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The role of (academic) social networks and platforms in the competitization of science

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The role of (academic) social networks and platforms in the competitization of science

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1. Introduction

Academic economics, and the academic system in general, has undergone two major transformations in recent decades: *internationalization* and *quantification* of research evaluation methods. Economics has become increasingly international and standardized with respect to knowledge production, research cultures and teaching (Fourcade, 2006, Tribe, 2022, Bäuerle 2023). This trend of *internationalization* takes place - and can be empirically illustrated - at several levels, including (i) the increasing importance of English-speaking (mainly Anglo-Saxon) academic journals in academic systems around the world (e.g. Hyland 2009, Tribe 2022), (ii) the standardization of economics education and economics textbooks across the globe (e.g. Bäuerle 2021, Zuidhof 2014), and (iii) the increased mobility of individual researchers between different countries (e.g. Sautier 2021, Davies 2020). In addition to this process of internationalization, economics has also undergone several trends of *quantification*. While there is a long-standing and controversial debate on the quantification and mathematization of economic theories and empirical research design (Debreu 1991; Hodgson 2013; Romer 2015), our diagnosis of the competitive nature of economics rather refers to an expansion of a quantitative logic of the academic evaluation system. More precisely, the trend towards a different kind of quantification, namely the quantification of academic research practices in economics, which is reflected in the increasing use and impact of quantitative evaluation methods and techniques (QEMTs). This kind of quantification is reflected in (i) the growing importance of quantitative evaluation criteria such as journal impact factors for the distribution of academic prestige and as a quality criterion for individual research, (ii) a growing impact of these bibliometric indices on the selection criteria and career trajectories of (young) economists, as well as (iii) the more regular publication and application of academic rankings, both at the level of individual researchers and at the level of institutions, notwithstanding several international initiatives for a more comprehensive research evaluation culture and the open science movement during the last decade (including e.g. the DORA declaration in 2012, the Leiden Manifesto in 2015 and the CoARA initiative of the EU-Commission in 2022). Both internationalization and quantification are closely linked to

technological innovation, which has facilitated not only communication but also the availability of research performance metrics, thus triggering the "metric tide" (Wilsdon et al. 2015).

Moreover, and crucial to our argument in this chapter, both internationalization and quantification have intensified *competitization* within the academic field, that is, the expansion of competitive formats, competitive practices and competitive subjectivities. Our main claim in this chapter is that this far-reaching competitization of economics and academia in general has recently been further intensified by the increasing impact of academic social networks and platforms (ASNPs) such as ResearchGate, GoogleScholar, Academia.edu, Loop, but also Twitter. Our argument in this chapter is that academic platformization brings together and reinforces the processes mentioned above - internationalization, quantification and competitization. It makes scholars internationally comparable through the establishment and use of universal metrics and facilitates competitive relations between them. Therefore, we will pay specific attention to these ASNPs, potentially serving as organizers and reinforcers of competition and thus as promoters of competitive practices, and ask: How do ASNPs construct competition between their users and which role do QEMTs have in this process?

The remainder of this chapter is structured as follows: In the next section we briefly summarize the process of competitization in academia and describe today's (economic) academic competition ecology, in which QEMTs and ASNPs play important roles. In the third section we lay out our analytical framework for studying ASNPs and how they construct competition. In the fourth section we empirically analyze three ASNPs and show how they construct competition to varying degrees. Finally, in the conclusion we summarize our findings and differentiate different ways of criticizing competitization in academia.

2. Competitization and the role of ASNPs and QEMTs in the competition ecology in academic economics

In recent years, several critics have argued that the organization of knowledge production increasingly follows a competitive logic on many different and mutually reinforcing levels. Historically, competition in higher education first gained prominence in the late nineteenth century, when nation states began to recognize that knowledge and research were not only crucial for technological innovation in the military sphere and thus for war, but also contributed to economic development and growth. Christine Musselin (2018), for example, points to several proactive initiatives by French and Russian authorities to close the knowledge and research gap with Germany. The rise of territorial nation states is thus the starting point for increased competition in higher education at the macro level. The second important trend for the development of a competitive ecology in higher education is closely related to the

managerial turn and the shift towards New Public Management (NPM) in university administration (Gornitzka/Maassen 2017, Söderlund 2020). NPM emerged in the 1980s against the backdrop of a neoliberal critique of the ineffectiveness of state bureaucracy in several areas, and was associated with the introduction of market-based mechanisms and instruments into the higher education system. While NPM was first introduced in the US and the UK, it was soon adopted by all OECD countries, which have implemented several public sector reforms to increase the 'efficiency' and 'productivity' of academic institutions (see e.g. Broucker/de Wilt 2017). On a discursive level, buzzwords such as 'internationalization', 'excellence' and 'knowledge society', which paved the way for the managerial turn in higher education, follow the ideological strands of neoliberalism, neo-institutionalism and managerialism. The managerial turn has also been interpreted as a further economization (Berman 2014) and marketization of knowledge production and has been accompanied by increased financial and administrative autonomy of universities, also in Europe. With this autonomy and the increased international orientation and comparison of universities and knowledge clusters, universities have been discursively framed as engines of economic growth (Söderlund 2020), which has further strengthened the competitive conceptual understanding of the higher education system at the meso-level of academic institutions.

Today competition has become the hegemonic way of organizing interaction, quality assessment, and stratification in (economic) academia - what could be described as an academic competition ecology (Arora-Jonsson et al. 2020, Altreiter et al. 2023). The emergence and expansion of competitive formats occurs at very different ontological levels, ranging from the micro-level of individual scholars to the macro-level of nation-states embedded in the competitive organization of knowledge societies (Musselin 2018, Krücken 2021). Figure 1 provides a comprehensive visualization of the ecology of competition in the academic system, in which we aim to provide a better understanding of this hegemony of competition in academia. We distinguish between competitive formats in terms of the competitors, the 'scarce goods' that are being competed for, the organizers of the competition, and the performance measures that are used in different formats to decide on the allocation of the scarce goods. In this chapter, we focus on ASNPs as organizers of competition between individual scholars and their use of QEMTs as performance measures for this purpose.

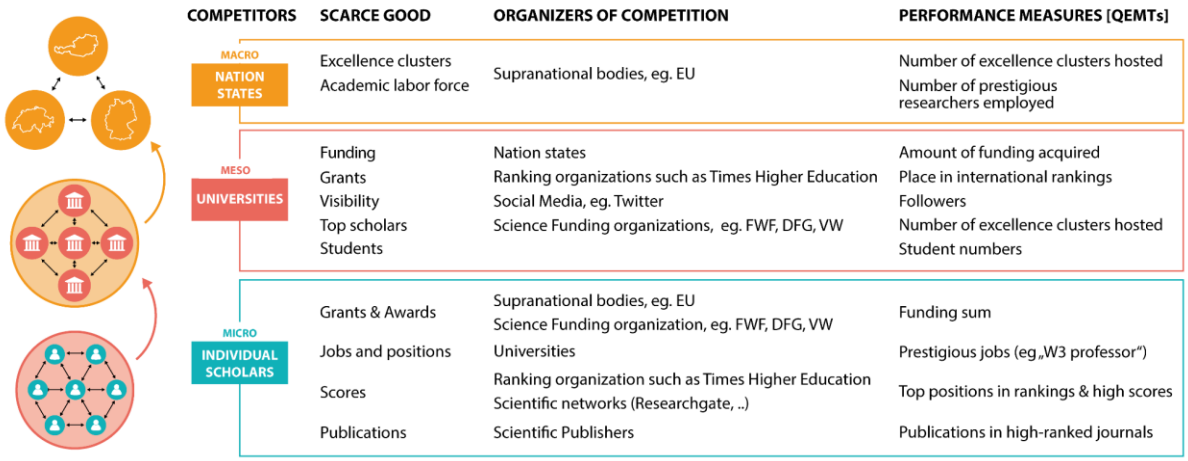

Figure 1: Competition ecology in academia

ASNPs as organizers and reinforcers of competition

Within academic competition ecology we distinguish between different organizers of competition, including a heterogeneous set of institutions and organizations ranging from supranational bodies and nation-states to academic institutions such as universities, but also ranking institutions and scientific publishers. More recently, however, ASNPs have entered the academic arena and introduced a further expansion of competitive formats into the academic system, so much of our work will focus on these more recent actors in the field of competition organizers. Due to the increased metricization of research evaluation and assessment, and the increased visibility and impact of scores and rankings, ASNPs are used as evaluation tools for individuals and institutions in the academic world. While more static platforms such as WoS or GoogleScholar played an important role in the metrification of scholarly output, it was the interactive platforms and networks such as ResearchGate, Academia.edu, Loop, etc. that not only provided additional competitive formats but also increased the potential competitive pressure on individual scholars. As we will show in more detail in the next sections, especially these newer interactive forms of ASNPs provide several devices for the subjectivation of their users as 'quantified academic selves' (Hammarfelt et al. 2017) or 'competitive selves' (Pühringer/Wolfmayr 2023). Thus, competitive logics not only contribute to the organization of academia, but also increasingly affect the self-perception of researchers as competitive subjects.

QEMTs as performance measures within the (economic) academic competition ecology

The increasing use of QEMTs as performance measures, which can be both material (e.g., funding, number of prestigious researchers) and symbolic (e.g., impact scores, top rankings),

has been an important accelerator for the establishment of an (economic) academic competition ecology. The introduction of steering tools and performance indicators in NPM in academic institutions has also been rooted in and further promoted by QEMTs (Broucker/de Wit 2017). The managerial turn in higher education thus relies heavily on the application of standardized bibliometric evaluation methods developed since the 1960s. In particular, Eugene Garfield's invention of the Science Citation Index (SCI) and the Journal Impact Factor, as well as the expansion of the Web of Science database, made it possible for the first time to measure scientific output in terms of citation and impact scores, thus gradually giving rise to the 'metric tide' (Wilsdon et al. 2015). Although these scores were already formulated in the 1960s and 1970s, it was the digitization of publication outlets and the associated bibliometric information that made QEMTs an easily accessible source for the competitive organization of quality control and thus the stratification dynamics in academia. In addition, archives and platforms such as Web of Science, Scopus, and Google Scholar, as well as the invention of the Hirsch index (Hirsch 2005), intensified competitive relations between academic institutions and individual scholars. Despite several critiques of the validity, informative value and (interdisciplinary) comparability of specific QEMTs (Espeland/Sauder 2007, Brankovic et al. 2019), various rankings and ranking institutions, such as the Shanghai Ranking or the CHE in Germany, have emerged since the 2000s and developed performative power in the assessment of scientific quality (Musselin 2018, Krücken 2021).

However, compared to other social science disciplines, QEMTs have been particularly influential in economics, as economists seem to be 'into rankings' (Rossier and Hammarfelt et al. in this book). For example, the distribution of academic prestige (and power) depends heavily on the ability of individual researchers to publish in journals that occupy top positions in journal rankings. These rankings, in turn, are based on the evaluation of (quantitative) impact factors. Hence, competitization of economics does not only relate to the increased impact of QEMTs but rather on a far-reaching self-understanding of the discipline as being organized and structured by different competitive formats and particularly rankings. The variety of individual and departmental rankings in economics in different national and international contexts illustrates the particularly strong competitive organization of the discipline. There exist several personal rankings of economists (but also departments), such as the REPEC-Ranking, or in the German-speaking area, the prominent 'Handelsblatt-Ranking' and the 'FAZ-Ranking'. Both latter rankings, which are published by German and Austrian Newspapers, gain public attention with labels such as 'The economists Germany listens to' (FAZ) and are also frequently referred to by economists - particularly those, who lead the rankings. Consequently, several recent studies diagnose an 'obsession' with rankings within economics (Fourcade et al. 2015, Maesse 2017 and Hammarfelt et al. in this book).

Economics stands out in terms of the importance of publications in 'top journals', or in other words, the ability of an economist to publish in the top 5, which is crucial for future career trajectories, especially for younger economists. It is against this backdrop that we are interested in the role of the ASNPs as organizers and reinforcers of competition.

3. Analytical Framework

The theoretical starting point for this chapter's conception of competition is the emerging field of - broadly speaking - constructivist competition research, which assumes that competition is neither universal nor necessary, but constructed (Tauschek, 2013, Wetzel, 2013, Werron, 2015, Stark, 2020a, Arora-Jonsson et al., 2021). In order to systematically analyze how competition is constructed through ASNPs, we start from an understanding of competition as consisting of four basic elements (Arora-Jonsson et al., 2021; Simmel, [1903] 1995; Altreiter et al. 2023; Wolfmayr 2023): First, without scarcity, there is no rival good to compete for. Second, there must be a competitive allocation mechanism that rewards the party that best meets certain criteria. Third, without at least two competitors who perceive the situation as a competition and who also see themselves as competitors, there is no motivation for them to enact the competition. Finally, without the ability to perform, such as a lack of control and decision-making power, active competition is impossible. Thus, competitors must have competitive agency in order for competition to exist.

Over the past decade, there has been increasing scholarly interest in how and by whom ASNPs are used and what effects they have on their users (Kapidzic, 2020; Muscanell and Utz, 2017; Utz and Muscanell, 2018). However, there are few studies explicitly interested in the competitive aspects of ASNPs, including Utz and Muscanell's (2018) work on feelings of envy and pride when using the platforms. In another study, Hammarfelt et al. (2017) examine how neoliberal ideas about markets and competition shape the conception and enactment of research as a game on ASNPs and how profiles are technologies of the professional self. They show how ASNPs transform academic sociality and identity formation. In addition, Jana Komljenovic (2018) studied how metrics on ASNP increase competition, and Duffy and Pooley (2017) examined how these networks lead to the self-branding of academics.

However, in this chapter, we are particularly interested in the user interface of ASNPs and their competitive structural elements. Thus, we ask, from the perspective of constructivist competition research, what competitive elements ASNPs use to construct competitive relations among their users, particularly how the four basic elements of competition are constructed.

4. Competitive Platforms as embedded in competition ecology

a. ResearchGate, Google Scholar and Twitter

The emergence of (academic) social networks and platforms such as LinkedIn (2002), Xing (2003), GoogleScholar (2004), Twitter (2006), Academia.edu (2008), ResearchGate (2008), or Loop (2015) was another step in the dissemination of metrics, in making scientific work comparable, and - as we will show in the next subsection - in the diffusion of competitive relations between scholars. In this chapter, we look at three ASNPs in particular: While we focus on ResearchGate because the competitive elements are most pronounced there, we provide a comparative and contrastive perspective with two quite different platforms, Google Scholar and Twitter.

ResearchGate was founded and launched in 2008 as one of the first academic social networks by German scholars Ijad Madisch, Sören Hofmayer and Horst Fickenscher, and soon moved to Berlin, where the company is still headquartered as the for-profit company Researchgate GmbH. Similar to platforms such as academia.edu and Mendeley, ResearchGate combines the features of more static academic databases such as Google Scholar, Scopus or Web of Science with interactive communication tools. ResearchGate allows the uploading of various forms of research output and provides tools for communication and interaction with other researchers, as well as a job market tool. According to its own statements, money is made in particular with personalized advertising and subscription-based services as well as the selling of user data (Keusch & Kreuter 2022; Goldenfein & Griffin 2022). It has received funding from a variety of sources, including venture capital firm Benchmark, Accel Partners, Peter Thiel's Founders Fund, Goldman Sachs, and Bill Gates. Since 2023, ResearchGate has been cooperating with the scientific publisher De Gruyter, which means that content from 437 journals is included in ResearchGate. According to its own data, today ResearchGate has 20 million users in over 190 countries. CEO Madisch is also a member of the German Digital Council, which advises the German government on the digitization of society.

Google Scholar was released in 2004 and, like the rest of Google's services, is now part of Alphabet Inc., the world's third-largest technology company by revenue. Google Scholar is a search engine and bibliographic database for scholarly literature. In 2011, *Google Scholar Citations profiles* were introduced, making it possible to compare individual scholars without regard to their disciplinary or geographic context. In contrast to similar services such as Scopus and Web of Science that gained prominence in the 1990s and early 2000s, Google Scholar is not fee-based, and unlike ResearchGate, it does not display advertisements. However, it is not entirely clear to what extent Alphabet can extract commercial value from Google Scholar (Goldenfein & Griffin 2022). It is also not transparent as to which documents

are included in its database, and according to which criteria the results of searching are ranked (Goldenfein & Griffin 2022).

Twitter (recently renamed X) was launched in 2006 by Odeo, a podcasting service and is today one of the most prominent social media sites. It is primarily used to facilitate communication and allow users to share news and thoughts. Although Twitter is not primarily aimed at an academic audience, the platform is increasingly used to share research results, call for publications, or discuss the latest scientific findings, and offers features for active sharing (i.e., following and tweeting). Recent studies have also found a correlation between active participation on Twitter (number of tweets) and scientific influence as measured by citations (Ortega 2016; Luc et al. 2021). Thus, a Twitter account could serve researchers both as a tool for academic exchange and as a strategic option for improving their own scientific metrics. Today Twitter has about 450 million active users and makes money via advertising (the majority of the company's revenue) the selling of data licenses and, since 2021, the subscription-service Twitter Blue.

b. Competitive elements on ResearchGate, Google Scholar and Twitter

In order to elaborate how and to what extent these ASNPs promote competition between their users, we will now look in detail at the central competitive elements of the three platforms. We distinguish three elements of the platforms that contribute in different ways to how they propose competitive relations between their users: profiles, statistics/metrics, and requests/notifications.

Profiles

The three platforms allow users to shape their own profiles to very different degrees. On ResearchGate, the profile page allows the user to present their own work. Users can add a profile picture and describe their research in their own words. Often these descriptions resemble short CVs, including current research projects, institutional affiliation and research interests. In addition, users' activities on ResearchGate are summarized, and they can use predefined forms to provide information on education, institutional affiliations, journal positions, grants and awards, and memberships. A summary of the user's attributes in the form of a 'business card' can be found at the top of the profile page, along with an indication of how many times it has been viewed in the last week. In contrast, there is limited control over profiles on Google Scholar and Twitter. On both platforms, a photo can be added, a website can be linked, institutional affiliation(s) can be provided, and a few keywords about research interests can be given. However, the profiles are less about self-presentation, which on Twitter is more the result of the tweets posted, the sum of which gives an impression of the user.

In general, profile pages in academic social networks serve as a means of presenting oneself to an academic public. Through text and photos, the user's image can be promoted and the perception of the user's research activities can be affected. However, this also raises the question of how the user wants to appear, how the researcher avatar should be designed. Thus, users are addressed as active subjects who have to shape their own presentation and communicate themselves to a scientific public. Beyond these possibilities for shaping one's own profile, the logic of the individual profile also fundamentally reproduces the conception of scholarship that can also be found on university websites, in CVs, and in the idea of individual authorship, namely that scholarship and knowledge production is an individual matter. Thus, profiles co-produce the user's agency in the scientific community.

QEMTs, metrics and statistics

Another key competitive element of ASNPs is the QEMTs used to measure scientific output and impact, which appear in many different places on the platforms. On visiting the ResearchGate homepage, users are immediately confronted with their own metrics: A text box titled 'Stats on your research' at the top right of the page shows the changes from last week and links to the statistics page, which goes into more detail. Publication metrics such as reads, citations, recommendations, mentions and research interest are displayed. These values can be displayed in different ways: What reads does the number refer to, full texts or answers? Which aspects of my research interest score have changed? The metric and visual representation that most strongly establishes a comparative relationship with other researchers can also be found here: the comparison of the user's own research interest with that of other researchers and the user's competitive position in this comparison. Again, the data can be viewed in different ways. The user's research interest score can be compared with all other users on ResearchGate, with all users on ResearchGate who published their first paper in the same year as the user (to control for academic age), or with users in the same research fields (see figure 2).

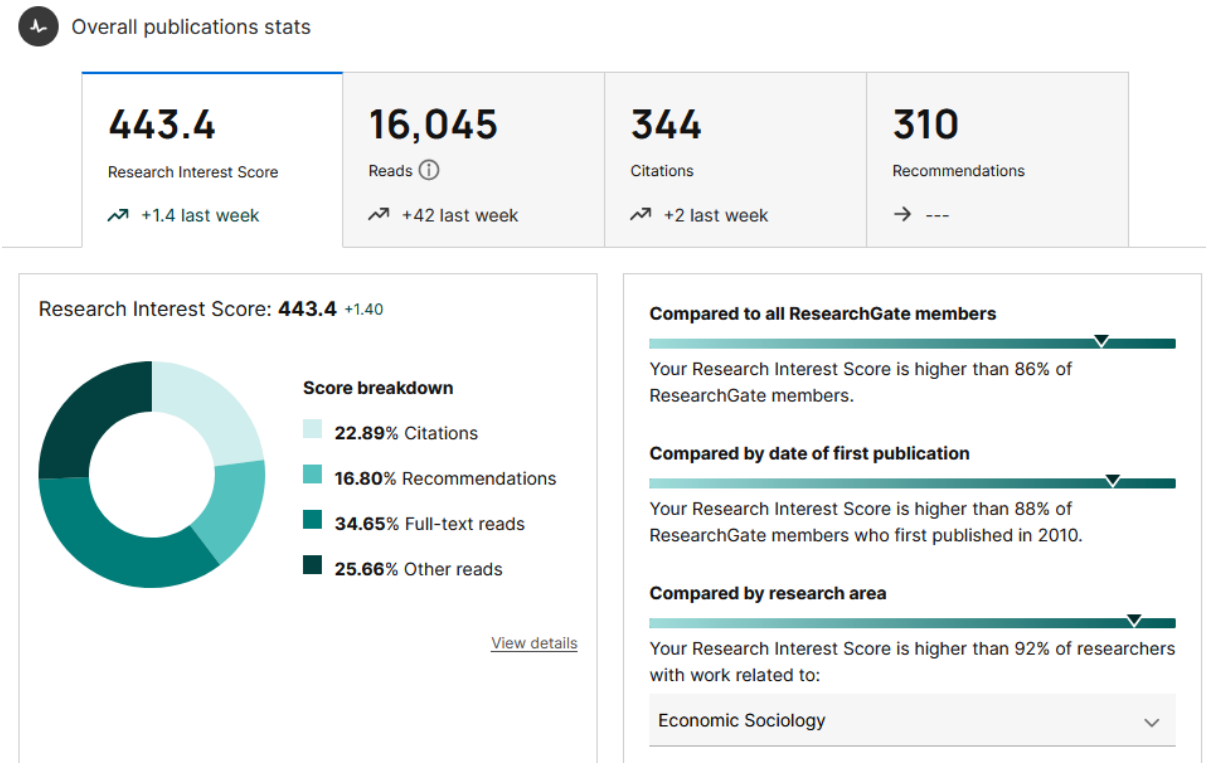

figure 2: Visual representation of QEMT at ResearchGate

In each case, the page shows what percentage of other scientists have a lower research interest, implicitly promoting a hierarchical order of science. A separate page is dedicated to these comparisons: 'How your research interest compares. See how much interest your XX research topics are getting compared to the work of other researchers on ResearchGate'. In addition, similar to platforms such as Facebook or Instagram, and particularly similar to the targeting logic in marketing, detailed information about readers can be displayed and broken down by country, discipline, academic position or institution. A statistics history graphically displays the evolution of the user's scores. This makes it possible to identify patterns and directions of development over the course of weeks, months and years, to assign them to individual publications and to differentiate divergent developments, for example when a rising curve of research interest is not reflected in a rising curve of citations. While these metrics on the stats page can only be viewed by yourself, the metrics on the scores page and the profile page (i.e. research interest, h-index and citations) are also accessible to other users, who can thus check the scholarly impact and 'value' of other scholars. Metrics such as RG score, h-index, research interest and citations are listed. On the pages of the individual publications, it is again possible to view statistics on them, such as research interest, citations, reads and also recommendations. It is also possible to see how the publication compares with other researchers' publications.

While the metrics are not as immediately and prominently visible on Google Scholar, which is more akin to Google's search engine, many of the metrics described can be found here, especially on the individual profile pages, where the h-index and citations of scholars can be viewed over time (see figure 3).

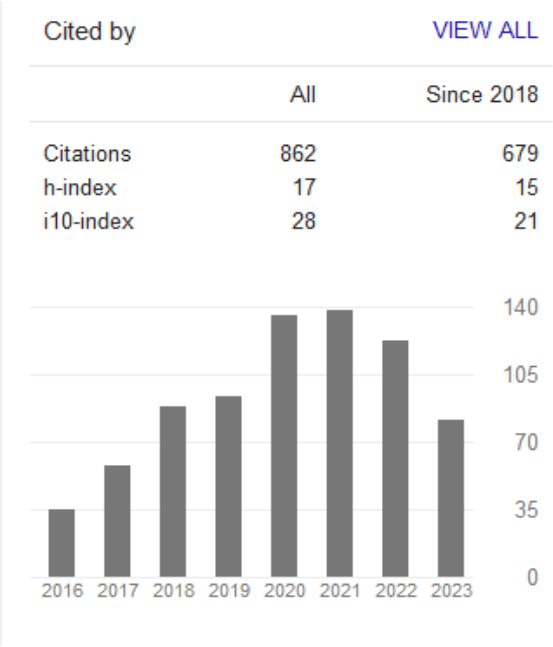

figure 3: Visual representation of QEMT at GoogleScholar

This is also the case for individual publications, for which the number of citations over time can be viewed and which are sorted by number of citations on the profile pages. Twitter, on the other hand, which is not a genuine academic social network, displays no academic metrics at all, but rather the number of followers, retweets and 'likes' familiar from other social platforms. In addition, detailed pages allow users to view statistics on their own posts, such as the number of impressions, interactions, profile visits and new followers as a result of the post. As with ResearchGate, this allows users to track their own performance.

In summary, a variety of QEMTs, metrics and statistics appear on ASNPs, allowing, to varying degrees, both self-tracking and statistical categorization of other scholars. Crucially, comparison between oneself and the scholarly community is enabled and encouraged, especially on ResearchGate. Unlike profiles, then, metrics level out personal differences and replace them with comparable, universal and context-free scores. The massive visibility of metrics and rankings on these platforms co-constructs competitive relations between its users by creating universal comparability and equivalence of scientific work, defining desirable high metric values and - in the case of ResearchGate - situating the user's values in relation to all other users. From the perspective of competition research, the evaluation and metrication of

research output can be interpreted as an important driver of scarcity. Top positions in various detailed (sub)-rankings are obviously rare and can therefore be distributed competitively. ResearchGate, for example, allows a very detailed analysis of one's impact compared to other scholars in the same field or academic age, e.g. being in the Top 5% of researchers in a very specific field, who have published their first scholarly work in a distinct year (see figure 2).

Requests and notifications

The first two competitive elements of ASNPs are reinforced by a third element, the requests and notifications that appear on various pages of the platforms. Again, this is particularly true of ResearchGate. The first thing that stands out is the large number of emails with requests and notifications that this platform sends to its users, for example about achievements, publications by other researchers, new research from one's own network and, above all, the weekly statistical reports mentioned above. This weekly report allows users to track the weekly changes in their metrics. The growth of their scores - reads, citations, recommendations, research interest - is thus regularly made visible. Users are also encouraged to contribute to the growth of their scores: 'Increase your impact'. Suggestions include adding full-text, linking to one's own ResearchGate profile from an external site but also inviting co-authors to join the platform and thus gaining visibility. The possibility of increasing visibility is specifically addressed in the platform's help center under the title 'How to use SEO [Search Engine Optimization] to improve the visibility of your research'. Noting that 'it is becoming increasingly important for researchers to improve the visibility of their work' because 'the easier it is for other researchers to find and access your research, the more likely it is that your work will be read, cited and used in future research', the site recommends linking from other websites, which 'can get you up to 5 times more publication views', adding a profile photo because 'publications on profiles with photos get 50% more reads', completing the profile because 'publications on profiles with complete About sections get up to 150% more reads', confirming authorship of one's publications and adding full texts, abstracts and other data to one's research. Notifications are also part of the platform itself with a notification feed. On the notifications page, the user is continuously informed about news, such as the new 'report of the week', when a milestone in reads or citations is reached ('Your research items reached 1,500 reads') or when other scientists follow the user's own updates. But outstanding 'achievements' are also mentioned: 'With 22 new reads, your research items were the most read research items in your department'. For these achievements, the user receives a graphical medal with the words 'Great job, XX' and can also share these achievements on social media.

Notifications are also offered by Google Scholar, but to a much lesser extent. 'Alerts' can be activated here, i.e. notifications about new publications and citations of individual scholars or about certain topics and keywords. However, these need to be actively set up. There are no notifications about new followers or reads, one can only activate a notification, when one's own research has been cited. There are also no requests to increase visibility or profile, although scholars can use search engine optimization to make themselves more discoverable on Google Scholar. On Twitter, however, notifications about interactions with your posts, mentions and new followers are an integral part of the platform. But again, there is no invitation to improve one's profile or gain more visibility.

In sum, again to varying degrees, these requests and notifications from ASNPs promote an active subject by constantly reminding users how they can increase their visibility. Thus, by making quantitative relations between users a constant theme, the platform further encourages a competitive imaginary in which users understand themselves and others as competitors.

The three competitive elements of the platforms thus contribute to competitive relations between scholars by encouraging self-presenting, active, and individual subjects who constantly compare themselves with other scholars and strive for greater visibility. As shown, the three platforms exhibit the elements to varying degrees depending on their basic orientation, with ResearchGate most strongly reinforcing competitive relations among its users.

5. Conclusion

A competition ecology in academia

This chapter focuses on the increasing importance of competitive formats in the organization of science. We distinguish between various processes that lead to and mutually reinforce competition in this area, such as the digitization of publication formats, the internationalization of academic knowledge production, and the quantification of various research evaluation tools, or what we call quantitative evaluation methods and technologies (QEMTs). Each of these trends further reinforces the competitive organization of academia by strengthening individual competitive agency, increasing comparability among actors and institutions, and providing new forms of competitive organization of knowledge production. In sum, scholars and academic institutions are confronted with a competitive ecology in contemporary academia. In this chapter, however, we focus on a rather new specific institution that organizes and promotes academic competition: academic social networks and platforms (ASNPs).

More specifically, we have shown how and with what devices and tools ASNPs (co)create academic competition among individual scholars. Although ASNPs are only one element in the current ecology of academic competition, they provide a fruitful example to highlight recent trends in academic competition, as they transfer the trend of individual exceptionality and the quest for visibility and attention that originated in social media to the academy. While we have not specifically focused on the performativity and efficacy of ASNP in this chapter, we empirically show that ResearchGate, GoogleScholar, and Twitter(X) at least provide their users with different formats and tools of competitive subjectivation. First, ASNP organize competition by creating individual researcher agencies in the first place. They provide different tools for personalized researcher profiles and offer different ways to develop one's profile, gain visibility, or build connections in specific communities. Second, ASNPs either create their own evaluation scores and metrics (e.g., the RGScore) or proactively make existing metrics more visible. In this way, the profiles and thus the academic identities of scholars are explicitly linked to QEMTs. Third, these scores artificially create a scarcity of top positions, either by informing individual and institutional rankings or by offering their own ranking tools, i.e. by organizing the allocation in specific competitive formats. While the visibility of scores and QEMTs does not represent competition as such, from the perspective of competition research, they become as scarce good that can be used in job applications or research grant proposals.

For some empirical illustration we focus on the discipline of economics for several reasons. The strong hierarchical order and stratification dynamics and the associated tendencies to marginalize non-mainstream approaches are at the center of criticism both from within (Heckman/Moktan 2020; Glötzl/Aigner 2019) and from outside the discipline (Hammarfelt 2017; Maesse 2017)[1]. It seems plausible that the importance of competition as an analytical concept and the individualistic focus of the discipline ('methodological individualism') contribute to the central role of rankings and QEMTs in economics. Thus, economics is not only particularly sensitive to the processes of competition in the organization of science and academic knowledge production, but is also strongly affected by the negative implications of a competition ecology in many respects.

[1] For an illustrative critique against the high level of concentration within economics, even by core proponents of the economic mainstream see this quote by George Akerlof, Nobelprize laureate in economics, at the annual meeting of the American Economic Association in 2017: 'What I am worried about most of all, is what we don't see. So, I am worried about the analysis that is never seen, that never becomes a paper and it doesn't become a paper, because it can't become a paper. And it can't become a paper, because that's not what a paper in economics is all about. I am quite worried about that and we know such vacuums exist.' (Akerlof cited in HEN 2017)

But how can we do better….

The critique against the competitization of academia and the role of ASNPs in this process is twofold and can be separated into a critique of a particular competitive format (in concurrentia) and a critique of competition as a central allocation mechanism in academia as such (ad concurrentia) (Ergen/Kohl 2022). First, from a positive position towards competition, one could argue that it is rather problematic that the impact of competitive research organization is still too weak or, in other words, that other non-competitive requirements, such as social or institutional status, personal relationships, etc., do indeed decide about academic positions, prestigious prizes or acceptance of publications. A competitive, merit-based organization of the hiring process of academic institutions, in turn, would potentially eliminate explicit forms of discrimination (e.g., based on gender, class, ethnicity). In this context, for example, Wilsdon et al. (2015) note that “peer review is not perfect, but it is the least worst form of academic governance we have”. The claim would therefore be for “better” or “fairer” competition. For the particular field of economics, for example, Aistleitner et al. (2022), Glötzl/Aigner (2019) and Ductor/Visser (2023) have shown that the institutional affiliations of authors and editors or their paradigmatic orientation still play a decisive role for academic careers. Thus, to a certain extent, the competitive nature of academia leads either to the selection of the best (connected and endowed) rather than the most innovative or original (best) researchers.

Second, in recent years several critics have raised empirically grounded concerns about the implications of differential QEMTs. For example, while citations, and thus QEMTs based on them, signal interest and quality of publications, citations are also used to signal one's own academic background and affiliation to a particular scientific community. These rather strategic functions of publication behavior, which also include strategic co-authorships, citation cartels, but also the increasing pressure to "publish or perish", have been widely documented for different academic disciplines, but are particularly strong in economics due to its strong hierarchies (Colussi 2019; Heckman/Moktan 2022, van Dalen/Henkens 2012). In recent years, the expanded use of Altmetrics can also be interpreted as a critique of QEMTs. In particular, their exclusive focus on the academic field and their failure to capture other forms of impact, for example, political or societal impacts of research. While Altmetrics aim at a broader organization of competition, including social, political and media impacts of research, they still support the competitive organization of research. Similarly, at the institutional level, initiatives such as the DORA Declaration on More Responsible Research Assessment in 2012, the Leiden Manifesto in 2015, and most recently the Coalification on Advancement of Research Assessment (CoARA), supported by the European Commission in 2022, indicate that scholars as well as administrative and funding institutions in the higher education sector are similarly

concerned about the strong focus on QEMTs and their direct and indirect effects on research, teaching, and science communication.

Third, while these initiatives can be seen as a critique of the over-reliance on specific forms of standardized metrics, they are also related to a broader critique of the quantification of science and academic knowledge production as such. On both a more theoretical and a more empirical level, several studies report a problematic increase of metrics and quantification in science (e.g. Wilsdon et al. 2015; Muller 2018; Rijke at al. 2016). Economics is particularly responsive to quantitative indicators, metrics, and rankings, and thus economic knowledge production is structured by QEMT. Fourth, and more generally, the competitive organization of science and academic knowledge production has some problematic implications. In this respect, ASNPs, while not the only source of competitive processes, play an important role as a further accelerator and promoter of competition and competitive agency, i.e. by staging researchers as "quantified selves" (Hammarfelt et al. 2016) or "competitive selves" (Pühringer and Wolfmayr 2023). According to this fundamental critique of competition in science, the organization of competitive research entails several direct and indirect economic, social, and psychological "costs". For example, in the area of competitive research funding, economic costs refer to administrative and governance costs. These include the costs of non-acceptance, which include the value of the effort put into planning and writing proposals for unapproved, but often highly rated, projects. Implementation costs include the costs of managing the process at different bureaucratic levels in different institutions. The European University Association estimates that 30-50% of the funding received by countries from Horizon 2020 is used to cover the costs of all applications (EUA 2017), which is an alarming proportion in itself. The social cost of competition refers to the fact that individuals are unequally affected by (unattractive) temporary employment conditions. The social costs of competition refer to the fact that individuals are unequally affected by (unattractive) contingent work conditions. Relevant socio-demographic factors include gender (and related gender norms), race, socioeconomic status, and educational attainment (and the economic security it provides). In this way, the projectification and short-term employment induced by competitive research organization may foster a form of social stratification among scientists, thereby generating social costs through the inefficient use of research capacities and the lack of diversity of perspectives in knowledge production. Recently, several reports have also highlighted the alarmingly high psychological pressure among young scientists (e.g. Woolston 2020). Finally, the innovation costs of competition include the potential costs of the projectification of research activities in terms of reduced knowledge development and exploitation: project-based research has a relatively shorter planning horizon and thus limits the average tenure of individual project members. Furthermore, competitive knowledge

production also discourages interdisciplinary or risky research programs (e.g. Park et al. 2023), but tends to support mainstream and incremental research, which in turn corresponds to a general trend of marginalization of non-mainstream heterodox approaches in economics.

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