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Higher education for sustainable development in Taiwan: an analysis of universities listed in the top 500 of the QS World University Rankings 2024

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1 Introduction: some universities in Taiwan are pursuing world university rankings for sustainable development

The 1897 United Nations' Brundtland Report, *Our Common Future*, defined sustainable development as follows: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Since then, the concepts of sustainability and sustainable development have guided much of the world's thinking about global economic growth and development (DesJardins, 2015).

The core of sustainability discourse comprises two fundamental questions: one of the questions pertains to the preferred type of development, and the other pertains to the future, of all possible futures, that a society considers to be sustainable, desirable, and worthwhile to attain. Therefore, sustainability discourse is a major public debate whose outcome affects the development of higher education in Taiwan (Fischer et al., 2017). Owing to globalization in recent years, higher education institutions (HEIs) are facing increased pressure to prepare their graduates for the highly competitive international job market. Therefore, numerous institutions have focused on improving their positions in university rankings to attract the best academic and student talent from around the world (Estrada-Real and Cantu-Ortiz, 2022; Wang and Shih, 2022, 2023).

In Taiwan, the top universities are expected to secure high global rankings. Consequently, they receive considerable financial support for sustainable development (Wang and Shih, 2023). Taiwanese universities' global rankings have received considerable attention from the media and scholars. The internationalization of Taiwanese universities has contributed substantially to the sustainable development of higher education; in such internationalization efforts, emphasis has been placed on the enhancement of quality education. Specifically, the quality of the internationalization of universities is directly related to the quality of sustainable development of higher education in Taiwan. In recent decades, HEIs in Taiwan have actively committed to attracting and engaging foreign students, scholars, and research collaborators and to expanding overseas study programs, student and faculty cross-border academic exchanges, and language learning programs.

The internationalization of HEIs involves the movement of students and scholars across borders and promotes global learning among students and faculty. A university with a high global ranking can attract foreign students and excellent teachers. Therefore, some universities in Taiwan are pursuing improved global university rankings for sustainable development (Li and Xue, 2022; Wang and Shih, 2023). This article discusses Taiwanese universities listed in the top 500 of the QS World University Rankings 2024, and from a humanistic perspective to search for future places of learning and higher education in Taiwan. This study hopes that such discussions can promote the sustainable development of higher education in Taiwan.

2 Taiwanese universities in the top 500 of the QS World University Rankings 2024

2.1 Disadvantage of private universities in the QS World University Rankings 2024

Due to the current trend of internationalization and digitalization, higher education institutions (HEIs) in various countries are paying more attention to their international rankings, as these offer international recognition and attract international students (Wu and Borhan, 2024). The Taiwanese universities listed in the top 500 of the QS World University Rankings 2024 are National Taiwan University (Rank 67), National Yang Ming Chiao Tung University (Rank 217), National Cheng Kung University (Rank 228), National Tsing Hua University (Rank 233), National Taiwan University of Science and Technology (Rank 228), National Taiwan Normal University (Rank 431), and National Taipei University of Technology (Rank 431) (Quacquarelli Symonds, 2024). All of these are public universities, which highlights the disadvantage of private universities in the QS World University Rankings. The government should eliminate the differences between public and private universities and should enhance the international competitiveness of private universities.

A deeper discussion on the differences between public and private universities in Taiwan:

2.1.1 Public universities

2.1.1.1 Government funding

Public universities receive significant funding from the government, which allows them to have better infrastructure, more research opportunities, and higher salaries for faculty.

2.1.1.2 Tuition fees

The tuition fees of public university are generally lower than those of private universities due to government subsidies. This makes public universities a more affordable option for many students and families. Lower tuition fees at public universities can have a positive economic impact by making higher education accessible to a larger segment of the population, potentially leading to a more educated workforce.

TABLE 1 Taiwanese universities in the top 500 of the QS World University Rankings from 2022 to 2024.

School name	2024 ranking	2023 ranking	2022 ranking
National Taiwan University	69	77	68
National Yang Ming Chiao Tung University	217	202	268
National Cheng Kung University	228	222	252
National Tsing Hua University	233	178	180
National Taiwan University of Science and Technology	387	327	314
National Taiwan Normal University	431	334	331
National Taipei University of Technology	431	436	469

Source: Quacquarelli Symonds (2022, 2023, 2024) and Wang and Shih (2023).

2.1.2 Private universities

2.1.2.1 Private funding

Rely heavily on tuition fees, donations, and private investments for their funding.

2.1.2.2 Tuition fees

The tuition fees at private universities compared to public universities. Typically higher than those at public universities, which can be a barrier for some students. Hence, many private universities offer merit-based and need-based scholarships. Students should research and apply for scholarships both within the university and through external organizations. Some universities also offer payment plans that allow families to spread the cost of tuition over several months.

2.2 Taiwanese universities in the top 500 of the QS World University Rankings from 2022 to 2024

The Taiwanese universities listed in the top 500 of the QS World University Rankings for the period from 2022 to 2024 are presented in Table 1.

Seven universities from Taiwan have entered the top 500 in the 2024 QS Rankings. The rankings of National Taiwan University and National Taipei University of Technology have improved over the last 3 years, whereas those of the other universities have declined. The poor performance of Taiwanese universities in international rankings could affect their competitiveness. A possible explanation for the poor performance of Taiwanese universities in international rankings is that universities in other countries may have received additional resources, thus enabling them to achieve greater progress in research and development. While Taiwanese universities may face resource constraints, they can still leverage unique strengths

such as specific areas of research excellence, strong local and regional networks, and innovative teaching methods to improve their standing. Additionally, strategic partnerships and targeted investment in high-impact areas could also help enhance their global competitiveness (Wang and Shih, 2023).

In conclusion, addressing these problems may require collaborative efforts from the government, universities, and relevant stakeholders. Strategies for addressing these problems may involve increasing funding support for universities, promoting educational reforms, fostering international exchanges and collaborations, and providing more opportunities to attract and retain talented faculty and students (Weng and Liao, 2016; Wang and Shih, 2023).

3 Critiques of World University Rankings

The role of universities as the engines of knowledge-based economies drives global internationalization of higher education. This contributes to a competitive environment where higher education rankings indicate market value. Even though rankings are influential and are used a lot, ranking systems have been heavily critiqued (Wang, 2015; Belenkuyu and Karadag, 2023). Critiques of World University Rankings are widely discussed and mainly focus on the following aspects.

3.1 Methodological issues

Many criticisms stem from the methodology employed by ranking organizations. The criteria used and their respective weights can be opaque, difficult to comprehend, and potentially subjective. This ambiguity may lead to rankings being influenced by data selection, criteria balancing, and algorithm choices (Wang, 2015). Indeed, the methodology used by ranking organizations is a significant point of contention in the evaluation of universities. Many ranking organizations do not fully disclose the specific criteria, weights, and algorithms used to calculate their rankings. This lack of transparency makes it difficult for universities to understand how their performance is assessed and to identify areas for improvement (Wang, 2015; Uslu, 2020; Belenkuyu and Karadag, 2023).

The choice of criteria and their relative importance can vary significantly between ranking organizations. These decisions can be influenced by subjective judgments about what constitutes quality in higher education. For example, some rankings may prioritize research output, while others might emphasize teaching quality or employability of graduates. The data used by ranking organizations often comes from self-reported information by universities, which can be inconsistent or incomplete. Additionally, different universities may interpret data collection guidelines differently, leading to variations in the reported data. The weights assigned to different criteria can significantly impact the final rankings. For example, a heavy emphasis on research output might favor large, research-intensive institutions over smaller universities with a strong focus on teaching. Many rankings rely heavily on quantitative metrics, such as publication counts, citation

indices, and student-to-faculty ratios. These metrics may not fully capture the quality of education, the student experience, or the societal impact of a university's activities (Wang, 2015; Uslu, 2020; Belenkuyu and Karadag, 2023).

3.2 Criterion selection and weighting

Different ranking entities utilize varying criteria and weightings, resulting in disparities where the same university may perform differently across different rankings. For instance, some rankings may heavily prioritize research output and citations while neglecting factors such as teaching quality, student experience, and societal impact. Professor Huang, in his article "Do not Compete for Rankings in Universities," bitterly argued that universities rankings have led to fighting for the number of international journal articles published, developing the paper industry, corrupting the academic atmosphere and ethics, hollowing out local academics, harming social harmony, disconnected industry needs, domination of academic freedom, [and] competition for power and interests in the distribution of academic resources. Taiwan's long-term pursuit of rankings, the Science Citation Index, and the Social Science Citation Index has produced more far-reaching problems, particularly the lack of local research, and teaching quality, student experience, and societal impact are neglected (Wang, 2015; Wang and Shih, 2023).

3.3 Geographical and cultural bias

Ranking methodologies may exhibit biases toward specific geographical regions or cultural backgrounds, thereby overlooking global diversity and variations. Such biases can undervalue excellent universities in certain regions while overestimating others (Wang, 2015; Wang and Shih, 2023).

3.4 Incentivizing negative behaviors

To improve their rankings, some universities may engage in unhealthy competition, focusing on short-term projects and research outputs at the expense of long-term educational quality and social responsibility (Lu, 2022; Wang and Shih, 2023).

3.5 Impact of rankings

The outcomes of rankings can significantly influence aspects like student recruitment, international collaborations, and fundraising efforts. This often transforms rankings into a virtual competition assessing comprehensive university strength rather than a true evaluation of educational quality (Lu, 2022; Wang and Shih, 2023).

In conclusion, while global university rankings provide some insight into aspects of universities, they are also subject to considerable limitations and criticisms. Therefore, it is essential to approach and interpret ranking data cautiously,

supplementing it with diverse information and assessment methods to comprehensively evaluate a university's actual standing and value.

4 Discussion

4.1 Incorporating unique local cultural characteristics in the university curriculum

Taiwan's higher education system has adopted various key Western standards regarding academic structure, curriculum, accreditation, and faculty appraisals, in addition to adopting the West's emphasis on general education and governance models. Because it is modeled on these imported values and experiences, Taiwan's higher education system faces several fundamental challenges; in particular, it experiences challenges in the integration of these Western academic ideas with the deep-rooted values and heritage of Taiwanese society. Examining the cultural foundations, local cultural characteristics, and cultural awareness of Taiwanese universities and their development has become increasingly widespread (Lin and Yang, 2022).

In the globalized world of the 21st century, distinctions between countries have diminished and interdependency has increased (Wang and Shih, 2023; Shih, 2024); hence, preserving unique local cultural characteristics is a considerable challenge. Globalization often blurs distinct cultural traits. Place-based education, which can adapt to the unique characteristics of specific locales, can mitigate the disconnect that is frequently observed between school environments and students' lives outside school (Smith, 2002; Shih, 2022).

The trend toward the standardization of education raises the question of why teachers should focus on local contexts (Smith and Sobel, 2010). Historically, before the advent of common schools, education was typically based on local concerns and experiences and thus played a crucial role in a student's transition from childhood to adulthood. However, students in modern schools often experience a growing disconnect between their community lives and classroom experiences (Smith and Sobel, 2010). Hence, we recommend that university teachers in Taiwan focus on actively incorporating local cultural elements into the classroom experience. This approach can bridge the gap between students' community experiences and their educational environment and can help students develop a local identity in this era of globalization.

4.2 Opening higher education to the outside world is the core of the sustainable internationalization of Taiwan's higher education

Internationalization of higher education is commonly defined as the process of integrating an international, intercultural, or global dimension into the purpose, functions, or delivery of higher education (Shih and Wang, 2022; Akincioglu, 2023). Opening HEIs to the outside world constitutes the core of the sustainable internationalization of HEIs in Taiwan. This core concept comprises several detailed approaches, such as

comprehensive internationalization and local internationalization. Insufficient internationalization of universities may limit their ability to attract international students and faculty, thereby affecting their global reputation and competitiveness. Therefore, paying close attention to international evaluation systems and recognition standards, such as the QS Rankings, is necessary to guide the internationalization of Taiwan's HEIs. Strengthening the international influence of Taiwanese HEIs in accordance with internationally recognized criteria is also crucial for ensuring the sustainable internationalization of Taiwan's higher education sector (Li and Xue, 2022; Wang and Shih, 2023; Wu and Borhan, 2024). To enhance their international competitiveness, top universities in Taiwan offer English medium instruction courses, which have stimulated their global expansion mission.

4.3 Future places of learning and higher education in Taiwan: a humanistic perspective

The world-wide expansion of access to higher education has also created an increasing national and global demand for consumer information on academic quality. A university's participation in global university rankings can showcase its academic quality to people from different countries, enhance the nation's competitiveness, and thereby promote economic development. High-ranking universities enhance a country's global reputation and can be used as a tool of soft power. Countries may invest heavily in their top universities to boost their international standing and attract global talent. Rankings can influence the development and enforcement of national accreditation standards (Dill and Soo, 2005; Tian, 2022).

HEIs must fundamentally transform themselves into laboratories in which students learn to critically examine social conditions, develop ideas for a better future, and implement sustainable solutions. Such transformations can help them tangibly contribute to the wellbeing of mankind (Bauer et al., 2021).

A humanistic spirit is a universal force that is manifested in the pursuit, maintenance and safeguarding of human dignity, value and potential (Guo, 2009). A humanistic spirit is critical for college students so some universities try to accomplish this goal through general education. Taiwan's HEIs have various opportunities to engage in and foster sustainable human progress. They can play a major role in promoting sustainable development by integrating sustainability as a cross-cutting principle in teaching, research, operations, and knowledge transfer (Bauer et al., 2021). Therefore, as Taiwan's higher education sector moves toward globalization and enhances its competitiveness, it should still approach the development of universities from a humanistic perspective. A humanistic spirit is a universal force that is manifested in the pursuit, maintenance and safeguarding of human dignity, value and potential. A humanistic spirit is critical for university students so some universities try to accomplish this goal through education (Shih and Wang, 2022).

Attention should be paid to the cultivation of students' humanity and their future wellbeing. Therefore, inspired by the philosophy of liberal education with its origins in both Chinese

and Western cultures, several Taiwanese universities have been administering general education with the conviction that all undergraduate students should be broadly educated while being trained in a specialized field (Cao, 2016; Shih, 2019). This represents a future place of learning and higher education in Taiwan.

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Y-HS: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

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