Policy Instruments and International Organisations: Rankings and Field Structuration in Global Knowledge Governance[1]

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Abstract

Knowledge governance has become central aspect in national economic competitiveness, increasingly measured by global rankings. Various international organisations are currently producing indicators that measure the performance of higher education institutions, innovation environment of a country or a region, and the role of knowledge in economic competitiveness and quality of governance. Our paper analyses the network of international organizations and NGOs that produce global indicators. The emergence of global rankings can be understood as field structuration, where new actors joining the activity tend to re-enforce existing practices, even if their intention would be to provide alternative figures. Assessing the field development in rankings on knowledge governance, we identify similar paths of development in rankings of different policy domains. Most notably, we observe fragmentation of rankings and indicators relevant to knowledge governance in higher education, economic competitiveness, innovation and good governance. One characteristic of structuration is the unintentional reproduction of practices already existing in the field. Actors need to legitimate their knowledge products according to the criteria set by the standing epistemic community. As a result, the new indicators are likely to conform to the existing normative and causal beliefs and criteria of validity. Paradoxically, while the entrance of new actors leads to fragmentation of global rankings in knowledge governance, it serves to further institutionalise the practice of comparative numerical assessment in transnational governance.

Introduction: Rankings in Global Knowledge Governance

Since their emergence in 1990s, governance indices have become a central element of transnational governance. Rankings have become a prominent policy instrument particularly in knowledge governance: the institutions that govern and steer the production and dissemination of knowledge in a society are currently being assessed globally by various indicators that measure the performance of higher education institutions, innovation environment of a country or a region, and the role of knowledge in economic competitiveness

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and quality of governance. Indeed, knowledge is the nexus where the global policy scripts on competitiveness, innovation, higher education and good governance meet, which is also visible in their numerical assessments. Various international organisations are currently producing indicators that measure the performance of higher education institutions, innovation environment of a country or a region, and the role of knowledge in economic competitiveness and quality of governance.

At present, rankings and indicators constitute a frame for global knowledge governance. While more traditional means for 'transnational governance' build on direct interaction between actors (Mahon and McBride 2009), the rankings function as policy instruments largely indirectly through public naming and shaming. There is evidence that global rankings that now significantly influence policy choices of nation states (Erkkilä 2013; Hazelkorn 2011; Kelley and Simmons 2015). Even though there is no apparent mechanism of influence, the governance indices are said to have a strong steering effect on the countries that are being ranked, as policy actors adhere to the perceived norm (Buduru and Pal 2010; Davis, Kingsbury, and Merry 2012; Erkkilä and Piironen 2009; Löwenheim 2008; Merry 2011). However, the effects of ranking are often indirect and conditioned by the institutional traditions of a country (Gornitzka 2013).

What we make statistics out of, how, and why is a highly political choice since this constructs abstract entities upon which we can politicize, debate and make decisions (T. M. Porter 1996). Rankings establish normative standards, deficiencies of governing and prescriptions for action (Hopwood and Miller 1994; Miller and Rose 1990; Rose 1999). While measuring the institutional structures and processes that govern and steer the production and dissemination of knowledge in a society, the rankings also come to define the scope and attributes of knowledge governance. This renders the national institutional legacies visible and makes them governable, influencing policies on national level. But while the standards and virtues such as economic competitiveness, academic performance, quality of research or innovation seem commonsensical and easy for almost everybody to accept the rankings, in fact, often involve controversial and particularistic choices not necessarily apparent for regular users (cf. Erkkilä and Piironen 2009).

Statistics are increasingly being produced in the international context for the purposes of supranational governance. Even though actors such as the World Bank, the World Economic

Forum or the Center for World-Class Universities at Shanghai Jiao Tong University do not pursue state-like sovereign power, their actions and the use of calculative technologies in defining issues of concern bears remarkable resemblance to historical attempts at making the modern state calculable (cf. Meyer et al. 1997; Sheehan 2006, 9). This also raises concerns over the instrumental rationality of numerical assessment that may come to create a Weberian 'iron cage' (Weber 1978), limiting politics and ethics of national decision-making. The numbers have democratic implications creating a perception of a new external audience to whom national governments bear responsibilities, instead of their domestic constituencies.

A ranking not only reinforces particular standards, it affects the status, position or identity of the ranked entities. In producing imageries where some entities are elevated above others, rankings can make them appear exemplary ("excellent", "world class"), worth listening to, learning from and imitating. Rankings hence have political implications as instruments of governing. The attributes of rankings serve as guidelines for excellence, giving direct goals for improvement such as increasing financial autonomy of higher education institutions (Erkkilä and Piironen 2013; Piironen 2012). Moreover, rankings have geographical and temporal aspects, rendering national institutional trajectories visible. We can make claims about European higher education vis-à-vis American or Asian systems (Erkkilä 2014) or identify a link between economic competitiveness and long traditions of transparency in Nordic countries (Erkkilä 2012).

But while rankings are gaining importance as policy instruments, they are rapidly growing in number that is likely to make their policy feed increasingly inconsistent. Our paper analyses the network of international organizations and NGOs that produce global indicators and the rationalities and mechanisms behind its' growth. We argue that the emergence of numerous global indicators can be understood as field structuration, where new actors joining the activity tend to re-enforce existing practices, even if their intention would be to provide alternative figures. We observe fragmentation of rankings and indicators relevant to knowledge governance in higher education, economic competitiveness, innovation and good governance. However, the fundamental ideas and ideological underpinnings of the rankings still mostly remain the same, as new actors entering the field tend to reproduce the existing practices in the field. While the rankings are becoming more numerous and fragmented, ranking as a form of evaluation is becoming a standard tool of global comparative

assessment, constantly spreading to new domains. This has also challenged the established international organizations as producers of comparative assessments.

Field Development and Ideational Roots: Global Rankings and Competitiveness

Table 1 shows selected global indicators that measure state knowledge. While some of these date back to 1970s and 1980s, there is a surge of indicators in the turn of 2000s. This can be understood against the economic globalization that now sees knowledge as a valuable asset. This is linked to economic paradigm shifts in economics, stressing the role of information in market performance (Stiglitz 2002). Furthermore, digital information resources have also become valuable assets in the so called knowledge-based economy. Recently, higher education has been seen as a driver of economic competitiveness (Marginson 2009). This has also put emphasis on innovation environment, comprising innovation policies and related institutions, including the universities (Pelkonen and Teräväinen-Litardo 2013). Also the perceptions of national competitive advantages (North 1990; M. E. Porter 1990) and varieties of capitalism are relevant to the figures (Hall and Soskice 2001).

[Table 1 about here]

We see the global rankings to be based on an atomistic ontology that constructs the reality as economic competition between states. Owing initially to rankings of national competitiveness, this economic reductionism concerns most of the rankings available and issues such as higher education and good governance are now also perceived through the lens of economy - we could just as well perceive them as matters of social mobility and democracy. This owes to current ideas of institutional economy that now also influence the perceptions of higher education drawing from codifications of good governance. Looking at the history of global ranking, we see convergence of different policy specific rankings.

Since the early 1990s, we identify a shift from measurements on ‘democracy’ to indicators and rankings of ‘good governance’ (Erkkilä and Piironen 2009). This also comes with a shift in producers of the comparisons; while the measurements of democracy were made by academic scholars, the new rankings on good governance are produced by international organizations and NGOs. The shift “from democracy to good governance” implies a holistic understanding of institutions as central element of state performance. This is also apparent in the measurements of economic performance – in terms of national competitiveness and

innovation – that have grown in scope now encompassing various aspects of governance, including education and access to government information. Emerging in the early 2000s, global university rankings share most of the ontological assumptions of the previous rankings and are ideationally aligned with them. Moreover, their reading is done against the predominant narrative of economic competitiveness that has been constructed by the rankings of good governance and economic performance of states. Knowledge and higher education become perceived as central elements in how states fare amid economic globalization.

Recently, the above rankings have been complemented by rankings of (regional) innovation and cities that assess the role of knowledge and education in the global competition for innovations, wealth and well-being. Also these rankings are clearly ideationally linked with the previous ones. Table 2 summarizes the main characteristics of knowledge governance assessments. While the most visible good governance indicators have been produced by international organization there is a shift towards topic specific indicators produced by smaller NGOs. The competitiveness indicators, university rankings and innovation indicators are being produced by variety of actors, such as universities, research institutes, foundations, consultancies and media outlets, but less by international organizations.

The focus of the indicators differs with good governance and competitiveness indicators comparing countries, university rankings benchmark higher education institutions and innovation indicators assessing mostly cities as hotbeds of economic activities. Nevertheless, the above rankings and indicators now constitute global knowledge governance, a framework to assess and steer national production and dissemination of knowledge. As for the ideational elements of the above rankings, they have shared premises and underlying ideological elements. The causal beliefs behind the figures draw from similar kind of economic ideas (see above). In fact, the index producers also collaborate closely and along ideational similarities the figures share data used for the assessments (Erkkilä and Piironen 2009, 2014).

[Table 2 about here]

Through comparison, we identify general shifts in the use of indicators in global knowledge governance. We argue that there are similar paths of development in global rankings of universities, economic competitiveness and good governance and that their detailed analysis helps to understand the role of numbers as policy instruments in global governance. While

measurement have taken steps towards more detailed and less aggregate data and giving up the league table format, this has, nevertheless, not posed a fundamental challenge to the economistic background ideology and the homogenizing effects of numeric comparison. On the contrary, when new actors join the activity they tend to reproduce the existing ideas and practices prevailing in the field.

Field Structuration in Global Ranking

There are similar paths of development in rankings of state knowledge in different policy domains. Most notably, we observe fragmentation of rankings and indicators relevant to knowledge governance in higher education, economic competitiveness, innovation and good governance. The fragmentation is caused by new indicator sets and actors entering the field of global ranking. The above fragmentation reduces the policy relevance of rankings as it dents the coherence of their policy feed. Though the figures are seemingly aligned, there are often different rationalities behind them. Paradoxically, the ideational fragmentation of rankings has further deepened the field structuration of global ranking.

There are methodological changes in the indicators as the critique of ranking has led to the emergence of more sophisticated non-aggregate measurements and “actionable indicators” in university rankings and indicators of good governance, while the limitations of ranking economic competitiveness has also been critically discussed. Furthermore, there is also critique towards to the existing rankings in terms of their scope and level of analysis. Complementing the existing rankings, the measurements of innovation often hold cities as the subject of their analysis, instead of focusing on countries or universities. There are also new regional university rankings that focus on institutions overlooked by the global comparisons.

In trying to secure a position in the field the actors engage in the production of competing classifications of reality (Kauppi and Erkkilä 2011). Such classification struggles also entail political conflict and to certain extent the critique of existing indicators can also be interpreted as their politicization (cf. Palonen 2003). But most noticeably the above critique serves as a stepping stone for new actors to produce alternative figures. In order to argue for the need of yet another indicator, the actors wishing to join the activity seek to demonstrate weaknesses in the existing figures.

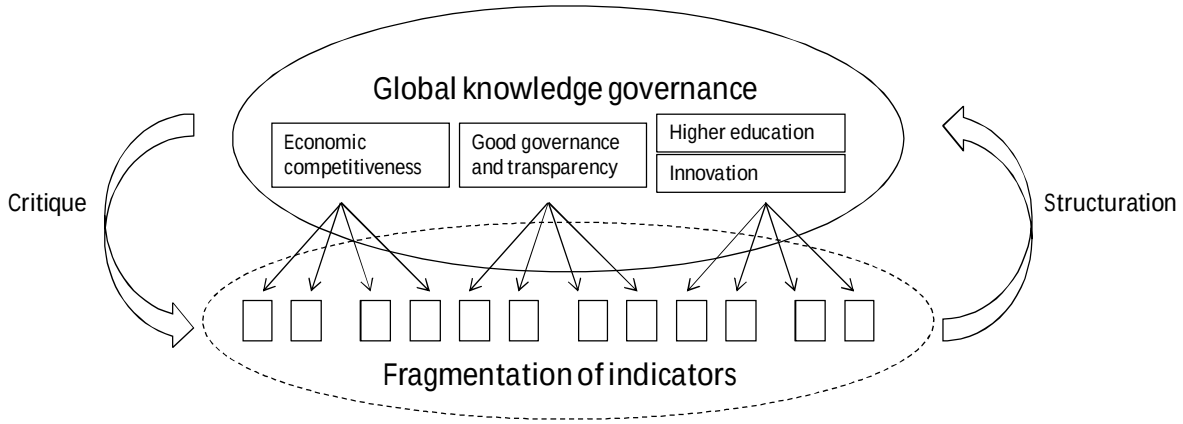

Figure 1 Global knowledge governance: field structuration and fragmentation of indicators

The Figure 1 shows the dynamic between the critique of ranking and field structuration in indicator-based knowledge governance. While the critique of existing indicators for their methodology and scope allows new actors to enter the field with their alternative sets of indicators, this also further embeds the use of numerical assessment in transnational governance. One characteristic of structuration is the unintentional reproduction of practices already existing in the field (Baert 1991; Giddens 1984) This is visible in the field development of global ranking as actors claiming to change existing practices come (often unconsciously) to replicate them. The production and use of global numeric knowledge builds on social scientific methods and practices of verification. Being recognized as an individual or organization possessing or having the capability of producing such knowledge lends an element of authority to actors involved and serves as a mechanism of inclusion and exclusion. Actors wishing to join the activity of governance measurements need to legitimate their knowledge products according to the criteria set by the epistemic community existing in the field (Haas 1992).

As a result, the new indicators are likely to conform to the existing normative and causal beliefs and criteria of validity. Paradoxically, while the entrance of new actors leads to fragmentation of global rankings in knowledge governance, it serves to further institutionalise the practice of comparative numerical assessment. We witness this (1) in the shift towards disaggregate governance measurements that have challenged rankings and (2) in the shift towards rankings of regions and cities that have come to complement the indicators of global scope.

Methodological Critique of Ranking and Shift towards Second Generation Indicators

Recently, there has been a shift in the way governance is assessed globally, as more nuanced and detailed numerical assessments, often referred to as second generation or actionable indicators, are challenging rankings (Knack et al. 2003, Trapnell 2011). According to Knack, Kugler and Manning (2003), second generation indicators are characterized by four criteria: 1) transparency, meaning that they should be replicable, well-documented and that the data sources are not politically controversial; 2) availability, meaning that the data has broad country coverage and continuity over time; 3) quality and accuracy, meaning consistency across countries and validity of measurements; 4) specificity, meaning that indicators measure specific institutions or output and that exogenous factors do not unduly affect the measurements. Index-producers have also called these new types of indicators 'actionable' governance indicators because they – unlike rankings – allow close monitoring and development of specific aspect of governance, providing guidance on reforms (World Bank 2009, Trapnell 2011). Actionable indicators are also often referred to as 'mappings', as they allow different representation of data, instead of just single aggregate number. In short, the key characteristics of actionable indicators are their detailed non-aggregated measurements and explicit aim for causality – in other words an established link between the use of indicators and the subsequent actions. The above development can be seen in the indicators of good governance and transparency as well as the university rankings and to a lesser extent in competitiveness indicators.

Good Governance and Transparency

The first ranking to assess transparency has been the Freedom in the World ranking by the Freedom House, published already in 1973 (see Table 1). The ranking concentrates on civil liberties and political rights, assessing also government openness and transparency. In 1980 Freedom House produced Freedom of the Press ranking that assesses transparency as an element of media environment. Related to the general rise of good governance as a global concern in the development economics, two prominent rankings of good governance emerged in the mid-1990s, Corruption Perception Index (CPI) by Transparency International and the WGI by the World Bank. The rise of the governance indices can be lined with the global concern over good governance and corruption, starting in the mid-1990s.[2] Several other

[2] Coinciding with the general pressures for economic globalization the concern over good governance led to the development of good governance indicators. Perhaps first of its kind, and a model for many, was the World Bank Institute's Worldwide Governance Indicators (WGI). While the World Bank has used Country Policy and

rankings that assessed transparency also emerged in the early 2000s: Reporters without Borders published its Press Freedom Index in 2002 and the United Nations e-Government survey produced two rankings in the early 2000s, e-Government Readiness Index and E-Participation Index. As part of the global drive for anticorruption (Ivanov 2009), Global Integrity launched its Global Integrity Index in 2006.

Aggregation allows ranking nations based on their relative position on the various measurements and the league table format has drawn a fair amount of media attention on certain global measurements. At the same time, they have become a subject of criticism. The most visible critique towards the rankings has been methodological, sparking a lively debate with and between the developers (Kaufmann, Kraay, and Mastruzzi 2010, 2011; Thomas 2010). The criticism towards the existing rankings – Worldwide Governance Indicators in particular – has led to attempts at developing more appropriate indicators and methods (Andrews, Hay, and Myers 2010; Gramatikov, Barendrecht, and Verdonschot 2011; Joshi 2011; McFerson 2009). Aggregation, the aim to make single ranking numbers, has drawn much attention to the first generation of governance indicators (Langbein and Knack 2010). There has been critique towards the validity of the measurements and the measurability of abstract issues (Andrews 2008; Barendrecht 2011; Ginsburg 2011; Neumann and Graeff 2010). Moreover, the global indices might not always be apt for observing the grassroots developments (Hinthorne 2011).[3]

Recently, there has been increasing critique towards the aggregated rankings that tend to lead to naming and shaming. In 2007, nine executive directors of the World Bank representing countries such as China, Russia, Mexico, and Argentina voiced their concerns about the WGI. The criticism was not as much about the accuracy of the measurements but whether World Bank should be producing such indices in the first place.[4] The above criticism is an

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Institutional Assessment (CPIA) tool since mid-1970s for assessing the eligibility for funding, the WGI was developed as a tool for general assessment on governance globally. It initially targeted the rather specific problems of global governance, such as corruption. But as several existing measurements of corruption and accountability were not always coherent in their results at the time of WGIs creation, it was developed to neutralize this variance by forming an aggregate number (i.e. ranking) of the available measurements (Erkkilä 2015).

[3] Also the use of the good governance indicators has drawn interest, most notably with regards to development funding (Hammergren 2011; Knoll and Zloczysti 2012; Saisana and Saltelli 2011). Here, the indicators such as the Worldwide Governance Indicators are seen instrumental for development aid, while also attracting attention on the local level (Morgan 2011; Stubbs 2009). While the World Bank has not used the WGI in its allocation of funding, the index has obtained such uses. The most prominent user of the governance indices in development funding has been the US government through its Millenium Challenge Corporation (MCC) that was established in 2004.

[4] One cited concern was Chinese low ranking in the voice and accountability component of the WGI (Guha and McGregor 2007).

instance of politicisation of ranking that has led to attempts at not only to readjust the methodology of measurements but also to redefine the goal of measurement. Some observers have called this a shift towards ‘second generation’ or ‘actionable’ governance indicators (Knack, Kugler, and Manning 2003; Trapnell 2011).

The rankings have been complemented and challenged by non-aggregate, actionable governance indicators produced by smaller NGOs. There are new indicators sets entering the field with a specific focus. For instance, the transparency of finances has been a topical issue in good governance debates, and the International Budget Partnership has been collecting an Open Budget Index since 2006. Since 2007, the Open Net Initiative has produced a mapping of government censorship and filtration of the internet. Also the Global RTI Rating by the Center for Law and Democracy and the Carter Center's Implementation Assessment Tool (IAT), are representatives of this new development. These indicators are clearly part of the new second-generation governance indices that have opened the way for smaller actors in the field. Interestingly, these NGOs tend to be of North-American origin, mostly building on the ideas of so called Washington consensus that sees increased transparency to benefit both democracy and economic efficiency. In other words, the new indicators largely adopt the existing normative and causal beliefs in the field but rather offer more nuanced and methodologically advanced tools for measuring transparency.

Also the OECD has decided to produce second-generation indicators on government performance. The OECD's Governance at a Glance (GG, launched in 2009) is more sophisticated than the rankings of governance performance or competitiveness (GCI, WGI, CPI), as it aims for a multidimensional assessment. As a newcomer to the production of governance indices, the OECD has argued strongly for the need of this new knowledge product on the basis that as non-aggregate figure it marks a methodological improvement to the existing rankings, most notably to the WGI (OECD 2006: 7, 60, 2007: 3). Nevertheless, as with WGI, GG measures governance in terms of its economic qualities (Erkkilä and Piironen 2014) and the assessments of transparency fucuses on collection, allocation, and use of performance information.

While the shift towards non-aggregated figures has marked an entry of smaller NGOs to the field of governance measurements, it has also caused shifts in the activities of established index producers. In 2010 Global Integrity decided to discontinue the Global Integrity Index,

which was already a widely cited ranking. To replace the ranking Global Integrity now publishes its annual Global Integrity Report with an Integrity Scorecard, which maps selected aspects of government integrity. In 2007, the World Bank responded to the methodological and political criticism of the WGI by publicly endorsing the use of "disaggregated and actionable indicators" (World Bank 2007: ix). Related to this, the World Bank has developed a set of indicators, named Actionable Governance Indicators (AGI) alongside its WGI. This new set of indicators is reform-oriented and striving for close observations on selected issues of governance (Trapnell 2011).

To summarise, though the field development of good governance indices might first appear as a competition among different data producers, it is perhaps best understood as an evolving epistemic community that shares many normative and causal beliefs on good governance as well as related policy objectives. While the rankings were informed by the so-called Washington consensus and had institutional ties to the major organizations of economic development, the second-generation indicators are in many ways part of the same movement, now only produced by smaller NGOs. In the case of transparency metrics, there are hardly challenges to the ideological premises of the rankings and the actionable indicators are in many ways reproducing the market-oriented core beliefs of good governance (cf. Drechsler 2004, Zanotti 2005). Though the critique of ranking may have politicized the aggregate indicators in terms of data presentation, the attributes of ‘good governance’ and ‘transparency’ as subjects of measurement have remained largely unchallenged.

University Rankings

The first publication of the Academic Ranking of World Universities in 2003 by Shanghai Jiao Tong University marked a shift in the transnational politics of higher education. Although the Academic Ranking of World Universities – also known as Shanghai ranking – did not aim at attaining international attention, it came to spark a new policy discourse on “world-class” higher education. Having started as an initiative of the Chinese government, this ranking exclusively focuses on “measurable research performance” (Liu & Cheng 2005, p. 133). The second most well-known global ranking system—The Times Higher Education Supplement Ranking—was first published in 2004 in response to a rising demand for advice on higher education (Jobbins 2005, p. 137). The THES, like most rankings, also emphasizes heavily the research output, meaning publications and citations.

The international recognition that the Shanghai ranking has attained was perhaps unintended, making it a "standard by accident" in global higher education. However, the development of global university rankings is closely tied to the general drive for evidence-based policymaking in other policy areas discussed above. The various rankings of good governance and national competitiveness have paved the way for all kinds of global policy assessments. The Shanghai ranking was, in effect, the first to provide higher education with a comparative measure that was already commonplace in other policy arenas. Rankings are now part of global higher education involving huge investments and markets as well as policy harmonisation through approaches such as the Bologna Process in Europe. Also from the perspective of global power shifts, it is not surprising that the first university ranking originated from Asia, given the significant investments in higher education in the region (Reinalda 2013).

Since the publication of Shanghai ranking there has been a surge in the number of global university rankings. At present, there are some dozen university rankings of global scope, though most of them enjoy little media publicity. For example, there are attempts at measuring the web-presence of universities by the Webometrics Ranking of World Universities. There are also rankings of national higher education institutions in Taiwan (Higher Education Evaluation and Accreditation Council of Taiwan, HEEACT), Netherlands (Leiden University) and Australia (University of Western Australia) that tend to focus on the research output of universities while giving less emphasis on teaching and learning.

The field of global higher education assessment that has become highly competitive, concerning actors as diverse as university research centers, newspapers, and consultancies. There are also two recent additions to the field of ranking: the European Commission funded U-Multirank by the Consortium for Higher Education and Research Performance Assessment (CHERPA) and the Assessment of Higher Education Learning Outcomes (AHELO) by the Organization for Economic Cooperation and Development (OECD). U-Multirank aims at providing a new type of mapping tool for comparing higher education institutions globally. The main difference is that U-Multirank does not provide an aggregate figure (ranking) but instead allows its user to choose the aspects of comparison. AHELO assesses learning outcomes in higher education, rather than research output.

Rankings have caused political controversies, shaking governments and higher education institutions, and leading to policy actions (Hazelkorn 2011). At the same time, there is also increasing awareness that the numbers are by no means apolitical but contain ideological baggage. In addition, the indicators have faced methodological critique. Similar to good governance indicators (see above), producing aggregate figures (that is rankings) to compare higher education institutions has been criticized for being vague and seeking media attention. This has also lead to attempts to create new non-aggregate measurements also known as "mappings" that arguably are more nuanced and methodologically more advanced than the previous ones. As an example of the above development, during the French EU Presidency in 2008, the European Commission launched a non-aggregate platform (U-Multirank) that would "do justice" to European universities. This shows both the politicization of global university rankings and the methodological changes that allow new actors to enter the field.

Yet the new figures on higher education that the field of global ranking provide mostly only minor methodological improvements without challenging the premises of existing university rankings. They mostly also emphasise research output using bibliometrical analysis, assume English as publication language and hold higher education institutions as their unit of analysis. Though the OECD's AHELO initiative draws attention to learning outcomes, it also builds on the atomistic ontology of competition. Similarly, while the U-Multirank initiative allows the user to choose and weigh the elements of analysis, it does not challenge the underlying premises of comparing universities already existing in the field. This shows how the existing figures come to shape future assessments – while the new actors entering the field aim to provide alternatives to the existing figures, they largely come to adopt the basic assumptions and causal beliefs already prevailing in the field.

As already noted, practically all global university rankings compare the research output of the universities. The North American Educational Policy Institute makes an exception by having produced the only global ranking to assess national systems instead of higher education institutions and focusing on the affordability and accessibility of higher education. This provides an alternative view of the matter of higher education rankings, where the Nordic and Central European university systems are ranked higher than the Anglo-American and Asian ones. But the North American Educational Policy Institutes assessment is marginal and mostly not even known to the actors in the field.

It is important to note that rankings focus on higher education institutions rather than national systems and, as such, cannot fully assess regional differences in higher education. Yet the rankings have strong geographical implications, showing for instance European, African and Latin American universities, among others, in questionable light as they are underrepresented among the top ranked institutions. This is visible in the new regional ranking initiatives that are discussed below.

To summarize, the field of global university rankings is ideationally linked with the rankings of good governance and economic competitiveness, seeing higher education as a competition on research output between higher education institutions. It is interesting how all the new figures in the field share the premises and hold universities as their unit of analysis (and not national systems). Similar to the good governance indicators, there are methodological shifts towards disaggregated figures, but no real challenges to the epistemic knowledge shared by the actors. Nevertheless, the field of global university rankings is fragmenting through the entrance of new rankings and actors producing them. Similar to good governance indicators, the established international actors such as the EU and OECD are effectively being eclipsed by small actors that have entered the field of ranking before them.

Competitiveness Indicators

The World Competitiveness Yearbook produced by IMD World Competitiveness Center (since 1989) and Global Competitiveness Report by World Economic Forum (since 1976) were the first comparative assessments for competitiveness. From 1989 to 1995 the two reports were produced together, but this collaboration ended in 1996. Both index producers now publish a ranking figure to compare the competitiveness of countries: World Competitiveness Ranking (IMD) and Global Competitiveness Index (WEF). After the collaboration ended, the two indicators relied on slightly alternative conceptualizations of competitiveness also weighing the attributes differently, leading to differences in the rankings of countries (Cho and Moon 2000, 197–200). Despite their differences, these rankings have promoted the discourse of competitiveness (Sum 2009), creating a strong political imaginary of globalization as economic competition between nations. The above competitiveness measurements enjoy broad visibility globally and have also influenced the rankings in other domains.

Over the past two decades the measurements of economic competitiveness by World Economic Forum and IMD have become broader in scope, now focusing also on knowledge resources of the state and the innovation environment. The conceptualization of competitiveness now comprises a holistic view of governance and institutions that enhance economic performance and the role of knowledge is increasingly being acknowledged as its critical component. Instead of measuring the mere price competitiveness of countries, the Global Competitiveness Report focuses on "the set of institutions, policies, and factors that determine the level of productivity of a country" (World Economic Forum 2014).

Since 2008 the Global Competitiveness Index merges the previous macroeconomic Growth Development Index with the microeconomic Business Competitiveness Index assessing now both aspects of national competitiveness. This shift also coincided with an external audit of the Global Competitiveness Index that was published in 2012, acknowledging that there was a potential "cultural bias" in the Executive Opinion Survey that makes part of the index along the more traditional economic data (World Economic Forum 2015, 78). Conducted by WEF's 160 partner institutes globally, the executive respondents in different parts of the world are asked to evaluate the quality of their operating environment. Mostly the questions are scaled from 1-7, containing assessments from worst to best situation perceived. As a response to the critique the survey respondents are now asked to answer the questions "in view of the country they are assessing based on international comparison" (World Economic Forum 2015, 78, 82).

The above critique of the index is again important as it shows the political character of numbers that are seemingly neutral (Desrosierères 1998; T. M. Porter 1996). The critique is also related to other indicators as the Executive Opinion Survey data is used by other index producers, for instance by Transparency International in its Corruption Perception Index. Also the World Competitiveness Ranking by IMD has undergone methodological changes (2001 and 2008-2012), becoming more holistic measurement of competitiveness also covering the issues of knowledge production and innovation.[5]

While the above rankings of economic competitiveness have not been challenged by other global measurements to the extent seen in the context of good governance indicators and

[5] http://www.imd.org/wcc/history-of-world-economy-ranking/

university rankings, there have been a shift towards the measurements of innovation that conceptually is closely linked to competitiveness. This has also brought in new knowledge producers and indicators sets, such as the Global Innovation 1000 (since 2005), Global Innovation Index (first published in 2007) and Bloomberg Innovation Index (since 2011). These have sparked a development for assessing innovation capacities of nations, also covering research, education and knowledge. There have since been several indicators for innovation that have come to complement the rankings of universities, economic competitiveness and quality of governance. Interestingly, the 2015-2016 Global Competitiveness Report lays foundations for future revisions concerning WEF's measurements of competitiveness introducing "relevant new concepts that modernize our thinking on specific elements—mainly in the domains of innovation, education, and finance" (World Economic Forum 2015, 43). These revisions will be included in the 2016-2017 edition of the Report, but apparently also World Economic Forum is further highlighting the role of innovation and education for competitiveness, which is most interesting from the point of view of global knowledge governance and the field development of indicators.

The scope and level of the indicators has also been a point of critique for the global indicators of competitiveness and innovation. Recently, several indicators focusing on cities and regions have emerged. Also global university rankings are now complemented by regional rankings.

Critique on the Scope and Level of Indicators: Regional Alternatives

The global rankings have also been criticized for their scope. Most notably, there have been regional alternatives to challenge the existing rankings. Again, we see changes in the producers of indicator knowledge as new players are entering the field. Also here the indicators are increasingly specialized and differentiated in terms of their focus. We identify the rise of regional rankings in all of the policy domains. There are assessments of economic competitiveness and quality of governance addressing specific regions such as Africa and Latin-America or groups of countries in transformation (by World Economic Forum, Bertelsmann Foundation and Mo Ibrahim Foundation). But the regional alternatives are most visible in higher education and competitiveness, where the innovation assessments and city rankings have also appeared to challenge the previous comparative assessments.

Regional Alternatives for Global University Rankings

At present, there are some dozen university rankings of global scope, produced by actors as diverse as university research centers (Shanghai Jiao Tong, Leiden, CHE, Taiwan), newspapers (Times Higher Education), consultancies (QS, Thomson Reuters), and international organizations (OECD, European Commission). However, the global university rankings only analyse the top 400 to 700 institutions (depending on the ranking), most of the world's 18,000 academic institutions are left out (International Association of Universities 2014). In short, the rankings come to focus on a very limited number of higher education institutions, providing a very exclusive and un-representative perspective on what the world of higher education is.

The limitations implicit within the rankings have compelled governments and other agencies to create alternative rankings. Some of these have had a strong regional flavour, such as the European Commission funded U-Multirank, a "European" university ranking of global scope. There are also several ongoing projects to create regional university rankings that can be seen as a potential competitor for the global rankings. Most notably the BRICS countries (i.e. Brazil, Russia, India, China, and South Africa) have been a special focus for such regional initiatives. The QS consultancy and Interfax Group have been working on a specific BRICS university ranking since 2012 (QS 2013). Already previously Webometrics had produced a specific ranking for the BRICS countries, with mostly Chinese universities in the top ten. The QS has also recently published an university ranking on the Arab region, where countries are investing heavily in higher education (QS 2015). Times Higher Education has also been active in the matter, arguing that the BRICS countries are punching below their weight in global rankings (Times Higher Education 2014b). It has since published rankings on both Asian universities in 2013 and BRICS and Emerging economies in 2014 (Times Higher Education 2013, 2014a). There are also Latin-American initiatives to rank the universities of that region. While these rankings might provide little improvement in methodological terms, they carry a strong symbolic message, highlighting again the political sensitivity over global rankings. The regional rankings evidently address the problem that most of the worlds universities, particularly those in developing countries are not ranked at all by the global rankings.

The effort to develop new regional rankings as a response to "global" rankings does not, however, address the underlying limitations of rankings in general. Like "global" rankings,

regional rankings are often justified as providing the information necessary to help students and scholars to find their place in global higher education. However, rankings mostly fail to cover teaching and learning outcomes as an element of evaluation (Kehm 2014). While rankings are often also defended as a means of providing accountability and insuring that universities take into account social demands, they reduce higher education to role of enhancing economic competitiveness, seeing research output as the key competitive advantage in global knowledge economy (Erkkilä & Piironen 2013b). This marks a striking shift from the traditional idea of academic researchers being primarily responsible to their peers in terms of scientific progress.

In short, the regional university rankings share the premises of the global rankings, providing only mild contrasting to the previous comparative assessments of higher education institutions. They hold the universities as subject of measurements. This is noteworthy, because assessing different national systems would most probably give a dramatically different picture of global higher education. While the current rankings come to idealise the top institutions the UK and North America, these regions would most likely not rank equally well if national higher education systems were compared instead. Also the regional rankings are in many cases produced by established ranking producers, providing no real alternative other than the scope of analysis.

Ranking Competitiveness and Innovation of Cities and Regions

The rankings of innovation also increasingly have a regional flavor, focusing on specific innovation environments and cities. There are initiatives for measuring regional competitiveness in Europe with EU Regional Competitiveness Index (since 2010) while Rich States, Poor States (first published in 2007) assesses the development in the United States. European Innovation Scoreboard (2001) published by the European Commission makes regional comparisons on innovation in Europe. Global city rankings, for instance by Economist Intelligent Unit and A.T. Kerneys, have also included assessments of talent, human capital and innovation. There are also new innovation indexes focusing specifically on cities, such as the Innovation Cities Index published since 2007 by 2thinknow, which calls itself "world's first innovation agency".[6]

[6] http://www.2thinknow.com/

The above development shows a clear shift from the previous measurements of national competiveness towards its regional measures, also including cities. Furthermore, there is a shift towards measuring innovation instead of competitiveness. These measures are particularly intent on comparing cities, seeing them as hot-beds of innovation, rather than states. As in the previous cases discussed above, we again see smaller actors entering the field with specific measurements, while some of the established index producers are also reassessing their methodology, as the case of Global Competitiveness Index shows (see above).

Recently, the issue of disaggregation has also been discussed in the context of competitiveness concerning city rankings. In 2015, the World Bank published a report on competitive cities, arguing that there is a growing consensus about the global importance of competitive cities (World Bank 2015, 19). The report stresses the importance of cities as the subject of analysis for competitiveness instead of countries. It also takes a closer look at the available measurements of city competitiveness and argues that the existing indicators have a rich country bias. Furthermore, the report states that "A better answer comes from disaggregating the indexes and supplementing them with new data" (World Bank 2015, 37). This shows how the idea of the benefits of disaggregation and second generation indicators is diffusing between different policy domains. Interestingly, World Bank that has been criticized for using aggregation in the measurements of good governance (see above) is now promoting disaggregation in measurements of competitiveness.[7] The above criticism of aggregate figures could mark yet another expansion of indicators, namely the entry of disaggregated indicators comparing cities.

The above fragmentation makes the ranking producers attempt to reduce complexity in policy assessment an elusive goal. Still we see no major paradigm shifts in the conceptualization of competitiveness and innovation, but rather incremental changes. As in previous cases, to enter the field of ranking the actors come to adopt many existing practices and ideas prevailing in the field that rather make them to further strengthen the established order than provide alternatives to it. Global knowledge governance is bound to be steered by rankings in the future as well. While the policy feed may become less coherent and also more regionally focused, the underlying ideas of economic competitiveness will remain dominant.

[7] It is noteworthy that since the publication of the Actionable Governance Indicators the World Bank has emphasized disaggregation in comparative assessments (see above).

Conclusions

Comparative measurement is not a neutral tool of rational inquiry. A decision to measure and rank implies choices and their consequences. There are indications that global indicators increasingly influence the policies of nations. This highlights the need to analyze the production of these policy instruments. As we have argued, the development of indicators in global knowledge governance is best understood as field structuration. Successfully entering the ranking field implies certain premises, some being the result of the inevitable unit-based logic of comparison, others the social and discursive structures setting the limits of credible measurement.

Rankings, their methodology, the data producers and their ideas are not isolated but interlinked and networked. In making these connections and their consequences visible through our analysis, we propose that rankings are a constitutive element of global knowledge governance. It is thus no coincidence that we find important similarities between rankings of academic performance, national competitiveness, good governance and innovation.

We see similarities between the cases discussed above. First, there is a clear shift towards disaggregated indicators, meaning an increasing criticism towards ranking. There are indications on politicization of rankings, particularly concerning the measurement of good governance and higher education institutions. This critique of ranking and aggregate figures has also marked an entry for several new indicators sets. Second, in the above cases there is also shift from global assessments towards regional comparisons. There are again new data sets entering the field of global comparative assessment, but now with the focus on cities and regions. Third, in the cases discussed, we see established international actors such as the EU or OECD (and occasionally also the World Bank) to be challenged and even outweighed by small NGOs, research institutes and consultancies. In the fast evolving field of global ranking, the data sets that have entered the field in early stages often enjoy greater visibility than the later entries. Also the media visibility of rankings (compared to disaggregated indicators) is an aspect here.

Our fourth and final point concerns the ideational foundations of the indictors amid the field development. We see the new indicators to provide only small incremental changes to the

existing figures, while the ideational premises and causal and moral beliefs guiding the activity seems to be largely shared by the actors. Nevertheless, we observe fragmentation of rankings and indicators relevant to knowledge governance in higher education, economic competitiveness, innovation and good governance. Paradoxically, the fragmentation of rankings has further deepened the field structuration of global ranking. While the scope and focus of indicators is becoming less coherent, they are becoming more embedded in transnational governance as means of comparative assessment.

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Table 1: Knowledge Governance - Field development and selected rankings

	1970	1980	1990	2000	2010
Good governance / Transparency	Freedom in the World (1972)	Freedom of the Press (1980)	Corruption Perception Index (CPI) (1995) Worldwide Governance Indicators (WGI) (1996)	Fringe Special (2001) Press Freedom Index (2002) UN E-Government Readiness/Development Index (EGRI/EGDI) (2003) UN E-Participation Index (2003) Global Integrity Report - Global Integrity Index (2006) Open Budget Index (2006) Open Net Initiative (2007) Actionable Governance Indicators –Public Accountability Measures (2008) Government at a Glance (GG) (2009)	Global Integrity Report - Integrity Scorecard (2010) Global Right to Information (RTI) Rating (2011) Implementation Assessment Tool (IAT) (2011)
Competitiveness	Global Competitiveness Report (1979)	World Competitiveness Yearbook (1989)		Global Business Competitiveness Index (2000) Growth Competitiveness Index (2000) Global Competitiveness Index (2004) Worldwide Centers of Commerce Index (2007) Rich States, Poor States (2007) A.T. Kerneys Global Cities (2008) Global Power City Index (2008)	EU Regional Competitiveness Index (2010) Hot Spots 2025 (2013) The Competitiveness of Cities (2014)
Higher education				Academic ranking of World Universities (2003) Shanghai University Ranking of World Universities (2003) Times Higher Education Supplement (2004) Webometrics Ranking of World Universities (2004) Affordability and Accessibility Comparison of Global Higher Education Rankings (2005) Performance Ranking of scientific papers for world universities (2007) The Leiden Ranking (2008) The SCImago Institutions Ranking (2009)0	QS World University Ranking (2010) Times Higher Education - Thomson Reuters (2010) High Impact Universities (2010) The U-Multirank (2011) The Assessment of Higher Education Learning Outcomes(AHELO) (2012)
Innovation				European Innovation Scoreboard (2001) Global Innovation 1000 (2005) Global Innovation Index (2007) Innovation Cities Index (2007) Innovation Union Scoreboard (2008) International Innovation Index (2009)	The Bloomberg Innovation Index (2011) The Startup Ecosystem Report (2012) Thomson Reuters Top 100 Global Innovators (2011) The Global Cleantech Innovation Index (2012) Top 100 Innovative Universities (2015) Contributors and Detractors (2016) Top 25 Global Innovators – Government (2016)

Table 2: Type of Knowledge Governance Assessment - Characteristics

	By whom?	For what?	Normative strands and underlying assumptions	Representation of indicators
Good Governance Indices	International organisation and NGOs. Recently a shift towards topic specific measurements of transparency that are produced by small NGOs.	Assessing quality of governance. Recently there has been a shift towards making the indicators actionable, meaning that they are actively used in policy reform.	The notion of good governance is rooted in governance performance and efficiency. Democratic qualities of governance are less highlighted. Furthermore the notions of performance and democracy are often conflated, so that increased performance is perceived to have positive effects on democracy as well.	Initially the indicators on good governance and transparency have been rankings, but recently there has been a shift towards so called actionable indicators that are non-aggregated figures.
Competitiveness Indices	Universities, foundations, research institutes, media companies, consultancies.	Benchmarking the competitiveness of countries, as well as regions and cities in order to provide guidelines for performance enhancement.	Rooted in ideas of competition and economic performance. The holistic nature of competitiveness and the importance of institutional factors is increasingly acknowledged.	Methodological challenges of measuring abstract concepts are generally discussed, but limited attention is paid to the political nature of the assessments. The assessments serve an instrumental purpose and are often simplified in order to provide keys for policy makers.
Higher Education Indices	University research centres, Consultancies, International Organisations, Media outlets	Benchmarking higher education institutions particularly with regard to their research output (publications).	University rankings assume Anglo-American research university as their model. Furthermore they build their assessment of research output on publication patterns of natural sciences and medical studies. The rankings are also linked to the notions of financial autonomy and accountability of research institutions.	Predominantly rankings. However, these have been recently challenged by non-aggregated measurements that are called 'mappings'.
Innovation Indices	Consultancy firms, universities, research institutes, media companies, foundations and NGO's. Often collaborative efforts.	Benchmarking for organisations, cities/regions or countries. Transformative agenda to enhance performance and enable commercialisation and economic development.	Rooted in ideas of competition and economic performance. Generally an unchallenged Schumpeterian depiction of innovation as a driver or economic and social development.	Depoliticized representation of rankings, albeit the difficulties of measuring innovation and innovation systems are acknowledged. Innovativeness predominately measured as an efficiency ratio