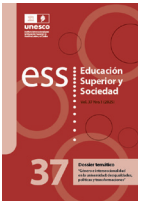

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3. Brazilian higher education performance in response to emerging societal demands

Desempenho do ensino superior brasileiro em resposta às demandas emergentes da sociedade

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ABSTRACT

This article argues that there is an emerging concept of university excellence that is increasingly replacing the concept of World Class Universities. This new paradigm is that of an Engaged University. This emerging paradigm prioritises two main characteristics: first, a focus on generating strong research and teaching capabilities based on natural strengths and demands of the region, and second, the ability to transfer knowledge effectively into guiding public policy focus. This conception has arisen in response to the priorities and demands placed on institutions in contemporary society. The standing World Class paradigm for universities is less prioritised by leading higher education systems and institutions than in the past. This paradigm is symbolised by a relatively limited set of quantitative indicators, mainly focused on publication in prestigious journals, the accumulation of citations, and the production of a few extremely prestigious scientists. In this article, first, we discuss the standing paradigm and its characteristics. Then, we characterise the changes we see that are pulling universities away from that model. Finally, a series of institutional capacities and changes for increasing public policy contributions are proposed based on two international examples.

Keywords: Higher education institution; Public policy; Social impact; performance indicators

Desempeño de la educación superior brasileña en respuesta a las nuevas demandas de la sociedad

RESUMEN

Este artículo sostiene que existe un concepto emergente de excelencia universitaria que está sustituyendo cada vez más al concepto de Universidades de Clase Mundial. Se trata de un nuevo paradigma, el de una Universidad Comprometida. Este paradigma emergente prioriza dos características principales: en primer lugar, un enfoque centrado en la generación de sólidas capacidades de investigación y docencia basadas en las fortalezas y demandas naturales de la región, y, en segundo lugar, la capacidad de transferir el conocimiento de forma eficaz para orientar el enfoque de las políticas públicas. Esta concepción ha surgido en respuesta a las prioridades y exigencias que se plantean a las instituciones en la sociedad contemporánea. Los principales sistemas e instituciones de enseñanza superior conceden menos prioridad que en el pasado al paradigma de clase mundial en pie para las universidades. Este paradigma está simbolizado por un conjunto relativamente limitado de indicadores cuantitativos, centrados principalmente en la publicación en revistas de prestigio, la acumulación de citas y la producción de unos pocos científicos de gran prestigio. En este artículo analizamos en primer lugar el paradigma vigente y sus características. A continuación, caracterizamos los cambios que observamos y que están alejando a las universidades de ese modelo. Por último, se propone una serie de capacidades y cambios institucionales para aumentar las contribuciones a las políticas públicas a partir de dos ejemplos internacionales.

Palabras clave: Institución de educación; política pública; impacto social; indicadores de desempeño

Desempenho do ensino superior brasileiro em resposta às demandas emergentes da sociedade

RESUMO

Este artigo argumenta que há um conceito emergente de excelência universitária que está substituindo cada vez mais o conceito de Universidades de Classe Mundial. Nesse novo paradigma, o de uma Universidade Engajada. Esse paradigma emergente prioriza duas características principais: primeiro, o foco na geração de recursos sólidos de pesquisa e ensino com base nos

pontos fortes e nas demandas naturais da região e, segundo, a capacidade de transferir conhecimento de forma eficaz para orientar o foco das políticas públicas. Essa concepção surgiu em resposta às prioridades e demandas impostas às instituições na sociedade contemporânea. O paradigma permanente de classe mundial para as universidades é menos priorizado pelos principais sistemas e instituições de ensino superior do que no passado. Esse paradigma é simbolizado por um conjunto relativamente limitado de indicadores quantitativos, concentrados principalmente na publicação em periódicos de prestígio, no acúmulo de citações e na produção de alguns cientistas extremamente prestigiados. Neste artigo, primeiro discutimos o paradigma atual e suas características. Em seguida, caracterizamos as mudanças que estamos vendo e que estão afastando as universidades desse modelo. Por fim, propomos uma série de capacidades e mudanças institucionais para aumentar as contribuições para as políticas públicas com base em dois exemplos internacionais.

Palavras-chave: Instituição de ensino superior; política pública; impacto social; indicadores de desempenho

Performance de l'enseignement supérieur brésilien en réponse aux nouvelles exigences de la société

RÉSUMÉ

Cet article affirme qu'il existe un nouveau concept d'excellence universitaire qui remplace de plus en plus le concept d'université de classe mondiale. Ce nouveau paradigme est celui d'une université engagée. Ce paradigme émergent donne la priorité à deux caractéristiques principales: d'une part, l'accent mis sur la création de solides capacités de recherche et d'enseignement fondées sur les atouts naturels et les exigences de la région et, d'autre part, la capacité à transférer efficacement les connaissances pour orienter les politiques publiques. Cette conception est née en réponse aux priorités et aux exigences imposées aux institutions dans la société contemporaine. Les principaux systèmes et établissements d'enseignement supérieur accordent moins d'importance que par le passé au paradigme de la classe mondiale pour les universités. Ce paradigme est symbolisé par un ensemble relativement limité d'indicateurs quantitatifs, principalement axés sur la publication dans des revues prestigieuses, l'accumulation de citations et la production de quelques scientifiques extrêmement prestigieux. Dans cet article, nous discutons tout d'abord du paradigme actuel et de ses caractéristiques. Ensuite,

nous caractérisons les changements que nous observons et qui éloignent les universités de ce modèle. Enfin, nous proposons une série de capacités et de changements institutionnels permettant d'accroître les contributions aux politiques publiques, sur la base de deux exemples internationaux.

Mots clés: Établissement d›enseignement supérieur; politique publique; impact social; indicateurs de performance

1. INTRODUCTION

Much recent attention has been paid to Brazil's leading universities' place in higher education, and how it compares to other universities around the world – in particular, the debate has focused on whether they can be considered "world class". This is perhaps to be expected of Brazil's flagship higher education institutions, which dominate so much of public life and were created with an explicit nation-building mission. However, discussions directed principally by the idea of having such a "world-class" institution, the bigger debates that surround the role of universities in society must be taken into consideration.

Universities should be seen as fundamentally connected to their local or regional contexts as well as their international ones. They have a responsibility to respond to the community that supports and finances them to ensure that they maintain national and regional relevance. This involves a much wider range of outputs, activities, and duties that need to be valued and supported than fit within the traditional World Class University paradigm. This new configuration of demands, challenges, and opportunities for higher education requires a rethink of the governance structures, career structure, and evaluation of science. Universities should seek to incorporate hybrid structures that span boundaries between academia and society to maximise the impact they have on their surroundings. This article discusses the current and emerging paradigms from the lens of a project supporting Brazilian universities to improve their governance and approaches to evidence-based decision-making.

Historical context

The roots of these demands placed on Latin American institutions can be found far back into the twentieth century, beginning with the Cordoba movement and its Liminal Manifesto of 1918, demanding closer links with society than the old Chair system would allow. This reform movement had a profound impact on the evolution of higher education in universities across

the continent, culminating in further agreements in Chile (1957), in Mexico (1972), and finally in Cuba (1996) that placed the role of extension as one of the three key finalities of university activity. Indeed, the Brazilian Federal Constitution (1988) and the Basic Education Law (Law no. 9394, 1996) enshrine extension as one of the three principal attributes of a university, alongside teaching and research, from which it is indissociable. However, the conception of extension throughout these remained something closer to public continuing and lifelong learning than knowledge transfer for public policy. In particular, this can be explained by long periods of political instability across the region, and in particular by military dictatorships in the second half of the twentieth century that sought to coopt higher education for state goals, rather than be guided by it, for example in the implementation of the Rondon Project in Brazil, which sought to use universities as mechanisms with which to deliver a sophisticated internship system. (Gomez *et al*., 2019). Universities in the region were typically seen as an issue for national security and subservient to governments throughout this period (Souza, 2010). Therefore, the idea that universities would be equal knowledge partners with governments was not a prominent feature of earlier thinking of community engagement in the region.

Indeed, the traditional role of knowledge exchange functions in Latin America has been more closely tied to teaching than to research. Extension was seen as a way of elevating the technical skills of the population, as well as having an emancipatory effect on rural populations without access to traditional courses (Freire, 1969; Moraes *et al.,* 2025). In part, this is because the spread of postgraduate education and research as priorities for universities began relatively recently, in the 1960s, with institutional support offered by the federal funding agency (Balbachevsky, 2013). This means that, as a result, social engagement and impact have been in the past heavily coloured by this historical structure that privileges the teaching functions of higher education over research functions. It is only relatively recently, following the innovation law of 2004 (Law no. 10.973) that Brazil began to move away from the linear, top-down model of innovation that viewed the university as a creator of technical solutions driven by governmental priorities towards a model that encouraged the formation of shared knowledge spaces and laboratories, leading to the development of a more reflexive knowledge space (MCTI, 2024).

This means that there has been a general disconnect between what is considered extension or knowledge exchange and the process of innovation,

meaning that inside institutions, it has tended to be treated separately, and therefore, institutions have been slow to develop mechanisms to measure the social impact of research through influencing public policy.

This approach contrasts with that present in the United States and Europe, where knowledge exchange has always been more closely allied to research agendas (Bush, 1945; 1950), stemming from the establishment of the National Institutes of Health and the technological arms race that the West found itself embroiled in the postwar period. We see consistent interaction not just in the need to finance public research, but in the need for that public research to inform public policy in return (Steelman, 1948).

Methodology

This article follows a comparative approach at the macro level (institutional), by comparing and contrasting systems and contexts in which institutions were founded and grew, and by identifying similarities and differences between them (Kosmütsky, 2020). It follows a thematic analysis that looks at the ideology and construction of the understanding of social engagement and university mission. It mixes these with juxtapositions of examples of how this is understood outside of the region (Blieklie, 2013). The juxtapositions demonstrate the layers of university governance that are absent in Latin America as a result of the relatively late introduction of research into the conception of social engagement. From this, we proceed to a series of policy recommendations based on these juxtapositions.

1.1. The World Class Paradigm

Since the turn of the millennium, policymakers, university leaders, and the media have been preoccupied with the urge to build "World-Class Universities." Jamil Salmi (2009) published his definition of the World Class University, which has become possibly the most widely used and authoritative definition of this concept. In it, he identifies three main characteristics of a world-class institution: a concentration of talent, a concentration of resources, and appropriate governance to deploy them effectively. This concept was further expanded by including elements of internationalisation and globalisation (Mohrman, 2008) as the Emerging Global Model. A global challenge was set forward for middle and upper-middle-income countries to develop world-class institutions as a way to compete on global knowledge and economic markets (Altbach, 2011).

For years, this concept was the principal way in which the world judged the quality of research-intensive universities. University rankings were the principal way in which this concept found its expression (Hazelkorn, 2007; 2008; Wai Lo, 2014; Marginson, 2008; Shin, 2008) – they use a single set of indicators that define excellence on a global level. For the Times Higher Education and Quacquarelli Symonds, this is primarily characterized by institutional recognition defined through reputation surveys. Universities increasingly incorporated ranking performance as a key part of their institutional mission (Erkkila, 2020; Hazelkorn, 2008)

Research excellence for a world-class university is represented by publishing in prestigious publications with global circulation and publishing highly cited research at a great volume. Teaching, where it is valued at all, tends to be represented by quantitative measures that refer to the financial resources invested in the student body – small class sizes and large teaching budgets are preferred. Knowledge exchange, outreach, and extension are barely considered. Essentially, the World Class University paradigm sets out a relatively restrictive set of common performance indicators to which universities in Australia, China, Germany, or Brazil may be directly compared with each other, regardless of their social and political contexts, or the local needs for higher education and knowledge production.

The indicators linked to this concept provided a relatively easy way to compare the functioning of leading higher education institutions across cultural and social contexts. In this sense, they have had a certain value as tools for decision makers to ensure that their institutions are producing knowledge that is well recognised by global academia, and that the institution is increasing its prestige as a result. University rankings and the World Class Universities debate should not be discarded as meritless, but they present some very significant limitations.

Gradually, as this concept became more prominent and central, a variety of criticisms emerged. The concept tended towards institutional isomorphism and uniformity (Pusser, Marginson, 2013), it reinforced a centre-periphery structure that prioritised the research and teaching agendas of a few Anglo-Saxon elite institutions (Ordorika, 2015), propagated a simplistic and reductive public view of the quality of institutions (Blasi, 2017), overemphasising research performance in the English language (Marginson, 2007). From such a perspective, a World-Class University serves the interests of global society; therefore, the research challenges it attends are thought of as global challenges, but are often challenges that principally affect a few rich coun-

tries with high concentrations of universities, especially the United States. For this reason, world-class universities tend to invest and publish heavily in themes such as cardiovascular obstructive pulmonary disease (COPD), related to a global obesity pandemic affecting mostly prosperous countries, but far less in diseases such as dengue, schistosomiasis, or Chagas disease (all on the World Health Organisation's neglected diseases list). This is because of the lower number of research-intensive universities in the regions where those diseases are endemic, and a tendency to prioritise subjects that are more likely to be published in high-ranking journals.

In the table below, we present a set of central beliefs, key quantitative indicators that represent these beliefs, and the methodologies and data sources that are typically used to calculate them.

Table 1. *Traditional World Class University paradigm concepts and associated indicators*

Paradigm	Concept	Selected Priority Indicators	Sources and methodologies
Traditional World Class paradigm	Produces leading scientists who have an outstanding impact on their scientific fields	Nobel Prize winners, Fields Medal winners Highly cited (top 1%) most cited articles in the area of knowledge Number of articles published in top-ranked journals	Quantitative analysis of Bibliometric databases and awards lists
	Produces large quantities of world-leading research	Field weighted citation impact and variants (Q3, etc.) Number of articles among the top 10% most cited in the area of knowledge	Quantitative analysis of Bibliometric databases
	Produces global leaders through teaching	Number of graduates in the C-suite in Fortune 500 Companies Number of international full-time students Ratio of students to academic teaching staff	Quantitative analysis of institutional data and publicly disclosed data from companies

Source: Authors.

On this concept, universities should be universally strong in all areas of knowledge. This strength and excellence are measured by academic recognition, whether by international scientific awards or, most often, by citations of publications in large publication indexes such as Web of Science or Scopus. Teaching outcomes are typically understood in terms of graduating salary and executive positions reached by graduates. Knowledge exchange and outreach activities are broadly overlooked. The key indicators for this conception are based on a relatively small set of quantitative data, with little focus on social, economic, or environmental impact or relationships with external communities.

1.2. Focus on local priorities and impact

Although the narrative around World Class Universities has become almost reflexive in the way that university leaders, policymakers, and the media talk about their desires and ambitions for their higher education institutions, this is not necessarily reflected in their actual ambitions, nor in the policies set by many countries.

During a visit to the Legislative Assembly of São Paulo (ALESP) at the end of 2023 to interview members about their expectations of public universities in the State of São Paulo, the need to deliver real impact to the lives of their communities was far more commonly cited than presence on global lists of best institutions. The deputies interviewed were interested in universities' ability to train and educate the families of their voters in a way that allows them to contribute productively to their local economy and community, to produce knowledge that allows them to make informed decisions on challenges facing local, state, national, and international challenges that they face. These priorities are not well captured by the World Class paradigm and lead us to propose these two main characteristics as key components of the model that Brazilian decision makers should focus on.

Protecting the Amazon rainforest and fomenting sustainable social and economic development for the people that live there is a scientifically intensive activity that requires the generation of new knowledge in consonance with traditional knowledge, as well as training and educated skilled labour The value of locally embedded knowledge networks able to span the gap between traditional knowledge and new knowledge production has proven to be more effective in creating and disseminating knowledge to a wider variety of stakeholders in the biome than international institutions working alone have (Axel-Berg et al., 2025). This knowledge, aligned with public policies such as

the Bolsa Florestal[1] and the robust impact evaluation of both the scientific activity and the results of the policy itself, is the best way to ensure sustainable development of the biome that leaves the forest standing.

The need for local priorities to be considered affects teaching as well as research. The digital revolution will bring about huge advantages for some, but critical vulnerabilities for others whose jobs will cease to exist. A recent (Cazzaniga, M. *et al*., 2024) study found that the sectors most exposed to risk are those with high numbers of workers without higher education, but in professional fields. Managing this transition for the workforce from vulnerable fields into those that benefit from artificial intelligence is a critical challenge, and one that will require a coordinated plan from higher education institutions in their teaching, research, and outreach missions.

These vital challenges are left unaddressed by the World Class University concept, and overemphasising the importance of ranking position means we risk neglecting their importance in public debate around higher education.

As compelling as the World Class narrative may appear, the debate around what the purpose of a university is and its place in the world has moved on significantly in the past decade. Increasing global fragmentation between great powers and societal polarisation at a local level have brought about significant changes to the expectations placed on universities from governments, and this change is unlikely to reverse soon.

2. ENGAGED UNIVERSITIES: AN EMERGING PARADIGM FOR UNIVERSITY PERFORMANCE

Gradually, in response to these external challenges, and a fragmenting and polarised world, the concept has become less prominent, with a variety of different models proposed with more of an orientation towards social justice (Rhoads, 2016), local impact (Douglass, 2016), a renewed interest in older conceptions such as the civic university (Godard; 2009, 2016):

> **The engaged civic university... is one which provides opportunities for the society of which it forms part. It engages as a whole with its surroundings, not piecemeal; it partners with other universities and colleges; and is managed in a way that ensures it participates fully in the region of which it forms part. While it operates on a global scale, it realizes that its location helps to form its identity and provides opportunities for it**

to grow and help others, including individual learners, businesses, and public institutions, to do so too. (Godard, 2009)

The civic university is a model that is seen as a means to drive sustainable development in local communities (Tomasi, 2021). Recent geopolitical crises have accelerated an increasing global isolationism that appears to be structural rather than caused by any specific event.

While the Civic University conception provides a good base for filling this "gap" that universities in Latin America have with prioritising the transfer of their research to public policy and social impact agendas, there are other characteristics that are essential to fulfilling this. In the table below, we outline the conception of an Engaged University, which combines the existing social impact from knowledge exchange activities in Latin America, in teaching and in public communication of science, with an increased importance and prioritisation of research functions.

Many of the largest and most ambitious national and international initiatives to improve the performance and impact of research ecosystems have, in recent years, pivoted towards the construction of individual areas of knowledge with high performance, and especially towards areas of high social, environmental, or economic priority. While these approaches are typically allied with structural funding for capacity building, the majority of funds are dedicated to the development of capabilities in areas of excellence, not to the building of World-Class Universities. Project 985 was eventually replaced by the Double First Class construction in 2015, which offered competitive funding for specific areas of knowledge, rather than for overall university performance. The Horizon 2020 and then Horizon Europe initiatives of the European Commission focus mainly on a series of pillars of strategic importance, while national initiatives such as those of Germany (2006) and Norway (2011) have come to focus much more on centres of excellence arranged around a specific topic than on universities themselves (Axelberg, 2019).

2.1 Areas of excellence

The priority for many decision makers and especially funders over the past decade has not been on raising the quality of institutions, but on producing areas of outstanding performance in certain areas of knowledge. These areas are rarely formed solely as the result of government initiative; they are usually formed as the organic combination of societal or governmental demand, natural resources, and concentrations of talent, among others. These

are necessary but not sufficient conditions for areas of outstanding performance to emerge. The role of visionary researchers, pioneers, and or leaders is necessary to consolidate the underlying resources. These figures can, in turn, attract funding, collaborative relationships, and other talented researchers.

The San Francisco Bay Area has an extraordinary concentration of capabilities in computer sciences as a result of the establishment of the Federal Telegraph Commission in 1909, the presence of US Air Force bases in the 1930s, and then a concentration of ARPA funding into radar and communications technology in the 1960s. The location and strategic importance of Northern California in the Cold War produced security demands and favourable conditions for the growth of Silicon Valley, which the US Department of Defence was able to supply financing for. In this way, an area of globally competitive excellence was formed in response to social demands, supported by public policy.

Brazil has capabilities in agricultural science, public health, and environmental sciences that are among the most influential on the planet. Like Silicon Valley, these capabilities have been formed by a combination of historical and geographical factors, societal demands, and financial support. The Luiz de Queiroz College of Agriculture at the University of São Paulo (ESALQ-USP), for example, was founded in 1901 by Luiz de Queiroz, a prominent agronomist and farmer who saw the need to improve the quality of agricultural management of Brazil's vast agricultural lands. As a result, Brazil was able to benefit from sustained investment in science in the area, vast natural resources, and a concentration of talent.

The emergence of leading areas of knowledge is usually in response to specific stimuli and favourable conditions. It is rare for an institution or ecosystem to have these conditions in all areas of knowledge simultaneously. Therefore, since a world-class institution cannot be defined at all, it refers much more closely to individual areas, not to comprehensive institutions. In other words, universities do not have to excel at everything to excel at anything.

2.1.1 Wageningen University and Research

The University of Wageningen is a specialised institution in the Netherlands with 13,564 students and a further 2,440 PhD candidates. The institution has 7,044 members of staff. Wageningen has just one faculty, split across five departments: Agrotechnology & Food Sciences, Animal Sciences, Environmen-

tal Sciences, Plant Sciences, and Social Sciences. It is situated in the small rural town of Wageningen.

Despite this seemingly humble profile as a regional institution in a rural area, Wageningen University and Research is unquestionably one of the world's leading authorities on sustainable agriculture, food transition, and security. Wageningen is regularly among the top few most productive institutions for agricultural science and is among the leading authorities on sustainable development and agriculture. It has done this by maintaining a specific focus on a set of missions approached from a variety of disciplinary perspectives. This narrow focus on mission subverts the traditional thinking that to excel, a university must cover every area of knowledge and be a World-Class University.

The university was founded in 1876 as the National College for Agriculture, showing a longstanding commitment to agricultural education in the region. Even more significantly, Wageningen is today the central component of a knowledge ecosystem known as the Food Valley, a collection of food multinationals, startups, farms, and other organisations employing 15,000 people. This region drove €120 billion in food exports in 2023, making the Netherlands the world's second-largest food exporter by value.

By maintaining an absolute focus on the environment around it, Wageningen has managed to become a global reference for agricultural sciences by focusing first on its local surroundings.

2.2 Society focus with global comparison

Traditional university rankings are still heavily used to compare some baseline performance parameters of leading national universities. Performance in these indicators that describe world-class institutions can form part of a wider, more ambitious plan for universities that considers the demands of the public that finances and supports the university, and the mitigation of the grand challenges facing contemporary society. The importance of ranking position should be placed in the context of universities' impact on the world around them – to their local environment, national context, and global role. That is the reason some universities are choosing to join the INORMS initiative called More Than Our Rank[2], which encourages institutions to publicly share their unique strengths and achievements that are not captured by traditional ranking metrics. This

initiative promotes a broader and more inclusive definition of institutional success, highlighting the diverse ways academic institutions contribute to society beyond their ranking positions.

This means that universities should not lose focus on using international comparisons for benchmarking their performance and their ability to carry out their missions. This mission must be clearly and ambitiously articulated locally, with a sensitivity to local demands. The way this can be done differs. The University of Utrecht, for example, takes a critical stance towards university rankings, emphasising that these rankings often fail to capture the full scope of an institution's quality and impact, and has opted out of the Times Higher Education and Quacquarelli Symonds rankings[3]. It suggests users use responsible tools, like the U-Multirank benchmarking tool, which allows one to identify relevant higher education institutions that your institution may learn from to improve its performance[4]. Sorbonne University has decided to discontinue its subscriptions to Scopus and Web of Science starting in 2024, as part of its commitment to open science. Instead, the university will use OpenAlex, an open-access database, to manage and analyse research information. This shift aligns with the Sorbonne's broader policy of promoting open, free, and participative tools for research and data management[5].

Ranking agencies are aware of this change in priorities for universities. In the past few years, Times Higher Education has released an Impact Ranking, based on the 17 Sustainable Development Goals defined by the United Nations, while Quacquarelli Symonds has released a ranking based on universities' contributions to environmental and social sustainability.

Such a plan will require sets of overall performance metrics, but placed in a much wider context that considers the role of narratives, the description of projects and individual actions backed up by solid evidence that universities are engaged in the very real process of transforming the world around them, and helping society to adapt to change. For this, they should seek to develop and embed active institutional research and institutional indicator and data management offices, of the type that both the University of São Paulo (USP) and the State University of Campinas (Unicamp) have in recent years, along with clear strategic goals in their "institutional development plans" (*PDI*s, in Portuguese) that align with local, regional, national and global priorities.

2.3 Impact on public policy

Part of the essential role that universities assume in contemporary society can be resumed by Pielke's (2007) conception of the honest broker. Rather than being a specific advocate for one position, ideology, or cause, the role of a researcher as a policy advisor is to present the best scientific evidence to support a decision, regardless of their opinion or values attached to an issue. The honest broker of policy alternatives seeks to offer the most complete possible scientific information available to reduce the scope of decision-making and choice for policymakers to make scientifically guided decisions. This interaction can take the form of published science being cited in policy documents (Lewison, 2008), in formal governmental consultations, roundtables, committee consultations, co-created and co-coordinated research projects into specific issues, presentation of policy briefings, informal consultations between policymakers and academics, formal policy advisory roles (Bleiklie, 2022; Sprjuit, 2016), among many other activities. The relationship between policymaking and research is typically much more complex than the relationship that governs research internally (Bornmann, 2013). The impact and timeframe observed vary widely depending on the type of policy and the type of interaction (Lingard, 2013; Boswell, 2017).

There are many different approaches to measuring and valuing policy impact. Scientometric approaches often include the use of tools such as Overton.io or Altmetric (Haunschild, 2016, 2017; Dorta-González, 2024; Coggo, 2025), which present a compelling but incomplete picture of policy impact due to the geographical and linguistic limitations of tools (idem, 2025). These scientometric approaches form an increasingly important part of how we understand the interaction between the spheres of public policy and research; however, because by definition they cannot capture the full range of productions and types of activity, they are considered important, but insufficient measures of this university function.

2.3.1 The university as a values-based actor

The idea that universities should be engaged in the support of public policymaking does not mean that they should, as an institution, espouse a specific political position or support for a specific political party or faction. ETH Zurich's recent Policy for Institutional Positioning[6] makes clear that:

> **ETH Zurich is guided by a set of core values that shape its operations and culture: responsibility, ingenuity, openness, respect, inclusion, and em-**

> **powerment. The institution promotes responsibility through accountability for its actions […] embraces openness by being accessible and receptive, upholds respect by having high regard for all people, cultivates inclusion by creating a sense of belonging, and empowers individuals by building trust in their competence.**

Therefore, while it respects the rights and even encourages its community to take a stance on geopolitical issues, the institution itself maintains impartiality to preserve academic freedom of expression and to avoid alienating members of the community:

> **Institutional impartiality is essential for preserving academic freedom. It protects a safe space for unbiased intellectual exploration and open academic debate, in which multiple perspectives can coexist**.

2.4 Key indicators for universities engaged in social, local, and globally recognised impact

The concepts described above, around civic universities and the role of academics as honest brokers, are coalescing towards a concept of Engaged University. An Engaged University is one that actively collaborates with its surrounding community and broader society to address local and global challenges. This type of institution prioritises public service, community involvement, and social responsibility alongside its traditional roles of excellent education and research. Engaged universities foster partnerships with various actors in society, including government, industry, and non-profit organisations, to create meaningful impact and drive positive change. They also emphasise open science and experiential learning, encouraging students to apply their knowledge in real-world settings to benefit the community.

In comparison to the world-class paradigm described earlier, there are a number of characteristics in this conception that require attention. For example, measuring the public policy impact of research is a significantly more complex task than measuring the number of citations registered in academic databases. It requires consideration of a much wider variety of productions, as well as stakeholder appraisal to judge impact. This mixture of qualitative and quantitative analysis is characteristic of this shift towards focusing on the impact of higher education on society. Furthermore, by looking at the application of science in some contexts, while preserving the value and importance of basic science on the other means that outputs can no longer be

Table 2. *Engaged university paradigm concepts and associated indicators*

Paradigm	Concept	Selected Priority Indicators	Sources and methodologies
Engaged university	Drives awareness of basic and applied science and informs the public on a range of issues	Number of articles published in full open access with associated reach and use indicators Number of appearances, citations, and mentions of university research in general media Public reach and evaluation of knowledge exchange activities	Quantitative analysis of bibliometric databases, general media, and social media Total and profile of the public engaged in knowledge exchange activities Stakeholder appraisal and evaluation of activities
	Creates and disseminates knowledge that has a significant impact on ensuring that public policy at all levels is driven by the best available scientific knowledge	Citations of academic research in public policy Number of evidence notes presented to policymaking organisations Policy papers authored for multilateral and international organisations Participation in public calls for knowledge	Scientometric analysis of the policy impact of published research Qualitative analysis of projects supported by indicators, characteristics of the project, ambition, and activity
	Creates graduates with the potential to generate significant positive social impact	Number of graduates working within fields related to sustainable development, health, or policymaking Orientation of syllabus and theses towards sustainability, responsible citizenship, and stewardship Social inclusion and representativeness of student and staff bodies Experiential and community-based learning initiatives	Quantitative analysis of institutional data, public tax records, and publicly disclosed data from companies Qualitative analysis of syllabus Internal student and staff data and survey data

Source: Authors.

measured by a common metric between the two. In line with the recent LERU Position Paper on Next Generation Metrics[7]universities will have a significant task to adopt new evaluation and data gathering methodologies in order to accompany and stimulate this move.

To illustrate how this can be done in practice, two innovative governance approaches to managing policy engagement are described in this section. One of the main ways that universities can increase their impact on the world around them is by strengthening their ties to local governments and decision makers.

2.4.1 University College London Public Policy

University College London (UCL) has a full-time permanent public policy transfer unit composed of nine full-time professionals to coordinate all of the university's policy engagement activities.

This unit offers its staff:

- Funding – a small grants scheme and funded policy placements
- Opportunities to participate in policy-focused activities – policy roundtables, public policy events, and the development of research summaries for policymakers
- Advice, guidance, and training – online resources and advice sessions to help you enhance the policy impact of your research
- Support for researcher-led policy engagement – including funding applications and Select Committee inquiries.

It also publishes regular evidence notes on key topics, giving clear and concise information derived from research for policymakers; https://www.ucl.ac.uk/public-policy/support/evidence-notes. These notes help to present up-to-date information in an accessible format for decision makers who do not necessarily have the time to read full research papers.

Fellowship Programme

UCL offers fellowships to its early to mid-career researchers to spend time embedded in policymaking organisations in order to help with the collection of evidence and better understand the needs of policymakers and processes. The returning fellows provide accounts of what they did, published on the website

CAPE Project

https://www.cape.ac.uk/ The Capabilities in Academic Policy Engagement initiative is shared between UCL and other institutions in collaboration with the Government Office for Science, the Parliamentary Office for Science & Technology, Nesta, and the Transforming Evidence Hub. This consortium conducts research into increasing policy engagement and offers fellowships, seed funding, and resources for other institutions and researchers.

Impact monitoring

This policy brokerage allows UCL to have a very clear impression of how its university affects public policy in the UK. UCL can achieve this because it has standardised and coordinated its public policy contributions. To do this, it has developed the following key indicators:

The university has a specific focus on producing and publishing evidence notes (guided by IPO guidelines and Hargreaves report) in a standardised format on key topics that summarise complex topics in an accessible format for policy professionals, describing the state of the art, and producing policy suggestions and possible limitations.

It organises and promotes Policy Roundtables, specifically organised meetings that bring together specialists and policymakers to discuss relevant scientific knowledge for the formation of public policy. It also counts the number of meetings held with policy professionals by UCL academics throughout the year, a key indicator of the intensity of activity between public authorities and university staff.

2.4.2 Erasmus University Rotterdam Impact Toolkit

When the university came to write its strategy for 2020-2024, it placed impact at the centre of its priorities, with its two main ambitions being: "Fostering our societal impact identity" and "Embedding excellent academic research in society". In the course of forming these priorities, the university recognised that the social impact itself was a contested concept and sought to carry out a thorough review of debates in order to produce a set of definitions and practices that reflect the activities of the university.

Instead of adopting a universal definition of impact, the university embarked on a learning approach to selecting and developing indicators and producing its own protocol for planning, monitoring, and evaluating impact. In effect, it launched an impact research agenda to supplement the aims of its strategic plan.

This exercise resulted in a set of resources that help to guide them in planning, monitoring, and evaluating the social impact of university activities.

The toolkit covers the following activities:

Building impact stories and narrative CVs; Evaluating student impact capacity; Cataloguing impact types; Impact indicator selection; Impact strategy development toolkit; Preparing Case Studies for Impact Within

SEP (2021-2027); Productive Interactions (SIAMPI): A Method for Impact Assessment; Proximity Lens on Structural Collaborations: A Method for Impact Assessment; Stakeholder Mapping Guide; Theory of Change (ToC): A Method for Impact Planning and Assessment; Writing academic bios, among others.

The sections on impact categorisation and indicators split what we broadly term policy impact into policy impact (influencing decisions of public policy) and legal impact (influencing decisions that affect legislation), as well as separating the types of impact that may be achieved into capacity building, conceptual change, instrumental change, knowledge culture, and enduring connectivity. The Evaluating Societal Impact toolbox is available at https://www.eur.nl/en/research/research-services/societal-impact-evaluation/impact-toolbox

Reporting on the 2024 Strategy

The multifaceted approach to impact at Erasmus University is shared publicly in its 2024 Impact Report at https://impactreport.eur.nl/a-university-with-a-purpose. This report shares the journey of how the community has fared in the past years in their transition to become an impact-driven university. Through evidence-informed, narrative-based stories, they share lessons learned and their path ahead to inspire change.

These examples demonstrate how universities are ensuring that their research, teaching, and extension activities are able to plan for, execute, sustain, and measure impact in the most effective way possible. The table below summarises the kinds of connections to government, industry, and society that they maintain, their governance structures, and their evaluation.

3. HYBRIDISATION OF UNIVERSITY FUNCTIONS, OUTPUTS AND SPACES

The emergence of hybrid institutions is a concept we find in the Triple Helix concept (Ranga & Etzkowitz, 2013; Champenois & Etzkowitz, 2018). In the interaction between university, government, and industry, the interfaces between these spheres should develop hybrid mechanisms that draw shared governance and understanding from different spheres to facilitate the flow of information between them. This means that for parts of the university that interact with public authorities, the information they produce should be in a

mutually intelligible format to reduce knowledge asymmetries. Their activities should be evaluated collaboratively to ensure that impact and rigour are achieved. The professional profile of people working in these areas is furthermore essential, as actors should be able to pass through multiple institutional environments. This hybridisation of certain relevant parts of universities helps to promote the permeation of knowledge through society.

What unites these examples is the adoption of hybrid forms of research outputs, evaluation, activity, and career paths. We will discuss the needs, implications, consequences, and learning curves required for each of these forms in the discussion below:

3.1 Hybrid research outputs

The examples above do not see articles in peer-reviewed, indexed journals as the only, or necessarily most relevant, product to come out of research. This defies traditional thinking around scientific value or impact. For a century, scientific publications in peer-reviewed journals have been considered the principal currency of scientific communication, and the principal way in which the success of a scientific endeavour is judged. The elements that measure research performance in rankings, for example, are composed almost entirely from publication and citation data from a few large indexes: Web of Science and Scopus.

There are a number of issues with transferring scientific research into policy documents. First among them is the difficulty of accessing traditional paywall model journals, which are prohibitively expensive to access for institutions and unrealistic for public bodies to maintain. In effect, this erects a large financial barrier between knowledge and knowledge users. In response to these hurdles, the open access model has grown in popularity.

However, merely making scientific knowledge available without further assistance also implies significant linguistic barriers between knowledge and potential knowledge users. Scientific language is often very different from everyday language and requires specialist knowledge to understand. Consider the difference between the way the word "significant" is used in scientific writing – to mean having a 95% probability of being confirmed – with how it is used in everyday language, to mean important or likely to have a major effect. Scientific writing often does not produce specific policy guidance or recommendations, and rarely is it in response to specific policy demands. The role of academic peer reviewers is to assess the scientific merit of research

and how it contributes to the advancement of scientific programmes. Therefore, it is often not well-suited to research in response to specific challenges.

In response to these challenges, the examples above describe how these two universities have developed specific formats for providing scientific guidance, policy proposals, reports, and other productions that are specifically suited to generating impact. Formalising the structure of these productions allows universities to measure how much they are doing and how well. It requires a different understanding of the evaluation of the value of different types of publications.

3.2 Hybrid evaluation

This is one of the main reasons that the Agreement on Reforming Research Assessment (2022) states that research assessment should take into account:

valuable contributions that researchers make to science and for the benefit of society, including diverse outputs beyond journal publications, and irrespective of the language in which they are communicated. (CoARA, 2022)

This international agreement sets out a range of principles for the evaluation of scientific activities in a responsible way that encourages evaluators to base research assessment on qualitative judgment supported by the responsible use of quantitative indicators. This movement is also indicated by a range of international agreements on research assessment reform, principal among them the San Francisco Declaration, or DORA, whose principles have been widely adopted by institutions around the world.[8] This type of evaluation is necessary to support policy-focused research because the range of productions, interactions, and impacts is not possible to assess with a restricted range of key indicators.

The other key characteristic of these examples is that evaluation is carried out principally through evidence and appraisal of performance by the partner institution and knowledge user. These assessments are then supplemented by quantitative indicators to reinforce findings.

3.3 More flexible career paths

One of the notable aspects of this hybridisation of knowledge production and dissemination is the emergence of hybrid professionals. The knowledge brokers and programme managers who staff these projects are educated to

PhD and often also hold academic positions. However, they also all have significant experience working with public bodies. Therefore, they are neither full-time academics nor are they technical support staff. The ability to cross these boundaries in a hybrid role requires a specific set of experiences and training that is highly specialised and respected as a profession equivalent to a university professor.

These professionals are neither solely researchers in the traditional sense, nor policymakers or political advisors, but a mixture of both. Therefore, they can reduce uncertainty in communication and serve as mediators between the two spheres. Because of the ambiguous, hybrid nature of their roles, they tend to carry a wide variety of job titles such as knowledge broker, policy broker, and programme coordinator. This professionalisation of research adjacent professions led to the formalisation of the Research Managers Competence Framework (RM Comp)[9], published by the European Commission in 2025. The framework is designed to identify key skills and competencies needed for effective research management, which includes stakeholder engagement. It supports career development for research managers and aligns institutional practices with European standards, ensuring consistency across roles and organisations.

3.4 How can Engaged Universities improve policy impact from their research activities?

Based on the examples and analysis, we can draw the following recommendations for universities in the short to medium term:

- Conduct a review of impact practices that adequately address the specific institutional and social contexts of the institution to ensure that what is being measured and incentivised is relevant to the institutional mission.
- Establish clear and formalised agreements with partner institutions that imply:
  - Formatted reporting mechanisms that standardise the transfer of knowledge in ways that do not require the use of peer-reviewed academic journals
  - Encourage exchange of professionals between the host and partner institutions
  - Establish joint oversight and evaluation mechanisms that take the stakeholder perspective into account

- Encourage the formation of hybrid professionals able to work comfortably with academic and policymaking cultures to act as knowledge brokers.
- Establish responsible evaluation practices focused on the gathering of evidence from stakeholders, considering a variety of inputs and supported by appropriate quantitative indicators.

3.5 Longer-term ambitions for Brazilian leading universities wishing to improve their engagement

Implement a permanent policy impact team, with fellowships and seed funding offered to researchers who wish to work with policymakers. One of the key characteristics that we see in the examples above is the use of policy fellowships or secondments that embed academics inside organisations to help them provide timely and effective evidence to inform decision-making, and to better understand the policy cycle. This is how UCL can be an inspiring example in producing evidence for policymakers, and how it can record and present this information by acting as a knowledge broker between its staff and the British government, third sector, and international policymakers. To further improve the transfer of knowledge, articulation of specific demands from public authorities helps to orient research in direct local government needs.

4. CONCLUSIONS

We must now consider the role universities have as Engaged Institutions that respond to the demands placed on them by local, national, and federal governments, and can develop outstanding areas of knowledge based on these demands and the resources available to them.

Universities and research-performing organisations have an almost unique ability to influence and benefit the world around them for the better through the production, dissemination, and application of knowledge. Areas of specific excellence, grounded in basic and applied research outcomes, can be produced by a combination of geographical and natural factors, societal demands aligned with public policy, and funding programs. The concept of a world-class institution is decreasing in importance compared to the idea of outstanding areas of knowledge with the ability to generate real social, environmental, or economic impact.

Identifying the value or impact of this knowledge is of paramount importance to ensure the idea of global excellence or world-class paradigms be-

comes less prominent and less important in global discourse on higher education. The world is more polarised and less globalised, and the idea of global higher education is not as important as it once was. Brazil needs excellent capabilities to produce and transfer knowledge so that it can produce widespread social impact, not world-class universities defined by a narrow set of quantitative indicators.

To do this, universities could look to the example of Wageningen as an institution that was able to leverage its local context to form areas of high impact and influence. The competencies identified in the examples of UCL and Erasmus Rotterdam could be considered by university leaders, policymakers, and lead researchers to ensure that the maximum possible impact is extracted from knowledge activities.

These two important characteristics of regional and public policy development are not new to higher education institutions and science systems; they represent the revival of priorities that have long been inherent to universities. What is new is that the paradigm that usually governed how universities thought about their place in society is shifting from a focus on a narrow set of indicators and research outputs to a broader set of contributions of research-performing institutions that are characterised by stronger engagement with society. The university concepts, priorities, and associated indicators identified in this article are the defining characteristics of institutions that are well placed to confront the challenges of the coming years. Brazilian public higher education institutions should prepare and adapt to these challenges in order to ensure that they can maintain their position and role in driving local, regional, and international knowledge production and dissemination and socioeconomic development.

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