

TOWARDS DEVELOPMENT OF A NEW HIGHER EDUCATION INSTITUTION RANKING MODEL THAT ESTABLISHES A MEANINGFUL LINKAGE BETWEEN HIGHER EDUCATION AND ECONOMIC DEVELOPMENT

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Abstract: This research examines and maps the existing correlation between the higher education ranking systems and the economic development, as a step towards development of a new ranking system. The first results from the Academic Ranking of World Universities (ARWU) from the Shanghai Jiao Tong Universities in 2003 has announced the start of the new way of measuring the quality of the higher education institutions. After ARWU, the Times Higher Education's (THE) World University Rankings and Quacquarelli Symonds' (QS) World University Rankings has been established which nowadays makes the "big three" ranking systems. The education is settled to support the development of the society and contribute to the growth of the national and global economies. The quality of the higher education systems, as assessed by rankings, is pivotal in shaping the future labor market and meeting various benchmarks for economic development. This includes criteria established by entities such as the World Bank and the Sustainable Development Goals (SDGs).

If we take into consideration the rankings who are showing the quality of the higher education institutions and start from the hypothesis that they are contributing towards higher level of economic development, that means that as high on the ranking the Universities are, as high on the scale of economic development the country from where they are coming from is. However, the literature and previous research conducted on similar topic have not yet investigate the correlations between rankings and economic development. The secondary data research followed by analysis of the indicators presented in the last round of measurement from the big three ranking systems show that despite the rankings' popularity, they have been criticized for the lack of transparency for their measurement methodologies and selective approach putting the research institutions at front. U-Map, U-Multirank, and the Berlin Principles on Ranking of Higher Education Institutions are some of the academia's first reactions to the criticism for the limited approach offered by the rankings. In addition, a limited connection with the reasons for which the rankings are serving, and the aim of the higher education institutions have been noticed. Bearing this in mind, evaluating the interplay and correlation between rankings and economic development is highly essential. It is imperative to delve deeper into these as a fundamental step in refining the existing rankings or creating new ones.

Considering the relationship between the quality of higher education systems, which molds the new generations of leaders in the labor market, economic development can be anticipated and if the rankings are measuring the effectiveness of the higher education institutions, they should provide a clear picture. The rankings should include specific indicators who will amongst the others measure the higher education institutions' influence over the development of the national economies. If the current rankings are not providing it than a new ranking model that establishes a meaningful linkage between higher education and economic development is needed. Finally, there is a literature gap about whether and how rankings relate to the countries' economic development.

Keywords: rankings of higher education institutions, economic development, quality of higher education.

1. INTRODUCTION

Education supports the growth of any society, democracy, and political stability, allowing people to learn about their rights and acquire the skills and knowledge necessary to exercise them (Kinser & E. Lane, 2017) with a final goal to increase their life quality. The quality of education enables people to find jobs and to live fine lives (Begumet al, 2013). Higher education serves as a foundational "input" fostering development and growth within commerce and industry. It not only fuels economic progress but also expands opportunities in the lives of learners. It's a critical condition for individuals to broaden their horizons and access diverse pathways toward personal and professional growth. The investment in higher education will affect the lives of people in a country (Trinh & Cicea, 2019), such as increasing the gross national income of a country (Soyer, et al., 2020), and highlight competitiveness in higher education as it enhances welfare and economic performance (Januškaitė & Užienė, 2018). The author argues that a country's level of economic development is directly linked to the quality of its higher education system. This quality is assessed through various methods, including its level of fulfilment of the Standards and Guidelines for Quality Assurance in European Higher Education 2015 and/or standards set by national Agencies for Quality Assurance in Higher Education. Another yardstick for measuring quality is through the higher education rankings, which stand as a testament to the upheld standards and quality by educational institutions.

Rankings have popped up as a supposedly “objective” means for evaluating institutions and conveying this information to the public (Rauhvargers A., 2013). They often reflect the excellence in teaching, research, infrastructure, and overall academic environment, offering a gauge for prospective students, researchers, governments, and stakeholders to assess the caliber of an institution. The era of global rankings started with the publication of the first results of the Shanghai Jiao Tong University ranking called “Academic Ranking of World Universities” (ARWU) in 2003, which “stirred the fire” (van Raan, 2005). Following the famous Shanghai ranking, two additional ranking systems emerged: 1) the Times Higher Education’s (THE) World University Rankings and 2) Quacquarelli Symonds’ (QS) World University Rankings. Nowadays, these three systems are recognized as the “big three” most popular ranking systems in higher education. Each of these ranking systems utilizes distinct methods for collecting data and information, relying on different indicators to measure success, which are typically categorized into specific groups or criteria.

Academic Ranking of World Universities (ARWU) uses four dimensions to measure the higher education institutions. The first one is determinate by the number of alumni who have won Nobel Prizes and Fields Medals, contributing with 10% in the overall score. The second one consists of two indicators: 1) one is related to Nobel Prizes and Fields Medals that faculty members received, while the 2) other is measuring the highly cited researchers in 21 subject categories. These two indicators account for 20% each. The third, titled research output dimension is also determined by two different indicators: 1) papers published in Nature and Science and those indexed in Science Citation Index (SCI), mainly focused into journals in natural and life sciences and Social Sciences Citation Index (SSCI) for the ones in social sciences. These two indicators account for 20% each. The last dimension is per capita performance of an institution that contributes 10% to the overall score. ARWU doesn’t use any subjective criteria and its methodology has not been changed since 2004 (Bojadjev, Mileva, Pavlova, Krliu, 2023). More than 2500 universities are ranked by ARWU every year and the best 1000 are published, as it can be concluded by the ARWU’s website.

A total of 13 indicators are included in the measurement obtained by the Times Higher Education (THE) World University Rankings divided accordingly in five dimensions. Their approach annually undergoes through modifications. Times Higher Education broke from QS in October 2009 and signed an agreement with Thomson Reuters for data collection (Bojadjev, Mileva, Pavlova, Krliu, 2023). THE World University Rankings evaluate research-focused universities based on their fundamental objectives: teaching, research, research impact, global perspective, and knowledge dissemination. The first criterion is the teaching dimension weighting a 30% from the total score. This criterion is determined through five indicators: 1) teaching reputation survey; 2) staff-to-student ratio; 3) doctorate-to-bachelor ratio; 4) doctorate awards by an institution, and 5) institutional income scaled against academic staff numbers. The second criterion is the research dimension with a 30% share measured through the research reputation survey, research grants, and the number of papers published in academic journals. The third criterion is the research impact, with a 30%. The fourth criterion is the research funding from industry, contributing to 2.5% to the overall score. Finally, the international outlook criterion of an institution is evaluated through a weight of 7.5% and is determined by evaluating 1) the international-to-domestic student ratio; 2) international-to-domestic staff ratio, and 3) number of internationally co-authored research papers. THE World University Rankings adopts a detailed approach to data submission, requiring positive confirmation from the designated representative of an institution before any information is self-submitted. The data undergoes automatic validation checks to guarantee completeness and accuracy. In the 2024 edition, the rankings encompass 1,904 universities spanning 108 countries and regions, attesting to the comprehensive and globally inclusive nature of the assessment.

The Quacquarelli Symonds’(QS) World University Rankings has been launched in 2004 and is now the most established research project operated by a company. QS develops and successfully implements methods of comparative data collection and analysis used to highlight institutions’ strengths. Their current evaluation approaches could be divided into two methods: bibliometrics and peer reviews (Huang, 2012). QS World University Rankings are an annual publication of university rankings which comprises the global overall and subject rankings. They are naming the world’s top universities for the study of 51 different subjects and five composite faculty areas. They are measuring four dimensions: 1) research quality; 2) graduate employability; 3) teaching quality, and 4) international outlook. The indicators included in the QS system include the academic peer reputation survey, with a weight of 40% and the reputation survey for the addresses employers contributing with a 10% in the total score. In addition, there are two more indicators of citations, the ones per faculty and faculty-student ratio included in 20% each to the overall score. Finally, the smallest percentage in the scoring are the numbers of international students and faculty indicators contributing with 5% each. The categories of the ranking also include Core Criteria, Research, Academic Development, Teaching, Employability, Internationalization, Advanced Criteria, Social Responsibility, Innovation, Arts & Culture, Inclusiveness, Environmental Impact, Learning Environment (Facilities or Online Learning), and Specialist Criteria (Subject Ranking or Programme Strength). Universities receive an overall Star

rating from 0 to 5+ based on their performance in these categories, allowing students to make informed choices about their future programs and institutions. QS also produces the following types of rankings: Graduate Employability Rankings; Best Student Cities; Higher Education System Strength Rankings; Rankings by Location and the suite of Business School Rankings including Global MBA, EMBA, Distance Online MBA and Business Masters. The QS ranking system still uses the original methodological framework (Quacquarelli Symonds, 2014). This ranking system in 2024 encompass 1,500 institutions across 104 locations.

It's worth noting the commonalities in these three rankings while recognizing that differences arise from how the indicators are weighted. These indicators fall into teaching, research, service mission, reputation management, and internationalization within higher education institutions. These categories are influenced by a range of interconnected factors, with particular emphasis on the latter two in knowledge-driven economic societies. Prospective students, particularly those that move abroad for study, are increasingly using rankings as a guide to choose, and international businesses are increasingly aware of them in seeking out university partners (Hazelkorn, E. 2007). However, biases may exist in the weights assigned to these indicators, reflecting the focal points of each global ranking system. Another challenge is that most of them are showing the research perspective of the Higher Education Institutions not taking into consideration the need to measure the level of achievement of their mission in terms of their contribution to the national economies. Despite the huge popularity there is a long list of arguments why the rankings are not objectively showing the quality of the higher education and its impact. A clear literature gap has been identified in the research for rankings and their connections with the economic development. This research is a step towards, or a baseline, for considering the need for development of a new higher education institutions rankings system that will specifically show the link between the higher education and the economic development.

2. MATERIALS AND METHODS

The paper originated from comprehensive secondary desk research, involving an in-depth literature review and analysis of existing literature related to higher education rankings and its connection and contribution in the economic development. In specific, the desk research included checking the data bases for examination and mapping of the current research in the topics related to the effect of the higher education institutions rankings and their potential connection with the economic development. The following higher education ranking systems were analysed: 1) Academic Ranking of the World Universities (ARWU); 2) the Times Higher Education's (THE) World University Rankings and 3) Quacquarelli Symonds'(QS) World University Rankings. In addition, the Sustainable Development Goals (SDGs) with a specific focus on the SDG 4- Quality of Education and SDG 8- Decent work and economic growth, and the indicators for economic development settled by the World Bank were taken into consideration. The targets prescribed in the SDG 8, are covering at least the following: sustainable economic growth, full employment, and decent work with equal pay, promotion of youth employment, education, and training. The author incorporated the World Bank's economic indicators into the Sustainable Development Goals (SDGs), expanding the metrics used to measure levels and fluctuations in the scale and composition of various economies. These indicators help identify both growth and contractions within economies. Included in the group are the following: Gross Domestic Product (GDP), including GDP per person employed, Gross National Income (GNI) per capita, Unemployment, Gross National Income (GNI), Prices and Terms of Trade, Labor Productivity and Output per worker. In addition, the research considered the targets prescribed in the SDG 8, covering at least the following: sustainable economic growth, full employment, and decent work with equal pay, promotion of youth employment, education, and training.

3. RESULTS

“How many universities can be among the top 500?” is unequivocal question posed by Jamil Salmi (2010). The methodologies used in these rankings adopt an elitist approach, resulting in over 16,000 universities worldwide never being able to attain any ranking position. Since the advent of global rankings, certain regions, especially North America and Europe-particularly Western Europe-have consistently held stronger representation in these rankings compared to others. These rankings implicitly favor the Anglo-Saxon research organizational model. On the other side if we compare the status of their economic development in this region it can be concluded that in 2023, both North America and Western Europe typically maintained relatively high levels of economic development compared to other regions globally. Both areas have historically boasted strong economies characterized by advanced industries, robust infrastructures, and significant technological advancements. Despite their high level of economic development, one cannot detect the relations between the high positioning of their Higher Education Institutions and their economies when seeing the indicators included within the rankings. This is the main reason why a new ranking model with indicators specifically showing the connections should be established. Clear connections between the

indicators included in any of the top three ranking systems and the economic development indicators settled by the United Nations and the World Bank have not been identified through searching the current literature available in this field. Presently, worldwide rankings offer limited insights into crucial aspects like teaching quality, accessibility, regional engagement, lifelong learning involvement, cost efficiency, and more. Research performance is the whole content of the Shanghai Academic Ranking of World Universities (ARWU), the Leiden ranking, and Scimago, and more than two thirds of the Times Higher Education ranking (Marginson, 2017). This limitation stems from the indicators used, which often do not encompass these issues. University rankings have been much criticized, especially after the global rankings appeared. Major global university rankings-QS, Times Higher Education (THE), U.S. News & World Report, and the Academic Ranking of World Universities (“Shanghai”) rankings are produced by profit-seeking organizations (Brankovic et al., 2018; Lim, 2018). Rankings translate the status economy in research into an institutional hierarchy, determining the value of each knowledge producer and, so, determining the value of what they produce (Marginson, 2017). Considering that over the years rankings have become both more diverse and resource-intensive to produce, ranking companies face greater pressures to generate profits in an increasingly competitive field (Brankovic et al., 2018; Lim, 2018).

Aware of the criticism and the need for more accurate measuring the EU University-Based Research Assessments (AUBR), U-Map, U-Multirank and AHELO have been launched as attempts to develop international transparency tools for all HEIs, although they all have their limitations (Rauhvargers, 2011). The completed U-Map project proposes a system in which institutional profiles are built up from metrics that measure activities in six dimensions: 1) teaching and learning profile (e.g. levels and orientations of degrees, subject range), 2) student profile (e.g. mature, distant, part-time), 3) research activity, 4) knowledge exchange, 5) international orientation, and 6) regional engagement. They are then displayed so that the relative magnitudes of these dimensions are apparent for individual institutions (although we have been unable to determine how relative magnitudes are determined). The system also permits institutions that match a given profile to be identified. To minimize the bureaucratic burden of compilation on HEIs, it is suggested that data compilations should initially be made from national statistics, which are then verified or amended by institutions. It is proposed this system should be implemented for Europe through an independent body funded by public or private organisations, or by contributions from institutions that figure in the U-Map system (Boulton, 2011).

To address this issue, it became evident that establishing common guiding principles was essential for those involved in producing rankings to adhere to which were developed in 2006, just a few years after the start of the first ranking systems. A set of guidelines was drawn up by the International Ranking Expert Group (IREG) in 2006 called the ‘Berlin Principles on Ranking of Higher Education Institutions’ (IREG, 2006) (Rauhvargers, 2011). These principles, as 16 general guidelines concerning the data collection, methodology, dissemination of rankings and their assessments, have recently also been used as the foundation for an audit practice of university rankings, the IREG Ranking Audit, launched in 2011 (Wedlin, L., 2013). Despite their many shortcomings, biases and flaws ‘rankings enjoy a high level of acceptance among stakeholders and the wider public because of their simplicity and consumer-type information’ as concluded by the EU University-Based Research Assessments (AUBR) in 2009. Thus, university rankings are not going to disappear; indeed, the number of rankings is expected to increase although they will become more specialized (Marginson, 2011). Finally, we must take into consideration that as Hazelkorn E. (2007) highlighted the universities have a tendency for including their target for high standing in rankings in their mission statements.

4. DISCUSSIONS

This research begins with the hypothesis that there is a strong relationship between higher education and economic development. Based on this if the higher education ranking systems are showing the quality of the higher education that means the ranking systems should clearly also show the level of economic development. This starting point is based on the already identified correlation between the higher education and the economic development, as concluded from the extensive literature review conducted by the author for the purpose of this paper. Having in mind this and highly aware that the rankings are here to stay and even become more focus the author would like to propose development of a new model for ranking of higher education system that will be clearly connected and will show the level of economic development. Although it faces challenges and obstacles, the QS World University Rankings stands out as the most suitable ranking system due to the indicators incorporated in its methodology and the measurement approaches it employs. They consider a wide range of factors, including academic and employer reputation, faculty-to-student ratio, international diversity, and research impact. This comprehensive approach provides a holistic view of a university's performance (Sowter, 2016). The QS can be taken as a starting point and their indicators can be modified and more focused into measuring the effect and/or influence that the higher education institution has on the economic development of the countries.

5. CONCLUSIONS

The rankings are enjoying high level of receptiveness despite the criticism and the clear identified need for new forms and methodology for ranking. The two main arguments for the criticism are centered around the 1) focus of the rankings on research while leaving the other activities performed by the Higher Education Institutions on the second place and 2) the ownership of the rankings` models- the fact that most of them are led by private companies and are for profit entities. Due to their popularity the rankings will most probably stay, but the academic world is showing the clear need for new models that will cover respectively the whole HEIs` mission and all activities performed. Having in mind the limited amount of research on whether and how rankings are showing the countries` economic development the new models for rankings should clearly have this in mind. Considering the relationship between the quality of higher education, which molds the new generations of leaders in the labor market, economic development can be anticipated. Higher education plays an important role in enhancing people`s capacity to acquire and use knowledge (Campbell, 2011), while at the same time is production line whose output is qualified human resources. Specifically, it is imperative to delve deeper into the connections between rankings and economic development as a fundamental step in refining the existing rankings or creating new ones. Bearing this in mind, evaluating the interplay and correlation between rankings and economic development is highly essential. The higher education systems require more precise and streamlined methods for assessing their impact on national development. This stems from the acknowledgment that these systems play a direct role in advancing economies and societies. There's a need for a novel ranking framework that incorporates indicators from the QS ranking system but with a stronger focus on economic development. Knowledge has a key role and becomes an important resource and competitive advantage (Tsoklinova, 2016). Education is the most appreciated asset that enhances the ability and professional skills of people to work effectively and efficiently in order to ensure the economic development of a country (Hannum, 2006). Today, the global economy is extremely dynamic and variable, with strong migration of labour resources, global competition, and constant changes in the situation (Tsoklinova, 2016).

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