, digitalisation can cause a considerable amount of work, which requires qualified staff and demands time from everyone involved. Regarding the free choice of teaching formats, the HEIs emphasise the need to create incentives for lecturers to engage in virtual teaching.

> *"TH Köln will support its faculties in their endeavours to internationalise their lectures, classes, courses, programmes, and extracurricular activities in both analogue and digital formats. It will establish the infrastructure required to undertake this successfully, particularly regarding information technology, and maintain its compatibility with international standards and practices."*
> *TH Köln Strategy Document*

This is supported by the related academic literature, which points out that the introduction of ▸ **ICT** could lead to a work overload for academics, leaving less time for research activities or compromising the quality of digital teaching (Esteve-Mon et al., 2023). On the other hand, staff can also drive the digitalisation process. Some employees value flexible working models, and motivated employees drive digitalisation processes forward, for example, by setting up virtual classes or initiating their own collaborations.

3.3 Conclusion

Overall, a formal institutional strategy for internationalisation is common for German and European ▸ **HEI**s (Fig. 3.1). Content-wise, virtual internationalisation in the German ▸ **HE** is guided by commitment to social responsibility; equity, diversity, and inclusion; enhancement of competitiveness and collaboration; and simplifying and increasing the efficiency of information management and communication processes. Decision making in German ▸ **HEI**s can be characterised as a comprehensive process that involves multiple levels of influence and is multi-directional. However, the support of administrative staff from international offices, in conjunction with faculty members and IT staff, has been identified as crucial for the successful implementation of virtual internationalisation strategies (Berg & Ferreira Santos, 2024). The objectives in terms of collaboration and competition are clearly linked to institutional prestige and competition for resources and highly qualified students and excellent researchers. On the other hand, digitalisation is recognised as an opportunity to support the fulfilment of societal expectations and the management of societal challenges (Berg & Ferreira Santos, 2024). Finding a balance between multiple objectives while maintaining core institutional values therefore remains both a challenge and an opportunity for universities (IAU, 2012).

4

Comparing and Contrasting Selected Results of the INDISTRA Research Project and the IAU Survey

In the introductory chapter, we already outlined why it is a promising endeavour to compare and contrast the quantitative 6th IAU Global Survey on Internationalisation with the interview material of the Internationalisation in the Digital Transformation: Strategies of the German Higher Education Institutions (INDISTRA) project. It is important to note that the INDISTRA interview data are not always directly comparable with the IAU survey given the differences in study design, question formats, and focus of the studies. Despite these differences, this comparative approach enables us to identify points of divergence and convergence between the two studies while providing additional insights into the issues investigated. In some instances, the survey and interview materials allow for direct comparison on virtual internationalisation issues; in others, the INDISTRA results can be contextualized against the broader trends in internationalisation in Germany revealed by the IAU Global Survey. Particularly valuable for this comparative approach is the possibility to yield complementary perspectives stemming from qualitative and quantitative research, generating a deeper understanding of the impact of the ▸ **digital transformation** on the internationalisation strategies of German higher education.

At this point, we would like to highlight some central aspects of the comparison before turning to the detailed discussion guided by the two projects' empirical data. Both the 6th IAU Global Survey on Internationalisation as well as the INDISTRA project focus on the topic of internationalisation from the viewpoint of higher education institutions. The focus of INDISTRA is on German public higher education institutions. Thus, for this comparative study, the data of the 6th IAU Global Survey were completely reanalysed for public German and European (without Germany) HEIs, taking private HEIs out of the sample. Europe (without Germany) was chosen as a reference category, since both INDISTRA expert interviews and IAU survey results show that (the rest of) Europe is the most important reference category for German ▸ **HEI**s regarding (further) institutional cooperation (section 4.5).

The interviewed ▸ **HEI**s in the INDISTRA project often refer to European measures and initiatives such as ERASMUS+, Erasmus Without Paper, European University Alliance, and European partners for ▸ **joint programmes** and ▸ **double degree programmes**.

The focus of this study lies in the comparison of the results of around 30 questions of the 6th IAU Global Survey to the results of the interviews conducted as part of the INDISTRA project. While the IAU data and analyses provide a good, quantified overview of internationalisation and activities in this area at HEIs, enabling us to highlight some German particularities due to the comparison with the results for the rest of Europe, the material of the INDISTRA project can delve deeper into the motives and connections between the topics. Thus, the data presented in this study are unique to this study and cannot be found in the report of the 6th IAU Global Survey. As a brief note, the selected quotes from the interview material have been lightly edited to improve readability and clarity. Adjustments include grammatical corrections, the removal of filler words, and the inclusion of contextual clarification notes in brackets (Braun & Clarke, 2006).

This chapter presents the results of an analysis of data on internationalisation and especially virtual internationalisation for German and European HEIs. It begins by introducing the survey participants and their international backgrounds. Then, we present findings on the impact of the COVID-19 pandemic, on key drivers for virtual internationalisation, and on how priorities have shifted in this field. The analysis also covers international collaborations and partnerships, the use of digital tools for skill acquisition, and the effects of geopolitical changes and tensions on the internationalisation activities of German HEIs.

4.1 Sampled Institutions and Position of Respondents

The goal of the comparative study Germany vs. Europe (without Germany) is to understand if some trends emerged from the results of the 6th IAU Global Survey, which are specific to Germany. To do that, the results of the survey were analysed separately for the ▸ HEIs based in Germany and in all other European countries. As the overall goal of the project is to compare these trends also with the results of the qualitative research conducted in the INDISTRA project, the analysis of the results for both Germany and Europe were conducted only on 33 questions of the 6th IAU Global Survey, which investigated similar topics to those of the INDISTRA project. Both projects cover additional questions and topics that are not analysed in this report. The final sample contains answers from 33 public German ▸ HEIs and 190 public European ▸ HEIs (excluding German HEIs).

In terms of teaching/research orientation, the majority of ▸ HEIs are focused roughly equally on both teaching and research, both in Germany and in Europe. However, while in Europe, three quarters of respondents fall into this group, in Germany, only 55% do. In Germany, there is a higher percentage of predominantly teaching-focused ▸ HEIs (39% vs. 18%), while the percentages of predominantly research-focused ▸ HEIs are similar and small both in Germany and Europe. Among German respondents, there are no teaching-only institutions, which are 3% of the responding ▸ HEIs in Europe (Fig. 4.1).

Most survey respondents at German ▸ HEIs are heads of international relations offices (61%). They also constitute the biggest group in Europe, but not at most institutions (40%). In Europe, the percentage of academic leadership (heads and deputy heads of institutions) that replied to the survey is much higher than in Germany. This is because deputy heads of institutions replied much more often in Europe (22%) than in Germany (9%) (Fig. 4.2).

FIGURE 4.1 Teaching/research focus of institutions (in per cent)
Question 49: Which of the following best describes your institution?(Single choice)

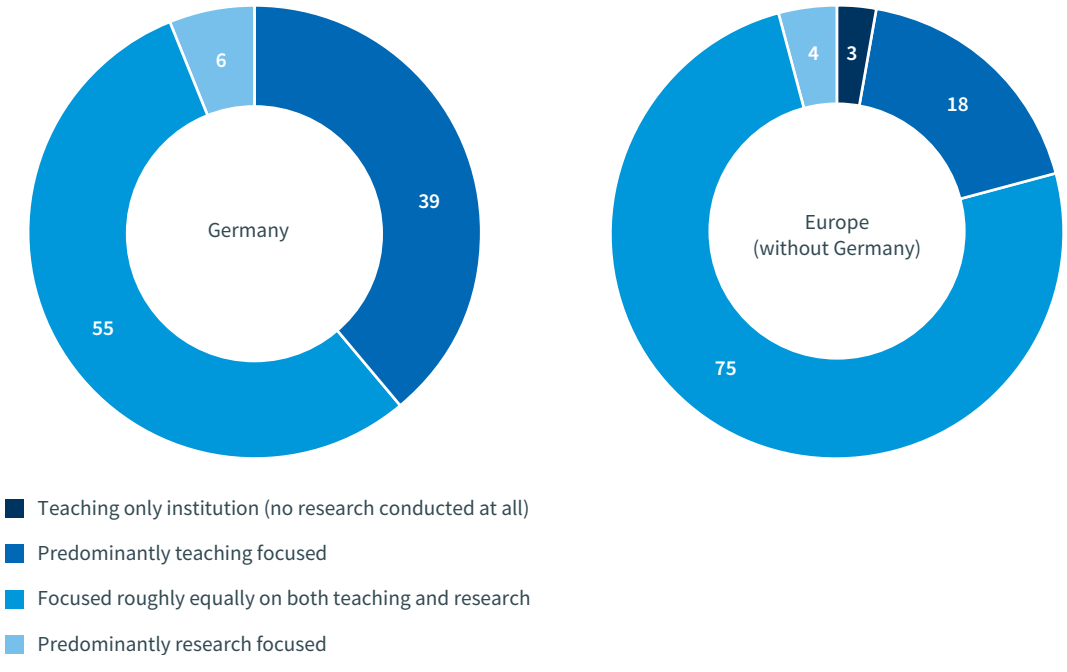
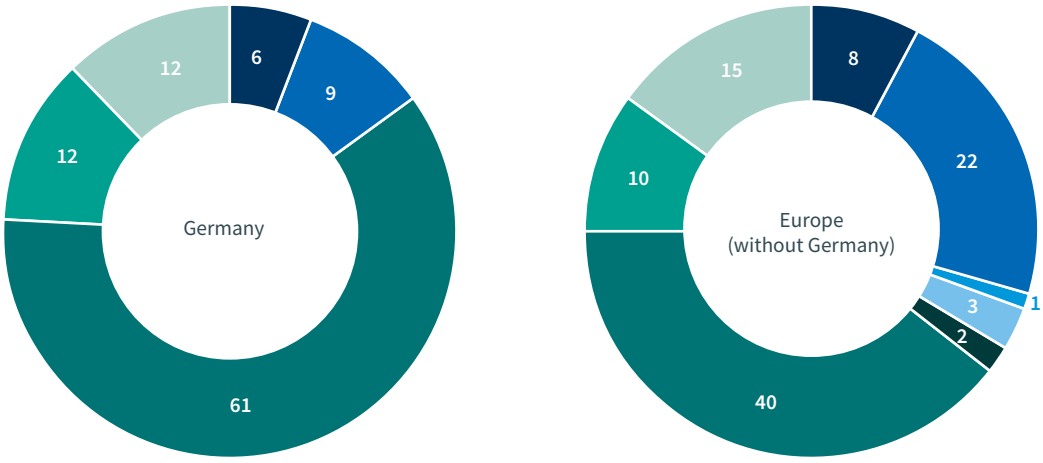
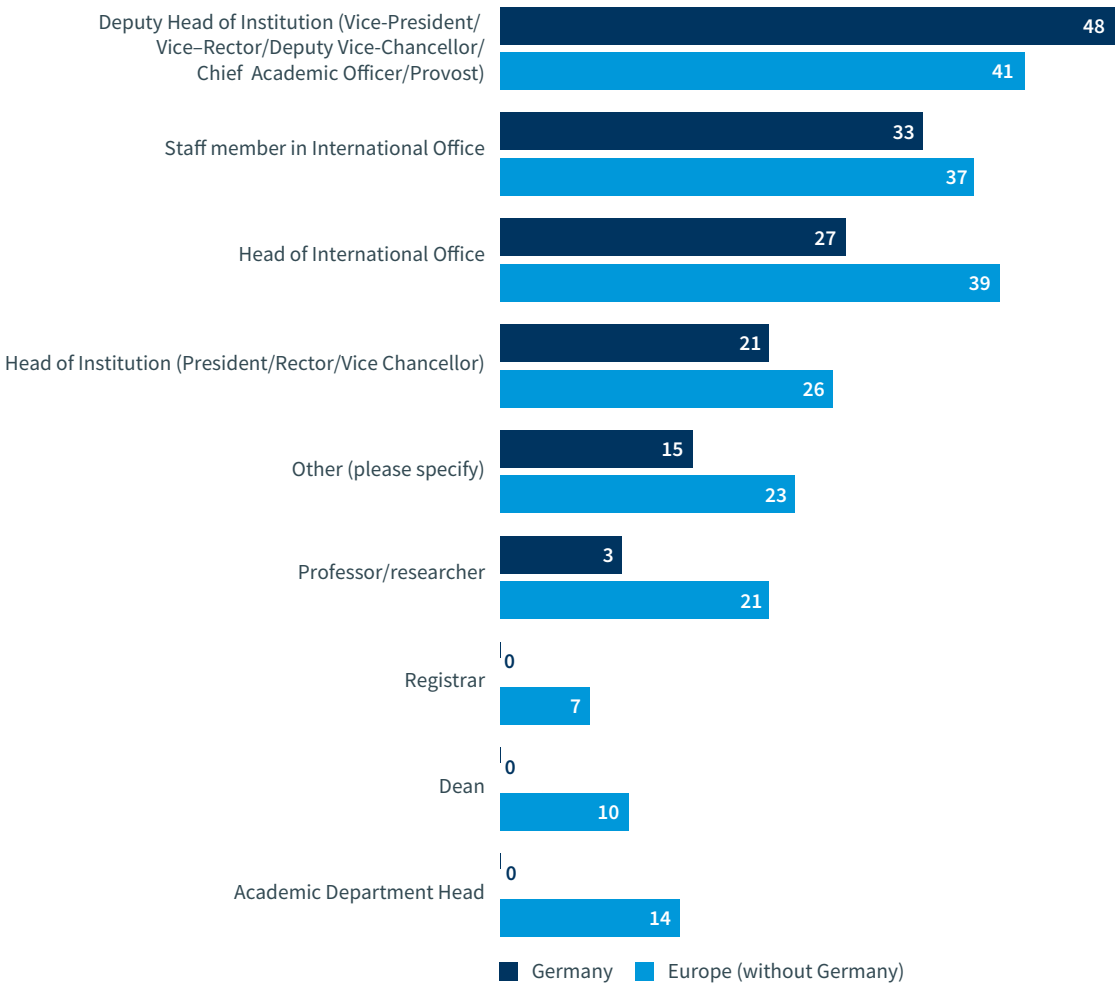


FIGURE 4.2 **Position of respondents** (in per cent)
Question 65: Which position best describes you? (Single option)



- Head of Institution (President / Rector / Vice Chancellor)
- Deputy Head of Institution (Vice-President/Vice–Rector/ Deputy Vice-Chancellor/Chief Academic Officer/Provost)
- Registrar
- Academic Department Head
- Professor/researcher
- Head of International Office
- Staff member in International Office
- Other (please specify)

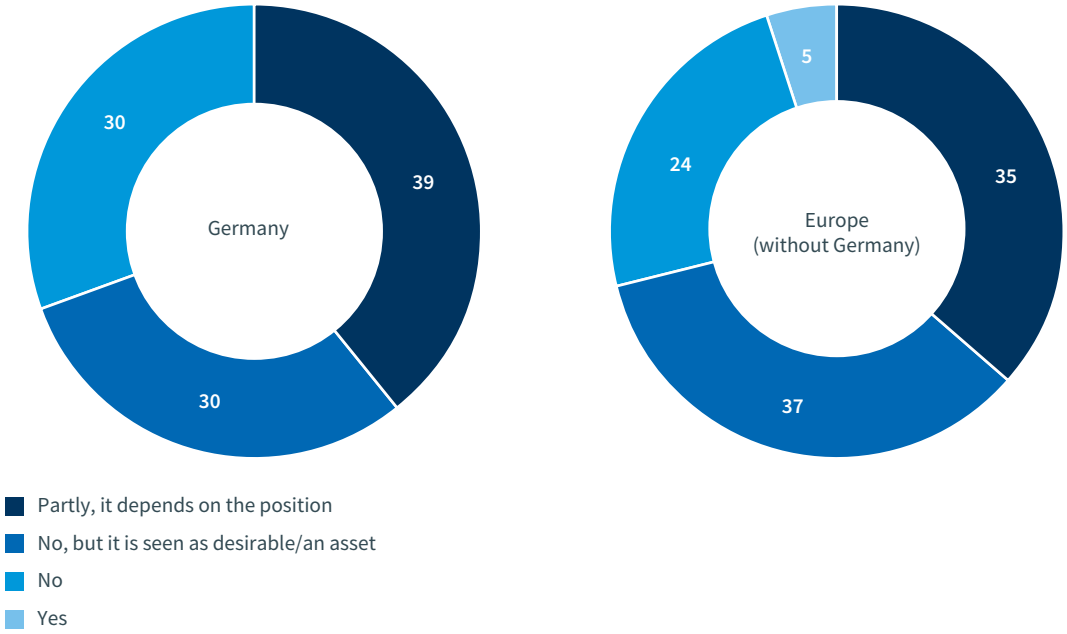
FIGURE 4.3 Units/individuals inside the institution consulted to reply to the survey (in per cent)
Question 66: Which units/individuals inside your institutions did you consult to reply to this questionnaire? (Multiple response options)



The units/individuals consulted to reply to the survey are similar in Germany and the rest of Europe. They are mainly the deputy heads of the institution, the head of the international office, and other staff members in the international office. This indicates a process which is very centralised at the academic leadership and international office levels, probably implying a top-down approach to internationalisation that could run the risk of not having the involvement and/or buy-in of faculties and departments (Fig. 4.3). However, since the data do not allow us to draw conclusions in this regard, we must come back to this question when analysing the material of the expert interviews (Chapter 5).

According to the results of the 6th IAU Global Survey, there is no noticeable difference between answers from German HEIs and other European HEIs on prior international experience as a requirement for the recruitment and/or promotion policies for administrative staff. German and European HEIs only consider international experience a requirement for some positions (39%–35%) or an asset (30%–37%). No German institution indicated that it is a requirement for all positions; similarly, European institutions very rarely require it (5%) (Fig. 4.4).

FIGURE 4.4 **International experience as a job requirement** (in per cent)
Question 28: Do the recruitment and/or promotion policies for administrative staff at your institution include prior international experience as a requirement? (Please only select one.)



Even though not an official job requirement, the expert interviews conducted with heads of international offices in the realm of the INDISTRA project clearly show that participants possess vast international experience, often gained through studies abroad, particularly via the Erasmus exchange programmes. While we did not specifically ask if international experience was a job requirement, we coded the question 'how did you become involved in internationalisation?' to assess participants' international experience. We came to conclude that extensive international experience, along with their multicultural background in the case of some interviewees, strongly motivates them to work in internationalisation. Many of the interviewees have been in the field for over a decade, and some view their career as a biographical life choice, as evidenced in the selected quotes[3]:

> *I've been in this position now for about nine years, and I've been working in international higher education for close to 20 years. I came into international higher education kind of on an interesting path. I had experienced international higher education as an exchange student at various times during my studies.... Kind of fell in love with what internationalisation means. I felt like I could bring it a lot with my background, to what needed to be done to what the university was doing. And I've worked in various fields that are international higher education since then (U1-2).*

> *And I decided that I wanted to actively engage in internationalisation because of my experiences abroad. I wanted to just improve and, you know, support the welcome structure in Germany. That was my goal, and I didn't regret it so far. (TU1-3)*

> *I have worked for more than 20 years as a head of an international office. So, internationalisation is my life. It's my life in this way. (U2-3).*

3 The direct quotations have been proofread, but we have decided not to implement all linguistic improvements. This is to preserve the original character of both the statement and the interviewee, and in some cases the emotionality (in the case of repetitions) of the interviewee.

4.2 Key Drivers of Virtual Internationalisation at German HEIs

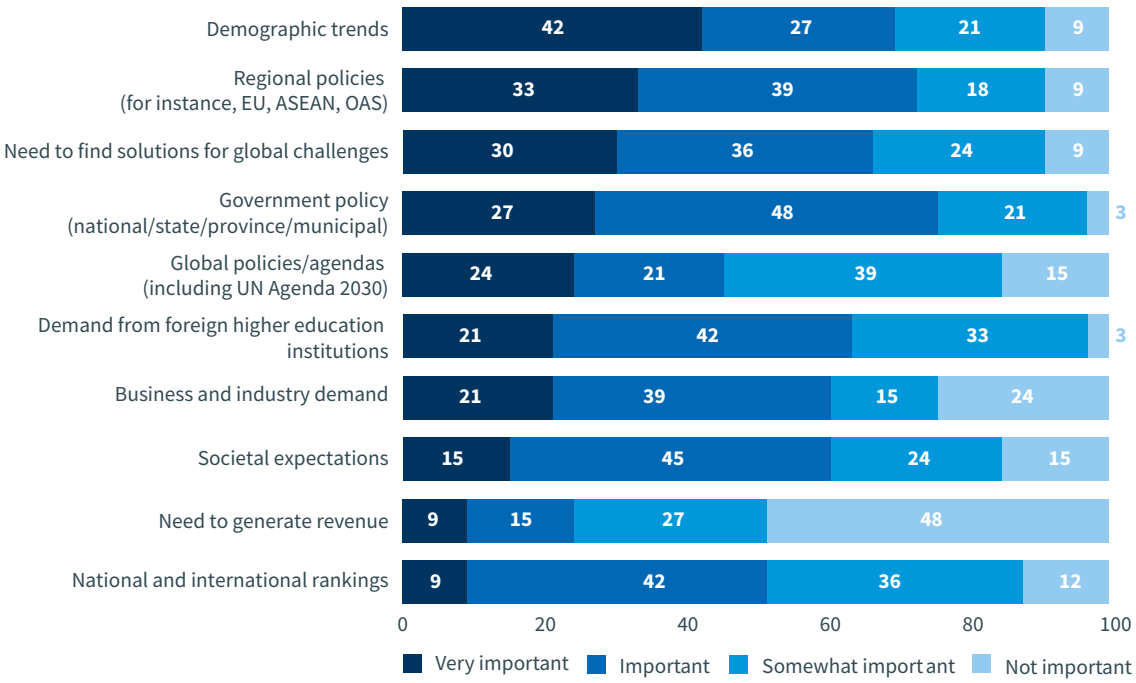
4.2.1 External Drivers

The findings of the IAU Global Survey show that external drivers of internationalisation are quite different in Germany and in Europe. In the analysis of the INDISTRA interviews, it was also clear that they differ from the external drivers of virtual internationalisation. Yet, it is worth taking the IAU results as a backdrop to situate the INDISTRA results on the specific factors driving ▸ VI.

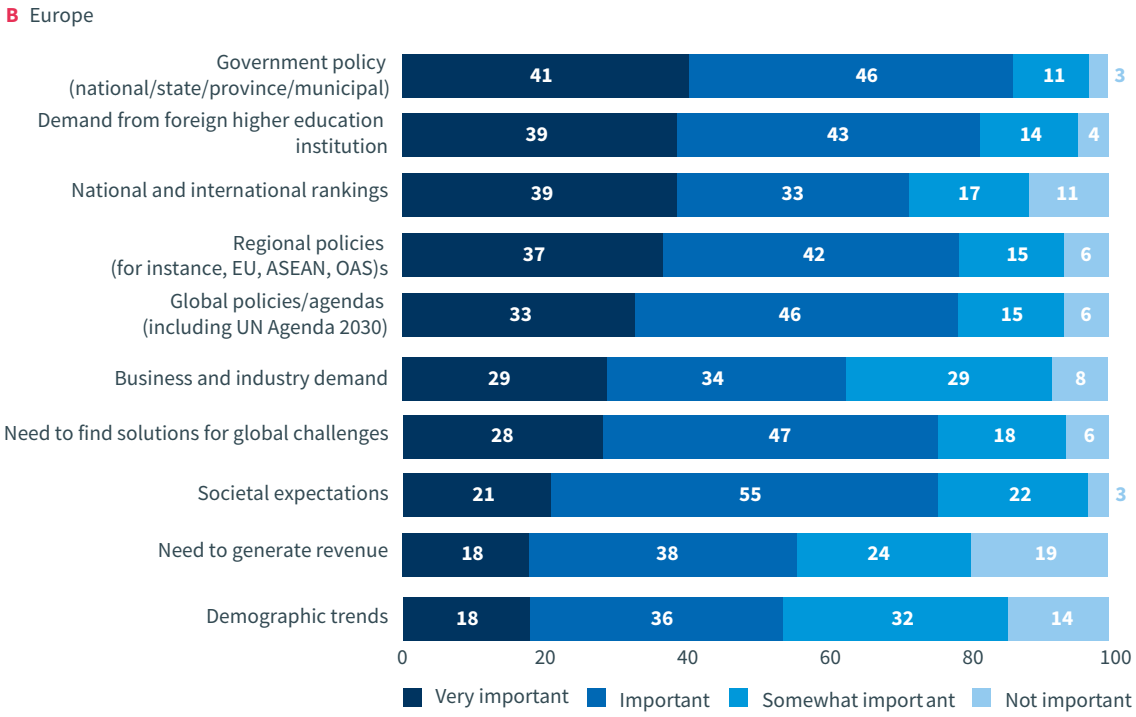
Regarding (broader) internationalisation, the IAU Global Survey shows that ▸ **demographic trends**[4] in Germany (42% very important) are the most important external driver, whereas in Europe, they are the least important (18% very important). Conversely, national and international rankings proved to be an important external driver in Europe, cited by over a third of respondents as very important (39%), but they are ranked the lowest in Germany (9% very important). Similarly, demand from foreign higher education institutions seems to be less important in Germany than in Europe (21% and 39% very important, respectively). Finally, only the importance of regional policies is approximately the same in Germany and in Europe (Fig. 4.5).

FIGURE 4.5 Most important key external drivers of internationalisation (in per cent)
Question 14: What is the importance of the following key external drivers of internationalisation at your institution? (One answer per row)

A Germany



4 According to the 2023 Eurobarometer survey, for EU citizens, the two most pressing demographic challenges in EU member states are population ageing (42%) and a shrinking working-age population and labour shortages (40%). These are followed by migration and integration (34%), depopulation and ▸ **brain drain** (26%), and the declining fertility rate (21%). The smallest share (9%) selected the decline in the EU's share in the global population as a pressing demographic challenge in their country. Retrieved from https://europa.eu/eurobarometer/surveys/detail/3112



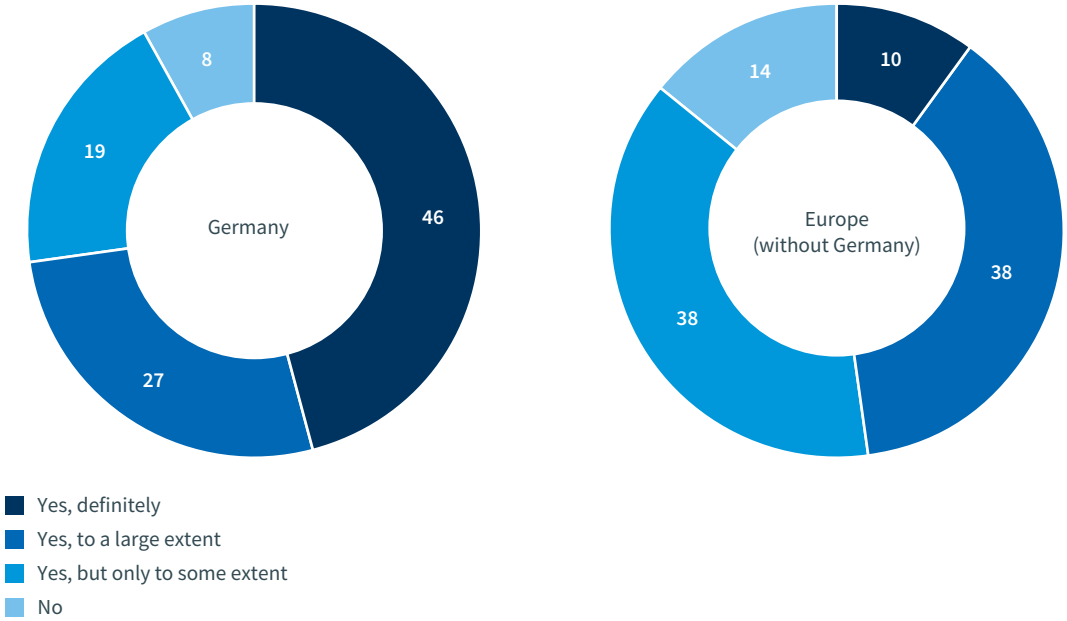
Turning to the findings of the INDISTRA project and focusing on the drivers of virtual internationalisation, we found that the COVID-19 pandemic, funding agencies, societal expectations, and social responsibility figure as the main drivers. Although ▸ **demographic trends** did not emerge as a topic of discussion in connection with ▸ **VI**, the interviews provided insights into why international rankings are seen as the least relevant among the drivers of internationalisation, according to the IAU findings. This could be traced to the fact that internationalisation strategies of German HEIs are less influenced by market-based approaches, as it is heavily supported by funding agencies (albeit competitive), with reduced dependence on international student fees for income generation. These conditions could arguably favour the prevalent societal over economic drivers (e.g., international rankings) in broader internationalisation and virtual internationalisation in Germany, as we will discuss further below.

4.2.1.1 COVID-19 Pandemic

According to the results of the 6th IAU Global Survey, the role of COVID-19 on bringing about changes to the importance of virtual internationalisation opportunities seemed to be more important in Germany than in Europe. A total of 46% of HEIs in Germany reported that the changes were very definitely due to COVID-19, while only 10% of HEIs in Europe did the same (Fig. 4.6).

Based on the INDISTRA interview material, the COVID-19 pandemic was identified as one of the external drivers in virtual internationalisation. The participants referred to the crisis as a moment of opportunity. It fostered a willingness to change and allowed for experimentation, creativity, and the development of solutions that might not have been implemented as quickly otherwise.

FIGURE 4.6 Changes in importance in VI opportunities (in per cent)
Question 44: Do you think that these changes are mainly a result of the COVID-19 crisis? (Please select only one)



It accelerated progress in areas such as teaching and learning, international student mobility, administrative processes, and decision making.

> *It sounds a little bit strange when I say COVID-19 was the best thing that could happen to us in this way, that Digitalisation from teaching and learning made such a step forward in this time and initiated so many developments. … For instance, we as an international office, very often talked with our faculties to say,' please, offer online examinations … and then came COVID-19, and from one moment to another everything was possible: online teaching, online examinations, … speaking with people, caring for people, everything was possible and was open and the people were open for this (U2-3).*

> *Yes, I think that was a kind of catalyst. We were already in a good position beforehand because as a university of applied sciences we were already a member of the virtual university of applied sciences and already had online programmes. We were able to react very quickly to switch to online teaching.... It got a lot of things rolling; it initiated a lot of things, which have now also become partially established, and you have the security everyone can handle it. With most of the tools, it works. So, I think that was simply an impetus for a lot of things to develop further (UAS2-1).*

The emergency transition from in-person to online instructional formats in response to COVID-19 highlighted the necessity for ▸ **digital competences** in both teaching and learning, resulting in a surge in demand for digital tools and resources.

> *I'm already very digitally savvy because my big challenge, even before the pandemic, was actually to introduce teachers and students to these digital media and to then integrate them profitably into their learning processes and studies. So, the focus was on both students and lecturers and, of course, very much on the lecturers. And Corona has of course gave us a little boost.... Suddenly, everyone wanted to take Moodle courses; suddenly video recording stories were in huge demand. We could hardly keep up with creating tutorials because everyone … wanted solutions (UAS2-4).*

So, let's say the digitalisation in our institution, it was actually astonishing how quickly we switched from physical teaching modus to digital teaching modus. I would say 90–95% of all lectures, except for labs, of course, which had to be in-person when it was possible again. This was really a huge, a quick progress (UAS1-4).

However, participants also identified a 'rollback' after the pandemic, as many were eager to return to in-person interactions, having become weary of virtual setups. The interviewees noted resistance, evident in a declining willingness to engage with digital processes and a preference for face-to-face meetings. Additionally, structural support such as funding for additional virtual teaching was withdrawn. However, despite frequent observations of a pushback in the use of digital tools following the pandemic, the inherent flexibility of digital formats and with enhanced opportunities for collaboration – particularly within the context of EU university alliances – are gradually intertwining the processes of digitalisation and internationalisation. There is now a desire for more blended options, but integrating these into faculty programmes and student mindsets will take time.

So, what I noticed personally and as a head of the international office, I do not work in the Erasmus area as such, but it's that there has been a kind of rollback. So, people were so relieved when the COVID-19 pandemic was finally over that they wanted to travel, and they wanted to be there in person. And they were quite fed up with virtual set-ups that there was a wish to have more blended options. And I think that's the way forward. But it's still a long way to go because now we aren't forced to have them (U1-1).

Higher education institutions are in the process of reflecting on the lessons learned during the pandemic, assessing what was effective and planning and incorporating the use of digital tools beyond the emergency measures necessitated by COVID-19.

I think a good summary would be that we were on our way, and then the wave of COVID pushed us to go even faster and further. And now is a time to regroup and see where things are going because now some people are kind of going back to their old ways, or it's like 'okay, COVID is over; now we're doing stuff that we did in 2017'. But the digitalisation strategy in teaching, but also in administration obviously goes on. And so, we ... as a central unit, are trying to use the boost that we had to get through COVID and stay on that course and go further (TU1-1).

At the same time, attention has been drawn to the importance of fully leveraging the established structures which, in participants' views, possess untapped potential.

There is a lot of potential for digital solutions. I think we're talking about every student getting a campus card, which probably happens at every university you're talking to. And there is a discussion about whether or not we can actually make that an app. And we felt there is a large-scale kind of project that we've introduced in the past to learn from COVID and to make sure that the things we did with regard to digitalisation, to make sure that the lessons are actually learned and not lost in the process of returning to this new normal (U2-4).

Because I previously worked in the field of e-learning, I think there is still a lot of potential in the area of digitalisation (UAS2-4).

Even in cases where participants initially downplayed the impact of COVID-19-driven digitalisation on internationalisation processes, further reflections revealed a different perspective. Ultimately, they concluded that the pandemic did foster a push towards digitalisation, compelling more hesitant countries, such as Germany, to embrace digital methods, even though the long-term fundamental changes might not be immediately apparent.

> *During Corona, everybody had the impression that this was going to make a big change to society and the way we do things. And it turned out that it made zero change in most respects. We just continued living our lives and doing our work and doing higher education the exact same way we did before Corona. That was just like a two-year hiatus when things were, of course, really different. But afterwards, nothing fundamentally changed. That's at least my idea.... Of course, we're not going to travel around the world again because, you know, it's clear then, you know, we don't need this and then we can know everybody is just, you know, hopping on planes again and making up for lost time. And I think it's the same with digitalisation. There was a big push for some countries to do things digitally where they were reluctant before. And Germany, of course, is a good example of it ... because Germany was behind in digitalisation a lot compared to other countries in all different ways: in banking, in higher education, and in government services, but also in industries on all different levels. Germany has been very reluctant to adapt to digitalisation for different reasons. Privacy is one. And then, like, general German conservatism, I don't know.... But then, even in Germany, because Corona forced us to do things more digitally or more online, I don't have the impression that it led to doing things a lot more differently than before the pandemic (UAS1-3).*

Nonetheless, there is wide agreement that the pandemic brought about a change of mindset and a new understanding of internationalisation beyond physical mobility. This led to the prompt reassessment of the concept and practices of internationalisation in the context of restricted physical movement. Anchored in the principles of ▸ **internationalisation at home** (**IaH**) and ▸ **internationalisation of the curriculum** (**IaC**), emerging formats such as ▸ **blended mobility** and COIL activities are anticipated to remain in use post-pandemic, offering international experiences for all students.

> *Well, I think prior to COVID the focus on internationalisation and particularly the focus on internationalisation of studies and teaching was on mobility. There was this large focus on mobility, sending students out ... and then some internationalisation at home for students coming in and for intercultural perspectives. And during COVID, I think we were very quick to ask 'okay, what does this mean? What does this mean for internationalisation when people can't actually physically move back and forth?' And we started looking into how we can expand our understanding of what international experience means for students. And using digital mobility formats, creating joint courses, joint online courses are new formats that we can use and that we're going to continue to use post-pandemic, and creating international experiences for our students. And I think it's hard to say the pandemic had a positive effect, but if we can draw something positive from the experience, I think it is that we're recognising that internationalisation is more than just physical mobility (U1-2).*

4.2.1.2 Funding Agencies

Those interviewed in the realm of the INDISTRA project consistently mentioned political actors, including the European Commission and German federal ministries, along with funding agencies such as the ▸ **German Academic Exchange Service** (DAAD) and ▸ **German Rectors' Conference** (HRK), as significant external drivers of virtual internationalisation. They stressed that previous participation in programmes supported by these stakeholders facilitated sustained engagement with digital formats during the pandemic and was instrumental in developing successful partnerships among ▸ **HEI**s worldwide. Moreover, the availability of digital infrastructure and the integration of digital teaching prior to the pandemic enhanced the resilience of these institutions, enabling them to respond more swiftly to the crisis and gain a competitive edge.

> *We were in the lucky position that we already before [the pandemic] were very much involved in projects like the ▸ IVAC – the International Virtual Academic Cooperation. We are part of this PIM project for international mobility, this ▸ BMBF and also ▸ IMKD – International Mobility and Cooperation Digital. So, we were not completely unprepared. We also have quite strong services in the teaching and learning department, which is dealing especially also with these online things, digital services in teaching and learning. So that is where we cooperate with. Plus, we were already, very strong when it comes to digital infrastructure ... so there were hardly any breakdowns here in the digital infrastructure. Plus, this unit in the teaching and learning department was also able to help didactically, so for the lectures, it was not only easy in terms of technicalities but also made it easier for them to learn how to didactically present their lectures. So, those were the advantages when the pandemic came. So, we had hardly any problems switching completely to online lectures.... It was surprising, and there was a lot of work, certainly, but we managed quite well because already before we saw the need and also the advantage of going digital in lectures and recognition processes (U1-4).*

In certain instances, the political pressure to comply with EU directives was also identified as a motivating factor. As different heads of ▸ **international offices** (IOs) described, the influence of these political actors is likely linked to their role as primary funders of projects designed to promote innovation and advance the digitalisation of internationalisation processes within German higher education. Indeed, the interviewees referenced ▸ **DAAD** projects such as ▸ **IMKD**, ▸ **IVAC**, and ▸ **HAW International** as notable examples. Similarly, initiatives like ▸ **Erasmus+ BIPs** and ▸ **Erasmus Without Paper** emerged as prominent topics throughout the interviews.

> *Of course, we also want to make use of the Erasmus grants for those blended international programmes. So, I guess, funding and money are the most important incentives for decision making (UAS1-3).*

> *Right, that guides our strategic decisions with internationalisation or digitalisation in internationalisation.... Yes, it's money; it's going to be money. And that means it's governmental agencies.... Essentially, it's the science ministry of the federal states.... They have a significant influence with regards to how they fund us as a public institution ... by essentially making digitalisation and internationalisation a key component of every third-party funding acquisition.... And the DAAD is a key driver in those innovative measures, and it remains a key player.... International partners do that to some extent, but not nearly as significantly as the 'money givers', as I would like to call them (U2-4).*

Yet, acknowledging the contributions of funding agencies goes beyond their role as 'donors'; they are consistently regarded as valuable providers of cutting-edge knowledge and information. They play a pivotal role in spearheading initiatives, offering expertise, and facilitating platforms for exchange through workshops, conferences, and networks among diverse stakeholders. These collaborative spaces have guided strategic decisions and driven change related to virtual internationalisation issues.

So, we are part of the [name of the alliance] where our research strategy is being especially influenced.... So, the networks are quite important also to self-adjustment, let's say. And then the DAAD is always very important, especially during the pandemic or a political crisis. We have frequent meetings where we have discussions with the DAAD, with the president, about the situation in Russia, Ukraine, and so on, for our own decision-making processes (U1-4).

The strategic papers from the German Rectors' Conference, for example, really always deal with the topics that come up with us later on, as it's a nice summary of very relevant aspects. The DAAD is just great for us as international offices; they are also networked.... So, I have to say that you [we] have a very broad base (UAS2-4).

We like to use events organised by the DAAD, for example, by the national agency, and partly by the EU. Some are also organised directly by the EU to provide information about measures in this area and things like that. We use networks like that. And, of course, we also exchange ideas with our colleagues in similar positions, be it the management level, be it the [specific unit at the higher education institution] team (U2-1).

4.2.1.3 Societal Expectations and Social Responsibility

Another prominent driver of virtual internationalisation strategies and practices involves addressing pressing societal issues. The interviewees stressed how digitalisation can be instrumental to tackle social inequalities and the climate crisis, while upholding values such as equity and inclusion, environmental sustainability, trust, collaboration, diversity, intercultural understanding, peace, democracy, and academic freedom.

Accessibility and providing internationalisation opportunities to a diverse set of people will be a major driver of digitalisation in the future. It will not go away. It cannot. Too many people are being left out, and we're now presented with tools that can actually present it to them. No university that has any sort of drive to actually internationalise their student body and also people abroad will be able to say no to that development. You need to be prepared; you need to be able to offer your programmes that way. The other major driver will be climate change and sustainability. Again, we're now presented with an opportunity to create experiences that may not hold the same kind of weight but certainly shoot in the same kind of direction to provide people with meaningful experiences in the intercultural world, without being at the same time very detrimental to the planet (U2-4).

4.2.2 Internal Drivers

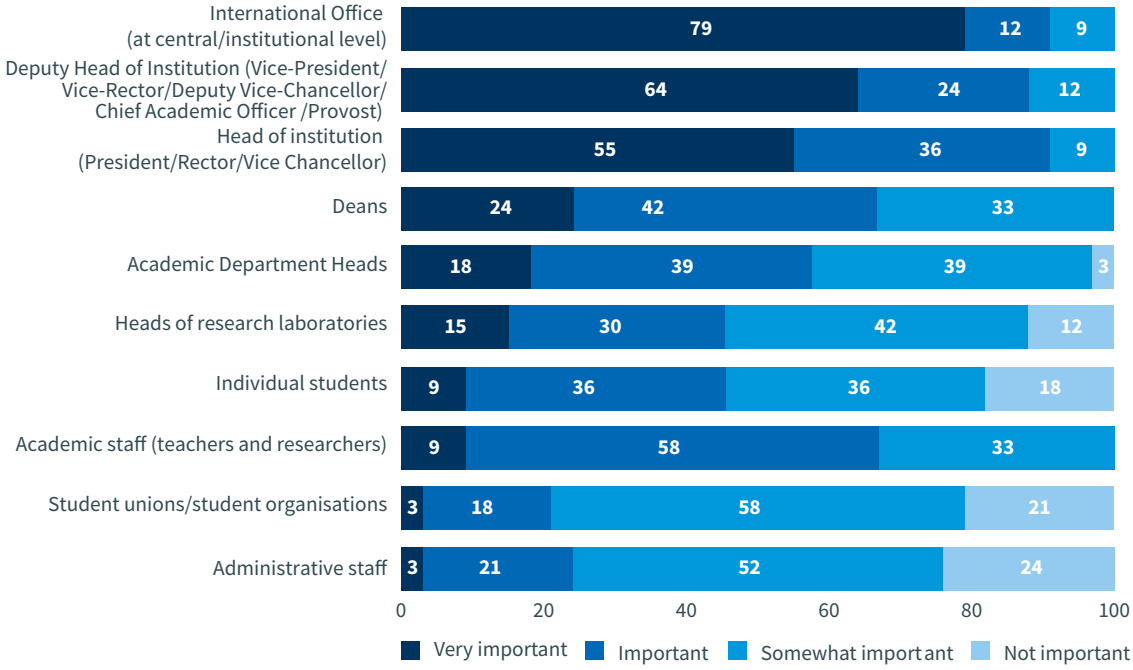
The analysis of the INDISTRA and 6th IAU Global Survey data indicates that the heads of institutions and International Offices (79% very important) are perceived as pivotal internal drivers of both internationalisation and virtual internationalisation processes. Insights from the INDISTRA interviews also identified other internal drivers, such IT professional and peer support networks, and highlight how their influence shapes different aspects of ▸ VI.

The IAU survey findings reveal that the three most important institutional key internal drivers of internationalisation are the same in Germany and in Europe, with the International Offices perceived as the most important ones in Germany and in the rest of Europe (see Figures 4.7 A and B).. However, the role of the head of institution is of less significance in Germany (55% of HEIs consider it very important) as opposed to Europe (74%). The importance of the following internal drivers: deans, academic staff, academic department heads, and individual students is similar in Europe where 39%, 33%, 33%, and 32% of HEIs consider them very important, respectively. However, in Germany, their importance appears to be less at 24%, 9%, 18%, and 9%, respectively (Fig. 4.7).

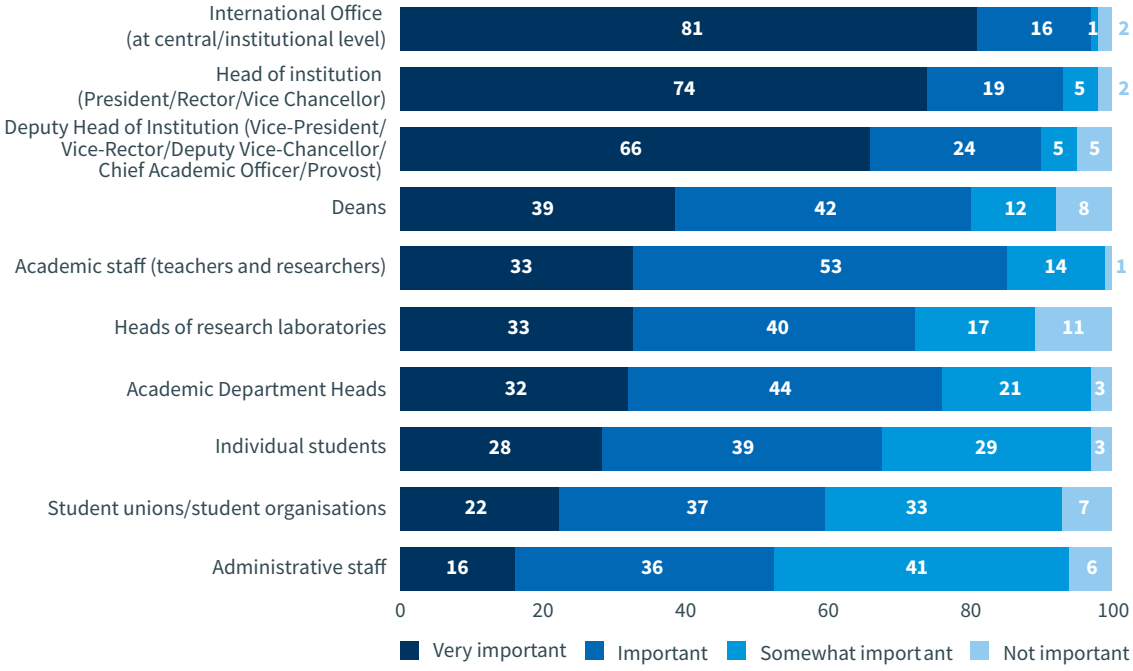
FIGURE 4.7 **Key internal drivers of internationalisation** (in per cent)

Question 13: What is the importance of the following key internal drivers of internationalisation at your institution? (One answer per row)

A Germany



B Europe



When we contrasted findings from the IAU Global Survey to those of the INDISTRA interviews, interview participants emphasised the influence of the head of institution in determining funding allocation and strategic decisions concerning ▸ **VI**. In this context, the ▸ **international office** plays a critical role in proposing new initiatives and seeking funding opportunities, while schools and faculties within the HEIs also contribute to strategic decision making.

> *First and foremost, it is the president, but also the vice president of internationalisation, academic qualification, and diversity. There is a vice president of HR and finances. He is essentially in charge of those two key players – the [name of the centre for campus management] and the IT centre – and, as such, he will significantly influence how much is funded.... There is the international office that takes a key role in proposing new measures, trying to look for new ways to acquire money in funding. The schools and faculties of our university remain players as well. And I think those in a way inform the strategic decisions (U2-4).*

The interviewees also disclosed that IT professionals and related units as well as the legal department are increasingly engaged in a variety of tasks associated with VI strategies. These include ensuring that contracts and agreements comply with ▸ **data protection** and data security regulations, providing training and technical support for online teaching methods, offering student services, and the smooth functioning of communication channels. These professionals are key in guiding the implementation and operation of campus management systems (e.g., ▸ **Erasmus Without Paper** and ▸ **Mobility Online**) and learning management systems (e.g., Blackboard, Canvas, and Moodle). Nonetheless, in the context of teaching and learning, academics hold a central position, as they retain autonomy in deciding whether or not to embrace ▸ **VI** practices.

> *And we're mostly in contact with the faculties because in the end, the faculties, the academic departments decide what they're teaching and who they want to teach with. And they are, of course, supported from the technical side by the computing centre with regard to digital infrastructure and things like that. Those are the key partners. One of the things that we are still working on a solution for, and we're in close contact with the department of studies and teaching on that, is ... how to ensure, from a legal standpoint, that digital mobility is recognised and how to deal with some of the issues that are still there with regarding, I guess you would call them, 'digital incoming students' (U1-2).*

Therefore, collaboration between academics and administrators is essential, as the interviewees highlighted the supportive and enabling role of international offices (▸ **IOs**).

> *Then again, from a strictly practical perspective, no digitalisation project is going to work if there's no collaboration between the academics and the administrators. So that's also why we had such a good project. I asked some professors at the department, and they were interested. Then, I said, 'Okay, I'll be happy to cut some corners in the administration', you know, reach out to other administrators and see if they can be flexible. And, of course, the students have to play along as well. But that's, of course, a very important prerequisite that you have this collaboration between the academics and the administrators (UAS1-3).*

> *Obviously, nothing works without faculty, so we need to keep faculty engaged. We need to offer them solutions as to why they should sort of work with regards to digitalising their courses, why they should go the extra mile and, of course, getting in touch with one of our partner universities (U2-4).*

4.2.2.1 Peer Support and Networks

Numerous accounts highlighted the significance of peer support and information exchange with partner universities, both within Germany and internationally. This observation underscores the invaluable role of collaboration through both informal channels, such as individual colleagues from international offices (▸ IOs), and formal networks, particularly in the context of the European Universities Initiative, as key drivers of their strategies.

> *Of course, we also talk to other colleagues if I meet them at conferences or just online.... We have a big university with many international students, mobilities, and so on. So, we use this network in [name of federal state] a lot. I meet colleagues, and we have a talk every month with colleagues about Erasmus. We do that online.... I think the most valuable network for myself is my colleagues in [name of federal state], all over Germany ... but also, of course, we talk to our international partners, especially in Europe, about digitalisation, about implementing the process.... So, the network extends, of course, to our international partners in Europe and further away. (UAS2-3). So, we are looking for the EU [for support]. We are also part of [a specific ERASMUS + network], and we have exchanges there ...The whole digitalisation or ▸ **blended mobility** was a big theme, and how it is accepted by the students, what we can do to promote it, and just share the experience. And, of course, I also have exchanges on the national level and with colleagues I know from different countries. I just call them or write an email and say,' What do you think?'. (TU2-4).*

4.3 Virtual Internationalisation Governance

4.3.1 Strategic Approach to Virtual Internationalisation

The INDISTRA interviews showed that digitalisation and internationalisation are increasingly viewed as transversal topics, prompting HEIs to rethink and update their strategies. Even in instances where a formal digitalisation strategy is not yet established, there are ongoing efforts and plans to develop a strategy that supports the achievement of internationalisation goals. This strategy may stand alone or be integrated into the broader internationalisation strategy and institutional development plan (*Strukturentwicklungsplan*). While many interviewees mentioned plans to rewrite their internationalisation strategies from scratch, others intend to feature digitalisation more prominently, reflecting the need to integrate digitalisation within internationalisation efforts, in alignment with current standards for strategic planning.

> *I think we cannot think internationalisation without digitalisation. It's not possible anymore (TU1-3).*

> *It's very important because in our new international strategy, digitalisation is specifically a new point part of our strategy. So, we basically combined parts of the digitalisation strategy, especially on developing digital formats for administrative processes, information support, and advice services, and then, obviously, teaching and exchange formats (TU-1-1).*

> *With the creation of my position, that kind of connection [between internationalisation and digitalisation] became more and more internalised. For the next year, we're waiting the new digitisation strategy ... as they're updating it. We're inserting a part in the internationalisation strategy that says, 'In this internationalisation strategy, we have a common-sense approach to digitalisation'. So, we kind of don't consider digitisation projects without the idea of internationalisation (TU2-1).*

4.3.2 Funding

The interviews conducted by the INDISTRA project team demonstrated that securing funding sources is paramount, as the implementation and sustainability of many strategic goals hinge on financial availability. As one participant pointed out, the fierce competition for financial resources has even led to changes in the tasks and responsibilities of professionals in the IOs. This situation is particularly urgent when it comes to obtaining funds to hire new staff. Consequently, managing funding applications and networking with peers regarding funding opportunities have become indispensable skills.

> *Coming back to the question of how we're financing those kinds of things, indeed, with third-party funded projects.... If you want to have more staff, then apply for third-party funding, that's all. And that's what we've started to do. So, my job really changed over the last six years. I'm seldom traveling for whatever, but I'm more concerned with 'where do I get the money from and what kind of application could I do next?' ... I always say, when remembering back the times when the international office consisted of two people – me and my administrative officer – that my life was much easier.... So, my job has really changed over the years, I think. But okay, it's still fun (UAS1-4).*

Although basic infrastructure is generally covered by the general institutional budget, additional digitalisation projects heavily depend on securing competitive funding. For instance, while hiring IT personnel is supported internally, funding from external sources, chiefly the DAAD or the European Union (through the European University Alliances), has been crucial for initiatives such as digital course catalogues, recognition systems, and the creation of dedicated positions focused on digitalisation – investments that most institutions could not afford otherwise.

> *The DAAD has specific digitalisation or competition calls for digitalisation of internationalisation. So, that would be our first remit, always the DAAD in internationalisation digitalisation.... So, I think, you know, external funding is number one. Internally, there are sort of limited amounts of money in my department. It's actually not that limited.... We have flexible funds for internationalisation of everything, and digitalisation would be one part of it. So, we hand out ... I would say, half a million [euros] a year in small grants to professors. So, if a professor says 'Oh, I want to do a digital experiment with so and so', they can apply to us and usually get the money within two weeks' time. So, we have a very good internal funding system for all sorts of internationalisation projects, including digital ones, but this money is only for initiating processes. I can't give them people or staff. I can give them mobility for the first meeting or a second meeting (U1-3).*

> *The people in IT, ... I think they are exclusively our core budget of the university. But then these experts developing, for instance, the digital course catalogue or this automatic recognition, they are very thankful for having the money from DAAD, let's say an IVAC or a PIM [DAAD funding lines] or now from the European Union and the European Union European Universities Initiative, but also this additional funding line by the DAAD for the European Universities alliances. They have the so-called DAAD Transform, and we're now creating two positions for the next four years out of this money from the DAAD, which we certainly would not have been able to finance otherwise. So, for the interconnected campus, for micro-credentials, and for ... digitalisation processes in cooperation and so on, it highly depends on successful applications made to the EU and so on.... So, the basic infrastructure we can cover, but for everything beyond, at least at our university at the moment, we highly depend on these projects to implement these digitalisation projects or processes (U1-4).*

4.3.3 Virtual Administration Structures

Virtual administration structures constitute the backbone of the work performed by staff at the ▸ IOs. Their expansion is essential to making administrative processes more comprehensive, agile, and transparent. High on the agenda are solutions catered to improving communication flows and information management (e.g., data sharing, security, and protection); recognition, mobility and campus management systems; as well as digital marketing (e.g., online student recruitment) and online communication with students, making them more inclusive and accessible, especially for people with disabilities.

> *We try to digitalise all our processes, and we try to make everything digital so that we can sign digitally and don't have to use paper anymore. Many of our colleagues also applied for work from home after the pandemic, so we have to find a solution in order to visualise our processes for all of our colleagues online.... And, of course, we have implemented Big Blue Button as a communication tool with our colleagues. If someone works from home, we can use that.... And since there has been a change in the generation in our universities or all the people retired ... we try to change that in a digital way because it makes life easier for us.... We have shared folders online where we can share documents with our financial department and controlling department so that everyone has access to everything.... So, all the departments in the university are involved in this process and it's a longer process (UAS2-3).*

> *To be inclusive with digitalisation means to provide tools and programmes which are readable for everybody, so it means for blind people or people with any special need. We had a workshop at our university [about] how we transform all documents into documents for people with special needs, so we did. But finally, you do it and you try to develop your website in this way but, again, you need manpower to do it, and the knowledge.... So, we had a workshop to do it, but you can't find it in all units because the manpower is missing and further on, then you get external documents from the European Union within the Erasmus+ programme or even the DAAD, and they are not designed so that people with special needs can read them (UAS2-2).*

Efforts have also been employed towards delivering better student support services and, therefore, improving their academic and social experiences. This encompasses the availability of e-learning management systems and conferencing platforms (e.g., Moodle, Kahoot, Zoom, and Edmodo) and a range of other online campus services such as registration and enrolment, exams, and virtual graduation ceremonies and access to online library resources. Additionally, students can communicate with peers, staff, and faculty members. Support services also include online pre-mobility preparation courses, ranging from language- to discipline-specific contents, together with online mentoring and 'buddy' and networking programmes throughout the student mobility journey.

> *With virtual meetings, with virtual orientation sessions, this gives us a lot of influence over how they are prepared when they arrive here. In the past, it used to be that we sent our e-mails, and we bombarded them with information. But now, we're much closer to them and we can offer them a much better sort of orientation and support along the way (U2-4).*

4.3.4 Internal Collaborative Structures

A key priority in this process is to foster collaborative involvement across multiple internal stakeholders. Quite a few participants mentioned that their internationalisation strategy was revised through a participatory process involving management, a steering group, and contributions from other university staff via specialist departments. However, challenges do arise. As one participant described the coordination of projects such as implementing ▸ **digital signatures** was particularly complex and misunderstood as a localised issue rather than a

university-wide concern. Ultimately, successful strategising and problem solving require a holistic approach that leverages collaboration and resources from multiple stakeholders.

> *At the moment, it's very complicated because we are struggling with many project processes, for instance, digital signatures. Our legal office together with some people is working on a concept for how we can handle this and when to use which kind of digital signature. We have already presented at our legal office a paper with a proposal, and we are struggling with many of these things. We also see again the difference between us, as an international office, and between the faculties, as well as the administration. We have insisted for years that we need signatures ... and we really had problems to make people understand why we need this, and to understand this is not a problem of the international office. This is a problem of the whole university. Digital signature is only an example. The process of data protection was also one such [problem]. The university likes to say, 'Okay, it's your problem, solve it'. And then you say, 'No, it's not only our problem'.... Of course, we are accustomed to this, because we are always confronted with problems and then we have to find a solution. You don't just need plan A; you need a plan B, C, D, and E ... and this is also a problem: the fact that we are successful in solving problems. They could not understand why, in this case, the international office is not able to solve it. They could not understand that this is an issue that concerns the whole university, the whole structure, and not just us. The faculty are the people who signed the agreement and everything in this way. They also need a signature (U2-3).*

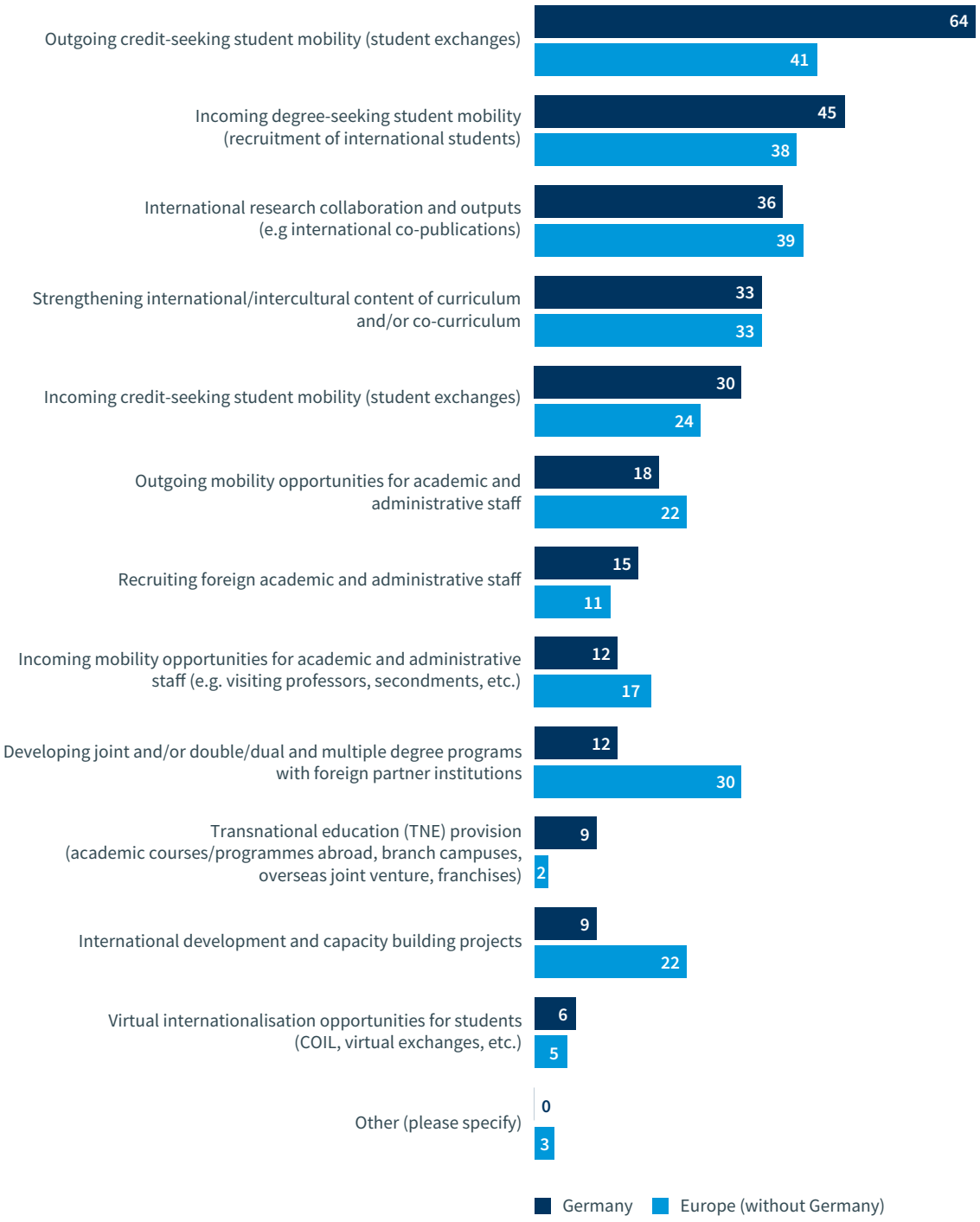
4.4 Priorities of (Virtual) Internationalisation Activities

4.4.1 Current Priorities in Internationalisation Activities

According to the 6th IAU Global Survey, outgoing credit-seeking mobility is clearly the priority activity in Germany and the only one that is considered a priority at the majority of HEIs (64%). It is also the most frequent priority in Europe, but not at the majority of HEIs (41%). All other activities are considered a priority only at a minority of HEIs both in Europe and in Germany. Incoming degree-seeking student mobility (recruitment of international students) and international research collaboration and outputs (e.g., international co-publications) are the second and third most frequent activities both in Germany and in Europe, but in reverse order (international research is second in Europe). Some interesting differences are that 30% of European HEIs indicated developing ▸ **joint and/or double/dual and multiple degree programmes** with foreign partner institutions as a priority; however, this percentage is much lower in Germany (12%) and international development and capacity-building projects have a moderate level of importance in Europe (22%) but are definitely not considered a priority in Germany and were selected by only 9% of German HEIs. Virtual internationalisation is considered a very low priority, ranking as the least important one in Germany (6%) and as the second least important one in Europe (5%) (Fig. 4.8).

Whereas the IAU Global Survey discloses that virtual internationalisation is among the lowest priority among German and European HEIs, the engagement of HEIs in virtual internationalisation opportunities is slightly higher in Germany than in the sample of non-German European HEIs (Fig. 4.10 below). Nonetheless, INDISTRA's interview sample exemplarily showed differences in how HEIs prioritise and approach virtual internationalisation. While some HEIs pay only scant attention to it, others have been systematically working towards expanding their activities in this area. The upcoming sub-sections will unpack the priorities in the field of virtual internationalisation identified in the interviews with the heads of ▸ IOs.

FIGURE 4.8 Priority of internationalisation activities (in per cent)
Question 31: Of the internationalisation activities that are undertaken at your institution, which are given the highest priority? (Please select a maximum of three.)



4.4.1.1 Types of Virtual Internationalisation Activities

According to the 6th IAU Global Survey, the engagement of HEIs in virtual internationalisation opportunities is slightly higher in Germany than in the sample of non-German European HEIs (79% vs. 71%) (Fig. 4.9). Regarding the importance of virtual internationalisation opportunities, the first results to report show that while in Europe, all proposed virtual internationalisation opportunities are present at the majority of HEIs, in Germany, only 38% offer ▸ **MOOC**s to students in other countries and even fewer (23%) offer online degree programmes (Fig. 4.10).

In terms of change in the importance, while in Europe all types of virtual internationalisation opportunities have increased in importance at the majority of ▸ **HEI**s over the last five years, in Germany, there is a more polarised situation. Collaborative online international learning (▸ **COIL**), virtual exchanges, and online preparatory courses (language training, etc.) offered by the institution to students in other countries have increased in importance at higher percentages of HEIs than in Europe. ▸ **MOOC**s offered by the institution to students in other countries have increased in importance only at half of HEIs and remained stable at the other half.

Finally, online degree programmes offered by the institution to students in other countries remained stable at half of ▸ **HEI**s and increased in importance only at 33% of ▸ **HEI**s. It is also worth mentioning that ▸ **COIL** is the activity that increased in importance at the highest percentage of HEIs in Germany (90%), while it is virtual exchanges in Europe that increased in importance, even if the difference in percentage between the two is small at only 2% (Fig. 4.10).

The IAU survey findings on the increased importance of COIL activities align with the INDISTRA interview material, where interviewees frequently mentioned the establishment of specialised units and roles, such as e-learning and ▸ **COIL** centres, as a key initiative to assist academics with digital teaching. In addition to offering digital infrastructure, these initiatives provided teaching staff with training and guidance on adapting their methods to interdisciplinary and online formats, improving online presentation skills, and developing flipped classrooms, webinars, tutorials, ▸ **COIL** projects, and ▸ **MOOC**s. They also fostered essential skills such as ▸ **digital literacy**, communication and intercultural understanding, and language abilities to effectively interact with primarily English-speaking and diverse international student bodies. Participants underlined the role of

FIGURE 4.9 Engagement of institutions in virtual internationalisation opportunities (Single choice)
Question 42: Does your institution engage in virtual internationalisation opportunities?

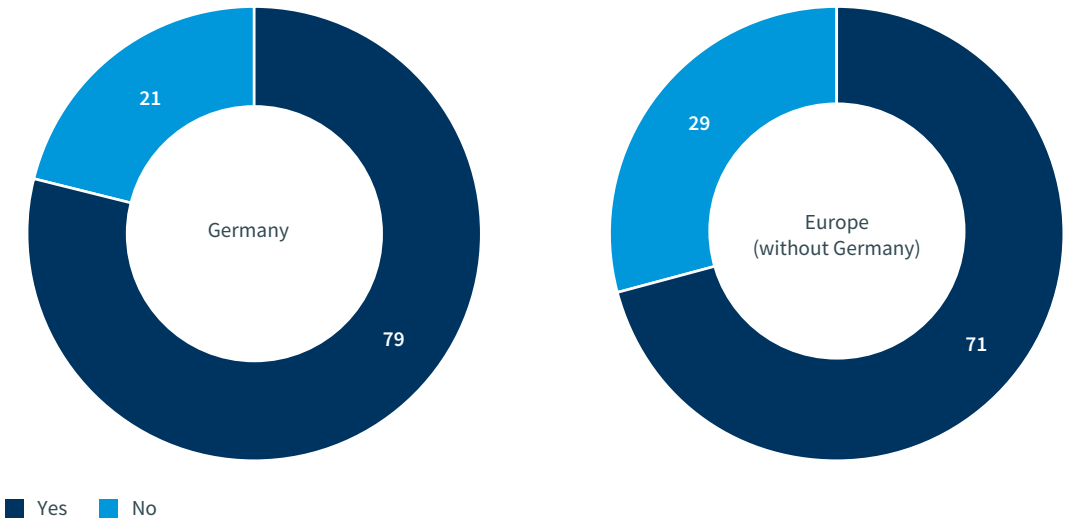
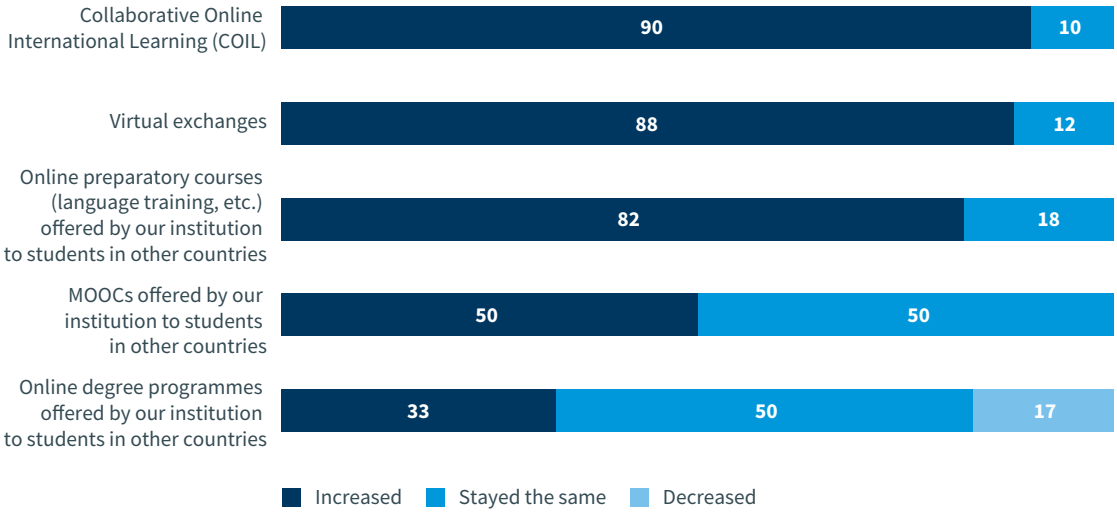


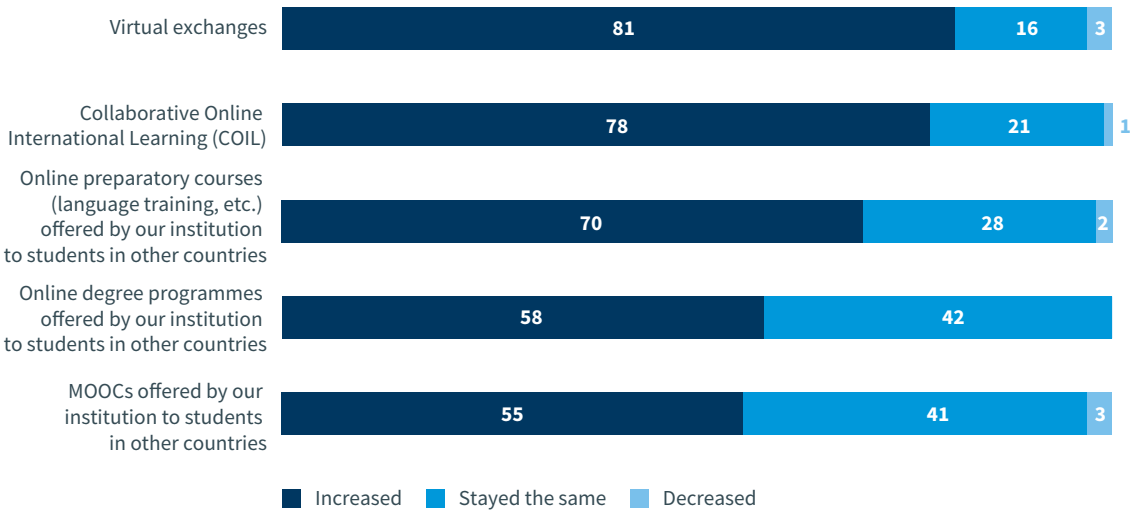
FIGURE 4.10 **Change in the importance of virtual internationalisation opportunities over the last five years** (in per cent)

Question 43: How has the importance of the following virtual internationalisation opportunities changed over the past five years? (Please select only one per row.)

A Germany



B Europe



international offices (▸ IOs) as advocates and supporters of virtual internationalisation by organising training programmes and facilitating online collaborations with partner institutions abroad.

> *They [academic staff] are encouraged [to integrate online teaching formats]. That's why we had this new unit that is really dealing with interdisciplinary and online teaching. So we have an expert in the administration and an expert unit, I would say, who is advising people, who is also helping to support the teachers or the staff members who teach on how to really do online learning, especially during COVID [who is helping] to set up presentations, not just technically, but also content-wise, and to change their didactics to really address and reach the target groups (TU1-3).*

However, the participation of academics in ▸ COIL is still an extra-curricular, good-to-have, rather than a systematically incorporated form of internationalisation activity. As interview partners observed, this could be related to the fact that organising ▸ COIL projects or hybrid classes can be discouraging due to the additional coordination and workload involved, combined with a lack of incentives, recognition, and suitable frameworks for online teaching. Some interviewees called for more robust institutional support and incentives for academics, as relying solely on their intrinsic motivation may not lead to comprehensive institutional change.

> *With regard to the teaching load and digitalisation and creating digital teaching projects, I wish there was some way of creating recognition or reducing the teaching load for teaching staff who want to create such projects. Because, at the moment, teaching staff who create such projects do it mostly due to intrinsic motivation, which is always wonderful. You always need someone who just wants to do something and try it out, but if we really want to widen such projects, widen the scope of what we're doing, then I think structurally there needs to be some incentive for teaching staff (U1-2).*

4.4.2 Shifting and Future Priorities in Virtual Internationalisation

In the 6th IAU Global Survey, when asked about the most pressing future priorities of internationalisation, either in Europe or in Germany, HEIs identified a clear and very pressing future priority for internationalisation. The situation is very diverse, and priorities vary from institution to institution. Enhancing virtual forms of internationalisation is the most common pressing future priority in Germany, but only at 42% of HEIs. On the contrary, only 18% of European HEIs selected enhancing virtual forms of internationalisation as a priority showing a specific interest by German HEIs for virtual internationalisation (Fig. 4.11).

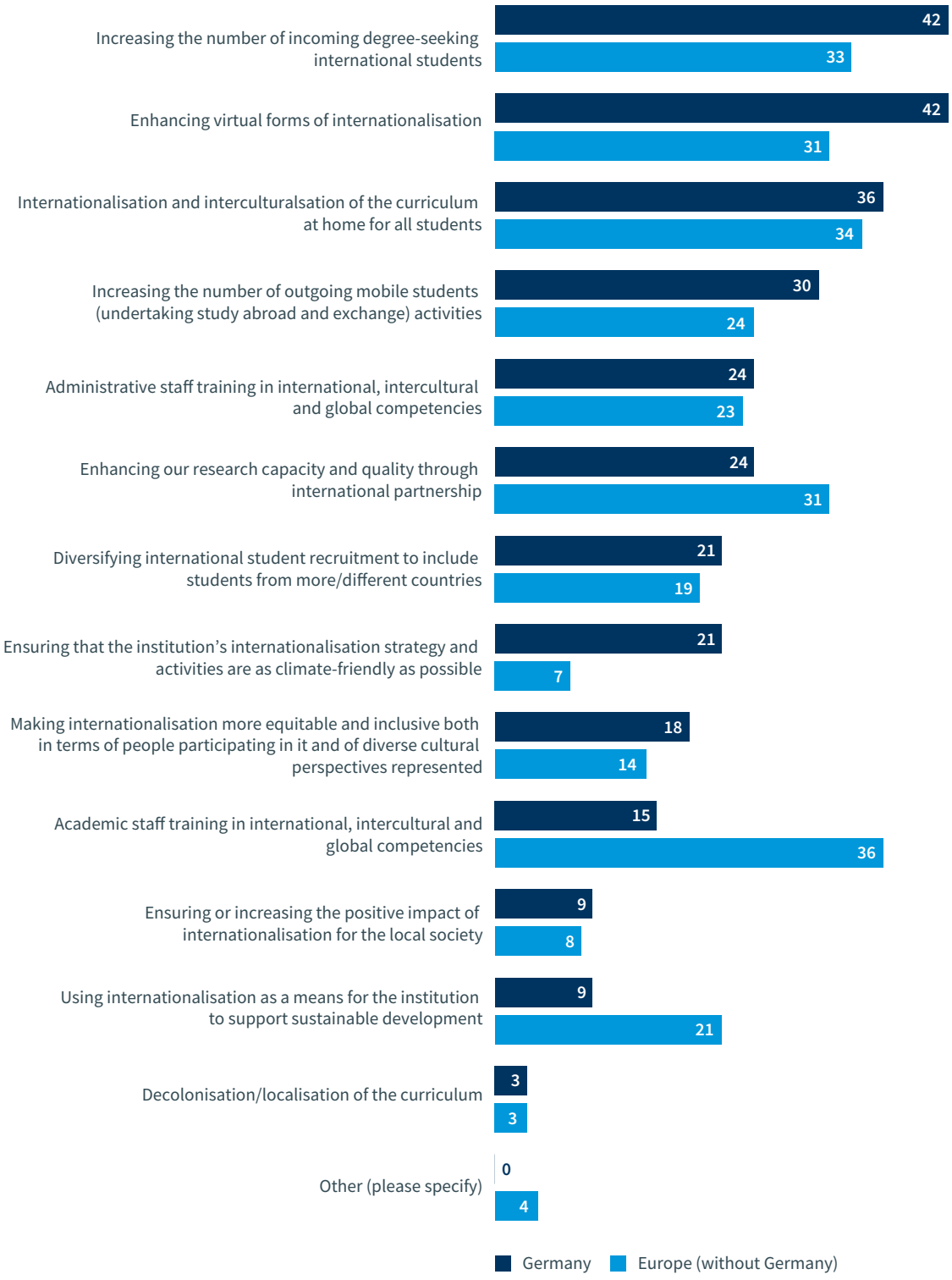
However, since virtual internationalisation itself was not the primary focus of the IAU survey, the limited information available did not allow for a comparative approach. For this reason, this section will lay out the evolving and future priorities of virtual internationalisation identified through the perspectives of INDISTRA's interview partners, with only occasional references to the IAU survey.

4.4.2.1 Digitally Enabled Collaboration

In the interviews conducted in the realm of the INDISTRA project, strengthening online teaching and boosting research collaboration with international partner HEIs feature among the most pressing priorities of VI. Although increasing collaboration with non-European ▸ HEIs (e.g., Global South) has been reported, there is a clear focus towards regional partnerships, chiefly within the European Universities alliances. On this point, the interviews resonated with the results of the IAU Global Survey on geographic priorities of internationalisation, which has similarly showed a strong regionalisation trend in Europe (Fig. 1 in the first chapter of this study). Optimism around the universities alliances is evident, with participants envisioning opportunities for greater integration across Europe, along with a competitive advantage for institutions through facilitated access to financial and technological resources, as well as collaborative efforts in knowledge production. Thus,

FIGURE 4.11 **Most pressing future priorities for internationalisation** (in per cent)

Question 62: What do you think will be the most pressing future priorities for internationalisation at your institution? (Please choose a maximum of three.)



affiliation with European Universities alliances focusing on a range of initiatives, including blended intensive programmes, ▸ **COIL**, ▸ **double degree programmes**, and joint ▸ **micro-credentials**, represents a promising path forward.

> *I think digitalisation is a very important aspect of this idea of bringing European Universities alliances together and bringing them to a higher level of cooperation and mobility (TU1-4).*

> *For the European Universities [Alliance], … we came together for two days in Brussels.… We were 35 people who worked to develop this concept online. We succeeded at the first try. We were really surprised that we made it. I couldn't believe it … because as [a member of the] European University [Alliance], now you are playing in the highest level of the game and have access to so many options that other normal universities don't have (U2-3).*

> *Within the Erasmus programme, we have these intensive programmes, but it will take time to integrate these into the programmes of our faculties, into the mindset of our students. We have a kind of 'lap' [an advantage] insofar as we are a member of a European university network, and they do concentrate quite a lot on blended intensive programmes and collaborative online international training – COIL (U1-1).*

4.4.2.2 Social and Environmental Responsibility

Another prominent aspect in the interviews was the assertion that virtual internationalisation strategies and practices must tackle pressing societal issues, such as the climate crisis and unequal access to and participation in education opportunities. In this vein, concerns over the environmental footprint of internationalisation of higher education have been a topic of discussion, with participants calling for a more critical approach to physical mobility. They are in favour of a thoughtful engagement with virtual tools to ensure high-quality mobility experiences with minimal environmental impact.

> *In international education, I believe we should ask [ourselves] very critically which mobilities are necessary regarding the carbon footprint and climate change. Even if you fly for academic purposes, you still have a carbon footprint and you should really be able to answer the question, 'why do I have to travel, and why can't it be done digitally?' Then, I think you can increase the quality of mobility. Just because you move, you don't necessarily change if you don't think about your experience. Just sending people all over the world without thinking about it is not good mobility quality (UAS1-2).*

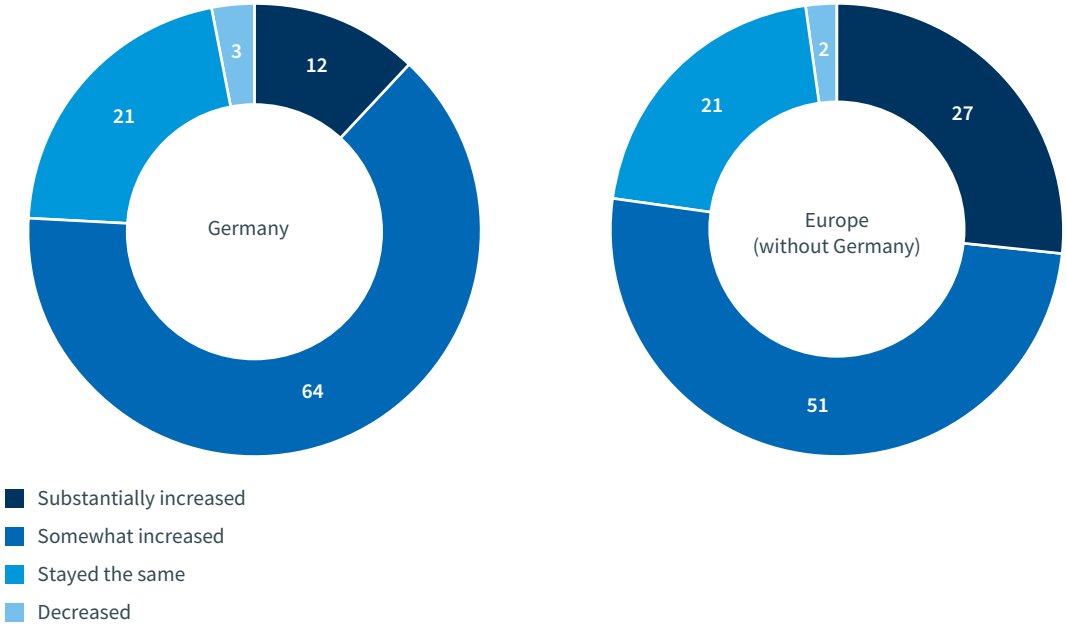
On this point, however, another interview partner maintained that, while internationalisation raises sustainability concerns, the in-person interactions facilitated by traditional mobility are crucial for fostering global peace, which is as important as addressing environmental sustainability issues, particularly in the context of current geopolitical tensions.

> *We're hearing discussions on 'you cannot really send students abroad because the plane is polluting the planet too much'. I don't think this will take place because both are here. All carry a lot of weight for the development of our planet, and, in a good sense, peace is also important, and … internationalisation helps in that regard (U2-4).*

In tandem with environmental concerns, focus on inclusion and widening participation has placed ▸ **internationalisation of the curriculum** (**IoC**) and ▸ **internationalisation at home** (**IaH**) at the forefront of VI strategies.

4.4.2.3 Internationalisation of the Curriculum and Internationalisation at Home

FIGURE 4.12 Change in the importance of internationalisation of the curriculum at home[5] over the last five years (in per cent)
Question 45: How has the importance of internationalisation of the curriculum at home (excluding staff and student mobility) changed at your institution over the last five years? (Please only select one.)



According to the 6th IAU Global Survey, both in Germany and in Europe, the importance of ▸ **internationalisation of the curriculum at home** has increased at about three quarters of HEIs over the last five years. However, in Germany, it has substantially increased at a lower percentage of HEIs than in Europe (12% vs. 27%) (Fig.4.12). While in Europe, several ways to internationalise the curriculum have increased in importance over the last five years at the majority of HEIs, in Germany, only two ways have done so: online activities that develop international perspectives of students at home (e.g., virtual exchange, ▸ **COIL**, online collaborative international projects, and virtual international internships) and teaching programmes/courses in a non-local language. The former has increased in importance for 89% of HEIs in Germany and for 74% in Europe, making it clearly the most common activity in terms of increased importance over the last five years (Fig. 4.13).

This clearly shows that European and especially German HEIs see virtual internationalisation as a tool to internationalise the curriculum at home (Fig. 4.12).

The increased relevance of internationalising the curriculum at home has been manifested in the strong consensus among the interviewees about making international, intercultural, and academic experiences more accessible to diverse and larger student and staff populations. As digitalisation strategies developed, it became evident that creating international experiences for all students requires integrating digital formats alongside traditional exchanges.

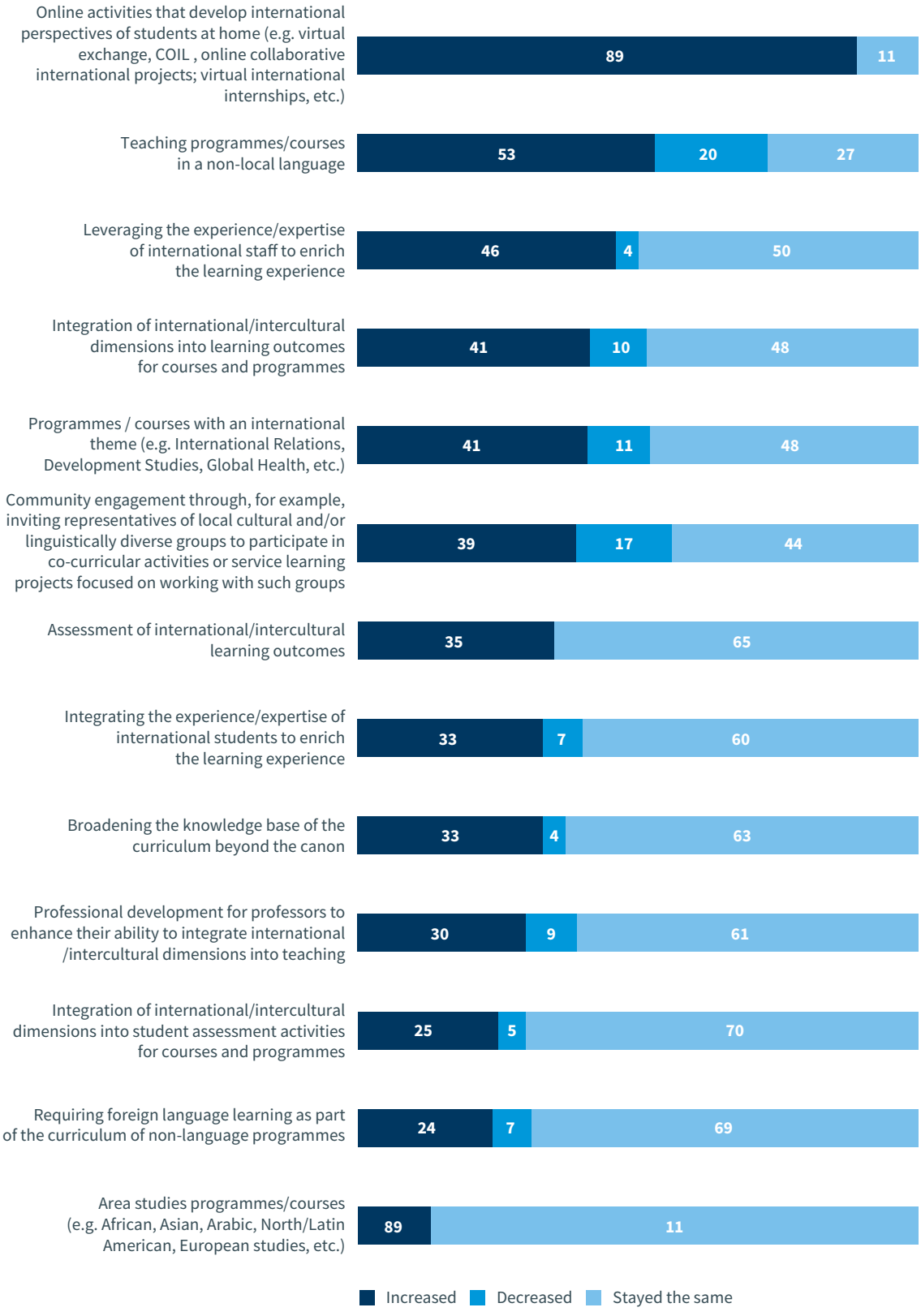
> *As the digitalisation strategy was being developed, I was also in contact with the digital office. I gave input and feedback, particularly with regards to the area of studies and teaching and how digitalisation can play a role and*

5 Given the similarity between the concepts of internationalisation at home and internationalisation of the curriculum (see glossary) and the fact that both have been used almost interchangeably, the IAU Global Survey subsumed them under the term internationalisation of the curriculum at home (Marinoni & Pina Cardona, 2024, p. 155).

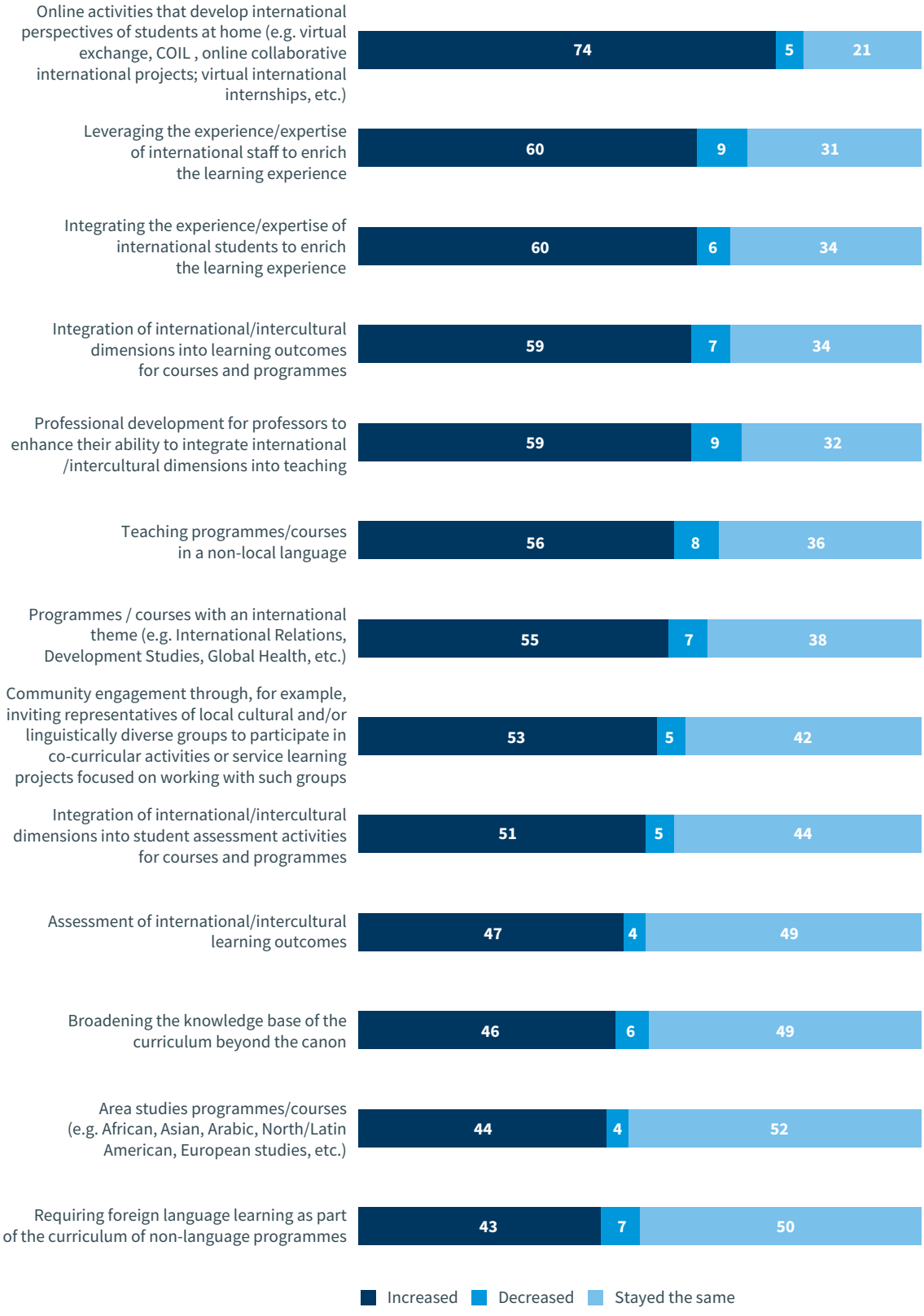
FIGURE 4.13 Change over the last five years in the importance of ways to internationalise the curriculum (in per cent)

Question 46: How has the importance of the following possible ways to internationalise the curriculum changed over the last five years at your institution? (Please only select one per row.)

A Germany



B Europe


Online activities that develop international perspectives of students at home (e.g. virtual exchange, COIL , online collaborative international projects; virtual international internships, etc.)
74
5
21
Leveraging the experience/expertise of international staff to enrich the learning experience
60
9
31
Integrating the experience/expertise of international students to enrich the learning experience
60
6
34
Integration of international/intercultural dimensions into learning outcomes for courses and programmes
59
7
34
Professional development for professors to enhance their ability to integrate international /intercultural dimensions into teaching
59
9
32
Teaching programmes/courses in a non-local language
56
8
36
Programmes / courses with an international theme (e.g. International Relations, Development Studies, Global Health, etc.)
55
7
38
Community engagement through, for example, inviting representatives of local cultural and/or linguistically diverse groups to participate in co-curricular activities or service learning projects focused on working with such groups
53
5
42
Integration of international/intercultural dimensions into student assessment activities for courses and programmes
51
5
44
Assessment of international/intercultural learning outcomes
47
4
49
Broadening the knowledge base of the curriculum beyond the canon
46
6
49
Area studies programmes/courses (e.g. African, Asian, Arabic, North/Latin American, European studies, etc.)
44
4
52
Requiring foreign language learning as part of the curriculum of non-language programmes
43
7
50
Increased
Decreased
Stayed the same

will play a role in our further internationalisation. And with regards to the internationalisation strategy, one of our key goals at the moment is creating an international experience for all students. And digitalisation plays a role in that because that's only possible if we're using digital formats in addition to, you know, the traditional semester abroad (U1-2).

We will definitely benefit from that [digital mobility], and since the pandemic, we are constantly using that for the students. I would say it's an addition. Digital mobility is very different from physical mobility, and it's not better or worse; it's just something different (UAS1-2).

Digital offers can lower participation barriers among students and staff who, due to different constraints, are unable to engage in traditional internationalisation activities. By providing introductory international experiences, while familiarising participants with peers and educational practices in other countries, it can potentially encourage them to pursue physical mobility later. In regions with strong local roots, digitalisation can offer alternative pathways to international exposure, replicating aspects of traditional study abroad.

I think it's more inclusive. We can reach students who, for whatever reason, can't go abroad or who can't come to us from abroad. It also can serve as an 'appetiser' for undertaking a semester abroad or an internship abroad later because you've had some international experience, or, for example, if you're in a digital classroom with one of our partner institutions, … then, you've already made contact and you kind of know how they work and that might lower the threshold for going abroad. I think those are two of the main benefits. And, of course, I think all students benefit from having a different perspective brought into the classroom. And with, you know, joint digital classroom projects, both cohorts of students benefit because they're getting an international perspective from the teaching side of things (U1-2).

To me, there's one major answer, and that's accessibility. That's the accessibility of international opportunities. Again, I'm coming back to students or academics who couldn't otherwise participate in internationalisation. And in a region, such as ours, … the [name of university] will presumably remain a university for the next 200 years with strong regional roots, with students who are usually from the region, the majority at least. And it's going to be difficult to provide every student here with an international atmosphere. So, we need to make opportunities abroad a reality for each and every person. And if you ask me, 'for each and every person, period'. And in that role, digitalisation provides us with the tools to give those people [access] who can't go – because they have to care for their parents, who have multiple jobs[…], and who just don't have the means to go abroad – not necessarily the same kind of experiences that their peers who actually travel have, but something that comes very, very close to it. And that is sort of the primary reason, I think, why digitalisation in internationalisation is something that cannot be brushed aside, … but it's just something we need to keep in mind (U2-4).

Yet, some drew attention to the fact that differences in students' profiles may pose limitations to their involvement in online offers. Often, the students who participate in digital courses are the same who would pursue opportunities abroad. Therefore, it is debatable if the goal to widen access to internationalisation to a diverse student population is entirely reachable by digital means.

In terms of teaching, of course, our main hope really is that we can widen the field of people who have an international experience. So, it's basically not replacing the physical international experience, it's more about widening the opportunities for those who otherwise wouldn't be able or don't feel like they can go abroad and so on. That's the main idea. Whether that's realistic, we don't know. And very often, I think those who might go abroad might be the same people who would also take a digital course because they are the ones who are more adventurous, … more innovative, …

> *who are interested in new things, you know? We have students who are not so interested yet.... So, widening access to internationalisation is our main point or main hope (U1-3).*

Concerning ways to internationalise the curriculum, ▸ **COIL** makes an integral component of this strategy, as frequently described in interviews. Some institutions have reported attempts to systematically integrate such activities through the permanent establishment of virtual exchange programmes with international partners. This aims to embed these programmes into everyday teaching practices rather than viewing them as optional enhancements.

> *It [the initiative] always has to come from the professors, of course. I mean, we do [receive] lots of funding from the [name of federal government]. We are running a project on COIL at the moment, collaborative online classrooms. Of course, it aims exactly at that, encouraging individual academics to use these tools to work and engage in joint teaching with colleagues abroad (TU1-2).*

Inviting guest lecturers to jointly deliver online classes or ▸ **COIL** activities is also part of the efforts of HEIs to infuse more international and multicultural perspectives into their curricula. Accounts suggest that these are often bottom-up initiatives sparked through relationships between academics and their counterparts at foreign institutions. In response to changing circumstances during the pandemic, some institutions have devised funding programmes to support international digital guest professorships. As the following quotes describe, by hosting digital guest lectures, HEIs can enrich the educational experience and foster international collaboration.

> *We also want to encourage teaching exchange and collaboration in sciences, in research projects, etc., and you do not always have to travel. If you met once at a conference, probably, and then you want to do research together, you can have a lot of meetings digitally, so it makes contact easier. If you want to teach, you can have a digital seminar and put together students from different countries. And what we also like to do to have the practical orientation in the class is to invite an expert just for a day, for a two-hour talk, and then you can invite an international professional to digitally talk in your class. You don't have to fly in for just two hours (UAS1-2).*

> *We adapted some funding offers. We have, for example, a funding programme for international professorships, for guest professors here at our university. And since the pandemic, we've also been offering a digital guest professorship because sometimes that's actually easier. So, the professors from our universities can invite lecturers from abroad for certain lectures, but only for 1 or 2 days, and they don't actually have to travel. So, yes, that has been a push in a positive way (U2-2).*

▸ **Double and joint degree programmes** were just marginally discussed, with four interview participants reporting their involvement in establishing such collaborative formats. Findings of the IAU Global Survey show that developing joint and/or double/dual and multiple degree programmes with foreign partner institutions is much lower (12%) in Germany than across Europe (30%) (Fig. 5.5). However, among interview participants, four additional institutions have expressed intentions to develop these programmes in the future. The implementation of such programmes is often associated with the ▸ **European Universities Initiative** (**EUI**) and aspirations to create a more unified European higher education system. However, this vision involves anticipated bureaucratic hurdles stemming from the need to converge diverse legal systems across European countries, unlike federal systems such as that of the United States of America.

4.4.2.4 Blended Programmes

The interviewed heads of IOs restated the aim of institutions to streamline alternative virtual internationalisation options, thereby making mobilities and collaborations more meaningful, resource-efficient, and sustainable. ▸ **Blended mobility** offerings, specifically the ▸ **blended intensive programmes** (**BIPs**) under Erasmus+, have emerged as a leading focus in the vision for international student mobility and have been particularly well received by students, as they offer international experiences without the extensive time commitment traditionally required for going abroad.

> *Now, we have these blended intensive programmes, for example, in Erasmus with short-term mobilities.... Students really like this programme because they do not have to invest so much time to go abroad. They take the seminars and lectures online during the semester and then have this short-term mobility between one or two weeks at a partner university. (TU2-4).*

While ▸ **BIP**s are seen as a promising endeavour, they present their own set of challenges. Limited funding options and stringent requirements concerning the number of participating students and partner institutions can lead to imbalances and complexities, e.g., managing student influx as well as in engaging with subsequent projects, such as research collaborations.

> *As a small university in [name of federal state], […], we have hardly any funds of our own. We also see that, for example, with these blended formats that I have just mentioned … because there is no suitable funding module for this at the DAAD. So, with Erasmus, there are now these blended mobilities but, as I said, they are mainly for students who cannot take part in a regular mobility due to personal restrictions or restrictions in the degree programme. And the BIPs are of course a great thing; we have already used them, and we've also sent students, if you can take advantage of the Erasmus funding. But this concept of three universities working together and only being able to travel to one university is not ideal for the concepts we have, which mostly work on a bilateral basis and where mobility sometimes goes in both directions, so that students from both universities can benefit from mobility.... So, we can see that something is actually missing (UAS2-1).*

> *And I think it [the pandemic] also helped massively to push this concept of blended learning projects. I mean, as I said, we were experimenting with them beforehand as well. But then, they came with their new Erasmus generation, the ▸ BIPs, and we're using them quite actively now. And I think without the experience during the pandemic, that would have been more difficult to blend in the sense that you do first a virtual and then physical period. We mainly use [blended learning projects] in the context of our European network, and to be honest, the numbers are not huge yet because there are still issues around how to administer them. And, of course, funding is limited from Erasmus, but they proved very popular. So, basically, we designed courses in ▸ micro-credentials jointly with the partners (TU1-2).*

Overall, while digitalisation is positively influencing universities, the intercultural value and personal growth offered by in-person learning continue to hold significant importance for many students. Institutions have observed a significant return to in-person exchanges post-COVID-19, underscoring the enduring demand for in-person international experiences, especially from those without participation barriers. Nonetheless, interview data indicate that while virtual exchange should not replace physical mobility, it can serve as a valuable complement to traditional learning formats or as a precursor to physical mobility. Having personally experienced the rich benefits of physical exchanges, some participants emphasised the irreplaceability of fully engaging with a foreign culture. Despite overt scepticism towards virtual-only experiences, they recognised the value of ▸ **BIP**s in integrating digital and physical interactions.

> *There has been a push in a positive way towards digitalisation in general for the university, but also in terms of internationalisation.... What we've also been observing in*

terms of student mobility, for example, is that you can't replace actual study abroad, like long-term study abroad opportunities, with digital offers. It's just not possible. It's neither something the students want, nor is it, I think, something that has actually the same intercultural value. You don't have the same international, intercultural experiences as when you're abroad, and when you're at home staring at your computer for some days. (U2-2).

Having had the experience myself … in the physical way of going abroad, and to be in a foreign country, and to get acquainted with the local culture, etc., that's something I wouldn't like to miss in that sense. So, if we're talking about digital mobilities and things like that, I'm not really a friend of that, to be honest. I mean, cooperating via digital means, like for instance, with the new blended intensive programmes from Erasmus where you bring together groups of students where they have a digital phase, but then afterwards they meet in a physical way; that's ok, that's fine (UAS1-4).

According to the interviews, ▸ **MOOC**s remain an underexplored area; they are increasingly discussed as parts or instruments of a broader strategy development, with significant potential, contingent upon the proper resolution of legal and structural issues. Current initiatives on this front are underway, including the establishment of MOOC-dedicated units, as well as the offer of MOOCs developed by or co-created with international partner institutions. Additionally, some institutions have incorporated MOOCs into blended intensive programmes. Since ▸ **micro-credentials** are assumed to contribute to the advancement of internationalisation by promoting flexibility, fostering international partnerships, enhancing employability, and supporting innovative and responsive educational practices. The interviewees mentioned them as a future priority for their higher education institution.

Micro-credentials or MOOCs are now a big topic. We're on this in a sense that there are certain units working on it, … but it's not yet a whole university strategy (TU1-1).

It is one position that's already there … to work on micro-credentials with the EU partners in the European Universities Alliance.… We do not really work too much yet with micro-credentials, but it is in our strategy. So that's why we have this position.… But it's a very broad definition what micro-credentials are, and this all needs to be agreed upon. If you talk about micro-credentials, nobody really knows what it means, but we want to go for it (U1-4).

I would say it has increased because before the pandemic, I'd say we didn't have the technical possibilities to be able to hold video conferences as easily as we can today. There are some lecturers who have applied for special funding programmes, including from the DAAD, and also run MOOCS at other partner universities (U2-1).

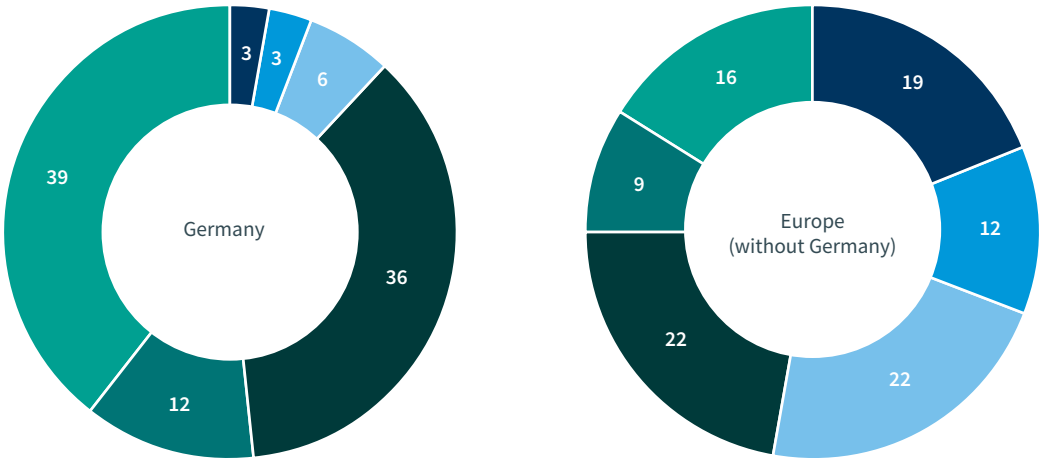
4.4.2.5 Learning Outcomes and Capabilities of Graduates

According to the IAU survey results, international, intercultural, and ▸ **global learning** outcomes are much less common in Germany than in Europe; only 12% of German HEIs have defined learning outcomes and capabilities of graduates compared to 53% in Europe. A relatively high percentage of German ▸ **HEIs** (39%) have not defined them at all, more than double of European HEIs (16%). In Germany, learning outcomes are included at the discretion of defined individual faculties/departments at 36% of HEIs and in development at 12% of HEIs (Fig. 4.14).

Despite this low attention paid by German HEIs to international, intercultural, and ▸ **global learning** outcomes, some interviewees pointed out that, for many students, virtual internationalisation offers invaluable opportunities to develop intercultural and language competences while connecting with peers from different countries. Moreover, virtual interactions can arguably enhance employability prospects, as graduates increasingly enter jobs that require online collaboration, communication, and other work-related skills essential to thriving in international, multicultural, and interconnected work environments.

> *And as a university of applied sciences, we have a very diverse student body. We are very proud of that, and we want to encourage that. But because of that, we have a lot of students who are not able to go abroad, and they won't be able to go abroad during their studies, maybe for a short trip, but definitely not for a semester abroad for various different reasons. For them, digital mobility is an opportunity to have international experience, to practise English, to get in touch with people from different countries. So that's a plus for them. And I think that students who go abroad will also appreciate having online international classrooms because then they can maintain contact with an international crowd.... They will also improve because you need different skill sets if you are in an international environment physically or digitally. So, I think that's a plus for students, and this is also again a full*

FIGURE 4.14 Set of learning outcomes or capabilities of graduates to be achieved (in per cent)
Question 47: Does your institution outline a set of international, intercultural, or global learning outcomes or capabilities of graduates that they all must achieve? (Please only select one.)



university of applied sciences. Employability is important for us, and I would expect that most of our graduates will have jobs which require international online meetings as well, so they already know how to do that (UAS1-2).

Despite the challenges posed by this topic, participants see significant advantages in developing digital skills for cooperation with international colleagues. However, there is an identified need to further enhance students' ▸ digital literacy skills, particularly in the areas of data security and management, to effectively deal with the risks associated with the use of information and communication technology (▸ ICT). Despite the common assumption that students, as digital natives, readily embrace digital tools, interviewees suggested that they may, in fact, be more vulnerable to digital threats. This observation aligns with the discussion in Ferreira Santos (2023) concerning digital security.

Some older staff members are not easily engaging with new systems, and the younger, of course, they get engaged easily. If you talk about using new systems, I think the main problem at German universities or worldwide at the moment is data protection. And I think our students who are digital natives are very easily tapping into scam mails. Maybe you heard there are universities in Germany which are having a breakdown [due to cyberattacks] at the moment. Most of the time, this happens to students who gave away passwords or things like that in mails they received because they didn't check [the sources] well (UAS2-2).

4.5 International Collaboration, Institutional(ised) Partnerships, and Changes in Partnerships

4.5.1 Institutional International Partnerships

The 6th ▸ IAU Global Survey results show that the number of institutional international partnerships over the last five years has increased at the majority of ▸ HEIs both in Europe and in Germany. However, in Europe, 71% of HEIs reported such an increase, while in Germany, this percentage is lower (61%). Correspondingly, the percentage of German institutions noting no change in the number of partnerships is higher in Germany (36% vs. 21% in Europe) (Fig. 4.15).

In Germany and Europe, the COVID-19 pandemic seemingly did not play a role in the change in the number of institutional international

FIGURE 4.15 **Change in the number of institutional international partnerships over the last five years**
(in per cent)
Question 33: How has the number of your institution's international partnerships changed over the last 5 years? (Please only select one.)

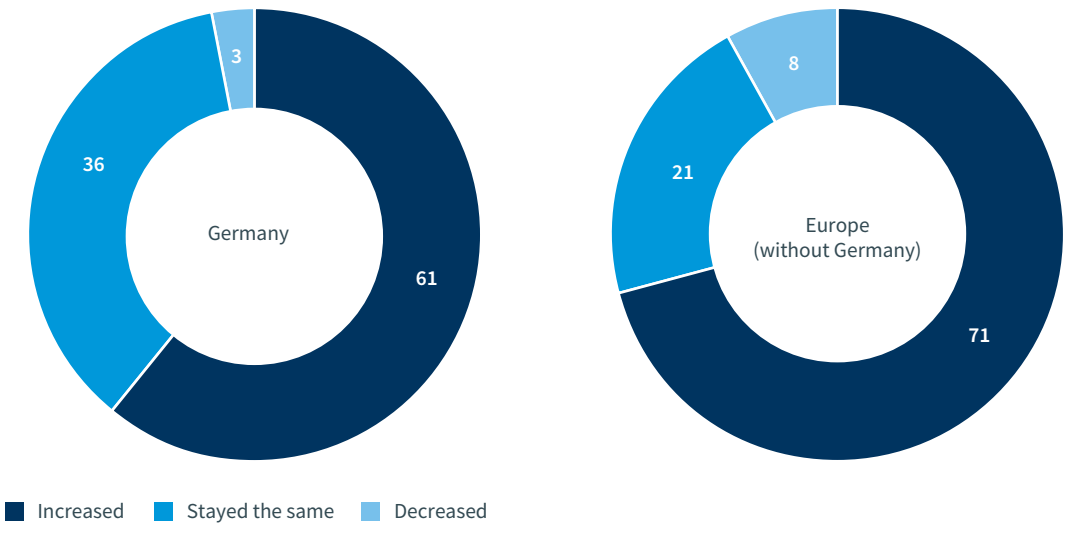
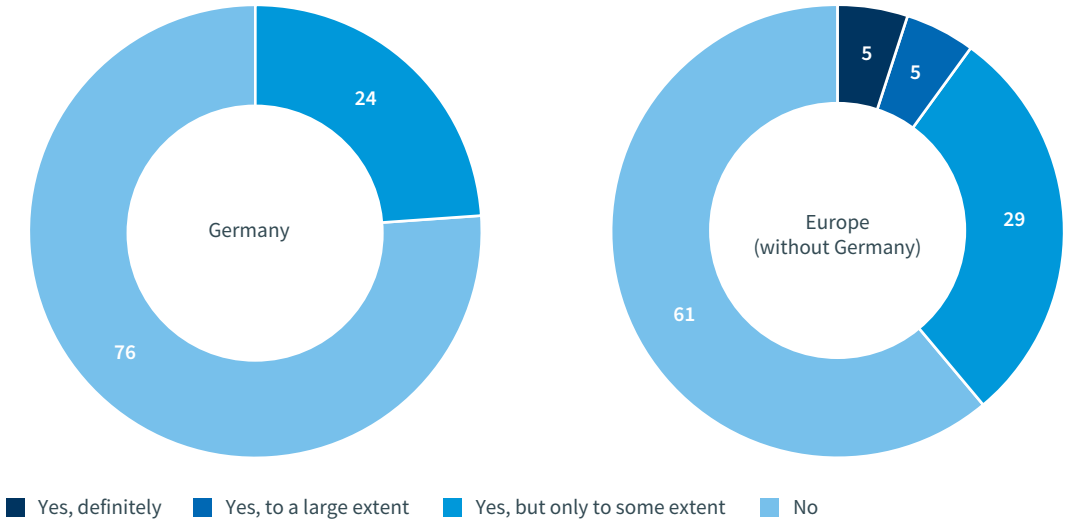


FIGURE 4.16 COVID-19-induced changes to international partnerships (in per cent)
Question 34: Do you think that these changes are mainly a result of the COVID-19 pandemic? (Please only select one.)



partnerships over the last five years at the majority of ▸ HEIs (76% in Germany and 61% in Europe). However, the impact of the pandemic is given less relevance in the German sample than in the rest of Europe, with 24% of ▸ HEIs reporting that COVID-19 played a role only to some extent (29% in Europe) and no ▸ HEIs reporting that COVID-19 played a role to a large extent or definitely (in Europe 5% of ▸ HEIs reported such cases) (Fig. 4.16).

The INDISTRA's interview data do not allow us to directly compare with the ▸ IAU survey results since the interviewees were not asked to provide exact numbers on international institutional partnerships. Yet, the material allows us to delve deeper into the topic and assess the (changed) quality of institutional partnerships and if the pandemic and the digitalisation of processes had an impact on the quality of the collaborations. In general, there is consensus among the interviewees that digitalisation has increased the quality of collaborations. Some highlighted the enhanced matchmaking and collaboration: Digital tools have significantly improved the process of starting and further developing international collaborations, particularly in involving scientists. There is greater ease and flexibility in organising meetings to facilitate preliminary interactions between personnel in international offices and researchers. This is particularly helpful when physical travel is challenging due to scheduling conflicts or logistical issues, making international collaboration more accessible.

> *One [benefit] is definitely the way to start and further develop a cooperation, especially when you want to involve scientists. So, this matchmaking process has improved a lot with digital means. And this collaborative work in between physical meetings of partners and networks has also improved a lot (TU1-4).*

> *The meetings are very easy, … and you can organize online meetings not only between international officers but also between researchers. We can make a workshop online for them where you put in contact the different researchers to say, 'Okay, make smaller work groups to see if you have any research contact points' [common research interests], … and it's easier to implement a strategic partnership if you have a lot of contact points in the research.… So, this is the kind of development. Usually, the first point is the research, and after that, they are thinking about mobility; then, after mobility, they are thinking about curriculum development, and after*

> *curriculum development, they are considering double degrees or joint degrees. So, there are of course advantages to utilising digitalisation of internationalisation in this case (TU2-1).*

Thus, effective digital collaboration can lead to more sustainable partnerships, both in terms of maintaining relationships and optimising resources. Digital meetings make it easier to connect geographically dispersed participants, facilitating more frequent and accessible interactions. However, while digital connections are easier to establish, they may lack the depth of in-person interactions. The absence of informal follow-ups and reflection that occur naturally during in-person meetings can make digital connections feel less meaningful. Despite these challenges, the interviewees agreed that the long-term benefits of digital collaboration in terms of sustainability and improved accessibility outweigh the drawbacks, leading to more robust and versatile international partnerships. In addition, we noted there is a boomerang effect where digitalisation can support stronger collaborations, while at the same time, collaboration can offer more opportunities to enhance digitalisation, while serving as fields for experimentation among partners:

> *The digitalisation strategy for teaching has this cool term, which is a 'culture of enablement', and they have this exploratory teaching space. So, it's more about exploration of certain ideas and possibilities, and these can be internal projects where you try to develop blueprints for a larger strategy for the university.... And for the outside strategy, with the university alliance, another project is that through these projects, the strategy gets accelerated and maybe pushed in certain directions (TU1-1).*

Higher education institutions have leveraged existing partnerships to engage in this format for its potential to create more equitable collaborations, particularly by addressing existing imbalances in the number of incoming and outgoing students.

> *And if I look at the top five outgoing countries for our students for study reasons, I have the USA in the top five, for example. So, I need to consider all American partner universities as being of high priority because we are getting the free places for our students only if the American universities get something back in return. So, I need to think about what we can offer them, and that might include digital formats as well.... European partnerships are very important as well ... because we have some very attractive partnerships, for instance, in Scandinavian countries where we send lots of students, but we don't receive enough students from those. It will be necessary to discuss what we could do to get more students from them. Perhaps it's not only, for instance, offering the opportunity to do internships here, besides studying. Maybe we could offer digital access to lectures from [European Union country], so that there are perhaps common student projects initiated, and, in the end, they could decide to come in person, for example. So, digitalisation could play a role in that respect too (UAS1-4).*

4.5.2 Effect of Changes in Political Relations between Countries on International Partnerships

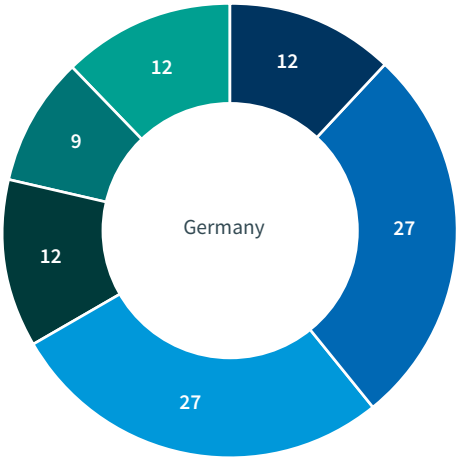
The 6th IAU Global Survey contained a question on the effect of changes in political relations between countries on the internationalisation of research. However, the analysis of the results of this question in Germany is difficult and might reveal a possible misinterpretation of the question and subjective as opposed to factual replies. In fact, 9% of German ▸ HEIs replied that their institutions were required to completely suspend research partnerships with institutions in some countries because of newly introduced governmental rules and regulations, while 27% reported that their institutions were required to revise their research partnerships in some specific disciplines with institutions in some countries because of newly introduced governmental rules and regulations. A total of 12% of ▸ HEIs replied that their international research was not affected by changed political relations (Fig. 4.17).

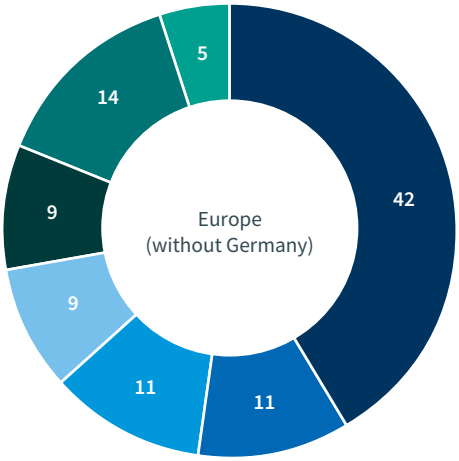
Drawing on INDISTRA's interview material, we can explain these results because the responses to geopolitical changes vary largely across German HEIs and according to the respective field of study and research interests. All interviews provided insight into the current dynamics of international collaborations involving China, Russia, and Ukraine.

Institutional cooperation with Russian HEIs has been largely suspended since the Russian attack on Ukraine. Although partnerships with Russian

FIGURE 4.17 Effect of changes in political relations between countries on internationalisation of research (in per cent)

Question 52: In the last five years, political relations between some countries in the world have changed and, in some cases, have become more tense. How has this impacted the internationalisation of research at your institution? (Please only select one.)





- Our international research was not affected by changed political relations.
- Our institution was required to revise its research partnerships in some specific disciplines with institutions in some countries because of newly introduced governmental rules and regulations.
- Our institution chose to revise its research partnerships in some specific disciplines with institutions in some countries because of its own decision.
- Our institution was required to revise its research partnerships in all disciplines with institutions in some countries because of newly introduced governmental rules and regulations.
- Our institution chose to revise its research partnerships in all disciplines with institutions in some countries because of its own decision.
- Our institution was required to completely suspend research partnerships with institutions in some countries because of newly introduced governmental rules and regulations.
- Our institution chose to completely suspend research partnerships with institutions in some countries because of its own decision.

institutions remain, formal agreements and collaborative efforts are currently on hold. Despite this, individual self-organised mobility from Russia to Germany is permitted, and Russian students from partner universities are still being welcomed.

> *So, we've frozen all institutional cooperation efforts with Russian universities.... Individual self-organised mobility from Russia to Germany, it's all fine and accepted.... And so those have changed significantly (U2-4).*

> *But [with] Russia, obviously, the general policy is to put collaboration on ice. So, we're not doing anything on an institutional level. We have two partners in Russia [name of the partner institutions ... and we've been in touch with them over the last couple of weeks, and they want to send students. Well, we'll have those students, right? If young people want to leave Russia in search for a better life and other possibilities, we want to facilitate that. But we don't want to communicate that we're having continued collaboration on an institutional level (UAS1-3).*

Partnerships with Ukrainian ▸ **HEI**s have not only persisted but also been strengthened since the onset of the war against Ukraine. Institutional support for Ukrainian students was in certain instances mediated by digital offers with funding provided by German funding agencies. Once again, digitalisation is seen as an important tool to secure the continuity of education provision and for the resilience of ▸ **HEI**s in critical times.

> *We did [collaborate] with Ukraine, obviously, because there was a DAAD programme for it. So, the programme Ukraine Digital is running, and we're part of that as well. We try to set up online classes for students and with partner universities (UAS1-3).*

> *Well, we don't work with Russia anymore. With Ukraine, we tried to set up some digital teaching projects, ... especially with refugee Ukrainian academics who are here at the [name of university] to provide them with the tools to continue their teaching online in Ukraine. That's been quite successful (TU1-2).*

> *We have a partner university in Ukraine, and they've been our partner for many years, and the cooperation has been very close ever since. But since the war, even closer (U2-2).*

The participants acknowledged the relevance of maintaining relationships with critical partners such as China. In the case of China, while in principle, collaborations were mostly impacted because of severe mobility restrictions imposed during the pandemic, geopolitical tensions posed major questions to ongoing collaborations with the country. While communication persisted during the pandemic, most collaborative activities were suspended. Chinese students continued to pursue studies abroad, but entry into China was constrained by stringent quarantine protocols.

> *Regardless of China interactions, not so much. China was difficult because [during the] COVID [-19 pandemic], they had the COVID restrictions until a couple of months ago. So, that was sort of on ice (UAS1-3).*

At the same time, German ▸ **HEI**s devised strategies and measures to secure the continuity and quality, while minimising the perceived risks of engaging in collaborations with China. The establishment of guidelines for collaborations with the country, described in the excerpt below, is one of such measures implemented by one of the HEIs in our sample. These risks are generally associated with issues such as ▸ **data protection**, data security, and intellectual property.

> *China is kind of the larger question. We started looking at this topic three years ago, actually shortly before the pandemic began. We started looking more closely at the question of international cooperation in a volatile world and how to deal with cooperation agreements and cooperation in critical countries. And China, of course, is the largest, right? We've developed a proofing process for all formalised cooperation where we use the academic freedom index as the basis for that ... and then depending on what the agreement is supposed to encompass.... Then, there are certain areas, particularly research areas, that have to be*

looked at more closely. We have a proofing process for that where not just my department is involved; the research department is involved, export control, things like that. I think it's very good that we started this process three years ago because it's become more and more a topic at the moment in internationalisation at German institutions. This past spring, we published some guidelines for international cooperation, particularly more with regard to the non-formalized side, giving guidance to researchers about what to think about before formalising [international cooperation agreements] or also with regard to things that they don't normally formalise. The guidelines aren't there to scare people or to dissuade them from international cooperation, but to make them aware of things; for example, how academic freedom is understood in Germany is perhaps not always understood in [the same way under] a different regime (U1-2).

And then China is obviously quite a major factor in our thoughts, and it remains [one], so we've not necessarily cut back. We didn't really cut ties with Chinese universities, but we're in discussions on how to set up a screening process, which we've already started in parts and a screening process, which is something we haven't done with other universities or with universities from around the world in other countries (U2-4).

4.6 Challenges to Advancing (Virtual) Internationalisation

According to the IAU survey results, 'Insufficient financial resources' is the most frequent internal obstacle/challenge for ▸ HEIs in Europe (55%) and the only one selected by the majority of ▸ HEIs. While the importance of this indicator is the same in Germany (55%), it only ranks second, because administrative/bureaucratic difficulties proved to be the most important internal obstacle in Germany, chosen by more than half of respondents (58%), a much higher percentage of ▸ HEIs than in Europe (29%). It is also interesting to note the higher importance of competing priorities at the institutional level in Germany (42%) than in Europe (23%) (Fig. 4.18b).

Limited funding to support internationalisation is the primary external obstacle to advancing internationalisation in Germany, where it is selected by the majority of ▸ HEIs (55%). It is also the most frequent in Europe, even if it is selected by a lower percentage of ▸ HEIs (46%). Language barriers are the second most important obstacle both in Germany and Europe, selected by similar percentages of HEIs (48% and 41%, respectively). On the contrary, 42% of German respondents mentioned visa restrictions imposed on foreign students as one of the most important external obstacles; this percentage is much lower in Europe (23%). Negative perceptions of the situation in the country are seen as an impediment to advancing internationalisation in 11% of cases in Europe, while no cases are registered in Germany (0%). The fact that internationalisation of higher education isn't a policy priority for the government is not perceived as an impediment to advancing internationalisation at institutions neither in Europe (8%) nor in Germany (12%) (Fig. 4.19).

Building on the IAU survey findings on challenges to advancing internationalisation (as a whole), the INDISTRA interview material indicates that funding remains a fundamental challenge also for advancing virtual internationalisation among German ▸ HEIs. Yet, VI comes with its own set of challenges associated not only with financial, but also legal, technical, and human resources issues.

FIGURE 4.18 **Most important internal obstacles/challenges to advancing internationalisation** (in per cent)
Question 18: What are the most important internal obstacles or challenges to advancing internationalisation at your institution? (Please select a maximum of three options.)

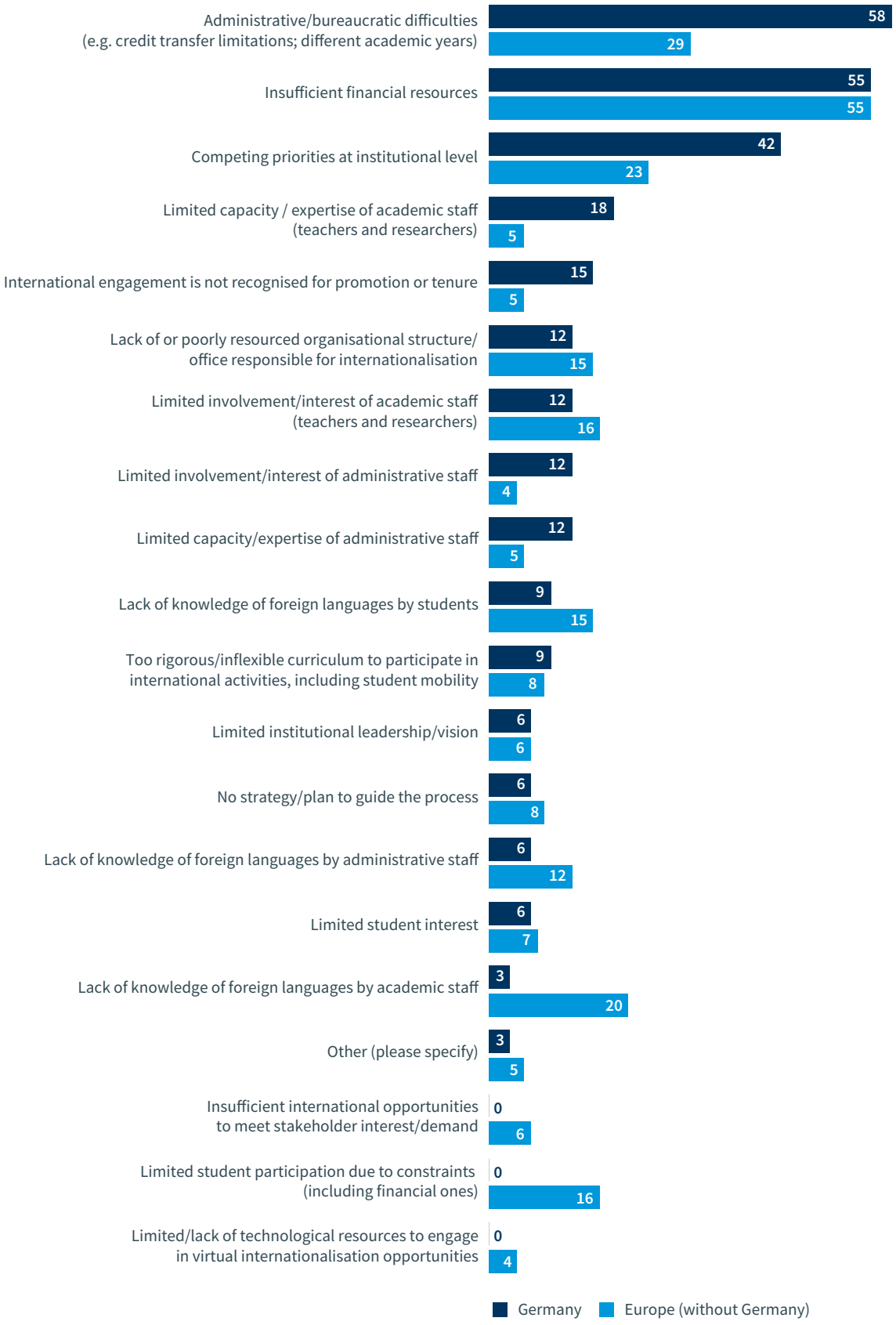
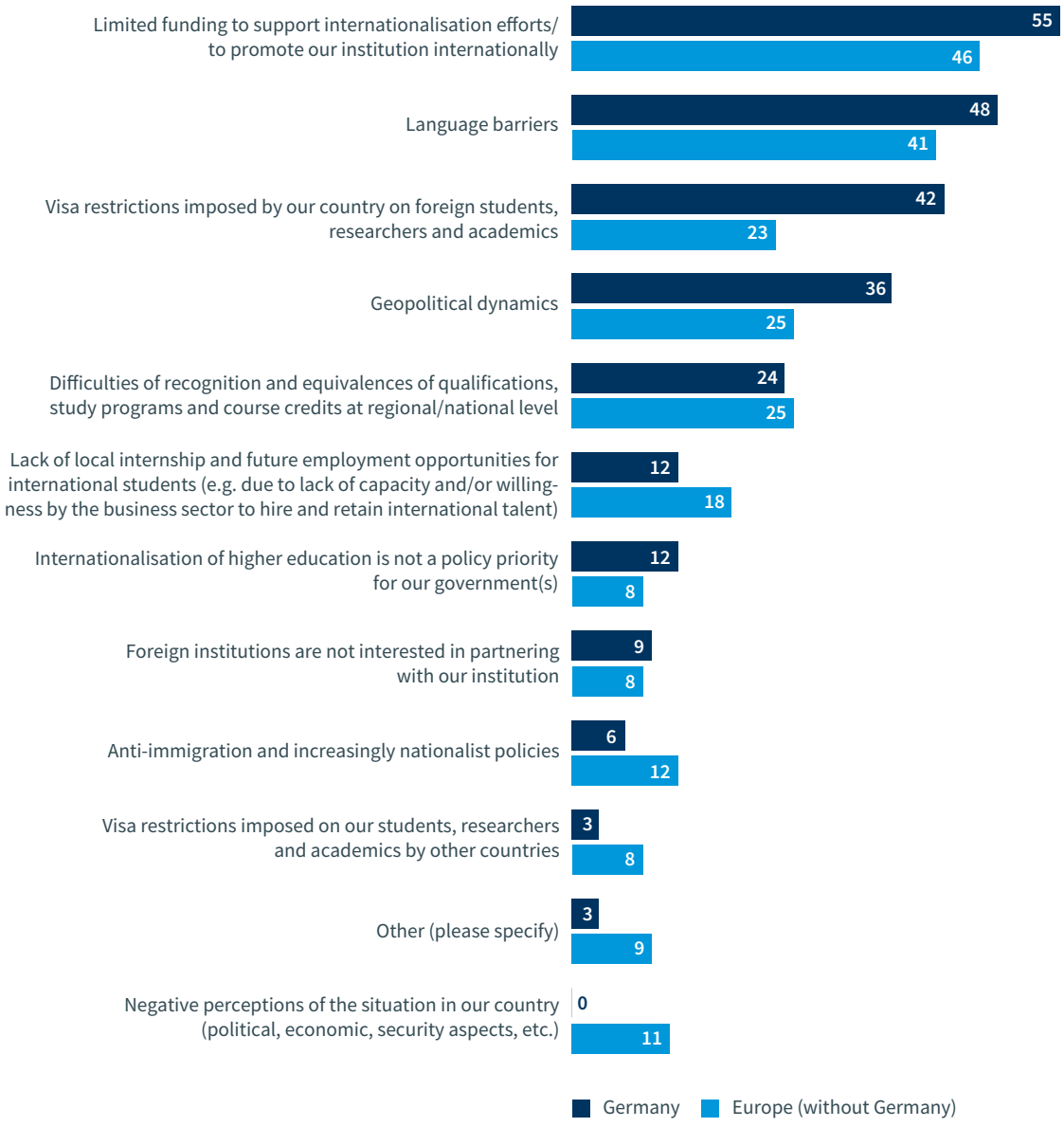


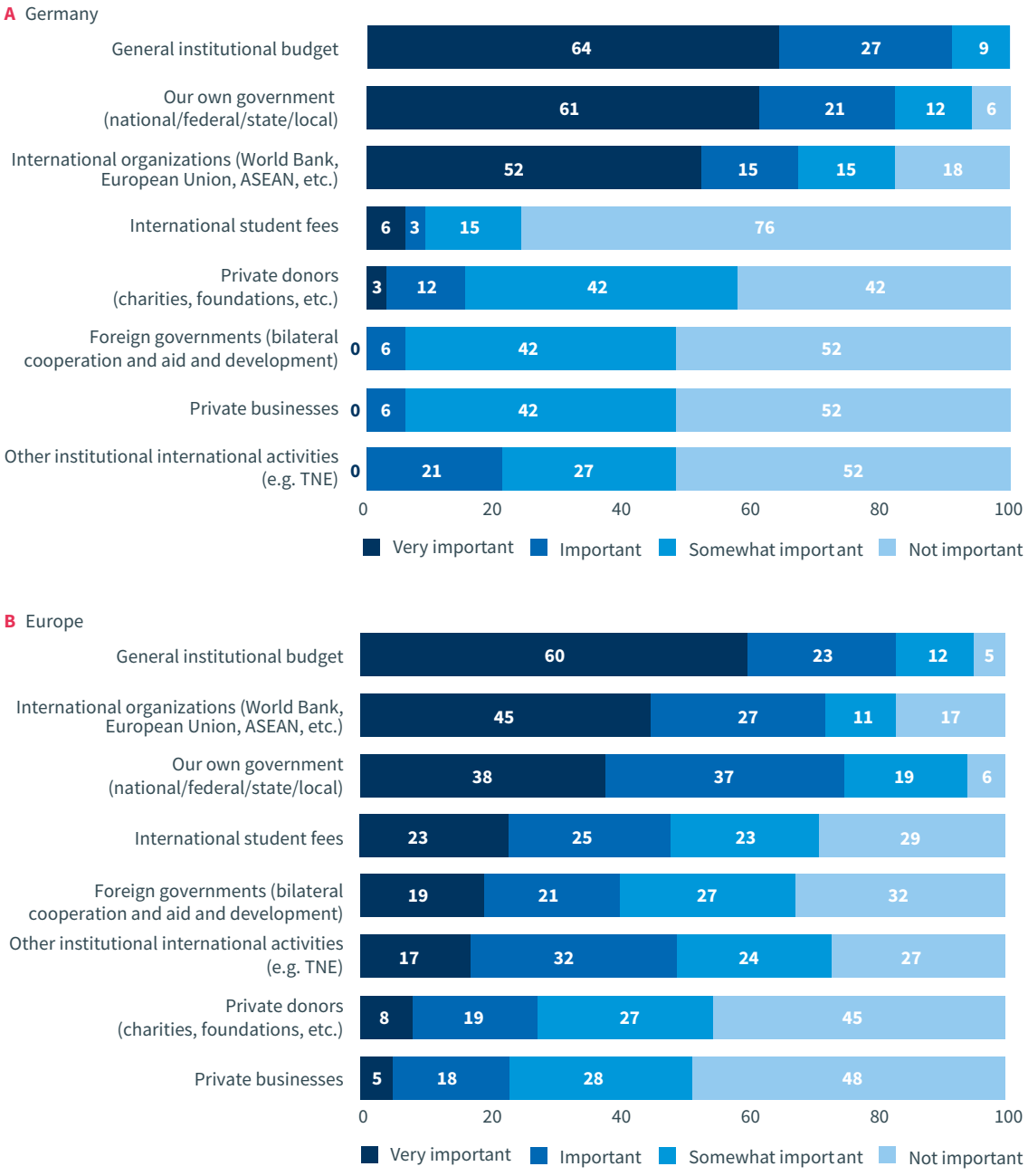
FIGURE 4.19 Most important external obstacles/challenges to advancing internationalisation (in per cent)
Question 19: What are the most important external obstacles or challenges to advancing internationalisation at your institution? (Please select a maximum of three options.)



4.6.1 Financial Challenges

According to the IAU survey results, the general institutional budget is the most important funding source for internationalisation both in Europe and in Germany. However, while in Europe, this is the only one selected as being very important by the majority of HEIs, in Germany, there are two: government funding (61%) and international organisations (World Bank, European Union, ASEAN, etc.) (52%). It is worth noting that international student fees are not an important source of funding for German ▸ HEIs as, in many federal states, Germany offers tuition-free education at public universities to both domestic and international students (Fig. 4.20).

FIGURE 4.20 Most important funding sources for internationalisation activities at HEIs (in per cent)
Question 26: What is the importance of the following funding sources for international activities at your institution? (Please only select one per row.)



In line with the IAU survey findings, our interview data show that governmental agencies, particularly those associated with science ministries, and supranational bodies, play a crucial role in leveraging digitalisation and internationalisation initiatives through third-party funding. In this sense, the DAAD and the European Commission (e.g., Erasmus programmes) consistently stand out as the most relevant and most frequently cited source of funding among the sampled HEIs. While most higher education institutions (▸ **HEI**s) are relatively well equipped in terms of digital infrastructure, they still face the need to compete for financial resources. There is notable inequality in funding availability across institutions, with larger universities often receiving a more substantial share. The inequalities between German ▸ **HEI**s due to the Excellence Initiative (*Exzellenzinitiative*) are frequently mentioned.[6]

Existing funding schemes constituted another critical point of discussion in interviews. The reliance on project-based funding from third-party sources, alongside the deceleration or discontinuation of many grants post-pandemic, poses significant challenges to sustaining long-term strategies. Because internal funds are somewhat limited and primarily used for initiating projects and do not cover long-term staffing, maintaining quality standards following the end of a given funding period is not guaranteed. Indeed, there are growing concerns regarding the sustainability of ▸ **VI** strategies once current funding sources are no longer available or financial support inevitably shifts to other priorities in the future.

> *Especially when we implemented it, we had support from the DAAD, and when the funding ended, and that was at the end of last year, then it's difficult to keep up the same quality level (TU2-4).*

> *Digitalisation will stay as a trend or as a development, rather, and will be ongoing. And it will be important to not lose touch with it. That is also why I'm keen on making sure that these funding propositions, that project funding is really not what we need. We need people to work on this for longer terms. We need institutions within institutions. We need international offices set up with their own digitalisation hubs that sort of expand to all different kinds of areas. And with that in mind, this is also where I think the biggest challenge lies: it's going to cost money. It's going to cost a significant amount of money to change processes that have been established and set up in the past for sort of 30 to 40 years. And it will probably be the most significant transformation of a lot of people's jobs that they will see in a lifetime. But it will come one way or another, and it's a question of how good we are either at funding the institutions so that they can train their people the right way or at onboarding new people. But this is the major challenge (U2-4).*

> *So now, because it's [digitalisation] one of those things that is trending in internationalisation, there has been a lot of money available for your research project, but also for DAAD programmes in the last couple of years.... So, that means it's always limited in time.... The Erasmus now has this blended international programme.... I have no idea how long that's gonna last.... I would say that most of the funding is limited, that is, project funding.... The big question is 'what happens afterwards when specific funding for digitalisation sort of dries out?', which is definitely going to happen because there's gonna be something else [a new trend] in five years (UAS1-3).*

6 Due to issues related to anonymisation, we abstained from presenting direct quotes related to the Excellence Initiative.

4.6.2 Legal Challenges

Despite funding being a critical issue addressed by the INDISTRA interview partners, the implementation of ▸ **VI** is not solely contingent on financial resources. In the German context, adherence to regulatory requirements, mainly concerning ▸ **data protection** and ▸ **recognition** processes, may impose considerable restrictions. The issue is exacerbated when collaborating with partners abroad, who often abide by different regulations and cultural norms. As interviewees noted, the existence of different regulations across the 16 German federal states, together with an overly strict interpretation of the rules and regulations adds to the difficulty.

> *I like this project [specific project in the HEI] because it was interesting to think about the implications of it for the administration. You very quickly get to the fact that higher education is still organized on a national basis, so that we sort of explore different ways of how to administer this multilateral virtual exchange semester. 'Will people all enrol in one institution, or could we just organize it so that they stay enrolled at their home institution and then exchange teachers?' And none of that is possible because higher education is national higher education bound by national rules and regulations. So, the only alternative for us was to have students enrol in each different institution in each different country. So, [these are] the limitations that digitalisation can offer. And on a personal basis, I very quickly got fed up with failing technology, the platforms that stop working. It was a huge hassle just to get a team's platform working for us to work together.... There was a partner in [European country] who was able to get someone in IT to set up this platform and open it up for us as external users from other countries. That was a big, big hassle because of privacy rules, IT security. So, we couldn't do it in Germany because our IT [department] said 'no, we don't do external users'. There are different contracts, so we had Webex in our institution, and we cannot use Microsoft (UAS1-3).*

> *And then, of course, in Germany because of federalism, each state has its own regulations, which complicates things. But I think that it's a challenge. It's a challenge at the moment, and I think it will continue to be a challenge (U-1-2).*

In addition, while participants restate their commitment to ▸ **data protection** and ▸ **data self-determination**, they also recognize regulations create barriers, such as the need for frequent consultation with data protection guidelines or the legal department, which leads to longer processing times and hinders smooth implementation of VI processes.

> *It's the data protection guidelines. That is the number one reason that makes it quite difficult.... While it is technically a good thing that information is transferred rapidly and easily between institutions, ... it is a major challenge to make sure that people retain their rights to that information and also retain the right to make sure that it doesn't get transferred if they don't want to (U2-4).*

> *We have money to implement software, but it's always about the regulations that we have to obey. So, it's not that we simply can say we just introduce a new software, and it doesn't matter the price. But then the data protection officer says, no, 'there's no way that you can use it' (TU-1-3).*

Issues such as credit transfer exemplify these challenges. Ensuring that students receive equivalent credits at their home institutions when participating in a European Universities alliance's programme requires addressing disparate student administrative systems. Providing students with seamless access to the systems of partner universities poses additional challenges, particularly from a digital integration standpoint. While political aspirations for such integration are understandable, practical implementation involves navigating a complex array of administrative, bureaucratic, and legal hurdles.

> *I think in the end, it's a big impact, especially what is wanted on a European level.... What is actually wanted is a real European university*

> *in the sense of merging different systems and having a European campus somehow. But we're not the United States of America, so it's different countries with different legal [frameworks].... How do you do a credit transfer? I mean, if you have a student at one of those ... European Universities, how can you make sure that he or she gets the same credits he would have got in his home country? ... Each and every university has their own student administrative database.... How do you make sure that students have real access to the university systems of another university? So, it's a huge impact, and it's also an example of how things are wanted on a political level, ... but then when it comes to reality, there are a lot of real administrative, bureaucratic, and legal issues (U2-2).*

A common issue shared by the interviewees dealt with the fact that regulations have not been updated to meet the demands emerging from changes in ▸ **VI** processes. This has directly affected the status of international or mobility students attending courses virtually from their home countries or who would come to Germany for very short stays (e.g., participation in blended intensive programmes).

> *We are also in contact with the enrolment office about how we can enrol students who will not come to the university physically. It sounds like not such a difficult question, but there's a lot of fees attached to compulsory insurances. (UAS1-2).*

> *(...) legal things that if you're enrolled at our institution, then you have to show proof of health insurance and you have to pay the semester contribution and all that. And, of course, then there's the question, 'Okay, but what if you are enrolled, but you're not here?' (U-1-2).*

In the same vein, concerns have also been voiced regarding a lack of clear framework conditions for online teaching considering the German capacity law (*Kapazitätsrecht*), which can arguably hinder academics' involvement with digital teaching offers (e.g., ▸ **COIL**).

> *They are free to do whatever they want to do, and we are there simply to support them. I think the only restrictions they might have is ... – and this is where the conflicts arise – when it comes to their own teaching load. If sometimes people think, 'I do an international online course with a partner; I teach two hours, and the partner teaches two hours', then the faculty would say, 'Oh, it's only a 50% position; you're only teaching one hour a week'.... But I think that's not particular to digital courses; that is particular to whatever course you develop that's new and innovative and doesn't fit into the sort of 'I give it a two-hour seminar'. There is easily conflict. But other than that, I think they are free (U1-3).*

> *We have many other study programmes that, now after COVID-19, they're trying ... to end the mobility or to start the mobility with a virtual classroom, but it's not very common, and the added value is not yet there. And you need a lot of additional resources, which are not yet there. For the lecturers, it is not very convincing why they should do that (TU2-3).*

4.6.3 Technical Challenges

By and large, participants reported numerous difficulties operating certain tools and platforms. Contrary to the expected benefits of ICT solutions, participants have complained about faulty systems, a lack of interoperability, and the mandatory adoption of new technologies with limited support for users. These factors have been associated with excessive time consumption, inefficiency, and frustration and increased ▸ **technostress**. This complaint is recurrently directed at EU provided tools, such as Erasmus Without Paper (▸ **EWP**).

> *Of course, digitalisation also means making processes more effective. For example, ... Erasmus Without Paper is a huge topic. The European Union is pushing it, but often with the wrong means and with the wrong tools, tools that are not working. At the moment, it's a nightmare, ... but eventually, ... we hope that processes will be smoother, less*

personnel-intensive, with less paper attached to it, and so on. But, at the moment, that's not the case (U1-3).

There are so many platforms where you have to register for everything. If you have Zoom, you have a different password, then [another password] for Microsoft teams, for everything. And this is driving me crazy because you have a lot of passwords; you cannot use the same one.... And then the problem is that most of the time they (EU platforms) don't work properly, so if you're working with databases, for example, the application platform from the EU is a mess. It's really a mess. When we have to submit applications, the application platform always breaks down (TU2-4).

Coming back to the Erasmus programme ... we're forced to implement so many things without proper support of the institutions who force us to use digital means. That's the major problem, ... you know, somebody tells you, 'You have to use this tool, and if you have a question, please get in touch', but they never answer.... And with the European Student Identifier, even our computer centre did not know how to implement things (TU2-2).

4.6.4 Human Resources-Related Challenges

Despite the potential benefits and high expectations associated with information and communication technology (▸ **ICT**), digital tools alone do not always ensure the seamless operation of administrative processes. This is what most interviewees suggested while recognising an urgent need for staff dedicated to providing training and support for the effective use of existing IT infrastructures, not only during planning and implementation stages, but also after systems are in place.

We implemented Mobility Online, so we had one person ... that was just dealing with this implementation of the software. Once the software was set up, the project was ended and the person was not funded anymore because they had the idea that once you implement the software and everybody is using it, no support is needed anymore. But that's not the case, as everybody knows. Especially [when it comes to] software solutions that you use for your administration processes, it's very important to have at least one staff member that is just dedicated to help you use this tool because tools are further developed new processes are implemented or need to be implemented. You have challenges that are of a technical nature that not everybody in the office can deal with, and you don't even have support from the software seller. So, what's really needed, and that's still a challenge, is to get resources for staff that support them in using these tools. And it's not just the case for the specialised tools, it's for everything. Also, training and support are very important (TU-1-3).

I think more manpower would be really helpful because we [...] have administrative staff to support digital education nationally and internationally, but I think they are in the central administration, but not every faculty has additional staff to support that. So, I think we would really need more manpower because I would say that digital offers need at least as much manpower as physical meetings, maybe even more. And sometimes, I think it's mistaken for, 'Okay, just do it online and then everyone meets, and that's it'. You really need to think about 'How should they meet? How can they interact? How can we keep in touch? What technical support do we need?' I would say that in our university, we should probably raise awareness on how much manpower you need, how much there is to organise, and how important it is to organise that (UAS1-2).

However, competition for limited human resources is intensifying, particularly in relation to the new skills, attitudes, and competences required from staff working in ▸ **IO**s. This challenge is compounded by the fact that the private job market for IT professionals often appears more attractive than the conditions offered by ▸ **HEI**s. The scarcity of individuals who possess a specialised blend of skills makes recruitment a considerable challenge for higher education institutions. Several interviewees have pointed out that political investments in this area are

insufficient compared to other European countries, which have made more significant strides in digitalisation.

> *I'm not sure if the politicians are recognising that the investment in education should be increased, and not at our expense, because I saw it in different regional campuses here in Germany. I think that the politicians aren't allocating sufficient amounts of money for digitalisation. Other countries in Europe are further ahead. Latvia and Lithuania are a few steps ahead of us in Germany, and I'm not sure if the decision makers on a political level understand that they have to invest more.... Otherwise, it's not easy to find a person who can implement it because the private sector is very strong. So, it seems that everybody is searching for an IT specialist, ... and we saw it in recent months that it's not very easy to hire a person to implement this kind of system. And the other point is that not every IT specialist understands education and how the system works. So, you need a kind of mix: a person who is very good in education management and ... in informatics systems. So, it's very difficult to find somebody who can do both, so you need two people (TU2-1).*

The next excerpts illustrate some of the challenges resulting from the changes in work conditions experienced by the interviewees. While more flexible arrangements have become possible and more tools now support assisted data-driven decision making, participants have noted an increase in work and information overload. The fast pace of communication imposed by the adoption of ICT has reportedly affected both individuals' well-being and the quality of decision making. This raises questions about whether or not pervasive digitalisation is always beneficial and prompts reflections on its more judicious use.

> *For our administration, [it] was also very good because we have more opportunities in terms of flexible working, in terms of home office, which is still possible at our university. So, we just have different programmes allowing digital signatures, for example, and that makes our working life much easier and much more flexible at the same time. But the big disadvantage is that the number of incoming emails has increased. It is because people prefer writing emails now, instead of calling colleagues, and I think this is also a result of digitalisation. And to my mind, this is a disadvantage. I went on holiday for three weeks, and I received more than 300 emails. This is not normal (UAS1-1).*

> *And then there are so many themes which are weighing on your shoulders, and that is [a] never-ending [state]. Sometimes, I wish [we could] go back to writing letters for a week, sending [them] by post, and waiting for a reply for some days. I think the digitalisation of work and labour in general is speeding up society, and I'm not sure if this is always good ... also [when it comes to] making decisions ... so fast and not taking time to think about [them] properly (TU2-4).*

> *I'm very open to all the things that digitalisation offers, but they also have to make sense. In other words, digitalisation really has to make our work easier and do more, and not just for the sake of digitalisation, just because it would be interesting to do it. It simply has to be worth the effort. I think you have to be careful about that (UAS2-4).*

5

Core Results and Discussion

This chapter presents a comprehensive analysis of the findings from the IAU survey and the INDISTRA project, focusing on the points of convergence, divergence, and complementarity between the two studies. We examine how these results align with and contribute to current scientific debates surrounding virtual internationalisation. The discussion encompasses several key areas, including the impact of virtual internationalisation on the internal workings and procedures of higher education institutions, as well as the evolving roles, tasks, and work conditions of administrative staff. Furthermore, we address the regulatory and funding challenges associated with virtual internationalisation, alongside the changes in internationalisation activities and the driving forces behind these transformations. Finally, we explore the impact of digitalisation on international networks and partnerships, highlighting the implications for future strategies in higher education.

5.1 Points of Convergence, Divergence, and Complementarity between the IAU Survey and the INDISTRA Project Results

The comparison between the IAU survey results and the INDISTRA interviews allowed us to identify some points of convergence but also a few points of divergence in terms of results. Moreover, it exposed complementary points where the survey and the interviews did not ask the exact same question, the results of the interviews provided insights specific to virtual internationalisation.

5.1.1 Points of Convergence

International experience of international office staff

From the IAU survey results, it can be concluded that German ▸ HEIs consider the international experience of their administrative staff mainly an asset and a requirement only for some positions. However, the interviews revealed that staff working at the international offices at German HEIs possess vast international experience.

Virtual internationalisation activities and internationalisation of the curriculum at home

The IAU survey findings and the INDISTRA interviews both underline the increased importance of virtual internationalisation and especially of ▸ COIL as a key initiative to internationalise the curriculum at home.

Financial challenges

The IAU survey results and the INDISTRA interviews highlight financial challenges as a major barrier to implementing both internationalisation in general and virtual internationalisation. Both research instruments underline the importance of the general institutional budget, funding from federal and state governments, and international organisations. In particular, the interviews exposed the challenges created by the (over-)reliance on project-based funding from third-party sources.

5.1.2 Points of Divergence

International, intercultural, and global learning outcomes

The IAU survey results show that international, intercultural, and ▸ global learning outcomes are not a frequent feature of the internationalisation strategies in Germany; only 12% of German HEIs have defined them as a goal. Despite this, heads of international offices interviewed in the INDISTRA project pointed out that for many students, virtual internationalisation offers invaluable opportunities to develop intercultural and language competences and enhance their employability prospects.

5.1.3 Points of Complementarity

Institutional key internal drivers of internationalisation

Although the IAU survey and the interviews did not investigate exactly the same topic (the IAU survey asked for the drivers of internationalisation as a whole, while the interviews asked for the drivers of virtual internationalisation), it is interesting to see that in both cases, academic leadership is one of the key drivers, suggesting a top-down approach to both internationalisation and virtual internationalisation.

Institutional international partnerships
On the one hand, the IAU survey investigated the change in institutional international partnerships from a quantitative point of view, concluding that the number of such partnerships over the last five years has increased at the majority of HEIs in Germany.

On the other hand, the INDISTRA interviews investigated the impact of the COVID-19 pandemic and of digitalisation on the quality of institutional international partnerships, concluding that the COVID-19 pandemic accelerated the digitalisation process, which in turn had a positive effect on the quality of international partnerships, for instance, by enhancing matchmaking and collaboration, facilitating the organisation of meetings, and offering the opportunity to create more equitable and sustainable collaborations.

Effect of changes in political relations between countries
While looking at the results of the IAU survey alone, some contradictions seem to emerge, as some HEIs reported that they had to end partnerships with HEIs in some countries, while others reported no effect as a result of changed political relations. However, the INDISTRA interviews shed light on the nature of these apparent contradictions (section 4.5.2), unveiling a complex situation in terms of the effect of the changes in political relations between countries that varies from institution to institution and even inside the same institution, regarding partnerships with one or the other country.

The INDISTRA interview data provide insights into the quality of institutional partnerships, particularly in the context of the pandemic and increasing digitalisation. While direct comparisons with the IAU survey in terms of changes in number of partnerships are not feasible, the interviewees consistently agreed that digital tools have significantly enhanced collaboration quality, making it easier to initiate and develop partnerships, especially among researchers. While collaborations with Russian institutions have largely been suspended due to geopolitical tensions, partnerships with Ukrainian HEIs have strengthened, facilitated by digital solutions. Thus, it is more about the changed quality and changes in partners than in the number of partnerships (Fig. 4.15).

5.2 Results in Light of Current Scientific Debates

5.2.1 COVID-19-Driven Digitalisation and Comprehensive Virtual Internationalisation

The COVID-19 pandemic presented a moment of opportunity, pushing change processes in virtual internationalisation faster and further (section 4.2.1.1). ▸ HEIs that had already kick-started the introduction of ▸ ICT to support internationalisation processes prior to the crisis experienced a distinct competitive advantage. They could swiftly respond to the predicaments posed by the COVID-19 pandemic, especially in the absence of physical mobility. Furthermore, despite declining levels of use of digital tools and platforms after the pandemic, there has been a noticeable openness to changing processes, seen in the overall adoption of digital technologies, especially in the administration, compared to periods pre-pandemic (IAU & Polimi, 2023). After the emergency phase ended, HEIs have been attempting to adjust to the options that best fit their needs, which signals a clear intention to benefit from the lessons learned during this time.

As a result of this, digitalisation strategies are in the process of being integrated into internationalisation strategies as a transversal topic. The interviewed heads of ▸ IOs expressed that internationalisation cannot be conceived without digitalisation, emphasising their intrinsic link (section 4.3.1). Likewise, most participants addressed the alignment of digitalisation with internationalisation strategies to be a cross-sectional issue that requires a comprehensive and institution-wide effort (Bruhn-Zass, 2021; Hudzik, 2011).

5.2.2 Teaching and Learning: Changes in Internationalisation Activities and the Driving Forces behind these Changes

According to the INDISTRA interview material (section 4.4.2.3), one outcome of the COVID-19 pandemic-induced digitalisation was a shift in focus by HEIs towards ▸ **internationalisation of the curriculum** (**IoC**) and ▸ **internationalisation at home** (**IaH**) (Beelen & Jones, 2015). As the pandemic unveiled persistent social inequalities, discussion over inclusion and participation came to the fore. This shift included the realisation that international student mobility was by and large an experience granted to a 'mobile elite', and not every student would have the opportunity to experience physical mobility (Wit & Altbach, 2021). As physical mobility became unfeasible and HEIs were compelled to adopt digital formats, a range of possibilities emerged, including the development of virtual exchanges, COIL, digital classrooms, joint courses, guest lectures, and online internships with international partners. Consequently, with the support of ▸ **ICT**, the internationalisation of the curriculum at home resurged as an increasingly prominent goal (Soulé et al., 2024).

The interviews provided evidence that the years following the COVID-19 pandemic have seen significant changes in international student mobility, reflecting a shift in mindset that recognises internationalisation as extending beyond physical mobility (Hudzik, 2020). Whereas physical mobility continues to be relevant and the preferred format among those who do not encounter barriers to participation (e.g., financial, physical impairments, and care responsibilities), there is growing acceptance of virtual internationalisation programmes, seen as pathways to future mobility experiences or as complements (O'Dowd, 2022) rather than alternatives to traditional mobility formats (Wit & Altbach, 2021). Nonetheless, perspectives on fully online programmes remain varied and the implementation of hybrid formats is deemed particularly daunting for academics.

Blended intensive programmes (▸ **BIP**s) have emerged as a key initiative in this area, advancing the ▸ **blended mobility** concept as part of the new version of the Erasmus+ programme, featuring more digital, green, and inclusive mobility and cooperation opportunities (European Commission, 2024). Institutions from our interview sample are actively using these formats, particularly within the framework of the European Universities alliances. Although participant numbers are not yet large due to administrative challenges and limited Erasmus+ funding, these programmes have proven popular. However, some interviewees noted that demand remains lower than expected post-pandemic, highlighting the need for a mindset shift and increased financial support for them to become mainstream (section 4.4.2.4). By combining online exchanges with short periods abroad, these programmes seem to have achieved a middle ground between digitalisation sceptics, who feel virtual internationalisation opportunities lack the comprehensive international and intercultural experiences of physical mobility, and digitalisation enthusiasts, who advocate for more eco-friendly, flexible, and inclusive mobility options.

Aligned with broader European Union directives, social and environmental responsibility is clearly a driving force of ▸ **VI** strategies (section 4.2.1.3). Participants have voiced concerns over the environmental consequences of international travel (Ahel & Lingenau, 2020; Jack & Glover, 2021) and trust that changing patterns of international mobility can effectively minimise these detrimental effects (Shields, 2019). In this context, they called for a more critical engagement with physical mobility, combined with efforts to make virtual experience more attractive and meaningful. Moreover, there is a new consensus that virtual and blended mobilities can enhance inclusion and access to international opportunities, offering to both students and staff the added value of developing a set of skills and competences – such as intercultural, collaborative, digital, leadership, and transversal skills – deemed as vital to successfully navigate an ever more diverse, mobile, and digital world (European Commission, 2024; European Union and

EACEA, 2020). While the interviewees mostly advocated for online formats to be more inclusive, accessible, and environmentally sustainable, some acknowledged inherent limitations. In one distinctive example, a participant stated that student groups participating in digital offers tend to be the same who would typically participate in traditional mobility programmes. This observation mirrors findings in the related literature indicating that virtual exchanges are more accessible to certain student demographics and of certain socio-economic backgrounds (Hauschildt et.al, 2024), while also questioning whether or not the empirical evidence available is robust enough to support widespread 'inclusion claims' (Whatley et al., 2022). However beneficial, digital opportunities are not equally distributed and, in many cases, barriers stemming from disabilities (Bruhn-Zass, 2021; Ciurea, 2020), age, gender, ethnicity, socio-economic status, and digital capital (Buchmüller et al., 2021, p. 92; Wimpenny et al., 2022) remain unabated. Therefore, the potential of virtual exchanges to promote inclusion and equity cannot be taken for granted (Kenyon, 2006; Whatley et al., 2022). Virtual spaces are not neutral (Rizvi, 2020), and addressing the roots of inequality and exclusion should also remain a concern in these settings (European Commission, 2024; Satar, 2021). It is paramount that leveraging the integration of ICT into internationalisation processes goes hand in hand with institutional commitment to enable digital equity (Gezici et al., 2021; Liu & Gao, 2022) and to tackle 'the complex ontological, epistemological, ethical, and identity issues arising from teaching, learning, and living in the digital age' (Buchmüller et al., 2021, p. 92).

5.2.3 Cooperation Processes: Impact of Digitalisation on International Networks and Partnerships

When it comes to ▸ **HEI** collaboration, digitalisation has improved communication with partners and strengthened existing partnerships (section 4.5.1). There is a focus on bottom-up collaborations, highlighting the role of academics as key players in internationalisation efforts. However, academic agency still needs institutional support with the provision of incentives and recognition (e.g., appropriate framework conditions for online teaching), especially given the high degree of autonomy enjoyed by academics in the German context. Consistent with evidence that peer networks can positively influence attitudes towards technological adoption (Trenerry et al., 2021), numerous accounts highlighted the significance of information exchange with partner universities, both within Germany and internationally, as key drivers of ▸ **VI** strategies. This observation underscores the invaluable role of collaboration through both informal channels, such as individual colleagues from international offices (▸ **IO**s), and formal networks, particularly in the context of the European Universities Initiative. Cooperation within the European Universities Initiative is associated with competitive advantages (Craciun & Ferencz, 2023; Gunn, 2020) and the enhancement of digital infrastructures. It has frequently been cited as a source of knowledge and innovation in the internationalisation of higher education.

Additionally, geopolitical considerations have shaped university collaboration and placed significant challenges to these endeavours. In Germany, this has led to growing scepticism and eroded trust, along with institutional measures targeting critical partners, such as China, Russia and Iran, to safeguard national interests, security, and academic integrity (section 4.5.2). This new realisation has also been accompanied by the recognition that 'Germany needs a more strategic approach that reconciles the great good of academic freedom with security policy interests in international cooperation' (BMBF, 2024). This new stance entails a reassessment of the risks, opportunities, and limits of scientific collaboration strategies – also against the backdrop of growing digitalisation (Blümel & Vögtle, 2023) – without sacrificing the collective benefits that continued collaboration with partners, such as China, can yield (DAAD, 2024).

Apart from the interruption of ongoing collaborations with Russian ▸ **HEI**s, as reported throughout the interviews, and beyond ongoing support to Ukraine since the Russian invasion, the German government has devised new measures with a view to tighten German-Ukrainian

relationships and aid for Ukraine's reconstruction. One of these steps has been the recently established bilateral agreement on scientific and technological cooperation (STC) with Ukraine. Starting in 2025, a set of measures are set to be pushed forward, such as the establishment of the German Ukrainian University Network, where, for instance, digital teaching or joint degree programmes will be part of the portfolio. To enable this, a total of EUR 24 million is allocated until 2029. In addition, the DAAD programme 'Ukraine digital' will be extended until June 2025 and increased by EUR 3.2 million. In total, Germany is investing over EUR 100 million in Ukrainian research until 2029, including support for centres of excellence in Lviv, Kiev, and Kharkiv (Kultusministerkonferenz, 2024).

This resonates with the view that given the extent and complexity of higher education's international engagement over the past five decades, ▸ HEIs can no longer sidestep these developments, however controversial and nuanced the current scenario presents itself (Wit & Altbach, 2024). The authors add that while simple solutions are not easy, HEIs are central in steering open and continued dialogue involving the whole academic community domestically and abroad, sustained on academic freedom, autonomy, participation, academic integrity, and social responsibility. 'Such a debate needs to be the basis of their international academic relations and the lens through which to assess existing partnerships, which may or may not result in freezing existing institutional relations' (ibid, p. 4).

5.2.4 Support Structures: Changes in Roles, Tasks, and Work Conditions of Administrative Staff

In line with Trenerry and colleagues (2021), changes in roles, tasks, and work conditions of administrative staff have taken place. Due to the aim to fulfil the new competences required for both academic and administrative staff, there have been changes in roles and the creation of dedicated positions to manage ▸ EWP, Mobility Online, and online teaching support units. One point revealed by the INDISTRA interview material is that the roles and responsibilities of professionals in international offices (IOs) have undergone significant changes (section 4.2.3). Having international experience is no longer sufficient as the only competence for those working in the IOs (EAIE, 2024). As a result of the increasing competition for funding, new competences such as mastering the process of funding applications and networking with peers to remain informed about opportunities for additional funding have become essential. In addition, staff shortages, high turnover, and competition for qualified IT staff pose challenges.

The impact of virtual internationalisation on the work conditions of administrative staff has been wide-ranging. Many have reported that the introduction of digital tools has resulted in an increased workload, often connected with information overflow and the constant need to update online content to effectively reach target groups. Some have noted that although remote work offers flexibility, it can also require constant availability, blurring the boundaries between professional and personal life (section 4.6.4).

A lack of a comprehensive approach to the use of digitalisation can also result in inconsistent solutions, and faulty or inefficient digital infrastructures can significantly hinder virtual internationalisation. Despite the intended benefits of ICT solutions, INDISTRA interviewees expressed significant frustrations regarding the use of various digital tools and platforms, having to deal with faulty systems and inadequate user support despite the mandatory adoption of these technologies. Furthermore, the participants voiced dissatisfaction regarding a lack of system interoperability that creates 'island solutions' that are perceived as inefficient (Brienza, 2022; Komljenovic et al., 2024). Combined with inefficient management practices, such challenges have resulted in excessive time consumption, inefficiency, and increased technostress (Trenerry et al., 2021), particularly with EU-provided tools like Erasmus Without Paper (EWP), which still present significant issues.

The interviewees stressed the urgent need for greater investment in human resources to provide ongoing training and support (section

4.6.4). Despite high expectations, the adoption of new ICT alone does not guarantee seamless processes. These expectations have placed additional burdens on staff, who are often required to adopt new digital tools without adequate support. By relying on technology to ensure efficiency, transparency, and fairness (Elish and Boyd, 2018), HEIs risk overlooking the significant time, coordination, and resources needed to fully realise the digital promises. This mirrors the observation of Komljenovic et al. (2024), drawing on Elish and Boyd (2018), that there is often blind faith in technology's seamless functionality, with little consideration for the efforts, risks, and costs it imparts.

5.2.5 Leadership: The Role of Internal Networks and Institutional Support

Digitalisation has made communication more agile, easier, and more transparent, thereby forging new forms of interaction at the institutional level and shaping participation and decision-making processes. Consequently, internal networks have become stronger, leading to greater interdependence among stakeholders.

A notable development is the increasing importance of IT staff and the need for collaboration between administrative and academic staff (Taylor, 2013), particularly in strengthening online delivery and fostering university partnerships. This supporting and enabling role of administrative staff resonates with recommendations of the German Council of Science and Humanities (*Wissenschaftsrat*, 2018, p. 65) in that 'the relationship between the academic and the administrative members of the university is of decisive importance for academic performance, especially since the administration fulfils both a service function as well as legitimising and controlling roles. The Wissenschaftsrat (ibid) acknowledges that this collaboration may involve trade-offs that could lead to 'interference with the academic freedom of university members' (p. 84). Yet, there is a general consensus that academics should be fundamentally supported and provided with the necessary competences (O'Dowd, 2022) and appropriate framework conditions, while retaining the freedom to innovate and the ultimate authority to make decisions regarding the use of digital technologies in their teaching practices, exercising what Elsholz et al. (2021, p. 474) have touted as 'organised freedom'. However, the interviewees stated that, despite some initiatives having been put in place, there is a persistent mismatch between the freedom of academic staff to decide how to teach and institutional support for digital teaching. This plays a significant role in German higher education, where, as the interviewees suggested, the high value attached to the freedom of academics in their teaching (Wolter, 2007; Jungbauer-Gans et al., 2023) demands even stronger institutional support to motivate their engagement with innovative pedagogical practices, such as online offerings (Deacon & Laufer, 2024; European Commission, 2022; O'Dowd, 2021).

To produce comprehensive and institution-wide change, such initiatives should not depend solely on individual agency and personal commitment. In fact, fostering a change of mindset towards technological adoption and readiness has become more critical. Addressing these challenges is closely tied to enabling leadership profiles that drive innovation by promoting stability, clearly communicating strategies and expectations, providing incentives and recognition, and empowering teams with the necessary resources to overcome barriers in adopting digital technologies (Laufer et al., 2024). In addition, fostering individuals' readiness to incorporate new ICT into their work routines requires 'digital maturity' (Kopp et al, 2019; Brienza, 2022), that is, organisational openness towards a culture of data-driven decision making (Sherwood, 2021).

5.2.6 Challenges in Regulatory Frameworks and Funding of Virtual Internationalisation

One of the primary challenges in digitalising internationalisation is contending with unclear standards and a wide array of contradictory rules and regulations, which often require case-by-case decisions and workarounds. The interviewees highlighted ▸ **data protection** processes – particularly regarding critical partners such as China – as significant concerns linked

to ensuring data security and intellectual property protection. ▸ **Recognition** processes are among the grievances of the interview partners. Although conversion of grades across different HE systems is an integral component to international student mobility (ESG, 2015), it remains fraught with bureaucracy, unclear guidelines, and lack of standardisation, eventually jeopardising fairness, transparency, and trust in HEIs (Aguiar & França, 2024). Additionally, rules and regulations often fail to keep pace with digital advancements, as in the case of the status of students participating in ▸ **blended mobility** programmes (Mittelmeier, 2023). These insights support Knight's (2015, p. 2) claim that, contrary to what is commonly assumed about the benefits of digitalisation and the 'borderless' world it can create, borders remain crucial when regulatory responsibilities, such as quality assurance, funding, and accreditation, are at stake.

Our study reveals that funding agencies constitute the main external drivers of ▸ **VI** (section 4.2.1.2). The European Union, federal ministries, and funding agencies, such as the ▸ **DAAD**, figure as the main funders of VI, and their support has arguably aided HEIs to respond to the crisis and to develop infrastructures beyond the pandemic. DAAD-funded programmes, such as IVAC [1] and ▸ **IMKD** [2], and actions within the European Universities Initiative, have provided essential support. However, securing funding is a competitive race that ▸ **HEI**s need to endure. Limited external funding, combined with unequal availability of resources across universities, especially in the scope of the so-called universities of excellence (*Exzellenzuniversitäten*) in Germany (Sziegat, 2022), has often prompted ▸ **HEI**s to adopt what has been mentioned as a 'follow-the-money strategy'. In such instances, strategic decisions regarding ▸ **VI** are primarily based on available funding opportunities. Questions about who provides funding are significant, especially given the notable prevalence of third-party funding sources. While there are various funding schemes available, these are largely project-based and not always sustainable in the long term. Third-party funding from the DAAD and the German Federal Ministry of Education and Science emerges as the principal financing sources for VI activities among HEIs in the sample. While there is a prevailing argument that these project-based, short-term funding schemes hinder the achievement of sustainable strategies, it is also evident that some ▸ **HEI**s have leveraged this expertise to advance their own programmes. Yet, it is essential to shift away from reliance on short-term project funding towards the establishment of long-term institutional support for VI as this is fundamentally about strategic sustainability (*Wissenschaftsrat*, 2018) and institutional autonomy (Sziegat, 2022).

6

Recommendations and Conclusion

6.1 Recommendations Addressed at Higher Education Institutions and Different Levels of Political Actors

This concluding chapter provides recommendations for furthering virtual internationalisation at German HEIs. The recommendations are structured according to the level they are addressing, starting with the HEIs and then addressing the German federal states (*Länder*), the German federal government, and the European level. We are basing our recommendations primarily on the interviewee's responses to questions about VI-associated challenges and ways to overcome them. These are supplemented by the recommendations of the German Science Council (*Wissenschaftsrat* 2022), the National Strategy for Internationalisation of HEIs (BMBF & KMK, 2024), the guide on improved framework conditions for the participation of international students in virtual study programmes by the ▸ **HRK** (HRK Advance, 2023), international scientific literature, and a policy paper of the European Commission (European Commission, 2022).

6.1.1 Addressing Higher Education Institutions

The administration of study courses is becoming increasingly digital, and European and international standards are being established. Prominent examples include the European Student ID Card, the European Commission's ▸ **Erasmus Without Paper project** (**EWP**) and the Erasmus+ App, and the implementation of the ▸ **European Student Card Initiative** (**ESCI**), aiming at handling all phases of international mobility digitally. These processes call for action in the interoperability of systems and software solutions, presenting itself as a joint task for the HEIs (BMBF & KMK, 2024, p. 8) and requiring tangible measures to make the digital campus a reality. A digital campus, understood as a situation in which all services and processes that organise and support studies and teaching are digitalised, should encompass the entire study process, from student recruitment and study preparation to the introductory phase to the studies and extending throughout the entire student lifecycle. Various providers are used in Germany to support campus management in teaching and studies; the campus management software from HIS – *Hochschul-Informations-System* eG (HIS eG) – is particularly widespread. In addition, ▸ **digital signatures** need to be introduced. Although they still present significant challenges for heads of IOs, digital signatures are becoming an essential requirement for several European initiatives and administrative processes in the realm of international mobility, especially Erasmus mobility. Thus, IOs urge that HEIs enable the use of digital signatures across the university and beyond, making them valid for all internal and external processes within European partner countries.

Close cooperation between the relevant units is a decisive prerequisite for the successful development of a digital campus. To handle all phases of international mobility digitally and secure the seamless operation of EWP, the international offices are dependent on strong internal networks, including support of the HEI management, the computer centre, the student secretariats, the ▸ **digitalisation** officers, the campus data management coordinators, and the examination offices. HEIs should equip and support their data centres and international offices in such a way that the European initiatives, including ▸ **EWP**, can be implemented adequately. In the same vein, there is a need to cooperate more intensively with student services organisations (*Studierendenwerke*) to better cater to students' needs, as they are the primary recipients of the services provided by HEIs.

A ▸ **comprehensive internationalisation** strategy needs institution-wide efforts and structure to be developed and implemented effectively. Some interviewees drew attention to how inadequate communication practices across different levels of decision making within the ▸ **HEI**s can compromise the attainment of internationalisation strategies. At the institutional level, the absence of both clear guidelines and a comprehensive strategic approach has been noted. To address these challenges, we recommend establishing clear guidelines outlining the processes

and responsibilities, facilitating communication across different departments and levels of decision making. The institution-wide adoption of project management tools, alongside standardised communication platforms, could streamline this process, provided staff are trained and supported effectively to use them. Finally, to bring together internationalisation and digitalisation in the development of HEIs, HEI leadership should structurally strengthen and interlink the organisational units and governance processes responsible for internationalisation and digitalisation (BMBF & KMK, 2024).

Although there is generally greater value attached to physical mobility experiences, virtual international opportunities offer a good complementary option to physical mobility and should be promoted in a clear and targeted manner. In line with this, the internationalisation strategy for ▸ **HEI**s of the federal and state science ministers (BMBF & KMK, 2024) stresses the importance of systematically leveraging the opportunities offered by virtual internationalisation (ibid. p. 5), giving special consideration to ▸ **blended mobility** formats. Nonetheless, while virtual internationalisation lowers the barriers to exchange and intercultural experiences, HEIs should develop solutions to support students' social and academic integration while taking part in full or partial online teaching formats. It is of utmost importance that ▸ **HEI**s commit to recognising both virtual and in-person components as valid ways of learning during periods of mobility. This could be done by acknowledging participation in blended intensive programmes through ▸ **micro-credentials** and corresponding ▸ **ECTS** credits (European Commission, 2022). Moreover, there is a need for transparent and comprehensive agreements between participating HEIs about grades, ▸ **recognition**, and quality assurance (ibid, 2022). The adoption, further development, and implementation of clear standards, combined with digital tools can contribute to fast-track recognition and credit transfer procedures (BMBF & KMK, 2024, p. 11). In addition, investing in digital technologies for remote learning and collaboration can help reduce the carbon footprint linked to international travel by enabling virtual exchanges and online courses.

To further support virtual internationalisation, HEIs can provide financial relief options for international students enrolled in a virtual degree programme without being physically present at the place of study (e.g., via regulatory authorisations or target agreements with the ministries), based on the existing legal provisions. If a status without enrolment is chosen for virtual participation in individual courses, it would be beneficial if administrative hurdles in identity management, access to IT infrastructure, and statistical recording were strategically addressed and, where possible, reduced to facilitate access for international online students.

In terms of personnel, HEIs should give greater weight to digital skills when selecting and hiring staff. The German Council of Science and Humanities advises that HEIs require the presentation of a digital course proposal as part of appointment procedures of teaching staff (*Wissenschaftsrat*, 2022). Similarly, as digital tools have been increasingly integrated into the work routines of staff in international offices (e.g., EWP), HEIs should consider making digital skills mandatory for new applicants and offer training opportunities for existing staff. However, in line with recommendations of the Internationalisation Strategy for German HEIs (BMBF & KMK, 2024), HEIs are also called upon to develop relevant competences among administrative staff, students, and teaching staff (ibid, p. 8). Training offers in this area could tackle a lack of understanding of the ▸ ***Datenschutzgrundverordnung (DSGVO)***, ▸ **the General Data Protection Regulation**, which the interviewees identified as a significant knowledge gap. On the teaching side, measures must be paired with organisational support and incentives for academics to engage with digital teaching (Deacon & Laufer, 2024). For students, it does not suffice to be a 'digital native' and master apps and other digital tools; HEIs should foster critical ▸ **digital literacy** beyond technical skills (Bilki et al., 2023; Dudeney & Hockly, 2016: 115; Akayoğlu et.al. 2020).

Furthermore, although HEIs are no longer compelled to adopt digital technologies as part of an 'emergency response', as it was the case during the COVID-19 pandemic, deploying the use of digital technologies to secure resilience in face of future crises should remain a critical component of the strategic agenda of HEIs (Hodges et al., 2020).

6.1.2 Addressing the Federal States (*Länder*)

The most pressing issues for the interviewed heads of IOs are the adaptation of regulations in finances and legal clarification of enrolment and ▸ **recognition** for digital and blended study formats.

A common issue shared by the interviewees dealt with the fact that regulations have not been updated to meet the demands emerging from changes in ▸ **VI** processes, as several legal issues regarding the status and the financial obligations of virtual international students remain unresolved. To date, foreign students who complete an entire degree programme in Germany incur costs related to enrolment fees and contributions. The same applies to virtual international students who must bear the costs for the use of infrastructure (e.g., the student union or library) and local services (e.g., semester ticket for the use of public transportation) regardless of whether or not they are (physically) at the university location and even though they might not benefit from these services.

To make the financial burden of virtual studies abroad as reasonable as possible, federal state authorities should consider which fees and contributions can be waived or reduced for virtual parts of the standard degree programme (HRK Advance, 2023). Many fees are charged to all enrolled students based on the principle of solidarity, while others are charged according to a performance principle for services used. In the case of contributions based on the solidarity principle, which are levied on all enrolled students, it is important to examine whether or not international online students should be excluded from the solidarity community (HRK Advance, 2023), for instance, from contributions to health insurance (BMBF & KMK, 2024, p. 11). The effects of this on other student groups would have to be considered in a differentiated manner but could form an important basis for further development steps for international students, including for the pro-rata reduction in fees and contributions, the waiving of health insurance contributions until the time of entry, and the granting of a residence permit for the in-person attendance phases of an online degree programme (HRK Advance, 2023).

The higher education laws of the federal states (*Landeshochschulgesetze*, LHG) define different status options for student enrolment including with enrolment (e.g., regular enrolment for degree-seeking students and double enrolment for international students); with temporary enrolment (e.g., credit mobility students); and options without enrolment (e.g., guest students). Each option carries distinct legal implications (HRK Advance, 2023). For example, participants registered under a status without enrolment are excluded from the capacity calculation. Although they are usually considered in the university's internal records, they are not included in the official student statistics. Therefore, they are neither considered in the internationalisation indicators nor in the performance-oriented allocation of funds by the federal states.

Legal and organisational conditions for international students engaged in virtual study programmes differ based on their enrolment status. However, apart from a few pandemic-related special provisions, there is no special status and hardly any regulations tailored to the special conditions of virtual international students. The ▸ **HRK** proposes to establish a new status of 'international part-time student' with enrolment to enable students to participate in courses and examinations during and after the semester (HRK Advance, 2023). Accordingly, this status should allow enrolment during the semester, especially for short mobility windows and allow asynchronous enrolment over several semesters or the entire period of study. In addition, a differentiation between on-campus and off-campus study programmes could be examined under state laws to make it administratively easier to

document the entry of students enrolled for less than one semester.

A functional campus management system is key to overall digitalisation, modern administration, and virtual internationalisation of HEIs. However, our interview partners described that the introduction of integrated solutions for campus management is generally a complex, multi-year project and usually associated with considerable project costs for the individual HEIs. Without additional state support, the financial burden on HEIs' budgets is often untenable. This is particularly true considering that the operation of a campus management system also leads to increased ongoing costs, for example, for licence purchases, adaptation developments, IT personnel, and student and examination secretariats. Therefore, we are following the recommendation of the German Council of Science and Humanities, which states that the federal states seek and finance infrastructure solutions across HEIs, as these are more cost-effective than individual solutions for each HEI (*Wissenschaftsrat*, 2022, p. 92). In line with this, the Internationalisation Strategy for German HEIs (BMBF & KMK, 2024) aims at creating interoperable infrastructures and processes in internationalisation, digitalisation, and ▸ **virtual mobility**.

As for teaching staff, recognition and incentives for the development of digital courses need utmost attention. The efforts invested by teaching staff in creating, co-creating, adapting, and delivering online offerings should be appropriately credited in their teaching load and formally considered towards internal promotion processes (European Commission, 2022). Some federal states have already created corresponding requirements (*Wissenschaftsrat* 2022, Appendix 4: Excerpts from the teaching obligation regulations of the federal states). In addition, the ordinance of teaching obligation (▸ ***Lehrverpflichtungsverordnung, LVVO***) should be made more flexible (*Wissenschaftsrat*, 2022, 97). In addition, it is also advisable to establish financial support programmes specifically designed to assist small HEIs in developing foundational online offerings. These programmes should provide targeted grants that enable these institutions to create high-quality online courses, covering essential areas such as instructional design, technology infrastructure, and faculty training. Moreover, encouraging pilot projects that explore innovative online teaching practices will allow small HEIs to share best practices and refine their offerings collectively.

A long-term funding scheme for virtual internationalisation activities is lacking due to the previous crisis mode-based and project-based funding. If virtual internationalisation efforts are to be sustained or expanded, HEIs need adequate and reliable funds. Moreover, since supporting IT infrastructures requires specialist staff, who are in high demand in other labour markets, HEIs must position themselves to attract and retain talents in competition with other sectors. In sum, regular and permanent funding requirements in connection with digitalisation and digitalised internationalisation must be assumed by the federal states. While many federal states provided special funding for digitalisation at HEIs at the beginning of the COVID-19 pandemic, it is now paramount for them to reaffirm their commitment to sustaining momentum for further digitalisation in the field of internationalisation.

6.1.3 Addressing the Federal Government

In the wake of the COVID-19 pandemic, the German Academic Exchange Service (DAAD) responded to the severely restricted exchange opportunities for international and domestic students and expanded funding opportunities for internationally oriented digital study formats. As digitally enhanced internationalisation has moved from an emergency response to becoming a pillar of HEI internationalisation activities, we are drawing on the recommendations of the German Council of Science and Humanities (Wissenschaftsrat 2022, 55) and the results of the expert interviews conducted in the realm of the INDISTRA project to recommend shifting the financing scheme from project-based to continuously funded programmes tied to existing mechanisms to secure accountability and sustained quality standards.

Action is also needed at the federal level to improve the framework conditions for the participation of international students with enrolled status in participating in virtual study programmes. For these students, a sustainable and secure legal framework for virtual studies and subsequent entry into German territory should be established to guide decisions regarding the need for compulsory health insurance (HRK Advance, 2023). In the case of entry during the semester, the possibility of reimbursement of health insurance contributions should be made permanent until the time of entry and decoupled from pandemic-related individual case reviews (ibid). The differentiation and documentation of on-campus and off-campus phases could serve as a basis for such measures. For purely virtual studies, we are following the recommendations of the ▸ **HRK** to provide the possibility of exemption from the obligation to register with health insurance. Regarding the right of residence, consideration should be given to making entry options more flexible for participants in blended study formats under the Residence Act (HRK Advance, 2023). We agree with the National Strategy for Internationalisation of HEIs that a standardised national definition of internationalisation experiences that encompasses not only physical mobility abroad, but also hybrid and blended formats, would be helpful in this regard (BMBF & KMK, 2024, p. 9).

One challenge commonly cited by the interviewed heads of IOs is the lack of guidelines for international collaboration with critical partners. The National Strategy for Internationalisation of HEIs (BMBF & KMK, 2024) calls on HEIs to expand their institutional risk management. To do that, the interviewees stated that they need a faster and comprehensible audit of collaborations with institutions and individuals from critical partner countries such as China, Russia, Iran and other non-democratic states.

Another frequently mentioned challenge is legal issues regarding the ownership of data in the case of online recordings. As it is often unclear who owns these data in the context of digital teaching and virtual internationalisation, a unified national legal framework is needed to settle these issues. This recommendation is in line with the internationalisation strategy for German HEIs (BMBF & KMK, 2024), which articulates the goal of creating ▸ **data protection** and information security in internationalisation, digitalisation, and digital mobility.

Digitalisation in teaching and learning, also in the realm of internationalisation, is a high priority at the national level (BMBF & KMK, 2024) and is supported and promoted in a variety of ways. However, there is still a lack of standardisation and quality assurance (QA) in virtual internationalisation, which is crucial for ensuring consistent quality, credibility, and global recognition of online educational offerings. Standardisation facilitates the seamless transfer of credits and qualifications, promoting greater student mobility and improving learning experiences. Additionally, it builds trust among stakeholders – students, educators, and employers – by providing a clear framework for evaluating digital offerings. To support HEIs in the federal states and establish standardisation and QA, national guidelines or frameworks for digital education should be developed. These should outline clear standards for course content, delivery, and assessment, while allowing federal states to adapt them to their unique contexts. Moreover, funding for training and capacity-building initiatives for faculty and staff in digital course design and QA processes should be provided.

Despite the existence of individual support measures, as well as national forums where relevant topics are discussed and solutions for common challenges are developed, these measures have been largely decoupled so far. There is a lack of coordination within and among the HEIs and across the federal states. The fact that state initiatives are primarily set up independently and operated in isolation serves as a clear example for this disconnect. Thus, establishing a national forum connecting these initiatives would lead to significant advancements, as many key issues outlined in this report (e.g., legal status of virtual mobile students, ▸ **data protection**, and collaboration with critical partners) are common to all HEIs, regardless of the federal state in which they are situated.

6.1.4 Addressing the European Union

The European Union should enhance its support and activities in the development of common standards and guidelines for virtual internationalisation across higher education institutions. By establishing a framework that outlines best practices, quality assurance measures, and benchmarks for digital courses and international collaborations, the EU can promote consistency and credibility in online educational offerings. For instance, the EU could allocate funding for pilot projects that test and refine these common standards in various institutional contexts. These projects would provide valuable insights into effective implementation strategies and help institutions adapt to the evolving landscape of virtual internationalisation.

▸ **Data protection** is consistently referred to as a hindrance to virtual internationalisation. The interview participants expressed the view that data protection regulations should allow for more flexibility (section 4.6.2). Especially when collaborating with third countries from outside the EU, it is mentioned that the agreements are harder to negotiate, with extensive provisions on data protection issues, resulting in large annexes to the contracts. Achieving a balance between data protection and facilitating cross-country collaborations in higher education requires careful consideration of both legal frameworks and practical implementation. On one hand, robust data protection measures are essential to safeguard students' personal information and ensure compliance with regulations such as the General Data Protection Regulation (▸ **GDPR**). On the other hand, cross-country collaborations can be hampered by varying data protection laws across different countries, which can lead to complexities and limitations in how data can be shared and managed.

To reconcile these two priorities, policy-makers at the European Union level should work towards harmonising data protection standards across borders while upholding essential privacy rights. This could involve creating a common framework or guidelines for data sharing that meet stringent data protection requirements while allowing for the secure exchange of information necessary for collaboration. Moreover, fostering dialogue among lawmakers, educational institutions, and technology providers can help develop innovative solutions that prioritise both data protection and facilitate international collaboration.

With regards to the mandatory adoption of the ▸ **Erasmus Without Paper** and other platforms provided by the European Commission, many heads of ▸ **IO**s participating in the interviews claimed that policymakers have lost touch with the needs of those implementing policies in the field and that the tools are inadequate and malfunctioning. To bridge the gap between policymaking and the practical implementation of European Union measures, regular consultative forums including administrative staff and heads of ▸ **IO**s could be established. Structured feedback mechanisms allowing practitioners in universities to provide input on proposed policies before they are finalised could be developed. HEIs could also be encouraged to document and share their experiences with policy implementation, including successes and challenges. Additionally, the EU can facilitate knowledge-sharing and capacity-building initiatives through training programmes and workshops aimed at faculty and administrative staff. This could support HEIs to align with adopted standards effectively while enhancing the overall quality of virtual internationalisation efforts.

6.2 Conclusion

In international literature, opinions on the systematic integration of digital solutions to internationalisation processes vary. Some scholars argue that German HEIs have not fully capitalised on the digital structures and process changes brought about by the COVID-19 pandemic (Bedenlier & Stöter, 2022) and question whether or not this will lead to the systematic integration of educational technologies by ▸ **HEI**s (Zawacki-Richter, 2021). Conversely, a 2023 global pilot study by the International Association of Universities (IAU & Polimi, 2023) found that, despite a partial reduction in the use of ▸ **ICT** following the pandemic, HEIs continue to benefit from the ▸ **digital transformation** and enhanced ▸ **digital competences** developed during the emergency response.

For further advances on the teaching side, measures must be paired with organisational support and incentives for academics to engage with digital teaching (Deacon & Laufer, 2024). For students, it does not suffice to be digital natives; they need training in ▸ **digital literacies** to navigate the complexities of ▸ **global learning**. ▸ **Global learning** refers to an educational approach that encourages students to engage with complex global issues, designed to develop critical thinking, empathy, and a sense of responsibility, empowering students to become active global citizens (Landorf et.al, 2023). In this context, digital literacy may allow students to conduct research on international challenges, participate in virtual exchange programmes, and engage with peer networks from around the world. It also enables them to critically assess information sources, discerning credible data from misinformation, which is crucial when addressing global issues that are often subject to debate and controversy. The synergy between ▸ **global learning** and ▸ **digital literacy** is essential for higher education students, as it prepares them for an interconnected world where digital tools are indispensable for understanding and tackling global issues. It should thus become an integral part of the higher education curriculum.

Our findings suggest that digitalisation has great potential to promote the internationalisation of teaching and learning, collaboration, and administration processes. Despite observed pushback in the use of digital tools following the pandemic, the inherent flexibility of digital formats is gradually intertwining the processes of digitalisation and internationalisation. This interplay has made the internationalisation of HEIs more accessible, inclusive, environmentally sustainable, and culturally diverse. Even though international experiences are generally regarded as more meaningful through traditional physical mobility, ▸ **blended intensive programmes** are gaining sway among HEIs as a middle-ground alternative that breaks away from the 'virtual vs. physical' divide. While digital and blended formats can arguably facilitate access to international learning opportunities for more diverse student and staff profiles, various barriers continue to limit participation, even in digital settings. Thus, we maintain that, in addition to these barriers, oversimplified 'inclusion claims' need closer scrutiny. Concerns have been voiced regarding the reduction in funding for personnel, as high expectations associated with digital technologies tend to overlook the resource-intensive nature of digitalisation. This over-reliance on the perceived potentials of digitalisation alone can lead to the neglect of financial and human resources needs.

This can be connected to the current discussions about artificial intelligence (▸ **AI**) in higher education. Although this aspect was not the focus of this study, it certainly is in the centre of attention when it comes to higher education and digitalisation. A systematic review article by Crompton and Burke (2023) found that most studies on the topic concentrate on undergraduate students, with a predominant focus on language learning and applications including assessment, prediction, ▸ **AI** assistants, intelligent tutoring systems, and student learning management. They came to conclude that the rapid evolution of ▸ **AI** technologies, such as ChatGPT, highlights the need for continuous exploration of their implications within the educational landscape, emphasising that certain geographic

areas remain underrepresented and warrant further investigation to fully realise potential benefits (Crompton & Burke, 2023). We would not be surprised that again, as mentioned above, there might be an over-reliance on the perceived potentials of ▸ **AI** in higher education, neglecting the financial and human resources needed to adequately implement and operate it.

Overall, the strategic orientation of digitalisation as a comprehensive institutional project has a positive impact. At various HEIs, digitalisation is pursued as a broad initiative, influencing all aspects of administration and, to some extent, teaching and science communication. This is evident in references to resource availability and allocation, the potential for internal collaboration and synergies, and a unified framework with the coordinated use of tools and platforms. In line with the concept of ▸ **comprehensive internationalisation** (Brajković & Helms, 2017; Hudzik, 2011), our findings corroborate the view that comprehensive digitalisation is a sustainable method for digitalising higher education, including virtual internationalisation (Bruhn-Zass, 2021). However, digitalisation should be a means to an end. Challenging the notion of digital techno-determinism and the status of technology as a 'virtually autonomous agent of change' (Elish & boyd, 2018; Smith & Marx, 1994), the interviewees emphasised that digitalisation should not be seen as a panacea. Instead of being an end in itself, virtual internationalisation needs to have added value by catering to specific needs and translating into improved human experiences.

Future research could build on the results of our study to further explore some areas. First, an examination of the state of virtual internationalisation strategies in German ▸ **HEI**s from the perspectives of a broader range of stakeholders beyond heads of ▸ **IO**s could provide a deeper understanding of multi-level and multi-stakeholder dynamics. In the same vein, extending the study sample to include the private higher education sector could yield a more comprehensive overview of ▸ **VI** within German higher education. In addition, while virtual collaboration among European partners was generally emphasised by interview partners, we see a need to investigate how digitalisation is shaping collaborations between German ▸ **HEI**s and partner institutions in the Global South, particularly in light of current geopolitical developments. Another important avenue for research is the development of joint degree programmes, which have received less attention compared to short-term virtual exchanges, such as COIL. Finally, given the pervasive impact of digitalisation in the administration of internationalisation processes, further investigation is needed to gauge the consequent changes in the work conditions of staff involved with these processes.

7

Appendix

List of References

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Glossary and List of Abbreviations

Term	Explanation	Related term(s)	Source/Reference
BIPs – Blended intensive programmes	BIPs are short, intensive programmes through which groups of students or staff can undertake a short-term physical mobility abroad combined with a compulsory virtual component facilitating collaborative online learning exchange and teamwork (European Commission, 2024, p. 52).	blended learning	European Commission. (2024). Erasmus+ Programme Guide. https://www.erasmusplus.de/erasmus
BMBF – Bundesministerium für Bildung und Forschung	Germany's Federal Ministry of Education and Research, now BMFTR – Bundesministerium für Forschung, Technik und Raumfahrt (Research, Technology and Space)		
Blended learning	With blended learning, the two different forms of learning (face-to-face and e-learning) are interlinked and combined into a unit in such a way that it is possible to take advantage of each form of learning and compensate for the disadvantages of the other form of learning.		Cornelsen eCademy & inside GmbH: INTEGRIERTES LERNEN Blended Learning. Definition, Vorteile und Nachteile. https://www.ecademy-learning.com/ausbildung-digital/blended-learning/.
Blended mobility	Blended mobility is a combination of physical mobility with a virtual component facilitating collaborative online learning exchange and teamwork. For example, the virtual component can bring learners together online from different countries and study fields in online courses or to work collectively and simultaneously on assignments that are recognised as part of their studies (European Commission, 2024, p. 51).	blended learning	European Commission. (2024). Erasmus+ Programme Guide. https://www.erasmusplus.de/erasmus
Brain drain	Brain drain is generally used to describe the association between the migration of higher skilled workers (e.g., scientists, teachers, engineers, and doctors) from poorer to richer countries and the subsequent erosion of local capacities in the sending regions.	brain gain	Levatino, A., & Pécoud, A. (2012). Overcoming the Ethical Dilemmas of Skilled Migration? An Analysis of International Narratives on the "Brain Drain". American Behavioral Scientist, 56, 1258 - 1276
Brain gain	The term refers to the competition between countries 'to attract the best brains from around the world to generate ideas that will in turn lead to innovations, patents, and profits' (Robertson, 2006, p. 1). Its notion stands in opposition to the notion of 'brain circulation', where 'migrants return to their own country regularly or occasionally, sharing the benefits of the skills and resources they have acquired while living and working abroad' (GCIM, 2005, p. 31).	brain drain	GCIM. (2005). Migration in an interconnected world: New directions for action: Report of the Global Commission on International Migration. The Global Commission on International Migration. https://www.iom.int/sites/g/files/tmzbdl486/files/jahia/webdav/site/myjahiasite/shared/shared/mainsite/policy_and_research/gcim/GCIM_Report_Complete.pdf Robertson, S. L. (2006). Brain drain, brain gain and brain circulation. Globalisation, Societies and Education, 4(1), 1–5. https://doi.org/10.1080/14767720600554908
COIL – Collaborative online international learning	Collaborative online international learning (COIL) is an approach that brings students and teaching staff together across cultures to learn, discuss, and collaborate as part of their class. Professors partner to design the experience, and students partner to complete the activities designed. COIL becomes part of the class, enabling all students to have significant intercultural experience within their course of study (SUNY, n.d.).	virtual collaborative learning	SUNY. (n.d.). What is COIL? – Intro 2 COIL. Retrieved November 7, 2024, from https://online.suny.edu/introtocoil/%20suny-coil-what-is/

Term	Explanation	Related term(s)	Source/Reference
Comprehensive internationalisation	'Comprehensive internationalisation is a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions of higher education. It shapes institutional ethos and values and touches the entire higher education enterprise. It is essential that it be embraced by institutional leadership, governance, faculty, students, and all academic service and support units" (Hudzik, 2011, p. 6). According to Brajković and Helms, comprehensive internationalisation includes the following key pillars: articulated commitment, administrative structures and staffing, curriculum, co-curriculum and learning outcomes, faculty policies and practices, student mobility, and collaboration and partnerships' (ibid., 2017, p. 1).		Brajković, L., & Helms, R. M. (2017). Mapping Internationalization on US Campuses. American Council on Education. https://www.acenet.edu/Documents/Mapping-Internationalization-2017.pdf. ; Hudzik, J. (2011). Comprehensive Internationalization: From Concept to Action. NAFSA – Association of International Educators.
Competence acquisition	Competency acquisition refers to the process by which individuals acquire the knowledge, skills, and abilities needed to successfully perform specific tasks or roles. It's a multifaceted process involving various learning mechanisms and experiences, ultimately leading to demonstrable proficiency. This goes beyond simply learning facts; it focuses on developing the practical application of knowledge (Gachino & Worku, 2019).		Gachino, G. G., & Worku, G. B. (2019). Learning in higher education: Towards knowledge, skills and competency acquisition. International Journal of Educational Management, 33(7), 1746–1770. https://doi.org/10.1108/IJEM-10-2018-0303
DAAD – Deutscher Akademischer Austauschdienst/German Academic Exchange Service	The DAAD is the world's largest funding organisation for the international exchange of students and researchers. It is supported as an association by German universities and student bodies. Its activities go beyond awarding scholarships: the DAAD promotes the internationalisation of German universities, strengthens German studies and the German language abroad, supports countries in the Global South in building up high-performance universities, and advises on education, foreign science, and development policy. The DAAD is institutionally supported by the Federal Foreign Office.		
Data protection	The term refers to the legal principle that 'everyone has the right to the protection of personal data concerning him or her'. Such data must be processed fairly for specified purposes and based on the consent of the person concerned or some other legitimate basis laid down by law. Everyone has the right of access to data that have been collected concerning him or her and the right to have them rectified. Compliance with these rules is subject to control by an independent authority" (European Union, 2012, Article 8).		European Union. (2012). Charter of Fundamental Rights of the European Union (2012/C 326/02). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:C2012/326/02

Term	Explanation	Related term(s)	Source/Reference
Datenschutz-Grundverordnung – General Data Protection Regulation (GDPR)	'Regulation (EU) 2016/679 (EU General Data Protection Regulation – GDPR) replaces the European Data Protection Directive of 1995 (Directive 95/46/EC) with the aim of harmonising and modernising European data protection law. It promotes the protection of those affected when personal data are processed and the free movement of such data (Article 1, paragraph 1 of the General Data Protection Regulation). The data protection directive, which was in force until May 25, 2018, was implemented very differently by the member states. This patchwork of member state regulations prevented cross-border data traffic in the European Union. The General Data Protection Regulation creates a uniform and directly applicable legal framework that guarantees the free movement of personal data in the European Union' (Bundesministerium des Inneren und für Heimat, 2024).		Bundesministerium des Innern und für Heimat. (2024). Häufig Nachgefragt - Datenschutz-Grundverordnung. Retrieved November 29, 2024, from https://www.bmi.bund.de/SharedDocs/faqs/DE/themen/it-digitalpolitik/datenschutz/datenschutzgrundvo-liste.html
Degree-seeking international students	Degree-seeking international students are international mobile students who are studying abroad for a full degree (Bachelor's, Master's, or PhD).	International mobile students	Marinoni, Giorgio; Cardona, Siro Bartolome Pina (2024): 6th IAU Global Survey Report. Internationalization of Higher RÉducation: Current Trends and Future Scenarios. International Association of Universities. Paris – France. Online verfügbar unter: https://www.iau-aiu.net/IMG/pdf/2024_internationalization_survey_report_digital.pdf. S. 243
Demographic trends	The term refers to the patterns and changes in the characteristics of a population over time, including measures of, for instance, populational size and growth, fertility rates, populational ageing, and international migration (European Commission, n.d.).		European Commission. (n.d.). Eurobarometer survey 3112. Retrieved from https://europa.eu/eurobarometer/surveys/detail/3112
Digital competence	Digital competence involves the confident, critical, and responsible use of and engagement with digital technologies for studying, working, and participating in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property-related questions, problem solving, and critical thinking (European Commission, 2019).		European Commission. (2019). Key competences for lifelong learning. Publications Office of the EU. https://op.europa.eu/en/publication-detail/-/publication/297a33c8-a1f3-11e9-9d01-01aa75ed71a1/language-en
Digitalisation, digitisation, and digital transformation	While digitisation is the technical 'process of changing from analogue to digital form', digitalisation involves 'employing digital technologies and information to transform business operations'. Digital transformation, in the case of higher education institutions, is understood as 'the sum of digital processes necessary to achieve a change process that enables HEIs to successfully leverage the use of digital technologies'. Therefore, 'we digitalise processes and roles that make up the operations of a business and we digitally transform the business and its strategy. Each one is necessary but not sufficient for the next, and, most importantly, digitisation and digitalisation are essentially about technology, but digital transformation is not' (Kopp et al., 2019, p. 1449).	digital transformation	Kopp, M., Groblinger, O., & Adams, S. (2019). Five Common Assumptions that Prevent the Digital Transformation at Higher Education Institutions. In L. G. Chova, A. L. Martinez, & I. C. Torres (Chairs), 13th International Technology, Education And Development Conference (INTED2019).

Term	Explanation	Related term(s)	Source/Reference
Digital signatures	A digital signature is a mathematical technique used to validate the authenticity and integrity of digital data. It's like a handwritten signature, but significantly more secure and reliable for the digital world. Instead of ink on paper, it uses cryptography to create a unique code linked to the document. It is related to the electronic signature, which is an electronic indication of a person's intent to agree to the content of a document or a set of data to which the signature relates. Like its handwritten counterpart in the offline world, an electronic signature is a legal concept capturing the signatory's intent to be bound by the terms of the signed document (European Commission, n.d.)		European Commission. (n.d.). What is eSignature? Digital Building Blocks. Retrieved November 29, 2024, from https://ec.europa.eu/digital-building-blocks/sites/display/DIGITAL/What+is+eSignature
Digital competence	Digital competence is a combination of knowledge, skills, and attitudes with regards to the use of technology to perform tasks, solve problems, communicate, manage information, collaborate, create, and share content effectively, appropriately, securely, critically, creatively, independently, and ethically		Skov, Anders (2016): What is Digital Competence?, https://digital-competence.eu/front/what-is-digital-competence, abgerufen am: 19.06.2024
Digital infrastructure	Digital infrastructure is the physical hardware- and software-based technologies that enable digital services. It includes the IT systems and networks that enable organisations to operate and communicate.		Neos Networks (2024): What is digital infrastructure?. https://neosnetworks.com/resources/blog/what-is-digital-infrastructure/. Abgerufen am: 19.06.2024
Digital literacy skills	Digital literacy is the ability to effectively and critically navigate, evaluate, and create information using a range of digital technologies. It encompasses a variety of skills, including the capacity to access and understand digital content, engage with online communication tools, protect personal information, and assess the credibility of sources. Digital literacy also involves being proficient in the use of software applications, understanding digital rights and responsibilities, and applying ethical considerations in digital interactions.		Akayoglu, S., Satar, H. M., Dikilitas, K., Cirit, N. C., & Korkmazgil, S. (2019). Digital literacy practices of Turkish pre-service EFL teachers. Australasian Journal of Educational Technology, 36(1), 85–97. https://doi.org/10.14742/ajet.4711 Bilki, Z., Satar, M., & Sak, M. (2023). Critical digital literacy in virtual exchange for ELT teacher education: An interpretivist methodology. ReCALL, 35(1), 58–73. https://doi.org/10.1017/S095834402200009X Dudeney, G., & Hockly, N. (2016). Literacies, technology and language teaching. In Farr & Murray (Ed.), The Routledge handbook of language and learning and technology (pp. 115–126). Routledge. https://api.taylorfrancis.com/content/chapters/edit/download?identifiername=doi&identifiervalue=10.4324/9781315657899-11&type=chapterpdf
Digital transformation	This is defined as the sum of digital processes necessary to achieve a change process that enables HEIs to successfully leverage the use of digital technologies.		Kopp, M.; Groblinger, O.; Adams, S. (2019): Five Common Assumptions that Prevent the Digital Transformation at Higher Education Institutions. In: L. G. Chova, A. L. Martinez und I. C. Torres (Hg.). 13TH INTERNATIONAL TECHNOLOGY, EDUCATION AND DEVELOPMENT CONFERENCE (INTED2019), p. 1449

Term	Explanation	Related term(s)	Source/Reference
Domains	Cooperation with internal and external IT service providers (data centres, external platform providers, etc.) or the cooperation of IO with both other administrative units and with faculties as providers of study programmes.		
Dual/double or multiple degree programme	Double/multiple degrees are separate degrees awarded by higher education institutions offering the joint programme attesting to the successful completion of this programme (if two degrees are awarded by two institutions, this is a 'double degree'). A joint degree is a single document awarded by higher education institutions offering the joint programme and nationally acknowledged as the recognised award of the joint programme (EQAR, n.d.).	Joint programmess	European Quality Assurance Register for Higher Education. (n.d.). Joint programmes: Definitions. EQAR. https://www.eqar.eu/kb/joint-programmes/definitions/
ECTS – European Credit Transfer and Accumulation System	Credit is a unit of formal recognition of students' academic achievements. Within the EHEA (European Higher Education Area), credits are generally gained in the form of ECTS credit points, competences, and certificates (European Commission, n.d.).		European Commission. (n.d.). European credit transfer and accumulation system. European Education Area. Retrieved December 2, 2024, from https://education.ec.europa.eu/education-levels/higher-education/inclusive-and-connected-higher-education/european-credit-transfer-and-accumulation-system
EHEA – European Higher Education Area	The European Higher Education Area (EHEA) is an international collaboration on higher education comprising 49 member countries. Based on key shared values, these countries commit to implementing a common set of reforms in their higher education systems, making them more compatible and strengthening their quality assurance mechanisms. For all these countries, the main goal is to increase staff and student mobility and to facilitate employability (EHEA, n.d.).	European Credit Transfer and Accumulation System (ECTS)	European Higher Education Area. (n.d.). Home page. EHEA. https://ehea.info/page-home-page
Electronic signature	See Digital signature	Digital signature	
ESCI – European Student Card Initiative	Part of the Erasmus+ programme, it is an initiative to help students and higher education institutions on Erasmus+ exchanges by simplifying administrative processes and enhancing digitalisation. The European Student Card establishes a common European identity for higher education students. Students can have their student status verified easily across Europe with their European Student Card. There are many benefits for students, including easier access to student services and simpler status recognition (European Commission, n.d.).		European Commission. (n.d.). European Student Card initiative: Card. Erasmus+. https://erasmus-plus.ec.europa.eu/european-student-card-initiative/card
EWP – Erasmus Without Paper	A digital solution for higher education institutions to connect their Erasmus+ mobility management systems so they can manage their student mobility online. EWP does this through an online exchange network that connects HEIs participating in Erasmus exchanges (European Commission, n.d.).		European Commission. (n.d.). Erasmus Without Paper. Retrieved November 7, 2024, from https://erasmus-plus.ec.europa.eu/european-student-card-initiative/ewp

Term	Explanation	Related term(s)	Source/Reference
EUA – European Universities alliances/ initiative	The European Universities alliances is a collaborative initiative bringing together higher education institutions from different European countries to create a network for joint education, research, and innovation. These alliances aim to enhance the quality and attractiveness of higher education in Europe, promote internationalisation, and strengthen Europe's competitiveness in research and innovation. Key characteristics of these alliances include joint educational programmes (see double degree above), collaborative research, student and staff mobility, shared resources and infrastructure, and strengthening regional development. While individual alliances may have specific focuses and goals, these are general principles guiding their formation and operation. The European Commission supports the creation and development of European Universities alliances through funding programmes, aiming to foster a more integrated and competitive European Higher Education Area (European Commission, n.d.).		European Commission. (n.d.). European Universities initiative. European Education Area. https://education.ec.europa.eu/education-levels/higher-education/european-universities-initiative
Excellence Initiative (Exzellenzinitiative)	The German federal and state governments launched the Excellence Initiative in 2005. The aim of the Excellence Initiative was to make Germany a more attractive research location, making it more internationally competitive and focusing attention on the outstanding achievements of German universities and the German scientific community. Measures of the Exzellenzinitiative include the establishment of graduate schools to promote early career researchers, Clusters of Excellence to promote top-level research, and institutional strategies to promote top-level university research (DFG, 2019).		DFG. (2019, June 16). General Information - Excellence Initiative (2005-2017/19). Deutsche Forschungsgemeinschaft. https://www.dfg.de/en/research-funding/funding-initiative/excellence-initiative/general-information
Global learning	Global learning refers to an educational approach that encourages students to engage with complex global issues, fostering an understanding of diverse cultures, perspectives, and interconnectedness in a rapidly changing world. This type of learning is designed to develop critical thinking, empathy, and a sense of responsibility, empowering students to become active global citizens. In the context of higher education, global learning encompasses a wide range of topics, including social justice, environmental sustainability, economic inequality, and cultural competency.		Landorf, H., Doscher, S., & Hardrick, J. (2023). Making Global Learning Universal: Promoting Inclusion and Success for All Students. Routledge. https://doi.org/10.4324/9781003445807
HAW.International – HAW International – Internationalisation of Universities of Applied Sciences	Through the 'HAW. International', the DAAD supports students and researchers at the universities of applied sciences during stays abroad and supports the universities of applied sciences in developing strategies and in establishing and expanding strategic cooperation with international partners. The DAAD also offers advice, events, and training courses specific to the universities of applied sciences (DAAD, n.d.).	DAAD	DAAD. (n.d.). Internationalization of Universities of Applied Sciences (HAW.International). Retrieved November 7, 2024, from https://www.daad.de/de/infos-services-fuer-hochschulen/weiterfuehrende-infos-zu-daad-foerderprogrammen/haw-international/
HEIs	This stands for higher education institutions.		

Term	Explanation	Related term(s)	Source/Reference
HRK – Hochschulrektorenkonferenz/ German Rectors' Conference	The German Rectors' Conference (HRK) is the association of state and state-recognised higher education institutions in Germany. The member institutions are represented in the HRK by their executive boards and rectorates. The HRK currently has 271 member institutions where around 90% of all students in Germany are enrolled. The HRK functions as the voice of the higher education institutions in dialogue with politics and the general public and as the central forum for opinion forming in the higher education sector. HRK deals with all issues relating to the role and tasks of higher education institutions in academia and society, especially teaching and learning, research, innovation and transfer, further scientific training, internationalisation, university self-administration, and governance (HRK, n.d.).		
Hybrid mobility	Hybrid mobility is a mix of physical and virtual mobility.	virtual mobility	European Commission: Culture and Creativity. https://culture.ec.europa.eu/de/faq-item/what-is-a-virtual-or-hybrid-mobility . abgerufen am: 27.06.2024
IAU	International Association of Universities		
IaH – Internationalisation at home	Internationalisation at home is a term referring to 'the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments' (Beelen and Jones 2015, p. 69).	IoC	Beelen, J., & Jones, E. (2015). Redefining Internationalization at Home. In A. Curaj, L. Matei, R. Pricopie, J. Salmi, & P. Scott (Eds.), The European Higher Education Area: Between Critical Reflections and Future Policies (pp. 59–72). Springer International Publishing. https://doi.org/10.1007/978-3-319-20877-0_5
ICT – Information and communication technology	Information and communication technology (ICT) covers all technical means used to handle information and aid in communication. This includes both computer and network hardware, as well as the software (Eurostat, n.d.).		Eurostat. (n.d.). Glossary: Information and communication technology (ICT). European Commission. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Information_and_communication_technology_(ICT)
INDISTRA	Internationalisation in the digital transformation		
IMKD – International mobility and cooperation through digitalisation	Between 2020 and 2023, the programme International Mobility and Cooperation through Digitalisation (IMKD) supported German higher education institutions to rethink international partnerships among higher education institutions. The programme promotes the use of digital instruments as tools for their own internationalisation strategies and supports student's international mobility The programme was funded by the Federal Ministry of Education and Research (BMBF), and the funding programme ended in 2023 (DAAD, n.d.).	DAAD	DAAD. (n.d.). International Mobility and Cooperation through Digitalisation (IMKD). Retrieved November 7, 2024, from https://www.daad.de/en/information-services-for-higher-education-institutions/further-information-on-daad-programmes/imkd/

Term	Explanation	Related term(s)	Source/Reference
Informational self-determination	The term is understood as 'an individual's possibility and ability to determine the disclosure, collection and use of their personal information/data' (CERES, 2018, p. 19).		CERES. (2018). Digitale Selbstbestimmung. Cologne center for ethics, rights, economics, and social sciences of health; Universitäat zu Köln. https://ceres.uni-koeln.de/fileadmin/user_upload/Bilder/Dokumente/ceres-Digitale_Selbstbestimmung_2.pdf
Internationalisation	This is defined as 'the process of introducing an international, intercultural, or global dimension into the delivery, purpose, or functions of higher education with the help of information and communication technology (ICT)'.		Bruhn-Zass, Elisa (2023): Virtual Internationalization as a Concept for Campus-Based and Online and Distance Higher Education. In: Zawacki-Richter, Olaf; Jung, Insung: Handbook of Open, Distance and Digital Education. Springer Nature. S. 374
International mobile students	Internationally mobile students are individuals who have physically crossed an international border between two countries with the objective of participating in educational activities in the country of destination, where the country of destination of a given student is different from their country of origin.		UNESCO Institute of Statistics (2024): Internationally mobile students. https://uis.unesco.org/en/glossary-term/internationally-mobile-students.
IO – International office	Thes are support and advisory units dedicated to promoting and supporting internationalisation at higher education institutions, acting as the primary liaison for international students and staff.		Self-made definition for this study
IoC – Internationalisation of the curriculum	Internationalisation of the curriculum is a term referring to 'the incorporation of international, intercultural, and global dimensions into the content of the curriculum as well as the learning outcomes, assessment tasks, teaching methods, and support services of a program of study' (Leask, 2015, p. 9).	IaH	Leask, B. (2015). Internationalizing the curriculum (1st ed.). Routledge Taylor & Francis Group. https://doi.org/10.4324/9781315716954
Internationalisation of higher education	The process of integrating an international, intercultural, or global dimension into the purpose, functions, or delivery of post-secondary education.		Knight, Jane (2003): Updated Internationalization Definition. In: International Higher Education. 33. 10.6017/ihe.2003.33.7391. p. 2
IVAC – International virtual academic collaboration	International virtual academic collaboration (IVAC) is a programme funded by the DAAD providing practical support to instructors and strategic support to higher education institutions in three calls for application between 2020 and 2023. The aim has been to develop and expand international higher education partnerships and worldwide mobility by tapping digital possibilities (DAAD, n.d.).	DAAD	DAAD. (n.d.). International Virtual Academic Collaboration (IVAC) - DAAD. https://www.daad.de/en/information-services-for-higher-education-institutions/further-information-on-daad-programmes/ivac/
Joint degree programme	A joint degree programme is developed collaboratively by two or more partner HEIs; graduates are awarded one joint qualification.		Marinoni, Giorgio; Cardona, Siro Bartolome Pina (2024): 6 th IAU Global Survey Report. Internationalization of Higher RÉducation: Current Trends and Future Scenarios. International Association of Universities. Paris - France. Online verfügbar unter https://www.iau-aiu.net/IMG/pdf/2024_internationalization_survey_report_digital.pdf. S. 244

Term	Explanation	Related term(s)	Source/Reference
Kapazitätsrecht – Capacity Law	The German Capacity Law contains regulations that can be used to determine the volume of training at a public higher education institution: a specific calculation method is used to determine the maximum number of students who are eligible to study and can begin studying a particular course at an HEI. For courses with restricted admission, where student demand is greater than the number of courses on offer, the calculated study place capacities are of crucial importance. Capacity law affects not only admission numbers, but also other areas of the higher education system		Borgwardt, A. (2019, May 23). Kapazitätsrecht - Definition. https://angela-borgwardt.de/was-ist-das-kapazitaetsrecht
Lehrverpflichtungsverordnung (LVVO)/Teaching Obligation Ordinance	A teaching obligation (teaching load) applies to employees of public higher education institutions with primary academic or artistic employment. This ordinance regulates the average scope of teaching duties, the weighting of course types regarding the fulfilment of teaching duties, and special supervision obligations for full-time academic and artistic staff in civil servant positions at universities (Niedersachsen, n.d.).		Niedersachsen. (n.d.). Verordnung über die Lehrverpflichtung an Hochschulen (Lehrverpflichtungsverordnung - LVVO) [Landesrecht Niedersachsen]. Amtliche Abkürzung: LVVO. Referenz: 22210. https://www.phil.uni-hannover.de/fileadmin/phil/LVVO_NI_19.03.2015_10-02-45.pdf
Micro-credentials	A micro-credential is a recognised proof of the learning outcomes that a learner has achieved following a short learning experience, according to transparent standards and requirements and upon assessment. The proof is contained in a certified document that lists the name of the holder, the achieved learning outcomes, the assessment method, the awarding body, and, where applicable, the qualifications framework level and the credits gained. Micro-credentials are owned by the learner, shareable, and portable and may be combined into larger credentials or qualifications (European Commission, 2024, p. 454).		European Commission. (2024). Erasmus+ Programme Guide. https://www.erasmusplus.de/erasmus
Mobility online	Software designed by the software development company SOP for the management of international mobility and partnerships, admission, and registration processes (SOP, n.d.).		SOP. (n.d.). Mobility online. https://www.sop.co.at/en/higher-education/mobility-online
MOOCs – Massive open online courses	This stands for a type of course that is delivered entirely online and can be accessed by anyone without cost, entry qualifications, or other restrictions; participant numbers are often high. These courses can have in-person components, e.g., they encourage local participant meetings and formal assessment, but they tend to use peer review, self-assessment, and automated grading. There are many variations of MOOCs that are focused on specific sectors, target groups (e.g., vocational focus and teachers), or teaching methods. MOOCs funded under Erasmus+ must be open to all, and both participation and a certificate or badge of completion are free of charge for participants (European Commission, 2024, p. 454).		European Commission. (2024). Erasmus+ Programme Guide. https://www.erasmusplus.de/erasmus
Online learning	Online learning is an educational experience that is mediated in whole or in part by web-based platforms, tools, and devices.		Sheridan. Library and Learning Services (2022): Online Teaching and Learning. https://sheridancollege.libguides.com/onlineteaching.

Term	Explanation	Related term(s)	Source/Reference
Online teaching	Online teaching is the process of educating others on virtual platforms. This type of teaching involves live classes, video conferencing, webinars, and other online tools.		Teachmint: online Teaching. https://www.teachmint.com/glossary/o/online-teaching/
Recognition	Academic recognition refers to higher education achievements. This includes temporary stays abroad, changes in HEIs or study programmes, and foreign school degrees as well as degrees from foreign HEIs. It allows individuals to transfer between HEIs and study programmes and prevents students from having to undergo a second examination of the competences they have already acquired. The basis for recognition is the Lisbon Convention, as well as the respective state higher education laws (HRK Project MODUs, n.d.).		HRK. (n.d.). Academic recognition: The system of academic recognition on Germany: quick start in basics, procedure and examination.
SDGs – Sustainable Development Goals of the United Nations	The 2030 Agenda, adopted by the UN General Assembly in 2015, includes 17 Sustainable Development Goals (SDGs) and 169 targets to be collectively reached by world leaders. The SDGs are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social, and environmental (UNESCO, 2015).		United Nations. (2015). Transforming the World: The 2030 Agenda for Sustainable Development (A/RES/70/1). https://sdgs.un.org/2030agenda
Service to society	This refers to internationalisation activities to yield a meaningful contribution to society, taking social responsibility beyond the academic sphere. This reflects the concept of Internationalisation in Higher Education for Society (IHES), which explicitly aims to benefit the wider community, at home or abroad, through international or intercultural education, research, service, and engagement (Brandenburg, 2020; Brandenburg et al., 2019).		Brandenburg, U. (2020). Internationalisation in higher education for society – IHES in the times of corona. Sociální Pedagogika / Social Education, 8(1), 11–24. https://doi.org/10.7441/soced.2020.08.01.01 Brandenburg, U., Wit, H. de, Jones, E., & Leask, B. (2019, April 20). Internationalisation in Higher Education for Society. University World News. https://www.universityworldnews.com/post.php?story=20190414195843914
Staff training and development	A set of activities and programmes designed to enhance the knowledge, skills, and abilities of employees. It is a continuous process that aims to improve individual and organisational performance, foster career growth, and adapt to evolving business needs.		Herbert, Kaitlin: employee training and development. https://www.techtarget.com/searchhrsoftware/definition/employee-training-and-development.
Student support services	They are also called campus services and are platforms for online application and enrolment, virtual graduation ceremonies, access to online library resources, and communication with faculty members. Socia services such as mentoring, buddy, and networking programmes for prospective foreign students are available via social media.		
Techno solutionism	Particular type of solutionism that focuses on the solution potential of technological interventions. This form of solutionism is tightly related to a faith in science and engineering.		Skaug Sætra, Hendrik (2023): Solutionism and techno-solutionism – what is it (not)?. https://www.techandsd.com/solutionism-and-techno-solutionism/. Aufgerufen am: 28.06.2024

Term	Explanation	Related term(s)	Source/Reference
Technostress	The term defines the 'stress that individuals experience due to their use of technology and the inability to cope or deal with these new digital technologies in a healthy manner' (Trenerry et al., 2021, p. 9).		Trenerry, B., Chng, S., Wang, Y., Suhaila, Z. S., Lim, S. S., Lu, H. Y., & Oh, P. H. (2021). Preparing Workplaces for Digital Transformation: An Integrative Review and Framework of Multi-Level Factors. Frontiers in Psychology, 12, 620766. https://doi.org/10.3389/fpsyg.2021.620766
TNE – Transnational education	The mobility of education programmes and institutions/providers across international borders.		Marinoni, Giorgio; Cardona, Siro Bartolome Pina (2024): 6th IAU Global Survey Report. Internationalization of Higher RÉducation: Current Trends and Future Scenarios. International Association of Universities. Paris - France. Online verfügbar unter https://www.iau-aiu.net/IMG/pdf/2024_internationalization_survey_report_digital.pdf. S. 244
UNESCO – United Nations Educational, Scientific, and Cultural Organisation	UNESCO is the United Nations Educational, Scientific, and Cultural Organization. It contributes to peace and security by promoting international cooperation in education, sciences, culture, communication, and information. UNESCO promotes knowledge sharing and the free flow of ideas to accelerate mutual understanding and a more perfect knowledge of each other's lives. UNESCO's programmes contribute to the achievement of the Sustainable Development Goals defined in the 2030 Agenda, adopted by the UN General Assembly in 2015 (UNESCO, n.d.).		UNESCO (n.d.). UNESCO in brief. https://unesco.org/en/brief
Virtual collaboration	Virtual collaboration refers to collaboration between employees who work in different locations without being in direct physical contact with each other. Communication happens via digital/multimedia channels such as the Internet, company intranets, telephone, email, or other electronic media.		Teamevents online (2024): Virtuelle Zusammenarbeit: Definition & Beispiele. https://teamevents-online.de/glossar/virtuelle-zusammenarbeit/.
VCL – Virtual collaborative learning	Virtual collaborative learning (VCL) deals with the possibility of offering learners a virtual learning environment in which they can combine the advantages of e-learning, such as time flexibility or independence of location, with the advantages of collaborative teamwork.	virtual collaboration	Erzsebet Balazs, Ildiko (2005): Konzeption von Virtual Collaborative Learning Projekten. Ein Vorgehen zur systematischen Entscheidungsfindung. Dresden: Technische Universität Dresden. https://nbn-resolving.org/urn:nbn:de:swb:14-1111134624957-21292.
Virtual education	This is a method of teaching that is taught either entirely online or when elements of face-to-face courses are taught online through learning management systems and other educational tools and platforms. Virtual instruction also includes digitally transmitting course materials to students.		tophat glossary: Virtual Instruction. https://tophat.com/glossary/v/virtual-instruction/.

Term	Explanation	Related term(s)	Source/Reference
VE – Virtual exchange	Virtual exchange refers to the application of online communication tools to bring together classes of learners in geographically distant locations with the aim of developing their foreign language skills, digital competence, and intercultural competence through online collaborative tasks and project work. In recent years, approaches to virtual exchange have evolved in different contexts and different areas of university education and these approaches have had at times, very diverse organisational structures and pedagogical objectives.		O'Dowd, Robert (2017): Virtual Exchange and internationalising the classroom. In: TLC 1 (4), S. 8–24. DOI: 10.29366/2017tlc.1.4.1.
VI – Virtual internationalisation	Virtual internationalisation at the national, sector, and institutional levels is defined as the process of introducing an international, intercultural, or global dimension into the delivery, purpose, or functions of higher education with the help of information and communication technology (ICT) (Bruhn, 2020, based on Knight, 2003, p. 2) (Bruhn, 2020).		Bruhn, E. (2020). Virtual Internationalization in Higher Education (Innovative Hochschule: digital - international - transformativ). WBV. https://www.researchgate.net/publication/344424367 _Virtual_Internationalization_in_Higher_Education
Virtual learning	The term is used to describe the acquisition of knowledge, skills, and competences using information and communication technology tools that allow participants to have a meaningful transnational or international learning experience (European Commission, 2024).		European Commission. (2024). Erasmus+ Programme Guide. https://www.erasmusplus.de/erasmus
Virtual mobility	Educational practices that allow students from one educational institution to take courses organised at a different institution without having to leave home (O'Dowd, 2022).		O'Dowd, R. (2022). Introducing Virtual Student Exchange in international university education (DAAD Research Brief).

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