Navigating competition and collaboration – The way forward for universities

A study by Peter Maassen, Jens Jungblut, Bjørn Stensaker, Rachel Griffith and Ariana Rosso, University of Oslo

Commissioned by Körber-Stiftung
in preparation for the

GUC Hamburg
Global University Leaders Council Hamburg **2023**

Körber Stiftung

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The Global University Leaders Council Hamburg (GUC Hamburg) is an initiative of the German Rectors' Conference, Körber-Stiftung and Universität Hamburg. It is the aim of the Council to initiate a dialogue among university leaders about the current key challenges that national higher education systems around the globe are confronted with. The process of globalization has led to a situation in which higher education systems worldwide are facing a number of similar challenges. These range from threats to university autonomy and academic freedom to conflicting theories of the university and education, and from questions of access to higher education to the financing of university teaching and research.

The co-organizers understand the GUC Hamburg as a forum for discussions on the core mission of the university in a globalized higher education landscape.

The study "Navigating competition and collaboration – The way forward for universities" was commissioned by Körber-Stiftung in preparation for the 2023 Global University Leaders Council Hamburg.

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A research study for the Global University Leaders Council Hamburg 2023

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INITIATORS

The study "Navigating competition and collaboration – The universities way forward“ was commissioned by the Körber-Stiftung in preparation for the 2023 Global University Leaders Council. The GUC Hamburg is an initiative of the German Rectors´ Conference, the Körber-Stiftung and Universität Hamburg.

German Rectors' Conference

The German Rectors' Conference (HRK) is the association of universities in Germany. The HRK is an independent organization, representing all types of higher education institutions. More than 90 percent of all students in Germany are enrolled at its member universities. Hence, the HRK is the political and public voice of the universities and the forum for the universities' joint opinion-forming process. The HRK helps to set the political agenda and lead public discussion on all issues relating to the universities. In this context, the HRK represents the universities' positions in Germany and Europe as well as on the international stage. Furthermore, the HRK supports its member institutions and provides them with a platform for exchange among each other.

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Universität Hamburg

Designated a University of Excellence by the German Federal and State Governments in 2019, Universität Hamburg is one of the strongest research universities in Germany. As a flagship university in the greater Hamburg region, it fosters innovative, cooperative contacts with partners inside and outside academia. It also provides and promotes sustainable education, knowledge, and knowledge-exchange locally, nationally, and internationally. The University boasts numerous interdisciplinary research projects covering the full spectrum of disciplines in the humanities, law, economics, business administration, social sciences and the natural and life sciences. We combine excellent research and academic breadth in teaching and currently offer 170 undergraduate and graduate degree programs, including teacher training and medicine. Additionally, we maintain an extensive partner network of leading regional, national, and international higher education and research institutions. As part of the Excellence Strategy of the Federal and State Governments, Universität Hamburg has been granted Clusters of Excellence for 4 core research areas: CUI: Advanced Imaging of Matter (photon and nanosciences); Climate, Climatic Change, and Society (CLICCS) (climate research); Understanding Written Artefacts (manuscript research); and Quantum Universe (mathematics, particle physics, astrophysics, and cosmology).

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PREFACE

Two principles shape both the relationship between scientific institutions and scientific work itself: competition and collaboration. On the one hand, there is competition for the best ideas and research concepts, for the “best minds” – from the student to the senior researcher level – and the competition for funding and reputation, for example, in the global rankings. And there is, on the other hand, the global exchange of ideas and research results, international collaboration on study and research programmes and the sharing of research infrastructure. Scientific progress is evidently based on the combination of both principles.

The developments of the last decades - the increasing globalisation and interconnectedness on one side and the growing competition of political systems on the other, as well as the enormously increased political and economic interest in higher education and research - have led to drastic changes in terms of competition and forms of cooperation amongst universities. This study is devoted to precisely these changes and examines how universities at the regional, national, and international level currently position themselves in this sphere. There is still little empirical research on what competitive incentive structures actually do for the successful production of relevant knowledge. This makes it even more important for university leaders to be able to recognise the opportunities and risks of both principles and to put them into a productive relationship for the benefit of their institutions. To this end, the study makes several recommendations, ranging from a conscious approach to rankings to the establishment of strategically promising collaborations.

The study was written ahead of the Global University Leaders Council Hamburg, a joint initiative of the German Rectors’ Conference, Körber-Stiftung, and Universität Hamburg. In preparation for the 2023 Council, Körber-Stiftung asked Professor Peter Maassen from the University of Oslo to analyse and compare how universities around the world navigate competition and collaboration. Maassen and his team focused on the role universities define for themselves as well as on their actual practices concerning competition and collaboration. They paid special attention to the challenges encountered by universities and looked in detail at the situation in a variety of universities worldwide.

Peter Maassen’s study will provide the participants of the Global University Leaders Council Hamburg with a solid base for their strategic discussions. In June 2023, around 50 university leaders from around the world will gather in Hamburg to formulate recommendations on how universities can best navigate competition and collaboration to provide knowledge locally, nationally, and globally for the benefit of society.

We would like to sincerely thank Peter Maassen, Jens Jungblut, Bjørn Stensaker, Rachel Griffith and Arianna Rosso for their work. The 2023 Global University Leaders Council Hamburg will benefit from this publication as will future readers.

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AT A GLANCE:

- Competition and collaboration have always been part of academia, but traditional forms of competition and collaboration have been transformed in recent decades. This has led to the emergence of universities as competitors, where before the competitors have been individual academics and countries.
- A distinction has to be made between the global competition among universities for status, and the (mainly) national competition for resources (students, staff, funding).
- While some forms of competition involve risks for universities – e.g., loss of autonomy, weakening of status, or reduction of the capacity for primary academic tasks – the study did not identify valid examples of competition negatively affecting university collaborations.
- The performance of universities addressed in global rankings is based on the assessment of the performance of individual academics. Little progress has been made on assessing the performance of universities as organizations.
- Global rankings have serious defects and are argued to lead to unproductive competition between universities. In various countries, a global ranking fatigue can be observed among universities.
- New forms of strategic institutional collaborations have emerged, such as inter-university partnerships and formal alliances. They serve multiple purposes – e.g., increasing competitiveness, serving economic interests, reducing risks and stimulating organizational learning – and are particularly flourishing in the area of sustainability and climate change.
- Universities connect new forms of competition and collaboration in an instrumental way, but at the same time are committed to using and further developing strategic collaborations for non-competitive purposes.
- The instrumental use of strategic collaborations by universities to maintain (or improve) their competitiveness is often promoted by government, for example, through government-university performance agreements and University Excellence programs.

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Transformation of competition and collaboration in higher education

1. Competition and collaboration have always been a crucial part of academia. Without the competition for students, staff, money, and scientific ideas and perspectives, and collaboration in the development and delivery of study programs, the exchange of ideas and research results, and the sharing of infrastructure, labs and equipment, scientific progress would not have been possible.

2. Throughout the last decades, there has been a transformation of the traditional forms of competition and collaboration in higher education and research. Competition has become more intense and its nature has changed, while new forms of formal collaborations between higher education institutions have emerged. There are a number of factors underlying this transformation, including the growing policy focus of public authorities around the world on the key role of knowledge in innovation and economic growth. Consequently, higher education is identified as a central sector for enhancing the global competitiveness of national economies with research universities as the key knowledge institutions. For higher education to realize its potential in the global knowledge economy, governments have initiated reforms aimed at enhancing the performance of their universities. These reforms have strengthened institutional autonomy, pushed for new forms of institutional governance, leadership, and administration, and introduced performance-based mechanisms for the public funding of universities. Furthermore, the public funding of research has become more competitive and in essence driven by the performance of the applying academics. As a result, research universities have become competitors in academia, where before the competition was in essence a competition between academics and between countries. Formal inter-institutional collaboration is also stimulated by the reforms, amongst other things, as a means to improve the academic performance of the participating institutions.

3. This development was made possible by the introduction of bibliometrics and scientometrics as research fields, which allowed for the growing use of performance ratings of individual academics and their units or teams. These metrics and ratings also led to the development of global university rankings, which have mushroomed since the early 2000s. These rankings have created a relatively stable order among research universities, with largely the same universities in the top 40-50 of every ranking, a group of 100-150 universities in the 'sub-top', and another 500 to 800 universities eagerly trying to enhance their performance in order to enter the 'sub-top'. Most of these universities are located in North America, Europe and Asia,

with the position of US universities under pressure as a consequence of large public investments by governments in a number of European and Asian countries, including China.

4. Rankings are contributing to the construction of new forms of competition in academia. A ranking defines status as something scarce: only one university can have the highest position and the other top positions are also scarce. Rankings directly and indirectly determine who is an appropriate organizational actor, by including some and excluding other universities from being ranked. In a total of 25 000 higher education institutions around the world, those included in a global university ranking are attributed a higher status. In addition, rankings have instigated some cases of mergers between institutions in order for the new university to gain a higher position in the rankings.

5. The existence of global university rankings is an expression of the global competition for status as a scarce good in academia. Governments stimulate this competition on the assumption that the higher the status of a university, the better it will be able to compete successfully for highly talented graduate students and staff, which will strengthen the chances of the university in question to compete successfully for external research funding. The ultimate expected outcome is an enhancement of the scientific performance of the university, which will strengthen its capacity for contributing to its home country's global economic competitiveness and status.

6. While the competition for status is global, the competition for resources (students, staff and funding) is in essence national. Only the small elite of the top ranked research universities truly compete globally for the most talented graduate students and high performing academic staff. However, even for these universities the national context is highly important in the sense that most of their students and staff are recruited nationally, and their public research funding income is allocated nationally. Therefore, the transformation of competition in higher education consists of research universities becoming competitors, a growing use of a variety of competitive schemes in the allocation of public funds by national governments, a more intense national competition for students and staff, and a global competition for status. In Europe, the EU has an important supranational role in the competitive allocation of research funding, but also here, most public funding is allocated nationally, and nearly all research universities compete for students and staff mainly nationally.

7. The transformation of inter-university collaboration is stimulated by 'the collaboration imperative' referring to the current situation in many academic fields that individual academics can no longer realize meaningful outcomes without collaboration with colleagues within their university, in other national institutions, or abroad. This can be observed in the dramatic growth in co-authored academic publications and the growing number of international collaborative research projects. In addition, collaboration in teaching has increased, made possible by the growing use of digital technologies.

8. The collaboration imperative has together with new governmental policy initiatives stimulated the development of new forms of inter-institutional collaboration in the form of formal strategic partnerships and alliances. While partnerships often are bilateral, alliances are formed by multiple institutions, and they sometimes also include non-academic private and/or public organizations as members or associated partners. These new forms of inter-university collaboration differ from traditional forms in their involvement of long-term commitment of all universities included in working toward a long-term vision or goal that is grounded in a common philosophy resulting in something new. Successful formal inter-university collaboration is argued to require mutual respect, trust, openness, shared decision-making and shared risk-taking.

9. A meta-organizational perspective can be used for analyzing the development of new university partnerships and alliances. Such a perspective identifies four dimensions – coordination, conflict resolution, commitment, and cultural characteristics – that affect key features of university alliances. A positive development of all four dimensions, and the ways in which they are interconnected, may lead to the institutionalization of certain practices and ways of doing things that can be assumed to transform an alliance or partnership into a persistent and long-lasting entity.

10. A challenge in inter-university collaboration is the integration of academic activities agreed upon in university alliances and partnerships with academic collaboration activities developed and undertaken by individual academics and their teams. These two forms of academic collaboration are usually weakly coordinated. Therefore, university leadership has an important role in stimulating a better horizontal and vertical coordination in their institution in the selection of institutional collaboration partners and the introduction of incentives for promoting the participation of academic staff and students in formal partnerships and alliances.

11. In many countries around the world, the government-initiated reforms of the last decades represent the introduction or strengthening of competition in systems where 'organized competition' was traditionally weak. This development has been argued to lead to a global convergence of the governance, funding, and organization of higher education in a direction that resembles the competitive US system of higher education. However, there are various indications that challenge this argument.

For example, OECD data shows that there is no homogeneous global trend towards an increase in the private contributions to higher education funding. Furthermore, basic governance and organization features of higher education remain firmly embedded in national legal and political contexts, implying that the traditional diversity among higher education systems is not diminishing.

12. At the same time, public funding priorities and the policy instruments used to realize these priorities have changed and seem to follow the same reform agenda. This implies a trend from input-oriented to output-oriented funding and from central regulatory approaches treating all universities alike to decentral competitive approaches where institutional performance, strategies and profiles play an important role in funding outcomes, stimulating a more diversified higher education system. This new public funding approach is accompanied by and reliant on a system that explicitly measures and evaluates university outputs, such as credit points produced by students, the number of dropouts and graduates, research articles, and the success in the external competition for research funding.

13. The academic literature is until now mainly focused on conceptualizing and interpreting new forms of competition and collaboration, with relatively little valid empirical evidence produced on the effects of new forms of competition and collaboration on universities, for example, the effects on the behavior of academics and the quality of teaching and research. At the same time, it has been argued that the attempts to transform academic qualities into numeric forms to measure, to compare, and to inform decision-making, reduce the quality of information about academic activities and run the risk of narrowing the recognition and impact of knowledge generated in diverse systems.

14. The changes in government policies and the growing focus on institutional performance in public funding require an organizational actor that can take the responsibility for realizing the expected changes in university organization and governance, and make sure that the university produces the expected outcomes. Government policies refer to universities with expectations about performance and fulfilling society's needs, but universities as such are not actors. They have traditionally been characterized by organizational features that are shaped by academic activities, consisting of decentralized, loosely coupled units, with unique ways in organizing work and distributing authority within the organization. In addition, the organizational culture of the university is firmly embedded in the principle of academic freedom and the crucial role of self-governance for realizing the quality of academic activities required for maintaining scientific progress. These unique features do not integrate naturally with the notion of actorhood, which requires a clear organizational identity instead of a fragmented academic culture, a hierarchical leadership structure instead of self-governance, and rational decision making instead of organized anarchy.

15. Governments assume that organizational actorhood of universities can be developed through enhanced institutional autonomy, creating executive leadership and management functions, and introducing external competitive schemes. The executive university leadership, it is argued, can use the enhanced room to maneuver to create more control over the academic activities and position the university into a niche where performance and status can be maximized. Studies show that even though leadership functions have been strengthened and have become more hierarchical, institutional autonomy enhanced, and competition for funding intensified, institutional leadership has not necessarily gained more control over the outcomes of academic activities. The framework conditions for the academic activities have changed, but this seems to have created new horizontal and vertical coordination problems in universities. Whether university leaders will be able to solve these coordination problems in the long run remains to be seen.

16. The study has identified six themes in the ways in which universities around the world navigate competition and collaboration. These themes are derived from an analysis of expressions and intentions developed at the central institutional level, for example, through institutional strategies, missions, ambitions, and plans. In addition, we examined the extent to which universities are involved in formal collaboration through institutional partnerships and alliances. We also conducted a number of interviews with university leaders. These themes are:

a. Changing global political landscape; this theme has to do with the rapidly changing contexts for higher education as a consequence of the COVID-19 pandemic and growing political competition and tensions between countries, especially in light of the war in Ukraine. The theme refers to the crucial importance for university leaders to take into account that the rapidly changing global political landscape runs the risk of re-emphasizing national interests in science and changing the open global science system into a number of loosely connected groups of systems in countries that form a political alliance, plus national science systems in countries that are marginalized in the political conflicts.

b. Strategic institutional positioning; this theme concerns the ways in which universities interpret competition and collaboration and indicate the objectives they have in using competition and collaboration for achieving their institutional goals. Many universities in this study indicate that they want to contribute to finding solutions for global challenges, while others emphasize that they prioritize their contribution to national development. A third group consists of universities that position themselves in local and/or national markets for students, with an interest in contributing to the econo-

mic competitiveness of local, regional or national businesses.

c. Rankings, bibliometrics and ratings; this theme reflects the current dominance of impersonal references in the assessment of individual, team, and institutional performance. This trend makes data on performance more easily accessible and comparable, and allows for the emergence of a performance measurement industry, especially with respect to global university comparisons and rankings. At the same time, impersonal, standardized performance data generally hides important information, for example, about the context and nature of the performance measured. Another challenge is the use of individual ratings in academia, while in many fields collaboration is a condition for achieving meaningful outcomes. University leaders are aware of these challenges, but institutional incentive schemes for enhancing performance or premiums for rewarding performance are generally still individually oriented and represent, for example, changing publication strategies at individual and organizational level, but not the group or team level.

d. Changes in institutional collaboration; this theme represents the development of new forms of formal inter-university collaboration. All universities in the study present various examples of their institutional partnerships and/or alliances in their documents and on their websites. However, it is not always clear how strategic these collaborations are, how committed the participating universities are to the collaboration, and whether they represent a genuine move towards long-lasting collaborations aimed at producing new outcomes. Another aspect is the extent to which the collaborations that are strategic and to which the institution is truly committed, are set up to gain a competitive advantage, or whether other rationales were more important for establishing the collaboration. Some universities have signed partnership agreements with unequal partners, in the sense of significantly worse or better performing universities. The rationales and objectives of strategic university collaborations should be a topic for future research, amongst other things, to get a better understanding of the multitude of motives for such collaborations. This is recommendable in order to nuance the current dominant discourse about the positive impact of strategic collaborations on the global competitiveness of universities. Another issue is that it is not clear to what extent universities use incentives for promoting participation in collaborations, for example, in the form of salary increases, promotions, or project funding. Finally, an issue with respect to this theme is how universities communicate their strategic collaborations. Overall, universities highlight the importance of institutional collaborations in their strategies and missions, research and education policies, and annual reports, and indicate that they want to further develop their strategic collaborations. However, the information on the existing collaborations is often not very clear, lacking basic information on the rationales and expected outcomes of the collaborations.

e. Collaboration with non-university partners; some of the universities in the study emphasize the strategic importance of collaboration with private and/or public sector partners in their strategies. This is related to the universities' knowledge transfer ambitions, their strategic objectives to contribute to the economic competitiveness of their region and country, or their goals of contributing to social inclusion, equal opportunities and the strengthening of democratic institutions in their society. The importance of this type of strategic collaboration is also reflected in governmental policies, however, we currently know little about the intended and realized outcomes for universities of collaboration with non-academic partners.

f. Disciplinary diversity; this theme has to do with the role of disciplines in competition and collaboration. While there are important differences among disciplines when it comes to their role in university collaboration and the extent to which they are impacted by competitive schemes, there is little empirical research done on the influence of disciplines on the transformation of competition and collaboration, nor on how this transformation affects disciplines. Studies on evaluation in specific disciplines show, for example, how research evaluation affects the structural organization and cognitive development of disciplinary research, reinforcing stratification, and standardization. In addition, transdisciplinary collaborations among individual scientists, research teams, and universities demand enhanced attention. Furthermore, more research is needed to get a better understanding of the impact of internal and external competition and strategic institutional collaboration on the power balance between and within disciplines.

17. The six themes give a first impression of the ways in which universities navigate competition and collaboration. They also provide limited insights into the impact of the transformation in competition and collaboration on the university, for example, on the behavior and attitudes of academics, the development of the quality of teaching and research, and the extent to which utilitarianism is replacing curiosity in the development of research problems.

18. In addition to the six overall themes, a more detailed examination of the strategic development of five research intensive universities in navigating competition and collaboration was undertaken in the study. These examinations provide relevant insights into the ways in which these universities use collaboration to maintain or strengthen their global competitiveness. At the same time, they show that the growing use of strategic institutional collaborations is also legitimized by other rationales than the institution's competitiveness, for example, the aim

to develop sustainability as a key component of the institutional profile, and the ambition to contribute to academic capacity building in the Global South.

19. In order to determine a way forward for university leaders, a number of opportunities in navigating competition and collaboration are identified in this study. To start with, the global acknowledgement of the importance of sustainability and the Sustainable Development Goals (SDGs) provides important opportunities for universities to break down the zero-sum game of global university rankings by contributing to a shift in institutional performance assessment from using competitive indicators to emphasizing collaborative achievements. Another way forward is offered by the opportunity to use the institutional and societal commitment to sustainability to create a better, more effective balance between disciplinary and inter-disciplinary academic activities. The commitment to sustainability would also allow for a more effective and attractive way of communicating university achievements. For example, instead of presenting the places in rankings, universities could communicate their achievements in sustainability collaborations.

20. Another way forward lies in the acknowledgement of the risks involved for universities in the competition for global status. By being aware of these risks universities will be less inclined to make unproductive investments, and be better able to develop strategic instead of instrumental connections between competition and collaboration. Furthermore, the current opportunities to develop multilateral, equal partnerships between universities in the Global North and universities in the Global South offer another way forward. An important challenge in these partnerships is formed by inequalities in areas such as funding, infrastructure, staff capacity, and academic career opportunities. How North-South university partnerships address these inequalities in their collaboration will to a large extent the long-term contribution of the partnership to academic capacity building in the Global South.

21. Furthermore, there might be a way forward for universities in navigating competition and collaboration in the ways in which they contribute to a better understanding of the positive and negative aspects of the use of competition in higher education and research governance. There is, for example, a critical lack of valid empirical knowledge on the use of performance indicators, parameters and criteria in the public funding of higher education and research. Universities can contribute in a number of ways to a better foundation for the understanding of the pros and cons of performance based funding. Finally, universities should be aware of the nature of consequences of the so-called 'desectorization' of the public governance of higher education and research. This concerns the ways in which the public governance of the academic sector decouples increasingly from the interests and specific features of the sector, amongst other things, by shifting public funding from basic research and general study programs, to applied and use-oriented research and study programs in economically useful areas, such as STEM. It is crucial that universities collectively communicate the importance of maintaining, if not strengthening the involvement of the sector in its public governance.

CHAPTER 1

Introduction

Higher education and research have undergone profound transformations in recent decades, with long-term implications for all relevant levels of academia. A major factor stimulating these transformations is the increasing global demand for research-based knowledge and for employees with higher education qualifications. As a consequence, higher education and research have experienced an unprecedented productivity growth. Research universities are argued to be the driving force behind the exponential growth in research production in practically every country in the world (Wuestman et al. 2019), while various types of public and private higher education institutions are responsible for the dramatic global growth in the number of people with higher education qualifications.

It is generally acknowledged that for further advancement of scientific knowledge and the training of a highly qualified labor force, especially in the STEM and life sciences areas, the academic capacities of individual universities are no longer sufficient (Bozeman and Boardman 2014). Therefore, academics, institutional leadership, and public authorities have invested in the development of formal national and international partnerships, alliances, and networks, resulting in a growing number of inter-institutional research collaborations, and various types of joint education projects. Without these collaborations the growth of research and higher education productivity to the level we are experiencing today would not have been possible. Consequently, an integrated, dynamic global science system has emerged (Powell 2018). High levels of public investments in faculty positions, basic research, study places, infrastructure, and buildings played an important role in this (Marginson 2006), as well as growing private contributions in the form of tuition fees, public-private R&D partnerships, and private sponsorships of various kinds of university activities.

In this new constellation, universities have become politically more important, but at the same time less special (Deiaco et al. 2008: 2; Gornitzka and Maassen 2014; Chou et al. 2017). 'More important' meaning that higher education and research have become more central policy areas for public authorities, especially because of their role in enhancing innovation and global economic competitiveness. 'Less special' meaning that universities have lost their rather unique, relatively protected policy status and are treated politically like other public sector organizations, resulting in a gradual 'de-sectorization' of the public governance of higher education and research. In practice, this implied that the special political treatment of

universities as a protected sector that has characterized university governance since the end of WWII has largely come to an end.

In the first decades after 1945, change and reform in universities took place routinely and incrementally within a rather stable institutional framework. This situation changed in the sense that the universities' role as the main knowledge institution in society has become so important that in addition to the sector Ministry/Department and the university representatives other political and socio-economic stakeholders have become involved in the public governance[1] of the sector. Consequently, the public governance of universities has become a multi-actor and multi-level system, involving more stakeholders than before, and linking actors and agencies over various governance levels. The new governance approach implied that the university sector became more integrated in other policy areas, such as economic affairs, labor, business, innovation, and technology, resulting in the boundaries of universities being less clearly defined. The new approach also resulted in changes in the use of competition and collaboration as instruments for affecting the behavior of universities.

Forms of collaboration and competition have always been part of the operations of universities. However, traditional forms of inter-university collaboration were to a large extent based on individual academic cooperation and consisted of many inter-institutional agreements and Memoranda of Understanding (MoUs). As a new development, one can observe in many universities the introduction of strategic institutional partnerships or alliances with carefully selected university partners and in some cases also non-university partners (Kosmützky and Wöhlert 2021). These new strategic collaborations are aimed at developing joint research and education activities, sharing research infrastructure, exchanging information about innovative practices, producing economic advantages for the involved universities, and enhancing the status and visibility of all partners involved. Furthermore, the emergence of the global science system has been accompanied by an intensification of competition in higher education at all relevant levels in the global science system (McKelvey and Holmén 2009). In addition to the increase in competition, also a change of competition has taken place with a growing focus on the performance of higher education systems and institutions, and of individual scholars and their academic teams or units.

An important challenge in the development of competition and collaboration in academia is that the patterns described above contribute to the maintenance if not strengthening of the global science inequities. How to create equal global university partnerships in an unequal world? Overall, universities from the Global South hardly profit from the increase in competition in the global science system and are therefore rarely considered as attractive partner institutions for research collaboration for universities in the Global North. Many universities in the Global North address the global science inequities in their missions and strategies[2], for example, when it comes to their ambitions to contribute to the realization of the Sustainable Development Goals (SDGs). However, current competition and collaboration policies and funding schemes of governments in the Global North are in general aimed at enhancing the academic performance of their universities, which disallows the use of these schemes for developing strategic partnerships with universities from the Global South. Consequently, North-South relationships in higher education are still primarily the domain of development aid programs, which only rarely support research collaboration and have therefore hardly contributed to reducing global science inequities.

These developments have led to a growing interest in the meaning and use of competition and collaboration in various university settings. From that perspective, the argument by Clark Kerr made around 60 years ago that the traditional university emerging in the Middle Ages in Europe is replaced by a new type of institution, the multiversity, is still relevant:

The University started as a single community -a community of masters and students. It may even be said to have had a soul in the sense of a central animating principle. Today the large American university is, rather, a whole series of communities and activities held together by a common name, a common governing board, and related purposes. This great transformation is regretted by some, accepted by many, gloried in, as yet, by few. But it should be understood by all. (Kerr, 1963: 1).

As a multiversity, the university is organized into many groups and units, both academic and administrative, which are traditionally loosely coupled. Recent reforms have aimed at turning the university into a more tightly coupled, strategic organizational actor, with an executive leadership that is expected to navigate the opportunities and challenges attached to new forms of competition and collaboration at their institution (Krücken and Meier, 2006; Musselin, 2006; Seeber, et al. 2015). A professional administrative bureaucracy supports the 21st century university leadership in its efforts to steer and control the decentralized academic domain, which has the responsibility for dealing with the uncertainties and complexities of producing, certifying, applying and transferring knowledge (Maassen 2017). How competition and collaboration

are interrelated and used in practice in universities to effectively connect the leadership and administrative structures with the academic domain, is one of the most important questions with respect to the functioning of the 21st century research university.

Taking the above considerations as a starting-point, the underlying study has reviewed how competition and collaboration in higher education have been interpreted and conceptualized in the academic literature, and how they are operationalized and used in university strategies and policies. In this report, the following issues are addressed:

a. The understanding of the principles of competition and collaboration and the relationship between them in university contexts.
b. The definition, interpretation and measurement of various aspects of university performance and success, for example, through global rankings.
c. The main interpretations and the handling of competition and collaboration by individual universities.
d. The challenges and opportunities with respect to the further development of competition and collaboration at the institutional level.

Methods

In the first phase of the study an extensive literature review has been undertaken addressing the academic and empirical understanding and interpretations of collaboration and competition in academia. While there is broad agreement on the increase of competition in higher education, there is less agreement on what the enhanced competition is about, who is competing with whom, and the impact of the new forms of competition on individual universities, for example, on the strategic responses of university leaders, the behavior of the academic staff, the quality of research and teaching, and the relationship between higher education and society. In addition, over the last 15-20 years various types of strategic inter-university collaboration have emerged that require new conceptualizations and interpretations. In both competition and collaboration, it can be argued that there has been a shift from countries and individual academics that are competing and collaborating, to universities emerging as (strategic) competitors and collaborators. The literature review allowed the study to contribute to a better understanding of where we are in the interpretation and use of competition and collaboration in higher education. Furthermore, while competition and collaboration are often treated in the academic literature and university practices as opposing concepts, the literature review allowed us to conceptualize the way in which they are interrelated and can in some respects be seen as complementary responses to various kinds of external and internal pressures.

The empirical focus in the study has been primarily on individual universities in their national and international settings. For that purpose, 27 universities in 15 countries have been selected (see appendix 1). The selected universities are located in various parts of the world and include 8 European, 6 Asian, 4 African, 4 North American, 3 Latin American, and 2 Australian institutions. The following arguments have been used in the selection of the case universities and countries.

The European universities are located in four countries, that is, Germany, the Netherlands, Poland, and the United Kingdom (UK). Germany and the UK are two key countries in European higher education, when it comes to size, impact and quality, output and productivity, and international attractiveness of the national universities. The Netherlands is one of 8 smaller countries in Northwestern Europe which have remarkably stable and productive research universities, while Poland as a Central and Eastern European (CEE) country has recently introduced reforms to strengthen the international competitiveness of its universities. In the turbulent situation Europe is in at the moment, amongst other things, as a result of the COVID-19 pandemic, Brexit, and the war in Ukraine, the European case offers a relevant setting for getting a better understanding of the ways in which competition and collaboration are used in higher education contexts, where both the national and European level are of relevance. The Asian universities are located in 3 countries: China, India and Japan. Japan is included since it is the first Asian country that has developed world class universities, and has been, until recently, the dominant university system in Asia. A government reform in 2004 enhanced the autonomy of the public universities, but recent studies suggest that this enhancement has mainly been introduced 'on paper', while the universities' operations have in practice been continuously controlled in detail by the responsible Ministry. China and India are the two most populous countries in the world, and have gone through rather different developments in their higher education systems, in the sense that China has gone through a period of rapid growth in higher education with various government reforms successfully enhancing the global competitiveness of its top universities, while India has been characterized by a lack of a comprehensive program of higher education reform and as a consequence, has been less successful in reforming its higher education system than China.[3]

The African universities are located in Ghana, South Africa and Uganda. The university system in South Africa has the highest participation rate of the continent, and the highest research output (in the sense of research publications, patents and PhD graduates). Also of importance in this is that the developments in the South African university sector are a central frame of reference for university sectors in the rest of Sub-Saharan Africa. Ghana and Uganda represent a group of African countries where the participation rates in higher education

and the research output of its main universities is increasing.

The North American universities include 2 institutions from Canada (Ontario) and 2 from the US (one public and one private university). In the US system of higher education competition has traditionally been used more than in other higher education systems. In addition, the US hosts still many of the most attractive and productive universities in the world, even though overall it is losing ground in comparison to East Asia and Western Europe.[4] The inclusion of Canadian/Ontarian universities allows for the analysis of relevant strategies of universities in a national-provincial context that is market-driven, but, at least until recently, in a more moderate form than can be observed in the USA. The Latin American universities are located in Chile and Brazil. Chile has the highest GDP per capita in Latin America and a national context that is relatively strongly competition and market oriented. Brazil, being the largest country in Latin America, has a relatively small public university sector, with most of the country's students enrolled in for profit higher education institutions. As a consequence, the public universities of the country operate in a highly competitive context. Finally, the inclusion of two Australian universities is of relevance, amongst other things, because of the strategic development Australian universities have gone through over the last 20-25 years, which has strengthened their global competitiveness.[5]

We have analyzed how competition and collaboration are interpreted, and if applicable, used by the selected universities. For this purpose, the institutional websites, relevant documents, available studies and data have been examined, with the aim to map and interpret the strategies these institutions have developed, adapted and implemented in navigating competition and collaboration.

Furthermore, university leaders have been interviewed about their institution's navigating, that is, interpreting and strategic handling of collaboration and competition. This has produced some insights into how university leaders contribute to producing effective balances between collaboration and competition in their university. The study has produced an overview of the main themes with respect to how collaboration and competition are operationalized and used by universities worldwide.

Finally, the study has examined lessons learned from the COVID-19 pandemic, for example, with regard to the impact of the pandemic on the use of digital technologies and the sharing of knowledge. In addition, the impact of the pandemic on 'North-South' university relationships and partnerships is addressed.

While the starting point of the study was to make a comprehensive analysis of all selected universities, it became clear in the study that not all universities are equally relevant to examine in a study on the strategic institutional use of competition and collaboration. Given the distinction identified in the study between the global competition for status and the national competition for resources, in practice, only the research-intensive universities in the study are truly involved in the global status competition. In the part of this report that discusses the use of competition and collaboration in the strategic institutional development, we have therefore concentrated mainly on the selected research-intensive universities. An overview of the strategic use of competition and collaboration of five of these institutions is presented in the report.

Through this study, we want to contribute to a better understanding of the nature and practices of competition and collaboration in academia from a university perspective. This includes an understanding of the effectiveness and impact of different governmental policy instruments geared towards universities. Various types of policy instruments for distributing funds competitively and for promoting and supporting collaboration can be identified. These instruments can be found in both research and education where competitive instruments have been complemented by more collaborative ones. In this, it has also been of relevance to look at programs for promoting 'excellence' in universities, be it national excellence initiatives or programs, or national center of excellence programs.

The project is conceptually positioned within a neo-institutional perspective, exploring the core puzzle of convergence and divergence within the university sector as an organizational field (DiMaggio and Powell 1983) through analyzing collaboration and competition facilitated by external policy instruments and institutional policies and strategies. Our main expectation is that processes of institutionalization of activities linked to policy instruments in universities are dependent on context. Thus, we expect inter-country divergence, due to history, path-dependence, and importance of differences in environments.

We will start with an overview of the way in which collaboration and competition in academia are understood and interpreted in the research literature.

Endnotes

1
Other terms used in the academic literature for the system level public governance of higher education are steering, coordination, public management or control.

2
This can be illustrated by a quote from the institutional strategy of the University of Glasgow: “Globally, we will have to use the collective strengths of our disciplines to build coalitions, collaborations and partnerships to tackle the major societal challenges brought by increasing inequality, future threats to human health, the rise of technology and automation, and the existential threat of climate change”.

3
This can be illustrated by the number of universities from the two countries ranked among the best universities in the world. In the 2003 version of the Academic Ranking of World Universities (ARWU), for example, nine Chinese and three Indian universities were ranked among the 500 best universities in the world. In 2022 there were 71 Chinese universities ranked among the 500 best universities according to the ARWU ranking, while only one Indian university was ranked among the top 500. In the 2023 version of the World University Ranking of the Times Higher, there are eleven universities from China and no universities from India ranked among the 250 best in the world.

4
In the 2003 version of the Academic Ranking of World Universities (ARWU), for example, 58 US universities were ranked among the best 100 in the world, while in the 2022 version of the ARWU ranking 39 US universities were placed in the top 100. In the 2023 version of the World University Ranking of the Times Higher, there are 34 US universities ranked among the 100 best in the world.

5
In the 2003 version of the Academic Ranking of World Universities (ARWU) two Australian universities were placed among the 100 best in the world, and 13 among the top 500. In the 2022 version of the ARWU ranking seven Australian universities were among the 100 best in the world, and 124 among the top 500. In the 2023 version of the World University Ranking of the Times Higher, there are seven Australian universities ranked among the 100 best in the world and 31 among the top 500.

CHAPTER 2

Competition and collaboration in academia

Introduction

With knowledge as its basic organizational building material, the university has since its origin developed unique organizational structures and shapes that are still recognizable today in any university around the world. Examples of these are the organization of the academic activities in specialized, loosely coupled academic units, such as departments, colleges, faculties, and schools; and the organization of the academic profession in and around three ranks, assistant, associate and full professor. In addition, the members of the academic profession have been granted academic freedom as a basic professional right. This freedom does not exist in a vacuum, but within a specific institutional setting: the university[1]. The connection between the individual academic freedom and the institutional setting of the university is crucial since the institutional setting has to be responsible for creating and guarding the conditions for the individual academic freedom to be exercised (Beaud 2022: 213). It has been argued that the idea of the university is meaningless without academic freedom (Jaspers and Rossman 1961), while there is no other institution in society outside the university where academic freedom can be exercised in a meaningful way. As a result, institutional autonomy is interpreted as a key condition for academic freedom. With these special organizational features in mind, Clark (1983: 11) has highlighted that universities have specific organizational challenges when it comes to performance and authority.

The organizational characteristics of the university have played an important role in the effective ways universities have been able to adapt throughout their history to fundamental transformations in their societies and the world at large (Olsen 2007: 27-28). Therefore, when discussing how universities navigate the principles of competition and collaboration nowadays, it is relevant to take these organizational characteristics into account. This implies that the question of how universities navigate competition and collaboration should be understood in relation to the overarching question of how universities navigate the pressure for changing basic organizational features with keeping the structural and organizational framework conditions in place that are required for continuing to be relevant to their societies as the main institutionalized domain for the handling of knowledge.

This overarching question is related to a general perspective on the future of the research university, that is, the ways in which we collaborate and compete in academia will to a large extent determi-

ne in how far our societies will be able to find and implement solutions for current and future challenges and crises. It has been argued, for example, that the complexity of the grand challenges facing our societies, such as climate change and inequality, and of crises, such as the COVID-19 pandemic, requires the research universities to change, in order, "to become more collaborative in the face of globalized competition between teams, organizations and countries" (Powell 2018: 5). This argument can be illustrated by the handling of the COVID-19 pandemic. Without the competitive public funding investments in scientific research in the relevant academic fields over the last decades and without the global collaboration networks of scientists that emerged as a result of these investments, it would not have been possible to develop effective vaccines in the short time period, it took a number of consortia in various parts of the world to produce COVID-19 vaccines.

This general perspective also helps us to be aware of the need to acknowledge that the interpretation of the changes that are going on in universities should not be reduced to assuming that they are caused by one dominant driver. Therefore, it is important in the review of academic literature on competition and collaboration in universities to take not only the complexity of the transformation of societies into account, but also the fact that change in universities in contemporary settings takes place in a complex ecology of actors, processes and determinants (March 1981; Brunsson and Olsen 1998; Gornitzka et al. 2007). This includes acknowledging the importance of the fundamental relationship between education and research in universities, instead of interpretating the nature and impact of competition and collaboration in research separate from the nature and impact of competition and collaboration in education.

At the same time, competition and collaboration are not only intensifying and changing in higher education, but also as important policy tools in public governance in general. While it lies beyond the realm of this study to discuss the general developments in public governance, it is important to keep in the back of our minds that developments in the use of competition and collaboration in other public sectors add to the complexity that university leaders face, amongst other things, by creating new opportunities and challenges for their institutions.

Competition and collaboration are expected to play a central role in shaping the further development of the universities' research, teaching and learning activities, their knowledge transfer and social engagement practices, and their innovation contributions. Consequently, the growing importance of competition and collaboration raises important questions for universities around the world. Universities are involved in many types of institutional collaborations, and practically all are member of one or more formal university associations, networks, partnerships, and alliances, while their academic staff members are participating in international research projects, joint degree study programs, and a multitude of academic network collaborations. At the same time, they compete with other institutions nationally and internationally for students, faculty, reputation and status, research funding, donations and other third stream (=contract) income. This creates new opportunities, innovative outcomes, challenges, and tensions.

With these considerations in mind, next we will discuss the literature on competition in higher education, followed by a review of the literature on academic collaboration. The chapter will finish with a reflection on how the relationship between the two is interpreted academically.

Competition in higher education

In the academic literature, there is recently a lot of attention for the transformation of competition in higher education. This transformation is argued to consist, for example, of a growth in the use of competition (Naidoo 2016), the development of multiple competitions (Krücken 2021), and the emergence of universities as competitors (Musselin 2018). A closer look at the underlying arguments reveals that growth in the use of competition has been such that it can be referred to as a fetish, since it is, "being trapped in a kind of magical thinking which results in the belief that competition will provide the solution to all the unsolved problems of HE" (Naidoo 2016: 606). This 'competition fetish' is argued to concern competition between individual scholars for national (or supranational) competitive research funding, for scientific status, and for attractive research and teaching collaborators. In addition, there is competition between research universities for public government funding and global status, the competition between private companies that are interested in the global market for online educational services, and competition between countries for influence in or even dominance of the global science system (Powell 2018).

Krücken (2021: 168) identifies a process in which individual academics, university leaders and universities are, "simultaneously embedded in different, nested and interdependent competitions," while Musselin (2018: 660) states that research universities and their institutional leaders have become competitors in a sector where until recently only (teams of) individuals and countries were competing.

These analyses and conceptualizations of competition refer mainly to developments in continental European universities, which have similarities and differences with trends in other parts of the world (Musselin 2018: 661). Various influential US scholars have analyzed the transformation of

the US research university, for example, from the perspective of the nature and impact of academic capitalism (Slaughter and Leslie 1997; Slaughter and Rhoades 2004), and the growing importance of the marketplace and the subsequent commercialization of higher education (Bok, 2003; Geiger 2004, 2016). In these analyses, several developments that have intensified competition in higher education in the US have been identified. Bok (2003: 14-15), for example, argued that the number of US research universities could grow throughout the second half of the 20th century in the competition for the dramatic increases in the number of college students and in the research funding by federal authorities and private foundations. Other developments in the US include the increase of state government investments in science and technology in their research universities, and the emergence of annual rankings, which gave a boost to competition.

Comparable studies have been done in other OECD countries. Marginson and Considine (2000) argue, for example, that the main trend in Australian higher education during the last decades has been that the dominant legitimating idea of the university has changed towards the vision of a service enterprise embedded in competitive markets. Their interpretations are based on a three-year study of 17 Australian higher education institutions, covering about half of the Australian system (Marginson and Considine 2000: 12). The developments in Australian higher education pose a relevant frame of reference for universities in other OECD member countries. On the one hand, it is stated that the university reforms of the 1980s have resulted in a public university sector populated only with large, comprehensive, multi-campus, research institutions. These public universities are still tightly controlled by the public authorities. At the same time, public higher education is argued to lose its traditional monopoly in the offering of degree-granting programs in Australia. However, tight government control and inflexible regulations hinder the development of a more diverse public university system, consisting of a number of research-intensive universities and others using competition and collaboration to find their own niche in the system. On the other hand, it is argued that the emergence of the enterprise university in Australia represents a reshaping of institutional purposes, with the university jeopardizes its legitimacy by losing sight of its identity and its distinctive features, functions, and achievements as an academic institution (Olsen 2007: 25).

The growing use of and reliance on quantitative measurements in university competition has become a global phenomenon and is argued to have both positive and negative consequences for creativity and innovation in higher education and research (Krücken 2021). This 'metricisation' of science and higher education allows for relatively straightforward performance assessments and comparisons. University rankings illustrate the ways in which the measurement orientation has attracted attention also outside higher education, for example, in private sector companies that have used quantitative indicators for developing commercial ranking products, in the media that use rankings for multiple purposes, and by students, who feel that rankings provide them information on the 'value' of study programs they might be interested in. The performance measurement of science and higher education through rankings and other forms of 'metricization' consists in essence of relatively straightforward assessments and comparisons. As Hazelkorn (2015: 9) notes, "rankings have become an important tool for strategic positioning and global branding". However, while the interest of politics and society in the performance of universities is understandable, rankings and other forms of performance measurement can be regarded as reductionist approaches that generally isolate major developments in complex national and global systems and institutions to the impact of a single variable. From that perspective, Collini (2020: 126) has asked three basic questions about global university rankings that are crucial but difficult to answer: 1) What do they actually provide reliable information about? 2) Whose interest is served by them? 3) Why do they persist even in the face of quite devastating criticism? In reflecting on these questions Collini identifies three serious defects of the global rankings. The first defect has to do with the use of quantitative indicators for measuring quality, and using these measurements to arrange universities in an ordinal ranking. In this, various proxies must be used for what the ranking in question claims to measure. A second defect is the use in some rankings of one or another form of 'reputation'. Obviously, no 'expert respondent' used by rankings to make a reputation judgement can ever have comprehensive, valid knowledge of the all the work in his/her discipline or field. In addition, no 'expert judgement' can validly be converted into a numerical scale. The third defect is that all efforts to produce a single ordinal ranking have to make decisions about the relative weighting to be assigned to the different proxies measured. However, there is no valid, generally agreed way in which different proxies used in a ranking can be weighed. A final defect identified by Collini is that rankings lead to 'irrational' and unproductive competition between universities, instead of promoting collegial and collaborative relations (Collini 2020: 126-127).

The outcomes of competition in higher education

As a starting point, from an economic theory perspective it can be argued that the use of competition in higher education is based on two expected

outcomes. First, competition is expected to result in more efficient use of resources in the form of controlling and limiting the increase of the costs of higher education, and second, competition is believed to encourage technological progress (Salerno 2007) and improvement of quality.

However, it has to be accepted that the increase of competition in higher education has until now not produced the two expected outcomes (Salerno 2007). First, there has been remarkably little technological progress in higher education because of competition. Higher education institutions have unique 'production processes', where the use of new technologies, such as digital tools, does not imply that the costs of education or research decrease. As argued by Salerno (2007: 122), "as science becomes more complex and education delivery becomes richer, both processes demand increasingly more resources, particularly when it comes to education and research in STEM and life sciences". The intensifying and more professional and structured use of digital technologies under the COVID-19 pandemic, was not the result of competition but of a crisis. Before the start of the pandemic, the main educational delivery mode in higher education was still predominantly lecture-based. In addition, there is still little empirical evidence for convincingly answering the question: "Under what conditions are markets perfect enough (few frictions, perfect knowledge, easy entry, etc.), and oriented towards academic quality rather than low prices, so that competition rewards excellent research and teaching and eliminate low quality?" (Olsen 2007: 36).

Second, competition has in general contributed little to limiting the increase of the costs of higher education, neither in the US higher education system, nor elsewhere (Salerno 2007: 122). In this, it can be argued that efficiency gains were at least as much the result of cuts in the level of public funding of higher education, as of the growth in competition. In addition, most higher education students have a clear preference for studying close to home. Despite the growth in the absolute number of students studying abroad for a full degree, this group remains a rather small part of the total student population. This means that most students recruited by universities around the world are national students, many of whom come from the city or region where the university at which they are enrolled is located.

Another issue concerns the nature of the competition in higher education. Very often, competition in academia takes the form of *"Equal competition between unequal competitors"*. Even though the number of research universities taking part in the competition for talented students, prestige and research funding is increasing, this does not mean that all participants in this competition have the same chances of success. This is caused by what Merton (1968) has called the process of accumulating advantages in research. Beerkens (2013) has studied this process in Australia, where in 1987/88 the country's vocational colleges were integrated with the existing research universities in a unified university system. Using university academic publication output and competitive research income data, Beerkens analyzed how the traditional gap in research output and competitive research income between the old and new universities that existed at the end of the 1980s, developed in the competitive Australian university research funding system. Her findings show that while the gap in research output decreased[2], the gap in competitive research income, after an initial slight convergence, seemed to stabilize, if not increase (Beerkens 2013: 164-165). This means in practice that it can be assumed that the ability for a university to attract new external competitive funding for academic research is roughly proportional to the current level of research at the institution (Beerkens 2013: 164).

Furthermore, not all higher education institutions compete with one another in the same markets or arenas. Here we can refer to Riesman's idea of academia as a snake-like academic procession, where, "the head is often turning back upon itself as at present, while the middle part seeks to catch up with where the head once was" (Riesman 1956: 35) … "and the tail of which, far from the head, is in "torpor" (Riesman 1956: 60). Applying this idea to today's global higher education system, we can identify various clusters of universities. As a thought exercise we could, for example, identify the following four clusters: the globally oriented prestigious world-class universities, the sub-top of research-intensive universities, the middle cluster of research universities, and the remaining large cluster of mainly teaching oriented institutions.

The most prestigious world-class universities, who consistently take up roughly the 40-50 top places in the global university rankings, are the truly globally oriented universities that compete amongst each other for status, the most talented students, highly qualified academic staff, and professional and highly experienced administrators, managers and institutional leaders. The next cluster of research-intensive universities could be called the sub-top and consists of roughly 100-150 institutions. They are in essence either one of their country's leading universities or among the most research-intensive institutions in their country outside the top group. This implies that they are in general highly productive in many academic areas, have the resources and leadership for making strategic decisions and investments, but lack the framework conditions to compete structurally with the top universities. Therefore, the universities in this cluster compete in the first place with each other for students and highly qualified staff. An additional competitive aim of the universities in this group is to stay at the current status level, that is, they do not want to fall behind and drop out of this cluster. The next cluster could be argued to consist of research

universities that have the ambition to move to the sub-top. These institutions often try to use competition as a way to enhance their research output and attractiveness for academic staff and students in such a way that they can move up the 'ranking ladder'. However, the universities in this group generally have fewer high quality academic groups and units than the universities in the sub-top, and lower levels of external competitive research income. In this, we can see an illustration of the Mertonian principle of the Matthew effect referred to above: the current level of research determines at which level universities can be expected to compete successfully for additional competitive funding. Still, there is competition between the sub-top and this cluster, and various circumstances can contribute to universities dropping out or moving up to the sub-top cluster. The remaining higher education institutions would form by far the largest cluster and consist in general of teaching-oriented universities and colleges. The recruitment of academic staff is usually national, if not regional, and these institutions have the tendency to compete in output markets; that is, they compete intensively with other (usually local or regional) providers for the right to offer degrees or qualifications to local and regional students (Winston 1999; Salerno 2007).

If one would accept the idea that it is possible to identify these four clusters it can be argued that the least permeable cluster boundary is between the world-class universities and the sub-top, and the most permeable boundary between the sub-top and the middle cluster of research universities. We obviously realize the lack of validity of presenting such a simple categorization of clusters of universities without any explicit indicators. Nonetheless, this example helps to illustrate the point that globally as well as nationally a large part of the competition in higher education is a competition between unequal competitors, while a large part of the academic literature on competition in higher education focuses especially on universities in what we have identified as the cluster of world-class universities and to some extent the sub-top cluster. What competition means for what we have termed the middle cluster of research universities gets less attention in the literature, while the fourth group is largely neglected.

Musselin (2018) has developed a thorough and elaborated theoretical perspective on competition in higher education by discussing and analyzing the transformation of 'the competitive game' in higher education, with a special focus on research universities. In her work, Musselin presents two reasons for the current interest in competition in higher education. First, competition and competitive schemes have dramatically increased in the last decades. Second, the nature of competition has evolved. The main arguments and interpretations of Musselin can be regarded as an insightful example of recent studies on higher education and science aimed at conceptualizing the transformation of competition in higher education. We will therefore present here her main contributions to the understanding this transformation.

First, she points to the importance of making a distinction between markets and competition in higher education and argues that the concept of markets should only be applied in higher education, "to situations where competition and exchange are simultaneously present" (Musselin: 658). While such situations can be found in higher education, especially in the US, they are in general rare. According to Musselin, very often the term marketization is used in studies on higher education where in practice only competition and not market mechanisms, such as monetary exchange and pricing, are at play. The example she presents to illustrate this point concerns the competition for grants, that is,

"when a university competes for grants, it is engaged in a competition for resources rather than in a market for grants, because the sum of the obtained grant is not a function of the match between supply and demand. Neither the quality nor rarity of the project impacts the grant level either. Conversely, if competition can exist without exchange, value may be attributed and negotiated without relying on competitive mechanisms" (Musselin 2018: 658-659)

Second, Musselin (2018: 660) points to the emergence of universities and university leaders as important participants in the competition for prestige in higher education. This implies that in addition to academics (individually and in groups, units or teams) and countries, universities have become competitors. Related to the emergence of universities as competitors, Musselin (2018: 664) argues that competition has an impact on the understanding of the nature of the university as an organization. The debate on the understanding of the organizational foundation of the university has featured prominently in the academic studies literature on higher education, addressing the questions whether universities are organizations, and if so, what kind of organizations? The work of Burton Clark played an important role in these debates, especially his conceptualizations of the impact that the specific features of academic activities have on the organizational shapes and forms of universities (Clark 1983: 11). Clark identified the specific nature of how academic work is organized, the unique distribution of authority in universities, and academic culture as the three elements that are responsible for the special organizational features of the university. Referring to Brunsson and Sahlin-Andersson's (2000) analysis of the intended impact of government reforms on the nature of public sector

organizations, Musselin (2018: 664) concluded that universities, "were finally transformed into organizations by public management reforms because their boundaries were better defined, hierarchical relationships were strengthened, and rationality became more important in decision-making". While Musselin is raising the important issue of how competition is affecting the university as an organization, her conclusion can be challenged, given that various studies (see, e.g. Seeber et al. 2015) suggest that the boundaries of the university have not become more clearly defined, amongst other things, as a result of the engagement of universities in multiple types of partnerships and networks. In addition, while governance structures in universities have become more hierarchical, the relationships between the leadership and the academic activities have not necessarily become more tightly coupled, amongst other things, because of horizontal and vertical coordination problems (Maassen and Stensaker 2019).

A third contribution by Musselin we want to highlight concerns her discussion of the nature of the competition in higher education. Building on the work of White (1981, 1992), she argues that competition in research universities is mainly a competition for quality, and not a competition driven by prices for services, or a competition driven by signals to clients. Her main argument in this is that students and academic staff are attracted to universities not because of the level of tuition fees for study programs or the levels of the salaries for academic staff, nor the signals universities give to students and staff they would like to recruit. Instead, the argument is that students are persuaded by the quality of a specific study program or a university, and staff are persuaded by the quality of a department where a position is available. Since quality is difficult to define higher education, Musselin (2018: 666-667) sees status as a 'proxy' for quality, implying that competition for quality in research universities is in essence a competition for status. But what does status mean in the global competition in higher education, and what are universities competing for, when they compete for status? What desired and scarce good does status actually represent?

Brunsson and Wedlin (2021) have analyzed the role and nature of status in the competition among universities. They point, for example, to the overwhelmingly national nature of the competition for resources among universities. Only a handful US and UK universities can be argued to compete mainly globally for resources, staff and students. Status in higher education, though, can be argued to have a global spread, appeal and scope. One reason for this is that the allocation of status among universities, which was traditionally nationally, based on tradition, and often implicit, "is increasingly organized on a global scale and highly visible" (Brunsson and Wedlin 2021: 101). This implies that universities who want to increase their status can use this organized world by trying to acquire a formal certification (or accreditation), for example, as a high performing business school (Wedlin 2006), to become a member of a prestigious alliance (or other type of 'meta-organization', see: Maassen and Stensaker 2019), or to improve their institutional position in one or more global university rankings. Especially the second and third type of global status allocation stimulate competition because the status they offer can be regarded as scarce. However, "scarcity is a necessary but not a sufficient argument for competition" (Brunsson and Wedlin 2021: 103). For global competition to take place it is important that there are enough universities who want to and are capable of globally competing for status. This point relates to Musselin's argument that research-intensive universities outside the traditionally competitive higher education systems of the US and the UK have become global competitors. As discussed above, national reforms in these countries have aimed at universities becoming 'more complete' (Brunsson and Sahlin-Andersson 2000) and 'integrated strategic organizational actors' (Krücken and Meier 2006). For that purpose, institutional autonomy was enhanced, the formal authority of university leaders strengthened, the university bureaucracy professionalized and led by managers, and the development of institutional strategies and profiles required (Gornitzka et al. 2017). With scarcity and organizational actorhood in place, what was left was the creation of desire within universities for the competition for status. This implies that university leaders must convince their staff and students that rankings matter and that there are significant benefits to be gained from membership in a prestigious alliance or partnership. The creation of the organizational desire for status has not always been easy for university leaders in higher education systems where the notion of an organized status competition is a new phenomenon. Why would regular staff or students care about the position of their university in a global ranking, and why would they want to actively participate in the development and implementation of a joint set of activities of an alliance that they hardly have heard of? Brunsson and Wedlin (2021: 106) argue that this desire is beginning to emerge in many research universities, and that it is used by university leaders to invest more structurally in their university's capacity to participate in the global competition for status. Research universities are, for example, employing administrators for supporting the realization of the university's ranking and alliance goals and ambitions, investing in institutional performance databases, introducing incentive schemes for stimulating staff and student participation in alliances, earmarking institutional funds for the implementation of alliance activities, etc.

All this supports the claim that competition has not only become more important in higher education, but that a growing number of research-intensive universities is actively participating in

the global competition for status. However, this raises an important question: "What types of behavior are generated by a competition for status and what are the possible positive or negative outcomes of that behavior?" (Brunsson and Wedlin 2021: 107). Here four types of strategies can be identified for universities that want to use competition to increase their status, that is:

1. Improving their organization in salient criteria.
   A university that wants to improve its status can invest in one or more high status research areas, try to close down low performance units, or merge with a higher status institution.
2. Influencing perceptions of others about which group the university belongs to.
   A university that wants to improve its status can become member of an alliance where the members have a higher status than itself, or it can initiate partnerships with universities that have a higher status.
3. Influencing the status of the group to which the university belongs.
   A university that wants to improve its status can convince others that an alliance to which it belongs has a higher status than other alliances.[3]
4. Influencing the criteria that are used to allocate status.
   A university that wants to improve its status can try to convince the organizer of a global ranking to change its criteria. (Brunsson and Wedlin 2021: 107-108).

Furthermore, the global competition for status is not without risks for universities (Brunsson and Wedlin 2021: 108-109), for example, in the sense that participating in status competition can decrease status. Membership of an alliance does not guarantee high status and allowing new members with a lower status to participate might reduce the status of the whole alliance and of its members. A second risk is that participation in the competition for status can lead to adaptations of the internal structure of universities to the status competition instead of to the basic activities and tasks of the university. Status competition requires, for example, hierarchical leadership structures, which might weaken the basic conditions for the functioning of units responsible for the primary activities of teaching and research. Another risk is that universities participating in the competition for status might lose part of their autonomy, for example, to an organization organizing a ranking or an alliance of which the university is a member. A fourth risk is that status competition comes, "at the expense of other, more fundamental values and purpose of organizations" (Brunsson and Wedlin 2021: 109). An ultimate risk in this is that status competition in higher education becomes an aim in itself, a kind of entertainment industry with awards, premiums, winners, losers, etc. While the chances for such a risk to become reality are very small, it is important to keep in the back of our minds that there exists already a commercial university ranking industry, which profits from the further development of the global status competition and has a clear interest in developing new forms of higher education competition and a larger audience for it.

Finally, in relation to the risks discussed above, two reflections on the possible impact of the development of a global status competition in higher education. First, the status competition essentially threatens the democratic, social and cultural contributions of universities or their positions as the guardians of free inquiry and intellectual exchange in society, by neglecting these contributions in the performance criteria. Second, academic communities, like democratic communities, have problems combining excellence and equality. From an institutional theory perspective, it can be argued that there are many arguments in favor but also defenses against competition and against rewarding individual performance and superior individuals. This study is focused on the university level's perspective on competition and collaboration, implying that we did not include the experiences and views of academic staff and students on the impact of competition in higher education. These views are, however, essential for understanding how the neglect of values and principles in the global status competition affects the state of play of basic values and rights, such as academic freedom, in academia, and how it influences the balance between excellence and egalitarianism in research universities in practice.

Next, a review of the literature on collaboration in higher education will be presented, including a meta-organizational perspective for analyzing the development and persistence of central features of university alliances and partnerships.

Collaboration in higher education

If competition for status is now fully global in higher education, so too is collaboration (Powell 2018), as can be illustrated, for example, by the steadily growing number of co-authored academic publications over the last decades (Huang 2015). To get a better understanding of collaboration among universities one must consider its preconditions and potential gains for the involved institutions. First, the academic activities at universities are in essence collaborative endeavors, as study programs and research projects rely on collaboration, for example, in the form of exchanging and sharing knowledge between academics within and among universities. In addition, there is also increasing external demand towards collaboration. In this, successful collaboration projects are based on a common understanding and shared values, anchored in universities' long history and key institutional characteristics (Meyer et al. 2007). Over time, organizational structures and common beliefs have

spread. It can be argued that as a result, cultural scripts and organizational rules in the field of higher education are strong connectors that link organizations. When changes take place in an organizational field, neo-institutional theory argues that organizations adapt to these changes due to isomorphic pressures to gain legitimacy (DiMaggio and Powell 1983). For example, by being exposed to governmental policies that introduce new or adapt existing incentives for collaboration, universities must decide what this means for them and how to best engage with these policies and the policy instruments used, given their organizational mission and strategies, disciplinary profiles, size, location, history, and socio-economic environments.

In the academic literature the interest in inter-institutional collaboration in higher education emerged in the 1970s especially in the USA and since then various terms have been used to refer to different forms of collaboration, such as (strategic) alliances, joint ventures, collaborations, partnerships, consortia, federations, and affiliations (Lang 2002; Eddy 2010). As argued by Lang (2002: 153), the terms were used, "without precision and sometimes without accurate understanding". Often, the different forms of collaboration were regarded as part of a continuum that also included inter-institutional mergers. In addition, while the terms collaboration and cooperation were regularly used as synonyms by higher education institutions for their relationships with other institutions, in the academic literature the two terms are interpreted as representing very different forms of collaboration. Stein and Short (2001), for example, define cooperation as merely going along with an established direction. In their definition, inter-institutional cooperation is driven by expedience, characterized by limited objectives, short timeframes and agreements, and less commitment and risk-taking. Collaboration between higher education and institutions is, in contrast, defined as, "involving long-term commitment in working toward a long-term vision or goal that is grounded in a common philosophy that results in something new. For that purpose, collaboration requires mutual respect, trust, openness, shared decision-making and shared risk-taking" (Stein and Short 2001: 425; Coombe 2015). These definitions capture in some respects the development of inter-institutional relations in higher education, in the sense that cooperation refers to traditional forms of low-commitment relations, while collaboration is used for the strategic inter-university partnerships and alliances that have been established over the last decades.

Since many of the collaborations failed in the 1990s, a number of studies tried to identify the reasons for this failure and the factors that influence success ('enablers') or failure ('barriers') of collaboration. Commonly identified barriers are, competing interests and expectations, inadequate time allocated, unsupportive or inconsistent leadership, geographical distances, and incompatible and bureaucratic systems. The most common enablers mentioned are shared vision and goals or purpose, collegial teamwork and a commitment to collaboration, effective and open communication, and trust (Coombe 2015: 342-343).

The early studies on inter-university collaboration were in general descriptive and lacked a theoretical perspective for a valid analysis of factors influencing the operations and outcomes of the different forms of collaboration in higher education. Studying the transformation of collaboration and the emergence of new types of university collaborations requires an analytical perspective that does justice to the organizational foundations and conditions of such collaboration. For her study of how university associations affect extra-organizational boundaries, Brankovic (2018) has used a meta-organizational perspective that is relevant as an analytical perspective for studying formal inter-university alliances and partnerships. The latter types of 'meta-organizations' have less members and less formal membership requirements and are usually more dedicated to stimulating and supporting joint academic activities than other types of collaborations, such as university associations. How than can a meta-organizational perspective be used for analyzing formal inter-university collaboration through alliances and partnerships?[4]

When analysing strategic university alliances and partnerships as an organizational form, we can draw on a range of insights from organizational and institutional theory perspectives. Universities have for long been recognized as organizations characterized by formal structures and rules, as well as informal rules and norms for organizing academic and cultural relations (Maassen and Olsen 2007). University alliances and partnerships can be expected to be carriers of much of the same cultural heritage, norms and values as their member universities, representing an important cultural side of building a formal collaborative relationship. Establishing strategic university alliances and partnerships also implies the formation of a new organizational form with formal structures and decision-making bodies, which suggests that a meta-organization perspective offers a valid and appropriate analytical lens for studying the promises and dangers of these forms of inter-university collaborations (Ahrne and Brunsson 2005, 2008).

Meta-organizations are special kinds of organizations characterized by the fact that other organizations, and not individuals, make up the membership. From a meta-organizational perspective, university alliances and partnerships can be interpreted as organizations that are trying to exercise control over parts of their own environment by turning part of their environment into an organizational form (Ahrne and Brunsson 2005: 447). At the same time, while member universities in an alliance or partnership will have specific characte-

ristics in terms of status, disciplinary composition, historical legacy, (staff and student) population, research output or budgetary situation, these characteristics may not automatically be transferred to the alliance or partnership they are member of. Meta-organizations can be considered as potentially weakly integrated organizations in that members are expected to be equal, implying that no member is above another in hierarchical terms and consensus may be needed for agreeing on important decisions (Ahrne and Brunsson 2008; Torfing 2012). Therefore, it should not be assumed that strategic university alliances and partnerships are fast-moving entities and that joint decisions are always embedded effectively in the individual member universities. Overall, the development of strategic university collaborations and the actions taken by their members are often co-constitutive – they set the conditions of possibility for each other (Owen-Smith and Powell 2008: 618). University alliances and partnerships may incorporate both interesting dynamics and more predictable incrementalism, for example, due to differences in the legal status of individual member universities.

University alliances and partnerships have the potential to form new institutional logics within the field of higher education (Thornton et al. 2012). The kind of 'logics' that dominate can be expected to differ from alliance to alliance, due to political, legal, and economic varieties among the home countries of the member universities (Gornitzka and Maassen 2014). The establishment of university alliances and partnerships has previously also been explained with reference to other rationales, for example, the belief that strategic collaborations serve the involved universities' economic interests (Beerkens 2004). Furthermore, it has been argued that they reduce risks or promote organizational learning among the participating institutions (Inkpen and Tsang 2007; Stensaker 2018)

To take advantage of the multitude of opportunities offered by alliances and partnerships is still challenging as these types of institutional collaborations also imply a form of internal competition (Inkpen and Tsang 2007: 493). This incorporates the risk of one member university opportunistically exploiting the knowledge and assets of others in such collaborations. To make matters more complicated, organizations are usually embedded in a broader web of formal and informal networks and links, making it a challenging task to assess and identify what collaborations should be prioritized and which partner universities should be engaged with (Vukasovic and Stensaker 2018).

The level of trust established within an alliance or partnership is often considered a key factor in explaining why the members share information, commit themselves, and engage in deep collaborations (Muthusamy and White 2005). For some collaborations, already existing trust-based relationships might have formed the foundation for the foundation of a new alliance or partnership. For others, the initial period of the collaboration needs to be used for building trust as a distinguishing feature that might create strong ties between the member universities and allow for new knowledge to be created (Vedres and Stark 2010: 1183). While trust can be said to be a basic condition for such persistence (Maassen and Stensaker 2022), research on inter-organizational relations has demonstrated that there are a number of potential factors that can influence the life-span of a meta-organization, including the ways knowledge within an alliance or partnership is shared, the type of knowledge it possesses, alliance or partnership characteristics, and cultural factors (Inkpen and Tsang 2007; van Wijk et al. 2008).

Four dimensions (coordination, conflict resolution, commitment, and cultural characteristics) can be identified, which can be assumed to affect key features of university alliances and partnerships. All four dimensions – and the possible ways in which they are mixed – may lead to the institutionalization of new practices and ways of doing things that may transform an alliance or partnership into a persistent and long-lasting entity.

The degree of organizational *coordination* provides information on the potential a given university alliance or partnership may have for consistent performance over time. Organizational coordination can take place in various ways, from developing more loose internal networks to the establishment of a formal organization (Owen-Smith & Powell 2008; Torfing 2012). Coordination can also take place through the development of standards and rules, which over time become accepted as guidelines for organizational action (Brunsson and Jacobsson 2000). To establish various types of internal coordination mechanisms may in this respect signal an interest in aligning the different governance traditions of the member universities (Ahrne and Brunsson 2008). Characteristics of the persons selected to handle coordination issues are also of importance. While professional administrators are carriers of in-depth expertise in specific areas, they regularly struggle with seeing problems from a more holistic perspective. The academic leadership, on the other hand, might have more holistic perspectives, but lack in general the in-depth expertise necessary to find practical solutions (Hustedt and Danken 2017).

University alliances and partnerships also need mechanisms for conflict resolution. As members may have different interests and preferences on various issues, agreeing upon rules and procedures for solving conflicts can be seen as a mechanism for securing the persistence of an alliance or partnership. The relatively weak central authority found in most meta-organizations may pave way for two types of conflict resolution: voting or consensus-oriented practices (Ahrne and Brunsson 2005: 441). While voting mechanisms may allow quick solutions, this is also a mechanism that may have a potential negative impact on the alliance or part-

nership, especially if some members always find themselves on the losing side. Consensus-oriented conflict mechanisms may be quite slow, but they have at the same time the potential of strengthening the cultural bonds and trust between the members (Vedres and Stark 2010).

Whether university alliances and partnerships are ultimately persistent is also dependent on the *commitment* of its members (Ahrne and Brunsson 2008). For alliances and partnerships with external funding, there is a risk that the commitment to engage in the collaboration will be reduced if the funding stops (Beerkens 2004), or when an attractive alternative to the current alliance or partnership emerges (Ahrne and Brunsson 2005). Justifications that match the identity of the members could be an indication of more long-term commitment (Boltanski and Thèvenot 1991).

Cultural characteristics may also affect the persistence of university alliances and partnerships (Muthusamy and White, 2005). Such characteristics are related to whether the members of an alliance or partnership share similar norms and values, have similar historical trajectories, and find an effective balance between integrating into in a new collaboration and preserving their historical institutional identity (Labianca et al., 2001). If new practices and processes in an alliance or partnership deviate too much from existing ways of doing things, individual members may find it easier to withdraw from the collaboration or to be less engaged in joint activities (van Wijk et al. 2008).

The four dimensions identified should not be seen as mutually exclusive. Studies have shown that factors related to culture and identity may have implications for the governance arrangements established (Beagles 2022), and that formal governance designs indeed affect the cultural practices that are developed over time (Hustedt and Danken 2017).

While university partnerships and alliances are in general initiated by one or more of the participating institutions and self-funded, a new program introduced by the European Union in 2019, called European University Initiative (EUI), has led to the establishment of formal inter-university alliances that are selected and funded by the EU through an EUI call for applications. The suggestion of a stronger, more integrated form of collaboration between higher education institutions in Europe was introduced in a speech by President Macron in 2017. This basic idea was operationalized in the EUI program, which has two main components. First, each selected European University alliance should promote European values and identity. In addition, all selected alliances should contribute to the "quality, performance, attractiveness and international competitiveness of European higher education institutions and contributing to the European knowledge economy, employment, culture and welfare by making best use of innovative pedagogies and striving to make the knowledge triangle" (Erasmus+ programme guide 2019)[5]. The involved higher education institutions are required to organize 50% student mobility as a standard feature and to develop joint study programs. In addition to joint educational activities, the alliances selected are also stimulated to develop joint research activities and contribute with associate partners to economic and social innovation in the regions of the member universities. Another requirement is that each alliance must be composed of institutions from various European regions, implying in practice that each alliance needs to have at least one member university from Central and Eastern Europe, and one from Southern Europe. There are currently 44 European University alliances made up of in total around 340 higher education institutions from 31 countries.

While the EUI program is still in a relatively early stage of its development, the relatively large number of alliances selected give the opportunity for comparatively monitoring their development. Already one can identify that there are differences in the internal organization and governance of these alliances (Maassen et al. 2022). In addition, there are differences in the extent to which the alliances develop joint research activities, collaborate with associated partners on innovation projects, and integrate universities from outside Europe in their alliance. Furthermore, a number of alliances has already decided to move in the direction of establishing their alliance as an independent association or foundation with its own legal status.

The interest of higher education institutions from all regions of Europe for the EUI program is larger than initially expected. Especially universities from Central and Eastern Europe have indicated that a key motivation for joining a European University alliance is the assumption that membership of an alliance will allow them to enhance their institutional academic performance, thereby emphasizing the competitive advantage they expect the alliance to offer them. This relates to the European Union's vision on the future prosperity of Europe as a whole, with respect to which universities are expected to play an important role. In this, an assumption is that European University alliances will indeed allow 'low performing universities' to profit from alliance membership by strengthening their academic performance, which subsequently will allow these universities to play a more important role in the socio-economic development of their region. Whether this will be realized remains to be seen, but the EU is also through other programs earmarking funds for supporting collaborations between universities in the economically and scientifically strongest EU Member States with universities in the economically less well-performing Member States. If these investments should indeed contribute to a more equal economic and scientific development of the EU Member States, the EUI program might become a relevant frame of reference for regional development policies in other regions and countries.

The importance of university collaboration can be illustrated by the impact of Brexit on research funding of top universities in the UK, and the attractiveness of UK universities for EU students. At the beginning of 2023, the UK's associate membership of the EU's research funding program Horizon Europe was not yet ratified and consequently academic staff of UK universities were not eligible to receive research grants from the EU program. For the University of Cambridge this implied that it received no research funds from the EU in 2021 and 2022 compared to the £62 million it received on average annually in the five years before 2021. For the University of Oxford, the figures are receiving in total £2 million in 2021 and 2022, compared to £67 million annually in 2016-2021. However, it is not only the reduction in research funding through which Brexit affects these and other UK universities, but also through the impact on academic staff. For example, one in eight grant holders of a prestigious grant from the European Research Council (ERC) employed by UK universities has left their institution for a position outside the UK since 1 January 2021. In addition, not being eligible for receiving Horizon Europe research funding also implies that the chances of collaborating with researchers from EU countries is seriously reduced, which makes UK universities in general less attractive for non-EU scholars. Brexit also has an impact on student enrolment with the number of EU students enrolling at UK universities having dropped by more than 50% since the beginning of Brexit.[6]

Relationship between competition and collaboration in higher education

Since the emergence of the research university at the beginning of the 19th century, academia is characterized by competition on the one side about scientific ideas and breakthroughs, and scientists' scholarly reputations, and on the other hand about resources (students, staff, and funding). The scientific competition was individual and international[7], while the competition for resources was national, and concerned both individual academics and their institutions. At the same time, scientific progress was dependent on the distribution and exchanging of ideas, research findings, and pedagogical innovations, and on collaboration in teaching and research, e.g., through joint research projects, the sharing of research infrastructure, guest lectureships, and jointly developing disciplinary textbooks. This scientific collaboration was international and national, and was mainly individually driven. These traditional forms of scientific competition and collaboration were also closely interrelated. With whom an academic decided to collaborate was a choice determined, amongst other things, by the expectations of the desired outcomes of the collaboration, whether in the form of scientific advantages or findings, theoretical developments, or enhanced attractiveness of study programs for talented students. Internal and external collaborators were also potential competitors, and successful academic collaborations could therefore develop into intense competitions for funding, graduate students, junior staff, and reputation.

As discussed in the previous sections, there has been a worldwide transformation of competition and collaboration in academia. National competition for resources has intensified because of a growing reliance of national governments on competition as a tool for enhancing academic performance. At the same time, in the scientific competition that developed from international to global, research universities have emerged as competitors, driven by national governments' increased interest in the comparative performance of their universities and the academics employed by them. This interest was linked to the policy idea that intensifying competition will improve the performance is universities and individual academics and their groups. An example is the introduction of university excellence policies and programs in various countries, including Germany, Finland, Poland, and China. A factor that made this development possible is the introduction of bibliometrics, the replacement of personal assessments of academic performance by impersonal quantitative ratings, and the growing popularity and use of global university rankings.

As argued by various scholars (e.g., Musselin 2018; Brunsson and Wedlin 2021; Krücken 2021), the new global scientific competition is a competition for status, or as Musselin (2018) argues, a competition for quality, with status as a 'proxy' for quality. Only a few research-intensive universities, covering the top positions in global university rankings, compete structurally at a global level for resources (especially highly esteemed scholars, and the best graduate students, as well as private research funding and undergraduate tuition fees), but even for these institutions the national context still forms a very important competitive arena for funding, staff, and students.

The transformation of competition and collaboration and the ways in which they are related have also an impact on the competitive and collaborative behavior of research universities as new competitors. According to Musselin (2018: 672), competition among research universities gives a new impetus to classifications in higher education by incentivizing inter-university collaboration in the form of alliances of research universities. These classifications are based on the consideration that the participating universities belong to the same category of institutions and should network, share information, and develop relationships with one another. In addition, as discussed in the previous section, these partnerships or alliances of competitors have yielded new forms of collaboration and common social norms among their members.

The relationship between new forms of compe-

tition and collaboration is also visible in the organization of the university bureaucracy, where new positions and units have been established for supporting the functioning of university partnerships and alliances, and assisting the institutional leadership in its decisions and actions for enhancing their university's competitive strength and effectiveness.

Endnotes

1
The term university refers here to any type of higher education institution with a formal status in a national higher education system.

2
In her analysis, Beerkens (2013: 165) did not take into account the possible difference in quality in the research output of the new universities compared to the output of the old universities.

3
This can be illustrated by the efforts of members of European University alliances in certain countries to promote these alliances as more prestigious than other alliances.

4
This discussion of a meta-organizational perspectives on university alliances is based on: Maassen, Stensaker & Rosso (2022).

5
See: https://education.ec.europa.eu/education-levels/higher-education/european-universities-initiative

6
See: https://www.theguardian.com/education/2023/feb/04/brexit-causes-collapse-in-european-research-funding-for-oxbridge-universities

7
The term international is used here, since the number of advanced national science systems was until recently limited and the scientific competition could therefore not be interpreted as global. The emergence of the global science system, with practically every country contributing to global knowledge production, is a relatively recent phenomenon (Wuestman et al. 2019).

CHAPTER 3

Higher education policies and competition and collaboration

How is the transformation of collaboration and competition in academia addressed in and affected by higher education and science policies? An important reference point highlighted by many scholars is formed by the dramatic expansion of higher education and science since the end of WWII, starting in the US in the 1950s, followed in later decades by the rest of the world, including most recently in many African countries (Schofer and Meyer 2005; Mouton and Blanckenberg, 2018). A relevant feature of this expansion is that higher education and science have become interdependent institutions in knowledge societies. In addition, some scholars argue that the traditional boundaries between higher education, science and society are gradually fading. New partnerships emerge and new models have been introduced to conceptualize these partnerships, such as triple helix; mode 1 – mode 2; and Pasteur's quadrant (Etzkowitz and Leydesdorff 1995, 2000; Gibbons et al. 1994; Nowotny et al. 2001; Stokes 1997).

The expansion in student numbers, faculty positions, administrative capacity, number of higher education institutions, and range of activities, including knowledge transfer to society, led to an inflation-plus growth in costs, which ultimately resulted in governments around the world being unable to continue covering most of the costs of higher education through public revenues. Consequently, alternative approaches to governing and funding higher education and research were introduced, with New Public Management (NPM) emerging as a dominant approach in the OECD member countries. NPM refers to a set of ideas underlying public sector reforms aimed at addressing public governance problems and challenges that emerged in the 1960s and 1970s. These include the growing complexity and size of society, increasing fiscal deficits, a reduced faith in the quality of government, and the demand for better quality of public services (Peters 2001). Central mechanisms of NPM are the reliance on market forces and the use of business practices and values in public governance, and a focus on sector outcomes and performance and public interests, instead of on input and sector interests. Brunsson and Sahlin-Andersson (2000) have argued that the NPM-inspired reforms aimed at turning public sector organizations, such as research universities, into more complete organizations. As discussed in the previous chapter, this implied that universities were stimulated to introduce hierarchical leadership and governance structure, should strengthen their organizational identity, and were expected to become more rational in their decision-making. This organizational actorhood idea (Krücken and Meier 2006) implied

that university leadership was becoming responsible for improving the institutional performance via a stronger control over the academic activities. As a result of the development of bibliometrics and scientometrics, this performance could be measured through quantitative metrics and ratings, which was assumed to give the leadership a tool for gaining greater control over the traditional academic autonomy of the academic staff and allow the university to participate in the global competition for status: the better the performance ratings and metrics of its academic staff, the higher the position of the university in the global rankings.

NPM ideas have been used in university reforms especially in OECD countries but have also affected reform agendas in medium- and low-income countries (Peters 2001; Broucker and De Wit 2015). These NPM inspired reforms led, amongst other things, to the strengthening of competition in higher education systems where competition was traditionally weak. This is clearly visible in the public funding of higher education, where performance-oriented components have been introduced in many countries around the world.

In the next section the impact of these NPM inspired university reforms on the public funding of higher education will be discussed.

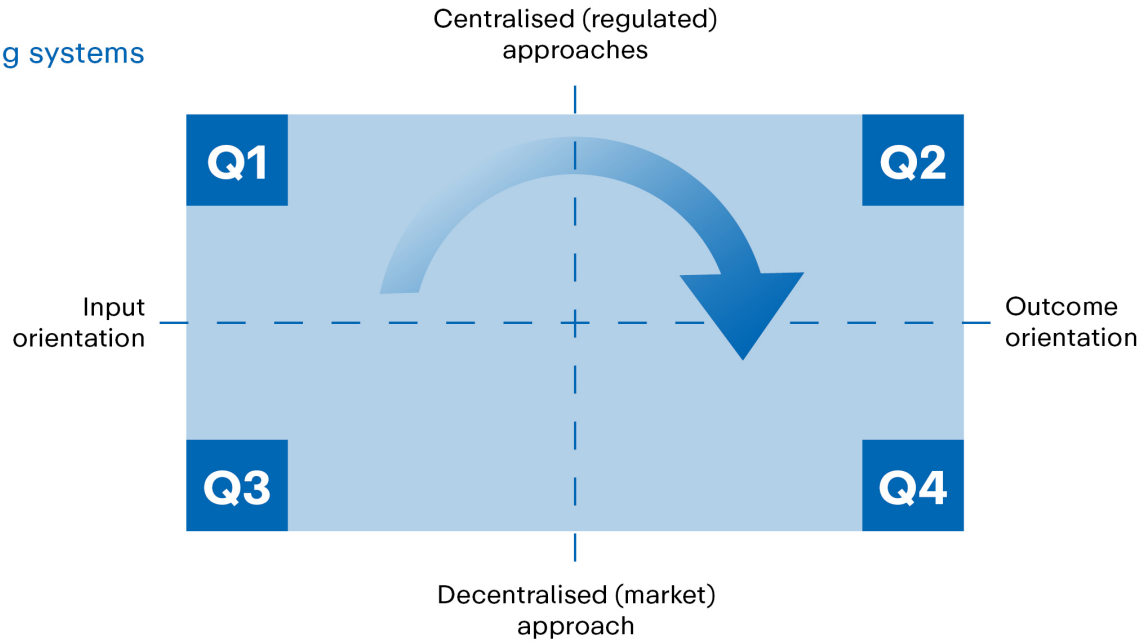
Trends in the public funding of higher education

In the 1980s and early 1990s, there was a widespread assumption that higher education reforms would lead to a global convergence in institutional governance, organization and funding. This was based on the argument that global norms affect states and institutions resulting in the homogenization of cultures and organizations around the world (Ramirez and Meyer 1980; Meyer et al. 1997). In recent years, however, there is a growing acknowledgement of continued divergence rather than convergence among national higher education systems. This is illustrated in table 1 which shows that basic features of the funding of higher education are more stable than previously assumed and do not represent a significant trend towards privatization and marketization principles. While private expenditure as percentage of the total expenditure on higher education has increased over the period 2000-2019 in some countries, such as the UK, Australia, Mexico, and Austria, it remained rather static in others, such as Finland, Iceland, and the Netherlands, or even decreased in a number of countries (Poland, South Korea, and Chile).

At the same time, even if the share of public expenditure on higher education has been rather stable in most countries, there is evidence that public funding priorities have been changed. Over the last decade, more emphasis has been given to interdisciplinary and applied research as well as commercialized research and patenting. Furthermore, in these new forms of funding, competition between universities, and between the universities and other entities, such as research institutes, has become a more central element. Public funding of higher education and research is a national competence, and the changes referred to take place in a variety of forms in national public funding mechanisms.

In Figure 1, four types of public funding systems for higher education and research are presented based on two dimensions, input versus output orientation in funding, and centralized versus decentralized approaches to funding. In recent decades there has been a trend from input oriented

Figure 1:
Four funding systems



(Source: Jongbloed & Vossensteyn 2016)

Table 1: Private expenditure on higher education in selected OECD countries, as percentage of total higher education expenditure (2000-2020)

COUNTRY	2000	2007	2013	2016	2020
United Kingdom*	32.3	64.2	42.7	71.4	72.6
Australia	50.4	55.7	57.5	62.1	66.3
United States	68.9	67.4	63.7	64.7	64.3
South Korea	76.7	79.3	67.5	63.8	61.7
Chile	80.5	85.6	62.5	67.5	61.1
Israel	43.5	48.4	49.7	41.6	47.5
Canada	39.0	43.4	n/a	50.6	46.3
Mexico	20.6	28.6	32.2	29.1	44.1
New Zealand	-	34.3	48.1	48.4	42.0
Italy	22.5	30.1	32.8	35.3	36.6
Spain	25.6	21.0	30.7	31.7	33.1
OECD average	23.4	30.9	n/a	30.1	30.8
Portugal	7.5	30.0	41.9	31.5	30.7
Netherlands	23.5	28.5	29.7	29.2	28.3
Slovak Republic	8.8	23.8	24.5	19.7	27.3
Ireland	20.8	14.6	22.3	26.3	26.6
France	15.6	15.5	21.1	20.3	22.5
Poland	33.4	28.5	19.6	16.1	18.5
Germany	11.8	15.3	14.4	15.2	16.8
Czech Republic	14.6	16.2	23.0	19.9	16.6
Belgium	8.5	9.7	10.7	14.2	12.5
Sweden	8.7	10.7	10.5	11.2	12.0
Austria	3.7	14.6	5.4	6.2	11.0
Iceland	8.2	9.0	8.8	8.2	7.7
Norway	3.7	n/a	4.0	5.9	6.1
Finland	2.8	4.3	3.9	3.4	4.2

Source: OECD (2022); see also Capano & Jarvis (2020)

* The figures presented in this table are derived from the OECD data basis. While the Education at a Glance reports make a distinction between UK (England) and UK (Scotland), the data basis that we used does not make this distinction, and includes data on the United Kingdom. (see: doi: 10.1787/a3523185-en).

funding through centrally government regulation to outcome oriented approaches in public funding using decentralized approaches through market interactions. In figure 1, this is presented as a trend from quadrant Q1 to Q3. This implies a shift from an orientation on inputs of higher education to an emphasis on outcomes, and a shift from centralised approaches where all institutions are treated equally, to a more decentralised approach where competition plays a much more important role. The main trend in the public funding of higher education represents a shift towards performance-based funding of higher education, and a growing reliance on cost sharing between students and taxpayers implying the introduction of or increase of the level of existing tuition fees (Jongbloed and Vossensteyn 2016).

Overall, public funding arrangements for higher education and research nowadays include a larger share of competitive project funding. The introduction of performance-based components in the public funding of higher education and research may be regarded as a complementary policy tool aimed at stimulating the use of public funding for the production of needs-based outcomes, that is, politically prioritized and preferred outcomes. At the same time, there is a great variety among countries when it comes to the design and use of performance-based funding (PBF) systems in higher education. The varieties concern first the share of the performance-based component of the total level of public funding, second the use of performance agreements between the public authorities and the higher education institutions, and third, the performance a government wants to improve through the use of a PBF system.

A study by the Dutch Center for Higher Education Policy Studies (CHEPS) (De Boer et al. 2015) on performance-based funding of 9 European and 3 US state higher education systems (Louisiana, South Carolina, and Tennessee), plus the higher education systems of Australia and Hongkong, shows the following varieties of the use of performance indicators in the public funding of higher education:

Frequently used performance indicators include:

- Number of Bachelor and Master graduates / degrees: Austria, Finland, Netherlands, German states (North-Rhine Westphalia and Thuringia), and Tennessee.
- Number of exams passed, or credits earned by students: Austria, Denmark, Finland, Tennessee, Louisiana, South Carolina.
- Number of students from underrepresented groups: Australia, Ireland, the German state of Thuringia, Tennessee.
- Study duration: Austria, Denmark, the Netherlands, Tennessee.
- Number of PhD graduates: Australia, Denmark, Finland, Thuringia, Netherlands.
- Research productivity: Australia, Denmark, Finland, United Kingdom (England, Scotland).
- Research performance in terms of winning (research council) contracts: Australia, Finland, Hong Kong, Ireland, Scotland, Tennessee.
- Third party income: Australia, Denmark, Finland, the German states of North-Rhine Westphalia and Thuringia, Hong Kong.
- Revenues from knowledge transfers: Australia, Austria, Scotland.

Less frequently used performance indicators include:

- Internationalization (students or staff): Finland.
- Quality of education based on student surveys: Finland, Tennessee.
- Employability indicators, for example, the number of employed graduates: Finland.
- Research quality: Hong Kong, United Kingdom (England, Scotland)

A recent study showed undertaken by CHEPS in Europe shows that in most European higher education systems some type of PBF model is used in the public funding of higher education. According to this study, the use of PBF can have a positive impact, but also unintended consequences. Among the latter are the impact on academics' publication behavior in the sense of incentivizing quantity over quality of academic publications, and publishing in English rather than publishing in the native language. Other unintended consequences are the need for increased administrative capacity at universities for satisfying accountability regulations and handling the complexity of PBF arrangements. Furthermore, at the system level, the best performing and best-funded institutions generally profit more from PBF than the rest of the system (Jongbloed and de Gayardon 2023).

Recent studies of PBF systems in US states indicate that in some states PBF is used for improving the study success and graduation rates of minority students. In line with the European experiences, these studies show that PBF models often have a different effect than expected. For example, various studies show that PBF 2.0[1] had small or no effects on degree completion in Tennessee and Ohio (Hillman et al. 2018; Ward & Ost 2021; Chan et al. 2022).

In Canada, Ontario is the first province to introduce PBF, taking effect in 2022/23, with 60 percent of provincial funding for higher education to be allocated through PBF by 2024-2025. Among the critics to the use of PBF in Ontario a major argument is that it only values the contributions of the province's higher education institutions to the economy and neglects other contributions to the society. In addition, it is argued that it will not impact higher education in the intended way, since there are a number of ways to 'tweak and game the PBF system' (Peters 2021[2]). Furthermore, even

though in the end 60% of the annual public funding of higher education will be distributed through PBF, the possible impact in practice will be limited, since provincial funding accounts for only 25 percent of total revenues for universities and colleges in Ontario, and in practice it is suggested that at maximum around 1.3% of provincial funding would be at stake for universities.[3]

According to Jongbloed and de Gayardon (2023), one reason for the unintended effects of PBF models is that public authorities in general lack a valid, research/evaluation-based understanding of PBF models. Therefore, they make the following recommendations to governments who use or intend to use PBF models for their higher education institutions:

- Before implementing or reforming a PBF system, the responsible authorities should set out the performance/broad goals that they aim to achieve with PBF.
- PBF systems need to be based on SMART (specific, measurable, achievable, relevant, and time-bound) performance measurement systems.
- PBF systems need to be designed in collaboration with stakeholders in the higher education sector.
- Funding authorities should carefully consider attributing a relatively high share of core funding to measures of performance.
- Universities should have some degree of choice and flexibility within the PBF system and associated indicators/objectives to express their individual missions and ambitions (Jongbloed and de Gayardon 2023: 2).

Another factor that contributes to the complexity of understanding the impact of the use of PBF models in higher education funding is that there is a large variety in the ways in which PBF is designed, shaped, and implemented by public authorities. Furthermore, the causality question is of relevance, in the sense that the performance of a higher education institutions is impacted by many factors within and beyond the funding system.

Performance evaluation as a governance tool

One of the areas where competition has become more important is in the race for scientific progress and breakthroughs, where difficult choices are necessary. Formal evaluations, performance measures, and comparative indicators are continuously generated to support these choices. Although imperfect proxies, they have become the basis for political, institutional, research team, and individual academic decision-making. Simultaneously, collaboration across institutional, disciplinary, organizational, and cultural boundaries expands the possibilities of discovery (Powell 1998).

An important aspect of national higher education and research policies is that structured exchange of ideas and information as well as cross-national performance comparisons have become a common feature leading to practices of policy learning or borrowing. This often implies the introduction of policies that use apparently successful policy initiatives and experiences in other countries. With this growing influence of global policy ideas, we can observe that their diffusion occurs at every governance level, resulting in specific education and research models and priorities across societies. In Europe, this diffusion is in many respects coordinated by the European Union with its own supranational research policies, research funding programs, and the ERASMUS+ program for supporting educational collaboration. The OECD also plays a role among its members in spreading and promoting certain policy ideas. The extent to which EU Member States and OECD member countries are competitive in higher education and research is monitored through comparative indicators, which are used for various purposes by policymakers, academics, and administrators. In addition, many governments in low- and medium income countries borrow their policy ideas for higher education and science from international organizations, such as the World Bank, the IMF, the OECD and the EU.

In an era in which accountability, reporting and evaluation requirements can be found in any higher education system, the governance of academia is based on explicitly measured and evaluated outputs, such as credit points produced, teaching quality, the number of graduates and dropouts, journal articles, and success in the competition for external research funding. The effects and changed behavior of individuals and organizations in such regimes have gained attention, yet few longitudinal studies show the long-term impact thereof on universities and research. What can be argued, though, is that the practices to measure the quality of higher education and research through numeric forms in order to compare and to inform decision-making reduce the quality of information and threaten to narrow the recognition and impact of knowledge generated in diverse systems (Powell 2018). Research suggests that there can be a variety of effects of these evaluations of the quality of universities and individual academics as research outputs are quantified (Espeland and Sauder 2016; Marques et al. 2017). However, insight is lacking into the impact of the growing accountability, reporting and evaluation requirements with respect to higher education and research. Therefore Powell (2018: 11) raises a highly relevant question to be addressed in research on higher education: “How do research organizations (such as universities) actively construct and apply such competitive measures in their attempts to secure achieved status or strive for higher repu-

tation within regionally, nationally, and globally stratified higher education and science systems?"

In many countries, the influence of Ministries and national research councils on research agendas has increased through the growing number of strategic research programs with specifically defined themes and impact criteria (Zapp et al. 2018), usually at the cost of open research funding programs. This development has been called "programmification" and is argued to, "symbolize more educated policymakers and administrators with the aspiration to guide scientific development and target resources in the hopes of facilitating innovation" (Powell 2018: 11). "Programmification" runs the risk of undermining necessary long-term commitments to basic research and research priorities identified by the academic community. This development is also visible in other parts of the research policy system, for example, in the composition of the boards of research councils, where in some countries scientists have been replaced by politically appointed lay persons, who represent certain societal or economic interests without specific knowledge of the research system.

From a global perspective, these strategic or thematic research funding programs might lead to a narrowing of the range of publicly funded research themes. This poses the risk of overinvestment in fashionable topics or commitment to certain research questions with policy relevance to the detriment of a diverse research agenda or guarantees of academic freedom and scientific autonomy needed for frontier research with the potential of contributing to scientific breakthroughs.

Further development of higher education and research policies

How will the global science system develop further, and what kind of trends can we expect with respect to national higher education and research policies? Here we will start with briefly discussing three overall trends that are potentially of relevance for the development of the global science system. First the development of globalization. In an article published July 2009 in Foreign Affairs, Roger Altman reflected on the impact of the financial crisis and argued that, "It is now clear that the global economic crisis will be deep and prolonged and that it will have far-reaching geopolitical consequences. The long movement toward market liberalization has stopped, and a new period of state intervention, reregulation, and creeping protectionism has begun. Indeed, globalization itself is reversing." This is one of many predictions in the framework of the financial crisis of the late 2000s that globalization has come to an end. The discussion about the end of globalization has intensified again in the early 2020s in connection to the COVID-19 pandemic, the war in Ukraine, and global political tensions. Obviously, these are discussions of relevance for university leaders in light of the development discussed in the first chapter that universities have become politically more important, but less special. The latter implies that universities have become more integrated into other policy areas, such as economic affairs, business and labor, and foreign affairs, and have lost their relatively protected policy position. Consequently, the possible political and economic end of globalization will also affect the globally interconnected and interdependent nature of the world's national science systems. This issue will be discussed in more detail in the next chapter as one of the relevant themes with respect to the transformation of competition and collaboration. Here, we want to point to two global trends that are of relevance also for the scientific community and the world's research universities.

First, according to the 2019 World Trade Report[4] there are two interlinked trends that suggest that new forms of globalization are emerging, that is, greater digitalization and a shift toward more people working from home. The report argued that this represents a newly emerging form of globalization that looks very different from ships carrying stacks of cargo containers, but it is nonetheless a very real form of globalization, implying that, "Globalization is not slowing or stalling. Rather, it is evolving, driven by trade in human skills, knowledge, and ingenuity" (World Trade Report 2019: 18). The cross-border data traffic referred to in the World Trade Report is predicted to grow dramatically by UNCTAD, concentrated along two main routes: between North America and Europe, and between North America and Asia, and it is forecasted to grow dramatically[5]. The World Trade Report predictions were made before the start of the pandemic in 2019, but the UNCTAD data are from 2021 and show that global data flows have increased substantially since 2020 and are expected to triple between 2022 and 2026. This trend is highly relevant for universities given their key role in the production of knowledge not only on digitalization but also on sustainability and the green transformation, two key knowledge areas in the global digital trade.

Another trend is related to the increase of international migrants, especially in Europe and Asia. The World Migration Report (McAuliffe and Triandafyllidou 2021) contains several relevant interpretations of the increased competition between States, which has led to heightened geopolitical tension and risking the erosion of multilateral cooperation. Consequently, we are living in a period in which ***the core values*** underpinning global governance are being challenged[6].

While the report refers extensively to the upheaval caused by the COVID-19 pandemic, and the acknowledgement that we will continue to experience the systemic effects of the pandemic for many years to come, it also points to the importance of research collaboration (McAuliffe and Triandafyllidou 2021: 135), for example, around producing mi-

gration data from the perspective of the SDGs. This has caused a review by the international statistical community of the use of traditional sources for migration data, such as population and housing censuses, household surveys and administrative records. In addition, the UN Member States have committed themselves to strengthen partnerships, enhance collaboration, and create the conditions needed to develop research and studies on the interlinkage between migration and sustainable development.

Furthermore, the report refers to the impact of the pandemic on research in social sciences. As indicated in the report:

The rise of misinformation has impacted on how academia has been responding to the COVID-19 pandemic. Several scientific publishers made COVID-19 research accessible online free of charge, while others are fast-tracking the publication of COVID-19 articles. While much of the research conducted remains in the medical field, there have been calls made to increase the volume of much-needed social science research and to ensure that these findings are not overlooked when informing effective responses. Despite this, researchers have also expressed concern that this rush to respond to the COVID-19 pandemic may compromise research integrity, by pushing researchers to take shortcuts in the research process, impacting on quality and limiting the ability to develop interdisciplinary collaboration. Many academics are concerned about the possible consequences of this "covidization" (Pai 2020) of research, including in terms of availability of funding to develop other research areas in the social sciences (McAuliffe and Triandafyllidou 2021: 140).

AU-EU Innovation Agenda

The trends presented in these global Reports are in a number of respects of relevance for the discussion of the transformation of competition and collaboration in higher education and research. One important issue is the relationship between universities in the Global North and the Global South. As indicated in the World Migration Report, increased political tensions between countries leads to an erosion of multilateral collaboration, which forms a serious threat to the chance of developing more equal science collaborations between the Global North and the Global South.

A highly impressive plea for multilateralism was made by the Kenyan U.N. Ambassador Dr Martin Kimani during the security council meeting of 24 February 2022, which marked the start of the Russian invasion in Ukraine: "At independence, ….rather than form nations that looked ever backward into history with a dangerous nostalgia, we chose to look forward to a greatness none of our many nations and peoples had ever known… We must complete our recovery from the embers of dead empires in a way that does not plunge us back into new forms of domination and oppression."

These basic features of a new multilateral world order form the foundation for the joint agreement signed by the African and European Unions on 18 February 2022. As part of their overall agreement, the two Unions launched a joint Innovation Agenda (IA) that is widely acknowledged as having the potential of fundamentally renewing global scientific relationships. From political meetings, conferences and policy discussions, the following issues of relevance for the implementation of the IA can be identified.

First, the IA represents a move from scientific collaboration based on development aid to collaboration through equal, strategic partnerships of university alliances from both continents, which are expected to involve associate partners from the private and public sectors. Second, the IA has a long-term perspective and shifts the key mode of scientific collaborations from projects to joint, multi-year programs developed and implemented by alliances consisting of universities and their associate private and public sector partners from both continents. Third, while a large part of the financial foundation for the agenda will come from the EU, it cannot be successfully implemented without considerable increases in public funding in R&D and HE by public authorities in African countries. Finally, African and European universities should make sure to provide relevant input into the further development of the IA. Too often in the past the voice of universities was absent in the processes determining the framework conditions for scientific North-South collaboration.

What will be an important challenge for these emerging African-European university alliances is the issue of inequality among partner universities. The AU and EU have indicated that they expect that African-European university alliances will develop detailed plans for how they intend to reduce this inequality, for example, with respect to investments in research infrastructure, doctoral education capacity, young scholar career opportunities, etc.

In an article in University World News[7] Adam Habib, former vice-chancellor of the University of the Witwatersrand in South Africa and currently director of SOAS, London, discusses a number of key features of the IA. Habib argues that the IA has the opportunity to challenge all the existing models of international education, and that it will challenge the Anglo-Saxon model which emphasises the recruitment and training of students from across the world at universities in the United Kingdom, United States and Australia. This model is focussed

on the individual, accelerates the brain drain, and inevitably weakens institutional capacities in the South. Habib argues in the article that the AU-EU Innovation Agenda is truly ground-breaking, and in his view, political elites elsewhere, would do well to take heed of the development philosophy that underlies this plan.

Conclusion

Higher education systems and institutions operate in contexts that are to a large extent governed, regulated and organized by national public authorities. Obviously, the public governance approaches used by national governments and their policies have an important impact on the strategic development and operations of universities. It is of relevance that higher education and research form policy areas where policy ideas are often globally spread. Consequently, throughout the last decades apparently similar changes in the public governance of higher education and research can be identified internationally, including important transformations of competition and collaboration. However, the ways in which these transformations are interpreted and used in national higher education systems show important variations. For example, intensifying competition in higher education is more strongly identified with the public governance of higher education in the OECD member countries, than with, for example, the public governance of higher education in China. Still, there are some narratives in the public governance of higher education that have 'travelled around the world'. One of these narratives is that competition for resources among universities leads to better performance in the form of higher quality of education and research, lower dropout rates, higher research productivity, and more efficient use of funding, than high levels of basic public grants. As discussed in this chapter, this narrative is underlying the introduction of specific government policies and programs aimed at enhancing the global competitiveness of national universities. Examples are performance-based funding systems and University Excellence funding programs. In general, the focus on university performance in these governmental policies and programs is based on a strong belief in the positive effects of competition on universities.

In the next chapter we will move towards the universities' perspective by examining their strategic development. This will be done by presenting a number of overall themes with respect to how universities navigate competition and collaboration. In addition, the strategic development of five research universities will be discussed in some more detail. These five overviews of the strategic use of competition and collaboration by individual universities show some communalities in the strategic orientations of the institutions in question, but also important variations. This reflects the influence of each university's national context and the impact of its public authorities. At the same time, these overviews also show the room to maneuver universities have in their strategic development. In this they illustrate that change in universities is not simply determined by environmental processes of competitive selection, nor solely by the strategic choices of university leaders and managers. Instead, it can be argued that the changing use of competition and collaboration in universities, "involves a much larger repertoire of standard processes and in contemporary settings change often takes place in a complex ecology of actors, processes and determinants" (Gornitzka et al. 2007: 190). This interpretation of the complexities underlying change in universities should be kept in mind when interpreting how the general themes and institutional overviews presented in the next chapter, can be related to the governmental policies discussed in this chapter.

Endnotes

1
PBF 2.0 refers to the new PBF models that were introduced in the 2010s in the US. According to Chan et al. (2022, p. 2), "PBF 2.0 models determine basic funding levels (rather than bonus payments), tie funding to attainment outcomes, and award premiums for positive outcomes among historically underserved students".

2
See the article by Diane Peters in University Affairs Affairs universitaires entitled 'Performance-based funding comes to the Canadian postsecondary sector', published February 22, 2021: https://www.universityaffairs.ca/news/news-article/performance-based-funding-comes-to-the-canadian-postsecondary-sector

3
This figure is suggested by Alex Usher in a blog published December 2, 2020, entitled "Ontario's PBF System: Much Ado About Nothing"; see: https://higheredstrategy.com/ontarios-pbf-system-much-ado-about-nothing

4
See: https://www.wto.org/english/res_e/booksp_e/00_wtr19_e.pdf

5
See: UNCTAD Report „Digital Economy Report 2021. Cross-border data flows and development: For whom the data flow"; section on cross-border data flows (pp. 18-21); https://unctad.org/system/files/official-document/der2021_en.pdf

6
See: https://worldmigrationreport.iom.int/wmr-2022-interactive

7
For the full article, see: Adam Habib, (23 March 2022). Reinventing higher education for an inclusive world, UWN, Africa Edition; retrieved from: https://www.universityworldnews.com/post.php?story=20220322101854590

CHAPTER 4

Competition and collaboration: general themes and strategic development of universities

The potential of universities to contribute effectively to the future development of their societies and the world at large relates strongly to the ways in which they interpret and handle the opportunities that competition and collaboration offer and the challenges both pose. While competition and collaboration have always been part of academic life, there is a broad acknowledgement about the transformation of both in academic settings over the last decades. This transformation has been discussed in the previous chapters of this report. In this chapter, we will start with presenting general themes concerning how universities navigate the transformation of competition and collaboration, and the possible tensions between them. There are common patterns covered by these themes, but they also show how the institutional, local, national, and international contexts in which a university operates create important conditions for the extent to which a university can use the opportunities offered by competition and collaboration and deal with the challenges they pose. After the presentation of the general themes, an overview of the strategic development of five research-intensive universities in navigating competition and collaboration is presented. This overview shows how these five universities interpret and use collaboration and competition in their institutional strategies and missions. In addition, the strategic developments of these universities provide relevant insights into specific choices they have made, for example, in their research and internationalization policies, and the commitment to and organization of their interdisciplinary activities. While institutional examples presented in this chapter either to illustrate the general themes or as part of the more elaborated five university overview are context-bound, they are expected to provide relevant insights and frames of reference for universities in other contexts.

General themes

Despite the variety in university contexts, the themes presented in this chapter show common issues and concerns in the strategies, missions, and action plans that universities use in responding to fundamental changes in their environments and the expectation that universities play a central role in finding solutions to the grand challenges and crises that our societies face. The institutional strategies, missions and plans indicate that universities use competition and collaboration for enhancing and innovating their educational activities and research endeavors both from a scientific and societal needs perspective.

The overview of themes presented here is broad, but far from exhaustive. The transformation of competition and collaboration is not a homogeneous development in one direction. The globalization drive that was largely responsible for the transformation is seriously challenged by changes in the global political landscape that started some time ago, and the COVID-19 pandemic. Therefore, we will start the presentation of the themes with a brief reflection on the nature of the current, far-reaching changes in the global context of higher education, before discussing the other themes with respect to in the way in which universities navigate competition and collaboration.

Theme 1: Changing global political landscape

The development of the global science system has its roots in the 19th century with the global diffusion of the idea of the research university. The globalization of higher education and research further developed after 1945 with the massification of higher education, growing investments in scientific research, the growing number of international full-degree students, the development of governmental and institutional internationalization policies and student and staff mobility programs and agreements, the growing international research collaboration, the introduction of the World Wide Web and invention of the Internet, etc. More recently we have seen the establishment of international branch campuses, international joint degree study programs, the development of bibliometrics and scientometrics allowing for global performance comparisons in the form of institutional rankings and the use of ratings for comparing individual performance, and the growing use of digital technologies in education and research collaboration (Kosmützky and Putty 2016). The growth and transformation of competition and collaboration in higher education was a result of this intensifying globalization, which until recently was assumed to continue to develop in a globally connected science system with research production in practically every country in the world, and students being able to enroll in the study program of their choice either in their own country or abroad.

However, recent developments have marked a challenge to the unprecedented globalization drive and the development of a relatively open, well-connected global science system. The COVID-19 pandemic has affected the physical connectedness of universities, academics, and students in many ways. Furthermore, the skepticism about whether the global science system actually contributed to diminishing the science inequality between the Global North and the Global South became relevant again in relation to the dramatic North-South inequities in the scientific development of and access to vaccines with respect to the COVID-19 pandemic (Aryeety et al. 2020).

In addition, the global political landscape has changed dramatically with the war in Ukraine and the growing global political competition and tensions, causing, for example, the academic boycott by Western countries of Russia (and Belarus). This development poses questions about and challenges to the traditional notion of the global foundation of academic collaboration and competition in academia. For example, the idea that science diplomacy principles will allow for scientific collaboration to continue between countries with serious political conflicts, seems no longer valid. Instead, research and higher education have become more 'normal' policy areas and are increasingly incorporated in national economic and foreign affairs policies and strategies, instead of relatively self-standing policy areas that might allow for a continuation of interactions even during political conflicts. In addition, some of the consequences of the global political changes, for example, the increased energy costs, have potentially far-reaching financial consequences for universities, amongst other things, for the extent to which they can afford to use competition internally and further develop their institutional collaborations. Overall, universities around the world face the reality that they cannot be expected to survive by being complacent, that is, going back to ways in which they were used to operate before the pandemic and the current political tensions. As argued by the University of Glasgow in its institutional strategy, the current time frame is one of the most disruptive times that the university has experienced. Institutional adaptations are needed, also when it comes to the use of competition and collaboration.

Many of the adaptations needed have not been materialized yet in the formal university strategies, missions, and budget decisions. However, in the overview presented in the second part of this chapter, we can clearly see the contours of the adaptions the universities have started to introduce. Obviously, while the COVID-19 pandemic seems to be largely under control now (Spring 2023), there are remaining uncertainties about the status and possible long-term consequences of the pandemic. Many universities are still in the process of evaluating their experience in handling the pandemic and the lessons learned, and assessing the possibilities for institutionalizing, for example, the innovations in the use of digital technologies in their academic activities. In addition, the war in Ukraine is far from over, and the resulting global political divisions will disallow for a return to an open, global interconnected science system any time soon.

Therefore, we can expect that in the coming years universities around the world will have to update their institutional strategies and mission, and the way in which they use competition and

collaboration. It can be expected that many universities will continue to be committed to having a global impact, amongst other things, in the area of sustainability. Furthermore, it will remain important to them to respect and further develop global collaboration and contribute to reducing global science inequities, and to strengthening their global academic competitiveness. However, at the same time we will most likely see the adaptation of competition and collaboration practices to the new framework conditions created by the pandemic and the global political competition and tensions between countries.

These considerations and reflections are to remind the reader that this study is conducted in a period characterized by transition, political conflicts, and uncertainty. Therefore, the overview of themes presented in this chapter provides a partial insight into how universities are adapting when it comes to their use of competition and collaboration. In addition, in the study we focused on the institutional perspective and the interpretations and reflections of institutional leaders and did not examine how academic staff and students experience the transformation of competition and collaboration.

To follow up these general considerations and reflections, we will continue the overview with a discussion of how universities position themselves with respect to competition and collaboration in higher education.

Theme 2: Strategic institutional positioning

Most of the universities included in this study position themselves in the global science community. As a member of that community, they want to produce knowledge and educate and train students that can contribute to solving global challenges. Competition and collaboration are important tools for realizing their ambitions. This is expressed, for example, in the university strategies, goals and objectives, and confirmed in the interviews we conducted. Most of these universities combine their global orientation with strategies that are linked to their region, country and/or continent, but these are positioned within the aimed at global role of the university. On the other hand, several universities in this study are primarily oriented towards the city, region, and country in which they are located. These universities highlight especially their education strategies and capacities, with the aim to be successful in the competition for local, regional, and national students and contribute to local, regional, and national economic and social development.

Most universities emphasize the importance of internal and external collaboration for the realization of their strategies, goals, and objectives with respect to strategic themes and principles. This includes maintaining or forming formal institutional partnerships or alliances with other universities. While some universities indicate that they see collaboration through formal university partnerships or alliances as a key tool for strengthening their academic competitiveness, others emphasize that institutional collaboration is important for realizing the strategic goals of the university without an overarching ambition of enhancing the university's competitiveness. Of relevance in this is that nearly all universities expect that in their further strategic development the importance of collaborations, national and international, will inevitably grow, requiring new ways of both sustaining and building partnerships.

An example of a university that uses collaboration to strengthen its competitiveness is the University of Leipzig (UL), which has developed a strategic approach called 'the Leipzig Way' that aims at promoting interdisciplinarity and the formation of alliances with universities from around the world. As part of its strategy, the University has identified three strategic research areas that it wants to promote and support in the assumption that in these three areas the university will be able to improve its success in the competition for external research funding and the recruitment of excellent scientists. If the underlying assumptions are realized, the three research areas will contribute significantly to the enhancement of the university's competitiveness. Linked to this focus on research competitiveness is the university's strategy to strengthen its collaboration with scientific partners in central Germany, non-academic partners, such as the city of Leipzig, and to contribute effectively to the development of the regional innovation system. Through its strategy, UL clearly expresses the ambition to strengthen its academic competitiveness, with the aim to move towards a higher performance level without quantifying this aim explicitly.

The University of Plymouth is another example of an institution that wants to use international collaborations to become a leading university in producing research responses to global challenges. But unlike the University of Leipzig, the University of Plymouth specifies that it wants to be ahead of its competition by belonging to the top 250 best universities in the world by 2030[1].

The University of Tsukuba's Top Global University Project is part of a national initiative of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) to enhance the international competitiveness of higher education in Japan. The University of Tsukuba is one of 13 selected universities that have according to MEXT the potential to be ranked among the top 100 universities of the world. The concept used in this project by the University of Tsukuba is entitled 'Creating a Transborder University for a Brighter Future'. A central component in this concept is the Campus-to-Campus (CiC) initiative that aims at transcending national, institutional and other barriers. The University of Tsukuba has reached an agreement on the implementation of

the CiC initiative with 10 partner universities from around the world[2].

For all universities in our study, sustainability is a strategic theme or principle. These universities' strategies and missions indicate how they position themselves with respect to the SDGs and global worries about climate change. New York University (NYU) is a clear example of this by identifying sustainability as a priority theme for university leadership. In its '2040 Now' strategy, NYU states that for coping with global climate change, cooperation on an unprecedented scale is required, globally as well as at NYU. The strategy presents the University's emissions reduction strategies and ambition to have achieved carbon neutrality by 2040.

Another example is the University of Groningen (UG), which has established a Green Office for coordinating and initiating projects related to sustainability at the University. With sustainability as one of its key values, UG's Green Office has developed in collaboration with academics, service units, faculties, staff members and students a 'Sustainability Roadmap'. The new ambitions and goals as presented in the roadmap have been formulated around the central themes of Planet (the UG to become a CO2-neutral university by 2035), Performance (more involvement of students, staff members and external parties in sustainability) and People (a sustainable HR policy for a dynamic and healthy organization).

The University of Tsukuba has established the in 2022 the Organization for DESIGN THE FUTURE, which is responsible for exploring how the university can contribute to the realization of the SDGs. This Organization supports and promotes the collaboration of the University of Tsukuba in cross-disciplinary projects with regions, companies, and organizations around health care, the greying population, and sustainable energy use.

Another issue addressed by several universities is their post-COVID approach. Cardiff University (CU) presents a post-COVID strategy entitled "The Way Forward 2018-2023 Recast COVID-19". The strategy presents a set of themes and a post-COVID-19 education and students' strategy and a research strategy, post-COVID revival and renewal opportunities, and lessons learned in during the pandemic. The strategy also confirms the basic values of CU and contains information on how the strategy will be monitored and its achievements assessed.

The University of Melbourne signed a new post-COVID alliance with the Universities of Manchester and Toronto in November 2022. The alliance includes student exchanges, joint research projects and mutual bids to work with businesses and funders. The alliance draws on joint expertise and resources, and capitalises on new ways of studying, working, and collaborating that have emerged during the pandemic. For students the alliance offers global classroom programs that provide interaction with teachers and researchers on three continents via lectures, seminars, and practical classes. There will also be joint PhD programs with opportunities to visit the other institutions. Researchers will gain access through the alliance to specialist facilities and the opportunities to work on joint research programs on areas of interest such as environmental sustainability, cancer treatment and advanced materials.

Theme 3: Rankings, bibliometrics and ratings

The reliance on bibliometrics and ratings for assessing performance of academics is part of the shift from the use of interpersonal assessments to using impersonal references, for example, in the review by research councils of research funding proposals, or the assessment of candidates for an academic position. This quantification of performance assessment has made the results of competition more visible and better comparable (Musselin 2018). The emergence of global university rankings is related to this shift; also in the global comparison of universities bibliometric and other performance indicators are used. University leaders often criticize rankings, but still, most universities refer to them, when it comes to their current ranking, the position they want to achieve in future rankings, or other positions that are relevant for supporting a university's global ambitions.

Stellenbosch University, for example, presents itself as amongst South Africa's leading tertiary institutions based on research output, student pass rates and rated scientists, one of the top 300 universities in the world, and among the top 20 in BRICS countries. The University of Ghana states that rankings are considered as manifestation of global competition and are used as a policy instrument influencing national and international partnerships and collaborations. On a webpage dedicated to rankings it provides a detailed overview of the position of the University on various types of national, regional, continental, and global rankings. The University of Ghana has the strategic ambition of maintaining its position among the 20 best research universities in Africa and becoming ultimately a world-class research-intensive institution. The latter ambition is related to the African Union's and African Heads of States' strategic Agenda 2063 with its goal to promote and support the development of up to 200 world class research universities in Africa by 2063.

The Jawaharlal Nehru University (JNU) positions itself by referring to various rankings, that is, ranked number one in India by the National Assessment and Accreditation Council (NAAC) with a Grade Point of 3.91 (on a scale of 4), JNU was ranked no 3 among all universities in India by the National Institutional Ranking Framework, Government of India, in 2016 and no 2 in 2017. JNU also received the Best University Award from the President of

India in 2017. In the Shanghai Ranking it is positioned 701-800.

The use of impersonal references for academic performance has become the norm internally in universities, for example, in recruitment of staff and staff performance appraisals, and in incentive schemes, including for research seed money, conference support and travel grants, and performance awards. The success of the Adam Mickiewicz University (AMU), Poznan, in the university excellence initiative of the Polish government, allowed it, for example, to introduce an institutional incentives scheme aimed at strengthening the research performance of its staff. In the review of the applications for various kinds of scholarships and grants AMU uses an extensive bibliometric database for deciding on which applicants will be selected for support. Furthermore, also in the performance agreements between governments and universities various kinds of data are used. In the Strategic Mandate Agreement between the University of Waterloo (UW) and the Ontario government the performance targets are set against metrics that measure UW's effectiveness in addressing: the evolving needs of the labor market; enhancing the skills and competencies of its students; and supporting a postsecondary education system that strengthens Ontario's economic competitiveness.

A challenge in the use of bibliometrics and ratings is the emphasis on the performance of individual academics, while in many fields structured collaboration with other academics inside their institution and/or outside it has become the norm (Bozeman & Boardman 2014). This can also be seen in the move away from single author academic publications to co-authored journal articles based on collaborations among academic specialists, often from different universities and countries (Powell 2018).

As indicated in the interviews conducted in this study, university leaders are aware of the growing requirement to undertake research collaboratively in university groups, inter-institutional projects, and international networks, but still, they often use individually oriented incentive schemes. Universities have become more team, group and unit oriented in their research policies by promoting and supporting academic collaboration. However, the use of competitive schemes for promoting research collaboration is still an area where there is room for improvement and for better understanding of the growing importance and nature of academic collaboration in teams, including the integration of administrative and other support staff in the teams, instead of positioning, governing, and funding them separately.

Theme 4: Changes in institutional collaboration

Especially after 1945, many universities in the OECD member countries and elsewhere, have signed, as part of their emerging international policies, multiple exchange and cooperation agreements (often referred to as MoUs) with other universities from around the world. These agreements are often referred to as a Memorandum of Understanding (MoU). Usually, these institutional agreements were complemented by faculty and departmental agreements with academic partners at other universities. The result was often that universities had hundreds of institutional agreements, many of which were not structurally used. These types of agreements continue to exist. However, most universities included in this study have updated their internationalization policies and evaluated their institutional agreements. The result is that many universities nowadays identify different types of institutional collaborations for different types of purposes.

To present some examples for illustrating this development, the University of Cape Town (UCT) emphasizes the importance of global research partnerships in its institutional strategy, which include research partnerships with African universities and with research universities outside Africa. In addition, UCT is a member of global research networks, and it has signed collaborative degree programme agreements for its postgraduate students with a number of strategic partners, including a Cotutelle doctoral programme with the University of Bristol, UK.

The Technical University of Munich (TUM) has a worldwide network of collaboration partners that consists of various strategic partnerships and alliances, each with an individual focus: Strategic networks with selected partners enable cross-border and innovative forms of cooperation, especially in Europe; Flagship partnerships allow TUM to intensify its sometimes decades-long cooperation with world-leading universities in common areas of competence, while TUM's Global Strategic Alliances enable strategic cooperation in thematically focused formats.

The University of Leipzig (UL) has 56 bilateral institutional partnerships (16 in Europe, 40 outside), while the participation of the UL in networks and associations is regularly evaluated. An important strategic alliance for UL is Arqus, one of 44 European University Alliances selected and funded by the European Union.

The University of Waterloo (UW) has partnerships with more than 300 universities and research institutions in more than 50 countries/regions/locations. A strategic objective of UW is to develop a more focused institutional collaboration policy, by strengthening and increasing formal partnerships with strategic research partner institutions. An example of such a formal partnership is UW's collaboration with the University of Bordeaux, with which UW has organized internal calls for research proposals supporting UW and Bordeaux researchers with seed funding—most recently focused on artificial intelligence and health research. These internal, joint competitive schemes have resulted in

several conferences and workshops, new innovations and technologies, joint publications, and other valuable outcomes.

For the University of Plymouth, the further development of institutional partnerships is a strategic priority. In this, it emphasizes the importance of building significant partnerships with leading institutions in its areas of strength, marine and maritime sciences.

The Indian universities also highlight the importance of institutional collaborations. The University of Hyderabad indicates that it aims at developing meaningful and fruitful relationships with nationally and internationally reputed universities. In this, it focuses on the interests of its academic units as shown in the institutional guidelines that have been developed by the institution's office of international affairs. Jawaharlal Nehru University (JNU) has collaborated with universities across the world in research projects, conferences, and publications. It has many active MoUs with international and national universities and exchanges faculty and students with them regularly, while it also hosts the Indian segment of some international degree programmes.

A special position is taken by New York University (NYU) that instead of developing strategic partnerships with other universities emphasizes that it is reimagining what it is to be a university in the 21st century with a presence across the globe including degree granting campuses in Abu Dhabi and Shanghai as well as 12 study away sites throughout the world.

Theme 5: Collaboration with non-university partners

Most universities included in the study highlight the importance of their collaboration with universities and other academic partners, but for some of the universities, collaboration with non-academic partners is a key component of their institutional strategy. This is related to the universities' knowledge transfer ambitions, their strategic objectives to contribute to the economic competitiveness of their region and country, or their goals of contributing to social inclusion, equal opportunities and the strengthening of democratic institutions in their society.

For that purpose, Stellenbosch University (SU) aims at promoting partnerships with private sector firms and government, which will include work-integrated learning, continuing professional development, collaborative research, consulting, licensing, spin-out companies, and commercial ventures. Furthermore, the University of Leipzig (UL) has defined the transfer of knowledge as a performance dimension that visibly shapes its profile and creates competitive advantages. In this, UL indicates that the scope and quality of the university transfer services should be ensured through continuous monitoring of cooperation potentials and with special consideration of the networks and associations in which UL is involved. In addition, UL is committed to strengthen the transfer of knowledge into municipal and regional contexts. With partners, such as the City of Leipzig, UL is active in shaping the regional innovation ecosystem.

Furthermore, some universities emphasize the importance of collaborating with private and/or public partner organizations from outside academia in relation with their local, regional and national goals. In some cases, these goals can be linked to their government's higher education policies. For example, the University of Waterloo (UW) has signed a Strategic Mandate Agreement with the Ontario Ministry of Colleges and Universities. This Agreement presents the University's profile, that is, how the university's institutional mission and strategic goals support the priority areas of the Ontario government. In addition, the agreed upon performance of UW for a period of five years (2020-2025) is included. The Agreement is part of the Ontario government's policy for supporting a differentiated higher education system. In this, UW agreed with its government to have a specific role in the support of Ontario's economy, which includes the collaboration with employers in its well-known cooperative education programs. In addition, UW wants to increase private-sector partnerships to develop and deploy new technologies that enhance the competitiveness and innovation of Ontarian and Canadian business. It also wants to increase partnerships with the public and not-for-profit sectors to catalyse important policy developments. For that purpose, UW wants to increase work-integrated learning opportunities in its graduate studies and increase the availability and depth of partnerships with external agencies to advance applied research and learning opportunities for graduate students, post-doctoral fellows, and faculty.

Institutionally, university, industry, and government form the 'triple helix' of science production, with specific developments of these inter-institutional, boundary-spanning networks leading to different innovation dynamics (Leydesdorff and Etzkowitz 1998). With the university being the central knowledge organization in this 'triple helix' relationship, with its crucial capacity for transferring knowledge intergenerationally, between disciplines, and across cultural boundaries, research must delve deeper into the learning opportunities, networks, and types of collaboration this central organizational form enables. The importance of this type of strategic collaboration is also reflected in governmental policies, but we know currently little about the learning opportunities, intended and realized outcomes, governance structures, and competitive advantages for the university of this type of collaboration (Powell 2018: 5-6).

Theme 6: Disciplinary diversity

There are important differences among disciplines when it comes to their role in university collaboration and the extent to which they are impacted by competitive schemes. These differences can be expected to have an impact on universities, leading, for example, to different competition strategies for technical universities, compared to medical universities or comprehensive universities with large social science and humanities faculties. At the same time, there is little empirical research done on the influence of disciplines on the transformation of competition and collaboration, nor on how this transformation affects disciplines. The available studies on evaluation in specific disciplines show how research evaluation affects the structural organization and cognitive development of disciplinary research. Different conceptualizations of disciplinary research and development across countries and regions are crucial to analyse. Furthermore, there are substantial regional differences in the global science system when it comes to the contributions to cutting-edge scientific communication and disciplinary debates. This requires the need for intercultural research collaborations beyond the extensive links that exist across the global North.

In addition, transdisciplinary collaborations among individual scientists, research teams, and universities demand enhanced attention, especially to understand the conditions for these collaborations to be successful and their consequences for traditional disciplinary structures and cultures. More research is needed to examine the impact of internal and external competition and strategic institutional collaboration on the power balance between disciplines or within disciplines.

For many universities their disciplinary profile is an important framework condition for their understanding and use of competition and collaboration. For example, Adam Mickiewicz University (AMU) consists of a relatively small group of natural science faculties and a large group of humanities and social science faculties. The internal incentive schemes are aimed at strengthening the academic performance of the social sciences and humanities, while the university leadership also wants to further expand the natural sciences at AMU. Creating an effective and acceptable balance between the competitive schemes for the social sciences and humanities and for the natural sciences is seen as a challenging task by the university leadership.

At the University of Leipzig, it is argued that the historically grown variety of scientific disciplines is a particular strength of UL. However, in order to further strengthen the competitive position of the university and further develop the profile of the UL, the traditional diversity has to be coordinated and connected. For this purpose, UL bundles its scientific strengths in three strategic research fields, which in the long term will involve the humanities and social sciences, life sciences and medicine as well as the natural sciences and computer science in roughly equal parts. On top of this, a consistent inter- and transdisciplinary exchange between scientists is regarded to be necessary for creating transitions, cooperation and knowledge re-combinations.

Strategic development of selected universities[3]

University of California San Diego, United States

The University of California, San Diego (UCSD) is recognized as one of the top 10 public U.S. universities, is consistently ranked among the 40 best universities in the world[4], and is ranked number one in the US for public service by the Washington Monthly. As a public university, UCSD has gone through a remarkable development the last 10 years as illustrated by its institutional strategy and profile, which have changed from being disciplinary and multi-thematically oriented to becoming more cross-disciplinary and thematically focused. Here we will discuss how competition and collaboration play a role in the strategic development of UCSD.

At UCSD collaboration is utilized mainly as a means to achieve a more competitive international profile. This is exemplified in the university's internationalization strategy, which presents four strategic pillars the university has identified for providing what it calls 'global leadership through internationalization'. The first pillar, *Break silos to build bridges*, is aimed at developing a collaborative structure to enhance the work across all schools, divisions and health sciences, and build bridges across the globe. As part of this strategic pillar, UCSD wants to expand participation in international research and education consortia. The second strategic pillar, *Cultivate a culture of global citizenship*, aims at expanding existing curricular models to support global learning opportunities for all students. Furthermore, the third pillar, *Support Faculty & Scholars as frontline champions of internationalization*, wants to stimulate and support the exploration of new modalities for international research and instruction. Finally, the fourth pillar, *Create a community of lifelong Tritons*, states that UCSD has a desire to support a more diverse applicant pool. Through these four strategic pillars, the university aims at framing collaboration on campus, in the region, and internationally as a key tool to grow its international esteem, and in turn be perceived as more internationally competitive.

A key element in the institutional strategy is the recognition that an important prerequisite for becoming more internationally competitive is the need to break down the so-called UC San Diego silos. This breaking of traditional silos is also emphasized as an achievement of UCSD in the university's research strategy, with the aim "to assemble cross-disciplinary, flexible research teams with a common

purpose: to further our understanding of how the world works and the actions we can take to make it a better place."

The utilization of collaboration in order to enhance the university's competitiveness is addressed in UCSD's Strategic Plan Report, which is described as a 'living document'. It details the five transformation goals and four grand research themes of the university. One of the five goals of the plan is to nurture and support a collaborative and interdisciplinary research culture that advances the frontiers of knowledge, shapes new fields, and disseminates discoveries that transform lives. The strategic plan confirms that UCSD's commitment to institutional collaboration is framed in terms of increasing university competitiveness, as two of the metrics for measured success are the 'effectiveness of increasing global awareness of UC San Diego's impact' and 'the ability to attract external support'.

The variety in UCSD's strategic collaboration activities can be illustrated by The Tata Institute for Genetics and Society (TIGS), a partnership between the University of California San Diego, the India-based philanthropic Tata Trusts and the Institute for Stem Cell Biology and Regenerative Medicine (InStem) in Bangalore, Karnataka, India. UCSD is home to the lead unit of the Institute (TIGS-UC San Diego), which is aimed at supporting Indian research and addressing health-related issues in India. TIGS-UC San Diego and TIGS-India work collaboratively to train personnel, advance research and facilitate the broad applications of new technologies for human health and agriculture, based on self-propagating genetic elements referred to as Active Genetics.

A key area where the university engages in this interplay of collaboration and competition is through the framing of research, which is presented as global in scope and comparison. Through this global positioning of the university's research, one can argue that UCSD views itself in competition with research-intensive universities across the globe. This global view of the university's research competitiveness is enforced by its own words, as the strategic plan states that its disciplinary research "[compares] favourably with that of our peers around the world," but its interdisciplinary research is where UCSD regards itself to be most competitive. Furthermore, this statement reveals that its strategy for being competitive relies on collaboration between the disciplines via interdisciplinary research.

UCSD's research strategy incorporates various trends in relation to how the university navigates competition and collaboration. First, the research themes presented in the university's strategic plan confirm that UCSD prioritizes interdisciplinary research and collaboration in order to be globally competitive.[5] Second, in its current research strategy, UCSD focuses on 'climate change' as a key research theme, organized into four broad themes: Climate Science and Impacts, Adaptation and Solutions, Policy and Climate Justice. The university's commitment to climate change is operationalized through 17 climate-change related research centers, cross-campus collaborations in various research areas, and academic study programs.

UCSD's current focus on climate change is in line with the importance of sustainability and climate change as key profiling themes for research-intensive universities around the world. The identification of climate change as a key thematic area for UCSD's academic activities reflects the development at the university from the strategic plan launched in 2014 in which 'Understanding and protecting the Planet' was one of four grand research themes, to the current emphasis on climate change as a key profiling theme for the university.

University of Glasgow, Scotland

The University of Glasgow is the fourth oldest university in the English-speaking world and a member of the Russell Group of leading UK research universities. It is consistently ranked among the 150 best universities in the world[6].

At the University of Glasgow, global strategic collaboration is at the forefront of the university's current strategic plan, international strategy, and research strategy. To begin with, the strategic plan for the university is titled *World Changers Together: World Changing Glasgow 2025*, revealing that one ambition driving the strategy is to enhance the global and local impact of the university through strengthening its partnerships. This concerns research partnerships, transnational education partnerships, and partnerships with industry, government and third sector organizations worldwide. Additionally, the International Strategy 2025 also emphasizes the strategic importance of collaboration by stating that, "it is this ethos of teamwork and collaboration that is at the heart of our international strategy". Further, in the Research Strategy 2020-2025, collaboration is highlighted as one of the three research priorities, and the report's foreword states that, "the future requires looking beyond our boundaries and combining our ideas with those of others". From these three key strategic documents, it is obvious that collaboration is a driving element of the University of Glasgow's current institutional strategies.

The university's aim to enhance its global and local impact through strategic collaborations is also confirmed in its research strategy's description of collaboration as a strategic priority, indicating that successful partnerships depend on recognising the different, specialist contributions that are made to the research and innovation endeavours, and so we will reflect the importance of partnership in our investments. This strategic utilization of collaboration is further explained in the university's internationalization strategy, where four types of institutional collaborations are identified: priority partners,

international networks and alliances, mobility partners, and programme partners. Strategically most important are the priority partners, which are described as those institutions with and for which the university has invested funding with the specific objective of nurturing the relationship.

Considering this strategic use of collaboration in order to create an image of itself as 'world changing', collaboration also plays a part in how the University of Glasgow navigates competition. Specifically, the University of Glasgow perceives competitiveness as esteem measured through global rankings. This is revealed in the Global Glasgow: Internationalization Strategy 2025, which lists global reputation as one of its four strategic priorities and states that "global reputation underpins the success of the institution". Further, this strategy explicitly mentions the use of global rankings for measuring the global status of the university, in the sense that the university will seek to enhance the University's global reputation in support of an improved position in world university rankings. Consequently, as the university views success through reputation, strategic collaboration aims to build the university's image as globally impactful and is a means to achieve competitiveness. This idea is further supported by the university's key principles for working internationally, in the sense that the university argues that it succeeds when its collaborators succeed. As a result, the university positions its own status and competitiveness in a global context as expressed in rankings, and it aims at strengthening its competitiveness through its strategic collaboration activities.

The University of Glasgow's institutional strategies illustrate collaboration and competition trends identified in this study. First, the strategies show that the university positions its competition and collaboration mainly in global terms. This can be observed through the overarching strategy of 'world changers together', which gives global collaboration a central role in the university's strategic ambitions, while simultaneously positioning this global collaboration as the means to achieve a competitive edge. Second, the University of Glasgow prioritizes strategic collaboration, where partnerships which help the university achieve its vision are emphasized and sought out. This is revealed in how partnerships are framed in the research strategy, and through the existence of 'priority partnerships' as a prime category of institutional collaboration. Finally, the University of Glasgow is a good example of how the narrative surrounding global competition is changing for many universities, as they begin to view competition as the challenge to globalize. This is exemplified in the University of Glasgow's narrative that through strategic global collaboration, the university will strengthen its own competitiveness and achieve its desire to become 'The World-Changing University'.

University of Groningen, The Netherlands

The University of Groningen was established in 1614 and is currently, with around 30 000 students, among the three largest universities in the Netherlands. It presents itself as a top 100 university referring to its consistent position among the 100 highest ranked universities in various global rankings[7].

At the University of Groningen, collaboration has a strong regional component that includes both university and non-university networks and partners. While the university also prioritizes international collaboration and competition throughout its 2021-2026 Strategic Plan, this institutional plan has a noticeably strong focus on regional university collaboration, with the *Universiteit van het Noorden* (University of the North) network being highlighted throughout the plan. Described in the strategic plan as an open network of research universities and universities of applied sciences in the Northern Netherlands and Northwest Germany, the *Universiteit van het Noorden* is framed as one of the overarching elements of university's strategic plan. Additionally, the regional focus of the university's collaboration navigation is displayed in its focus on societal contributions. The strategic plan has an entire section that focuses on societal impact, which discusses its aim of positively impacting society in collaboration with social partners. This aim reveals that while the university also positions itself internationally, the university has a strong regional orientation, and as a result, commits itself clearly to contribute to the society around the university through its collaboration with regional partners.

Furthermore, these regional collaboration efforts show that the University of Groningen also places value on non-university collaboration. For example, when it comes to the *Universiteit van het Noorden* network, the university emphasizes the participation of not just the involved universities, but also the non-academic partners. It proclaims that, together with the business community and civil society, *Universiteit van het Noorden* wants to fully utilize and increase the economic strength of its geographical region on both sides of the Dutch-German border. Further, in the research vision for the university, it is stated that the university aims at continuously strengthening and consolidating collaboration with international, national and regional partners in academia, industry and society.

In its international collaboration strategy, the University of Groningen places specific emphasis on European collaboration. The internationalization section of the 2021-2026 Strategic Plan explicitly divides the geographical focus of the strategy into three sections: global focus, European focus, and regional focus. From this division, one can observe two important trends. First, the choice to include regional cooperation in the international section highlights the importance of regional positioning for the University of Groningen, especially considering that it is already included in other sections of

the plan. Further, this division shows that Europe is prioritized separately from the rest of the global relations, which are grouped together. Importantly, when discussing global partnerships, there is a strong emphasis on the university's commitment to academic capacity building in the Global South with reference to the Sustainable Development Goals. In the European section of the strategic plan, it is indicated that the university aims at further intensifying European collaboration. An important role in this is expected to be played by the European University alliance ENLIGHT of which the University of Groningen is one of nine members. With reference to expanding funding opportunities for European collaboration, the University of Groningen indicates that it wants to contribute to the fundamental transformation of European higher education and research. The university expects that this commitment to European collaboration will be to the benefit of especially intra-European student mobility and research collaboration.

With respect to how the University of Groningen navigates competition, the 2021-2026 Strategic Plan reveals that the university is competing to retain its place in international rankings, in addition to gaining resources, such as students and funding. To begin with, the university frames its competition for prestige and esteem via international rankings. However, it does not appear to strive for a rise in ranking and power, but instead the university wants to maintain its current high position in the relevant international rankings. The University of Groningen stresses that its competitive edge is the result of its researchers and proposes research management strategies that support and retain them, in order to maintain its institutional competitiveness. Further, the competition for resources is an important challenge for the University of Groningen. Interestingly, the university engages this competition through the same method as it engages the competition for esteem: through the maintenance and support of researchers. According to the strategic plan, "increasing competition for funding and for talent…can only be met by being innovative in our research, by supporting our staff, by being an attractive employer, and by enhancing our contacts with society".

In conclusion, the University of Groningen is committed to collaboration with a regional and European focus, with a specific strategic ambition to strengthen collaboration with the Global South, and it employs a strategy of maintenance in the competition for funding and highly qualified academic staff. Furthermore, the University of Groningen is through its regional positioning, which is supported by an emphasis on topics such as societal impact, confirming the interpretation that universities often navigate competition and collaboration in a variety of ways depending on the geographical focus identified. This implies, for example, that in its regional positioning collaboration with a variety of partners is a key strategy, without an explicit assumed impact on the university's competitiveness. At the European level the university wants to use the expanding funding opportunities to enhance collaboration, which is expected to have a positive impact on the university's competitiveness, for example, in the recruitment of highly qualified academic staff. At the same time, the commitment to European collaboration is also legitimized by the university's ambition to contribute to the tackling of major societal transitions. Finally, globally the university wants to enhance its competitiveness in order to secure and maintain its global status as a top 100 research university, combined with a contribution to the SDGs and capacity building in the Global South. Further, in the university's strategic institutional partnerships, the importance of collaboration with non-university partners is growing.

The University of Melbourne, Australia

The University of Melbourne is established in 1853 and is Australia's second oldest university. It presents itself as Australia's #1 university and largest research university and is consistently ranked among the 40 best research universities in the world[8].

The University of Melbourne engages in output-based and strategic navigation of collaboration and competition, where increasing focus on regional cooperation is combined with a strong view towards global competitiveness. Specifically, the University of Melbourne navigates both competition and collaboration through a strategic, output-based approach. This approach is exemplified in the prominence of output related diction throughout the university's key strategic documents. For example, the current institutional strategy, *Advancing Melbourne 2030*, argues that the University of Melbourne needed a new strategy because "the competition between universities and between nations for talented people and investment in knowledge and innovation is global and intense. Increasingly, national competitiveness rests on the strengths of universities". At the same time, the strategy argues that, "the measure of a great university lies in the extent and productivity of its collaborations in advancing the frontiers of knowledge". The latter perspective is legitimized with the argument that the traditionally globally leading research universities, such as the University of Melbourne, are increasingly challenged by Asian universities. In this the strategy shows how the University of Melbourne sees collaboration as crucial for being able to deal successfully with emerging competitors.

The University of Melbourne navigates collaboration and competition, amongst other things, through an output-based approach. For example, the benefits of international research partnerships are presented as increasing the quality, output, and impact of research. As a result, a key element of the university's navigation of collaboration and competition is that outcomes and measurable benefits,

such as income and impact scores, are a driving navigational force.

Considering this approach, the university promotes institutional collaboration with an increasingly regional and local focus, while retaining strategic international partnerships. With respect to the university's regional collaboration aspirations, the university strategy writes that one of the global priorities for the university is to "become a hub of knowledge and research for the Asia Pacific region". While also highlighting the university's desire to be a leader in research on regional challenges, the university explains that this priority also aims to create partnerships with Asia's rising research, innovation and education powerhouses. This strategic ambition is operationalized in the document *Engaging With China 2020-2024*, where it states that the university will strengthen collaboration with partners such as Asialink, the Association of Pacific Rim Universities, and joint Australia-China Research centers. Further, in the research strategy, the university highlights its goal to increase collaboration with local, non-university partners, as "Australia stands out amongst its global peers as an underperformer on several metrics of research and development, especially as these relate to business activity". However, it is important to note that while the university's strategic focus is to enhance strategic partnerships in the Asian-Pacific region and locally, they still value existing global partnerships because they benefit their outputs. The research strategy also states that the university "will continue to encourage joint research with well-placed European and North American scholars, recognizing that publications co-authored with researchers from these regions are cited more frequently and are likely to have greater impact".

In terms of competition, the University of Melbourne's strategy utilizes outputs to maintain its global position. Specifically, the university argues that it has moved from an era when it measured itself against Australian peers to a context in which it measures itself against global peers.[9] Further, the university indicates that this shift was made possible by following a strategy aimed at enhancing the university's competitiveness in order to raise its global relevance and ranking. For that purpose, it emphasized the importance of rewarding impact as a goal of research, as well as academic quality. From this statement, combined with the section on research performance measures, output and bibliometric measurements are key aspects of how the University of Melbourne navigates its goal to cement by 2025 its position "well within the top 50 research-intensive universities in the world, as reflected in the Shanghai Jiao Tong ranking and other indices".

This discussion of the University of Melbourne's strategic development highlights some key themes regarding how universities currently navigate competition and collaboration. First, the University of Melbourne's global positioning of competition combined with an increasing focus on regional and local collaboration is a good example of how a university navigates the relationship between global and regional focuses. Second, the importance of measurable outputs, such as bibliometric data, in order to gauge the institution's competitiveness reveals how these measurement systems have become an important tool for universities to compete. Further, the University of Melbourne's use of bibliometrics to value its collaboration agreements, as revealed in its statement on US and European partners, suggests that bibliometrics are also an important tool for measuring the impact of university collaboration. Finally, the University of Melbourne is an insightful example of how collaboration is often navigated strategically, as the university prioritizes retaining and gaining partnerships which benefit their own strategic advancement and goals.

Technical University of Munich, Germany

The Technical University of Munich (TUM) was established in 1868 and is currently one of Germany's largest universities. It presents itself as the best German university, as exemplified by its current place in the global university rankings[10].

TUM maintains and strengthens an internationally competitive profile, amongst other things, through building on its national competitiveness. Specifically, the institutional strategy *TUM Agenda 2030* is funded and impacted by the Excellence Strategy, a government-initiated funding program that rewards both Clusters of Excellence and Universities of Excellence. As a result, TUM places a strong focus on the Excellence Strategy within its TUM Agenda 2030 in order to retain its nationally competitive edge, which provides both prestige and funding that are necessary for furthering the university's competitive international profile. TUM is the only technical university that has continuously retained the excellence status in Germany since 2006. As the university is both a University of Excellence and a current member of four Clusters of Excellence, its competitive national profile results in funding which is from the government's perspective intended to strengthen the German science location in international competition in the long term and to make it more internationally visible.

In consequence of this nationally competitive focus within the TUM Agenda 2030, the competitiveness of TUM requires a strong degree of university and non-university collaboration within Germany. To begin with, the university's Clusters of Excellence are key collaboration activities which partner the Technical University of Munich with other universities and scientific institutions, such as the Max Planck Institute. This means that the university gains a competitive research edge, necessary funding, and heightened esteem from both university and non-university collaboration within Germany. It is relevant here to mention the ONE

MUNICH Strategy Forum, which was established in 2021 by TUM and the Ludwig-Maximilians-Universität Munich (LMU). The Forum is supported by the Bavarian Ministry of Science and Art to consolidate scientific potentials and to strengthen Munich as an attractive location in the international scene. In addition to the two university partners, also a variety of non-university organizations participate in ONE MUNICH, and this collaboration has until now resulted in three interdisciplinary projects covering Biofabrication, Quantum Communication, and Artificial Intelligence and Robotics.

Further, strategic European and international collaboration is utilized by TUM in order to strengthen the university's competitiveness. TUM's worldwide network is made up of diverse strategic partnerships and alliances, each with a specific profile and focus, that is, strategic networks, flagship partnerships, and global strategic alliances. Strategic networks consist of selected TUM partners and enable cross-border and innovative forms of collaboration, especially in Europe. One of the strategic networks of TUM is a European University alliance, called the EuroTeQ Engineering University. Flagship partnerships are used by TUM to deepen its often decades-long collaboration with leading universities worldwide in common areas of expertise. TUM's current flagship partnerships are with Imperial College London (UK), Tsinghua University (China), and the University of Queensland (Australia). Furthermore, TUM's Global Strategic Alliances enable strategic collaborations in formats focused thematically on sustainability issues. Currently, TUM has formed such a strategic alliance with Kwame Nkrumah University of Science and Technology (KNUST) in Ghana. In addition, it has co-founded the so-called Indo-German Partnership (IGP), a project funded by the DAAD and the Indian University Grants Commission. IGP consists of TUM and the two Indian Institutes of Technology Bombay and Kharagpur. This alliance supports joint research focusing on climate change, environment, energy, mobility, and transportation.

Ultimately, the ways in which the Technical University of Munich navigate collaboration and competition can be linked to a number of the themes identified in this study. To begin with, while TUM positions itself globally in terms of competition, national and regional collaboration are utilized as tools to maintain and enhance the university's global competitiveness. This is in line with the theme that the positioning of universities as either regional or global tends to impact how they navigate collaboration and competition. Secondly, the university is a good example of how, in addition to traditional university partnerships, non-university partnerships are becoming increasingly important for research-intensive universities. This is exemplified through the research done by the ONE MUNICH Strategy Forum and the Clusters of Excellence. Finally, the obvious trends in the different types of international partnerships reveal that TUM engages in various types of institutional partnerships. This relates to the theme that universities are increasingly engaging in strategic partnerships, as opposed to symbolic partnerships. Finally, TUM also shows that research universities do not use one interpretation of competition and collaboration but adapt their institutional approaches to both to the geographical and thematic-academic focus of the strategic goal and activity in question.

Endnotes

1
As a frame of reference, in 2022 the University of Plymouth is ranked 501-600 in the Shanghai Ranking. Its best ranked subject areas in 2022 in the same ranking are marine ocean engineering (rank 20) and oceanography (rank 50). In the Times Higher Education World University Rankings 2023, the University of Plymouth is ranked 401-500.

2
See: https://www.bgi.sec.tsukuba.ac.jp/en/partner-organizations/

3
The documents that were used for producing these five university overviews are included as a separate part of the list of consulted literature at the end of the report.

4
In the Academic Ranking of World Universities (ARWU), for example, UCSD is ranked nr 21 in 2022, while it is ranked nr 32 in 2023 in the World University Ranking of the Times Higher.

5
See: https://plan.ucsd.edu/about#four-grand-research-themes

6
In the Academic Ranking of World Universities (ARWU), for example, the University of Glasgow was ranked 101-150 in 2022, while it is ranked nr 82 in 2023 in the World University Ranking of the Times Higher.

7
In the Academic Ranking of World Universities (ARWU), for example, the University of Groningen was ranked in the 66th place in 2022, while it is ranked in the 75th place in 2023 in the World University Ranking of the Times Higher. For the position of the University of Groningen in other rankings, see: https://www.rug.nl/about-ug/profile/facts-and-figures/position-international-rankings

8
In the Academic Ranking of World Universities (ARWU), for example, the University of Melbourne was ranked in the 32nd place in 2022, while it is ranked in the 34th place in 2023 in the World University Ranking of the Times Higher.

9
This can be illustrated by the improvement of the university's place in global rankings. While in the 2003 the university was ranked as the second Australian university in the 92nd place in the Academic Ranking of World Universities (ARWU), in 2022 it was the highest ranked Australian university in this ranking in place 32.

10
In the Academic Ranking of World Universities (ARWU), the Technical University of Munich (TUM) was ranked in the 56th place in 2022, while it is ranked in the 30th place in 2023 in the World University Ranking of the Times Higher. In both rankings TUM is the highest placed German university.

CHAPTER 5

Way forward

The remarkable expansion of science reflects contrasting and simultaneous trends including intensifying competition at all levels complemented by new forms of strategic collaboration among universities. In the academic literature various convincing and relevant conceptualizations and interpretations of the transformation of competition and collaboration in higher education can be found, however, relatively little valid empirical evidence is produced on the effects of new forms of competition and collaboration on universities.

The six themes presented in the previous chapter give several indications of the ways in which research universities interpret and use competition and collaboration in their strategic development. The discussion of the strategic use of competition and collaboration in five universities added some practical insights to the presentation of the general themes. However, they do provide limited empirical evidence on the actual impact of the transformation in competition and collaboration on the university, for example, on the behavior and attitudes of academics, the development of the quality of teaching and research, and the extent to which utilitarianism is replacing curiosity in the development of research problems. The kind of international comparative research that would contribute to our understanding of the impact of the new forms of competition and collaboration would require levels of funding and research capacity that currently are not available. This means that university leaders must decide how to navigate intensifying competition and institutional collaboration without valid knowledge on the range of possible impacts of both in a period where the global circumstances for higher education and research are changing rather dramatically.

For identifying a way forward for university leaders, several opportunities in navigating competition and collaboration are identified in this study.

To begin with, all universities in the study highlight sustainability as an important strategic theme and most present contributing to the realization of the SDGs as a strategic institutional objective. Related to this, the study finds a broad commitment among the universities to prioritize academic activities addressing climate change, renewable energy, and more general the green transformation. This commitment involves all disciplinary areas of the universities, and is seen as requiring collaboration across disciplinary, institutional, national, and cultural boundaries. The latter offers important opportunities for universities to distance themselves from the negative effects of the global competition for status as a zero-sum game. A university can only move up in the global

rankings if another moves down. Instead of explicitly presenting the places in various rankings on their website and in institutional documents as evidence for their global competitiveness, research universities could present sustainability collaboration as a key achievement, for example, by developing joint websites and information documents with their academic, and if applicable, non-academic partners. Many university leaders criticize rankings, but at the same time, practically all research universities refer prominently to their current rankings and the position they want to achieve in future rankings. With the serious defects all rankings have, university leaders should seriously consider whether the continuous reference to rankings is in the best interest of their institutions. As indicated, if research universities want to highlight their performance this could be presented from a collaborative instead of competitive perspective. This could also be a key theme to take up with public authorities, agencies, and other stakeholders: how to move from measurements of individual academic performance by using impersonal metrics and indicators as the foundation for universities' competitiveness, to the assessment of institutional performance in the contribution to the achievement of the SDGs and other mutually agreed social, economic, and cultural objectives? In the latter, collaborative achievements could feature prominently.

In addition, the global acknowledgement of the universities' role in realizing the achievement of the SDGs raise some questions about the effectiveness of the universities' organization and governance features. One issue to address is the current imbalance in most universities between disciplinary and interdisciplinary academic activities. In this, it is of relevance to achieve intra-university understandings on how disciplinary developments can be combined with interdisciplinary research, teaching, and knowledge applications. Here various universities in our study, for example, UCSD, provide relevant insights into how a more inter- or multidisciplinary organization of the university could look like.

Furthermore, most universities in this study have developed strategic partnerships and/or are member of one or more formal alliances that address sustainability and climate change themes in their collaboration programs. There are also various universities in this study that provide insights into how strategic collaborations can be used to strengthen the participating universities' institutional commitment to sustainability, for example, by developing complementary areas of expertise.

Given the global challenges with respect to moving towards more sustainable ways of life, this is a profile area that can be used by university leaders to undertake collective action, aimed at developing joint research agendas and programs at a more international level than currently is happening, and enhancing both open and strategic research funding levels at the national level. Collectively, university leaders could aim, for example, at convincing national public authorities that competition for open and strategic sustainability funding should not be driven and decided by impersonal references and metrics of the individual researchers involved in the application, but also by the level and nature of the collaboration incorporated in the project for which funding is requested. In addition, university leaders could undertake collective action with respect to the ways in which performance is communicated. Global and national university rankings do not represent the range of tasks and missions a university has, but instead are using a reductionist approach that isolates major developments in complex national and global systems and institutions to the impact of a single variable. The ratings and metrics used internally for assessing faculty performance are also reductionistic and do not necessarily measure the performance the university wants to reward. Collectively universities could develop alternatives for the current performance measurements, which would, for example, allow for a more diversified way of measuring the achievements of academic staff, including contributions to university collaborations, or social engagement activities[1]. As indicated, with respect to assessing and comparing the performance of universities, indicators focused on sustainability contributions could be included.

The second opportunity to mention is that universities can more effectively navigate competition and collaboration by being aware of the risks involved in the transformation of competition and especially their involvement in the global competition for status. This concerns, for example, the possible impact of the participation in the competition for status on the internal structure and culture of universities with negative effects on their primary activities and tasks. A second risk is the possible loss institutional autonomy, for example, to an organization organizing a ranking or an alliance of which a university is a member. A third risk is that involvement in the global competition for status reduces the institutional capacity for undertaking other, more fundamental tasks. This might threaten basic institutional values and the purpose of universities. A final risk that the global competition for status can become an aim in itself, turning into entertainment industry with awards and premiums, etc. In this, we can point, for example, to the existence of a private sector university ranking industry, which has clear commercial interests in the further development of the global status competition and in developing new forms of higher education competition. Awareness of these risks will help in avoiding unproductive investments, for example, in competition-oriented staff capacity, and can also lead to better matching and less instrumental

connections of competition and collaboration in the strategic development of universities.

The third opportunity relates to various kinds of inequities continuing to characterize the global science system. Even though the research productivity of several universities in the Global South is increasing, there still is a significant North-South gap when it comes to doctoral education capacity and productivity, career opportunities for early career academics, research infrastructure and equipment, research funding, and administrative support structures. The multilateral ideology underlying the joint AU-EU Innovation Agenda shows a way forward for university leaders also outside Africa and Europe when it comes to the creation of equal university partnerships in an unequal world. The AU-EU Innovation Agenda can be used as a frame of reference for collective action of university leaders towards national authorities for strongly promoting multilateral science collaboration and the need to use public funding for supporting global university collaboration with multiple purposes, including reducing global science inequities. For the sustainable development of all our societies the scientific capacity of universities in the Global South needs to be structurally enhanced. This is not a short-term activity but requires long-term investments and commitment. The current global competition for status excludes nearly all universities from the Global South. Long-term commitments to reduce global science inequities are required and the coming 10-15 years will form a crucial period for realizing these commitments. In this, there are several examples among the universities in this study of strategic partnerships between a university in the Global North and a university in the Global South, for example, at Cardiff University, the University of Glasgow, and the University of Groningen. But even at these universities the North-South collaboration is between in essence unequal partners, which is visible in the organization, governance, funding, and presentation of these partnerships. Therefore, an important way forward in this is for universities involved in North-South partnerships to address the various inequality dimensions in the partnership and develop a long-term plan for how the partnership will contribute to reducing the inequalities. In addition, the presentation of these partnerships can become better integrated in the sense of becoming more balanced and equal. Currently, information on the partnerships is mainly if not exclusively found on the websites of the university in the Global North, and it is not clear, for example, what the role of the university in the Global South is in the partnership, nor in how far the partnership contributes to reducing inequalities.

The fourth opportunity concerns the universities' dealing with competition in the form of performance-based funding (PBF) systems and performance agreements. While governments increasingly introduce PBF systems, there is little evidence that they produce the intended outcomes in the sense of improved performance of universities in agreed upon areas, overall quality of education and research, or a more efficient use of public funding. In this universities could contribute to a better understanding of the pros and cons of PBF systems and performance agreements, for example, by instigating the development of an international data basis on the nature and impact of PBF systems. Given public authorities' emphasis on using performance as a central parameter in the public funding of universities, it is crucial that the evidence basis for this funding development is significantly improved, and universities should consider how they can contribute to this improvement.

Finally, research universities should consider how they could respond collectively to the global shift from open research funding to strategic, thematic research funding programs. This shift undermines necessary long-term commitments to basic research[2] and research priorities identified by the academic community. As argued at the fifth anniversary of the European Research Council (ERC) by the ERC's then President Helga Nowotny, "we simply do not know what we do not know".[3] Also from an academic freedom perspective it is therefore important to create and maintain ample opportunities for academics to follow their own research agenda. In addition, it is important that university leaders use their authority to pressure public authorities and agencies in their own country to maintain academic representatives in the boards of national research councils and other relevant bodies. The current 'de-sectorization' of the public governance of especially research consists, for example, of the replacement of top academics in the boards of research councils and other relevant agencies by members who represent certain socio-economic or political interests but lack an understanding of the specific features of academia and the main national and global scientific developments.

Endnotes

1
See, for example, John Douglas's discussion of ranking and 'world class' fatigue among universities in various countries, and ways to re-interpret university missions and activities (see: https://www.universityworldnews.com/post.php?story=20230228140706761)

2
Other terms used in this are: fundamental research, blue sky research, risk taking research, and frontier research.

3
See: https://www.iea-nantes.fr/en/news/opening-address-of-prof-helga-nowotny-president-of-the-european-research-council-erc-fifth-anniversary-brussels-29-february-2012_330

CHAPTER 6

Competition and collaboration in higher education: final reflections

Collaboration and competition have always been part of higher education in one form or another. However, throughout the last decades quite dramatic transformations of competition and collaboration have been taking place in higher education, which can be argued to have potentially far-reaching effects on higher education systems and institutions around the world. One of the dominant, New Public Management (NPM) inspired narratives in this transformation is that competition for resources among universities leads to better performance in the form of higher quality of education and research, lower dropout rates, higher research productivity, and more efficient use of funding, than high levels of basic public grants. This narrative emerged as part of changing governance relationships between higher education and public authorities embedded in many countries in NPM modes of public governance. In addition, higher education systems and institutions were affected by dramatic sectoral transformations. These include the unprecedented growth in student numbers often referred to as massification, the significant increase of public and private investments in academic research, the inflation plus increase in the costs of higher education and research, as well as the growing political and economic interest in the outcomes of higher education as a consequence of the rise of the notion of the knowledge economy. The latter strongly contributed to higher education and research becoming politically more important, which in practice meant that they were treated less as a special, rather protected sector, but gradually more like other public sectors with the consequence of being subjected to the same requirements concerning performance, relevance, responsiveness, use-orientation and accountability.

In particular, the transformation of competition has received significant attention in academic literature and higher education practice. This included the assumed relationship between the enhanced global competitiveness of universities and the economic competitiveness of their home countries. The growing use of competition by public authorities was largely anchored in this assumption and expected that enhanced global competitiveness of universities would make them more attractive for talented students and high quality staff, and would also stimulate the production of economically relevant knowledge. While collaboration has also changed in higher education, and has become more strategic, institutional and formal, its transformation has received less attention. In addition, competition and collaboration have often been treated and conceptualized separately, and in the limited efforts to interpret the relationship bet-

ween the two, it has in general been assumed that the transformation and more strategic, institutional use of collaboration is driven by the universities' ambition to enhance their global competitiveness.

Strikingly, while the academic literature contains many valid and relevant conceptualizations of competition and collaboration, there are only a few empirical studies on the effects of the transformations of competition and/or collaboration, and practically all of these are national.[1] In addition, public authorities and agencies seem to believe strongly in the positive effects of especially competition on the quality of public services such as higher education and research. However, they are hardly ever effectively evaluating the use of different forms of competitive or collaborative instruments or programs, such as performance based funding.

So where are we in our understanding of the transformation of competition and collaboration in higher education? As indicated, the academic literature presents a rather thorough academic understanding of the nature of the transformation in competition and collaboration, but limited insights into the effects of the transformation on academic behavior, quality of teaching and learning, use of public funds, etc. For that, large, comparative research projects are needed, for which currently the funding and academic capacity is generally lacking. Nonetheless, this study provides relevant insights into the transformation of competition and collaboration in higher education based on a review of the academic literature and an examination of key documents and information from selected universities. Important findings of the study with respect to competition include:

- The transformation of competition has led to the emergence of universities as competitors, where before, the competitors in academia were individual academics (and their teams) and countries.
- It is essential to make a distinction between the global competition among research universities for status, and the national competition for resources. Only a few research-intensive universities compete globally for staff, students and financial resources, but even for these universities, the national competition for resources is essential.
- The global competition among universities for status is usually aimed at maintaining the current status position instead of seriously challenging universities with a higher status. One of the few factors that can change the relative status quo in global university status is a fundamental increase in public funding, as has been the case, for example, in China.
- Participating in the global competition for status incorporates a number of risks for universities, including loss of autonomy, reduction instead of increase in status, and reducing the institutional capacity for the primary academic tasks and activities.
- Universities generally refer to rankings when it comes to declaring their global status. Even though university leaders often criticize rankings and are aware of the serious defect of rankings, they still seem to accept them as the main evidence for their global competitiveness. At the same time, we can observe the emergence of a ranking and 'world class' fatigue among universities in various countries (Douglas 2023).
- The performance of universities as, for example, presented in rankings, is based on the assessment of individual academic performance with the use of impersonal metrics and ratings. Little progress has been made on assessing the performance of institutions as a whole.

When it comes to collaboration, the study's findings include:

- New types of institutional collaboration have emerged that should be distinguished from traditional forms of university cooperation. The latter is driven by expedience, characterized by limited objectives, short timeframes and agreements, and less commitment and risk-taking. Collaboration, on the other hand, involves long-term commitment in working toward a long-term joint vision or goal that results in something new. For that purpose, collaboration requires mutual respect, trust, openness, shared decision-making and shared risk-taking.
- Inter-university partnerships and membership of formal alliances form the main types of strategic institutional collaboration in higher education. These can be national and/or international.
- Multiple aims of the new types of university collaborations have been identified, including contributing to the competitiveness of the institutions involved, serving certain economic interests, reducing risks, and organizational learning.
- An area where university collaboration has flourished is sustainability. For many universities, sustainability has become a key component of their institutional profile. These universities use strategic partnerships and membership of alliances as an important means for realizing their institutional goals in the area of sustainability.
- In their strategic plans and other institutional documents, and on their websites, most universities pay more attention to their strategic collaborations than to their

competitive ambitions and behavior. Most universities present various types of partnerships and alliances of which they are member. In the overview of these partnerships and alliances, various purposes and strategic ambitions are highlighted. Various universities, for example, express their commitment to contributing to academic capacity building in the Global South by one or more strategic partnerships with a university located in a low-income country.

Furthermore, the study has discussed how the relationship of these two concepts can be interpreted. Important findings are:

- The use of strategic collaboration by universities to maintain or strengthen their global competitiveness. In some cases, the use of collaboration for supporting or enhancing the university's global competitiveness is mentioned explicitly, while other universities refer to this relationship more implicitly.
- This instrumental use of strategic institutional collaborations is in some cases promoted by a governmental funding program that is aimed at enhancing the global competitiveness of selected national universities. This concerns, for example, government-university performance agreements and University Excellence programs.
- Overall, the study did not identify valid examples of university collaborations being limited, or negatively affected by competition, either for global status or for national resources.

An overall finding is that in practice, the universities in this study connect new forms of competition and collaboration in an instrumental way ('collaboration enhancing competitiveness'), and at the same time are committed to using and further developing strategic collaborations for non-competitive purposes. This implies that universities navigate competition and collaboration partly by using collaboration in an instrumental way to enhance their competitiveness, and partly by decoupling strategic collaboration from competition and competitiveness. One could interpret this as universities being able to use competition and collaboration both in tightly and loosely coupled ways.

The study has shown that research universities are using new forms of competition and collaboration in their strategic development, but not in a homogeneous way. The varieties in the ways in which universities use competition and collaboration can be explained partly by a university's national context and geographical location, and partly by the specific features and strategic ambitions of the university in question. Longitudinal, comparative research is needed to get a better understanding of the effects of the transformation of competition and collaboration, and its use by public authorities and university leaders on the inner life of universities, including the quality of its primary activities, the behavior and scientific orientations of its academic staff, and the commitment of students.

Endnotes

1
For example, the project Q-KNOW is aimed at analyzing how collaboration affects the development of quality in science in Germany (https://www.q-know.org/), while the research group 'Multiple competition in higher education' is focusing on the development of a comprehensive understanding of multiple competition in higher education in Germany (https://www.uni-kassel.de/forschung/en/27/incher/research/multiple-competition-in-higher-education/dfg-research-group-multiple-competition-in-higher-education).

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Appendix 1

Universities included in the study

Australia
University of Melbourne
University of New England

Brazil
Universidade Federal do Rio de Janeiro
University of São Paulo

Canada
University of British Columbia
University of Waterloo

Chile
University of Chile

China
China University of Mining and Technology
Fudan University

Germany
Technische Universität München
Universität Leipzig
Frankfurt University of Applied Sciences

Ghana
University of Ghana

India
University of Hyderabad
Jawaharlal Nehru University

Japan
Tsukuba University
Hiroshima City University

The Netherlands
University of Groningen

Poland
Adam Mickiewicz University Poznan

South Africa
University of Cape Town
Stellenbosch University

Uganda
Makerere University

United Kingdom
University of Plymouth
University of Glasgow
Cardiff University

USA
New York University
The University of California at San Diego

Author biographies

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Peter Maassen is professor in higher education studies at the Faculty of Educational Sciences, University of Oslo (UiO), Norway, and extraordinary professor at Stellenbosch University, South Africa. His main research interests are in the area of the governance of higher education and science, and the relationships between higher education and society. He has participated in many national and international research projects, expert committees and panels in higher education. He has been a member of the Institutional Board of University College Oslo (now Oslo Metropolitan University), and is currently member of the executive board of the Barratt Due Music Academy, Oslo. Maasen was in 2022 member of the expert committee on university accreditation established by the Norwegian Ministry of Education and Research. In 2022-23, he led a research project on the state of play of academic freedom in the EU for the European Parliament. He has produced over 250 international publications.

Arianna Rosso is a research assistant at the Department of Education, Faculty of Educational Sciences, University of Oslo, Norway. Her Master thesis project focused on the effects of Covid-19 on the internationalization of higher education in the European Higher Education Area (EHEA) from the students' perspective.

Bjørn Stensaker is professor of higher education at the Department of Education, Faculty of Educational Sciences, University of Oslo (UiO). His research focuses on change in knowledge organisations, governance, leadership and management in higher education, and quality and evaluation in higher education. He has had various leadership positions, including membership of the Executive Board, Karolinska Institute, Sweden, and of the Executive Board, Accreditation Council, Hong Kong and he is currently the vice-rector for education of the University of Oslo. He has produced close to 200 international academic publications, and is one of the most cited scholars in the world in the field of higher education studies.

University of Oslo

The University of Oslo (UiO) is Norway's oldest university, with 26,000 students and 7,000 employees. UiO is one of Europe's leading research-intensive universities. It celebrated its 200th anniversary in 2011, and has played a pivotal role in many of the major changes in Norway over the last 200 years. UiO consists of 8 faculties, 2 museums and several centers, including 15 national Centers of Excellence. This study is undertaken by researchers attached to the Department of Education (see: https://www.uv.uio.no/iped/english/) at UiO's Faculty of Educational Sciences, and the Department of Political Science (see: https://www.sv.uio.no/isv/english/) at UiO's Faculty of Social Sciences.

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