

CHAPTER

14

SUSTAINABILITY

CONTRIBUTIONS OF

UNIVERSITIES BY REGION

Kürşad Çavuşoğlu

14.1 INTRODUCTION

Global warming, climate crisis, and social problems such as discrimination continue to interest sustainability. Because universities produce knowledge and educate future generations, sustainability-related expectations and pressures are increasing for them. Universities have the opportunity to promote the importance of sustainable development through scientific and public discourse and can set a model for society on how to operate in a way that is committed to sustainability (Ferrer-Balas, et al., 2008).

The International Environmental Education Programme (IEEP) from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the United Nations Environment Programme (UNEP) introduced the concept of sustainability to education at the international level for the first time in 1975 (Yarime & Tanaka, 2012). According to the UNEP Sustainable University Framework (United Nations Environment Programme [UNEP], 2021), four core areas constitute a university. These areas are "Teaching and

Research, People and Society, Environment and Climate, Administration and Governance'. In 2015, the United Nations Sustainable Development Summit was held in New York, and the 2030 Agenda for Sustainable Development with 17 Sustainable Development Goals (SDGs) was adopted (United Nations, 2024). Universities are seen as guiding lights in the process of realizing SDGs; they have a key role with their ability to disseminate and adopt new ideas, as well as their education and research opportunities (Gedikkaya Bal et al., 2022).

According to the definition of Velazquez et al. (2006), a sustainable university is a higher educational institution that highlights, includes, and promotes the minimization of negative environmental, economic, societal, and health influences generated while using resources to carry out its functions and helps society make the transition to sustainable lifestyles.

University rankings continue to attract attention since the publication of America's Best Colleges by US News and World Reports in 1983 (Huang, 2012). A university sustainability ranking system can be defined as a tool that allows a higher education institution to clarify the points that will determine its sustainability performance and to compare this assessment with similar institutions, thus transforming it into an overall assessment (Bayhantopçu & Özuyar, 2021). There are various sustainability rankings for universities, such as UI GreenMetric World University Ranking, Times Higher Education University Impact Ranking, People and Planet University League, and The Sustainability Tracking, Assessment and Rating System (Simina, 2022). In this study, QS World University Rankings (WUR) Sustainability 2024 was used due to the availability of data.

The QS ranking is a portfolio of comparative university rankings published by Quacquarelli Symonds (QS), a higher education analytics company founded by Nunzio Quacquarelli that provides information and advice to students wishing to study abroad (Wikipedia, 2024). QS had published the world university rankings in partnership with Times Higher Education since 2004 but ended the partnership in 2010 and publishes them on its own (Huang, 2012; Wikipedia, 2024). In 2022, QS

began publishing the QS WUR Sustainability as part of its rankings portfolio (Wikipedia, 2024).

QS WUR Sustainability provides students with information about which universities have demonstrated a commitment to sustainability and looks for outwards evidence for sustainability beyond commitment such as the impact of research being done across the UN's 17 SDGS. QS WUR Sustainability 2024 consists of three categories: environmental impact (45% of overall weight), social impact (45% of overall weight) and governance (10% of overall weight). Each category has indicators consisting of an aggregated set of individual metrics (QS Quacquarelli Symonds, 2024a). The social impact category includes the following indicators:

- (1) Equality: This indicator evaluates the university's efforts to teach both gender equality and reduced inequalities such as discrimination based on sexual orientation, disability, race and wealth (QS Quacquarelli Symonds, 2024b).
- (2) Knowledge Exchange: This indicator measures university research partnerships to share knowledge and promote educational growth (QS Quacquarelli Symonds, 2024c).
- (3) Impact of Education: This indicator evaluates the education provision and quality of education, politics, social policy, law, and art & design at university (QS Quacquarelli Symonds, 2024d).
- (4) Employability and Opportunities: This indicator measures the university's ability to prepare graduates for strong careers and the strength of its connections with employers (QS Quacquarelli Symonds, 2024e).
- (5) Health and Wellbeing: This indicator evaluates the university's commitment to improving health and wellbeing, both to humanity and to its staff and students (QS Quacquarelli Symonds, 2024f).

The environmental impact category includes the following indicators:

- (1) Environmental Sustainability: This indicator evaluates the university's strategy and operations towards an environmentally sustainable future (QS Quacquarelli Symonds, 2024g).
- (2) Environmental Education: This indicator measures how the university educates students to both understand and make a difference to the environment (QS Quacquarelli Symonds, 2024h).
- (3) Environmental Research: This indicator evaluates the impact of research on environment-aligned SDGs (QS Quacquarelli Symonds, 2024i).

The governance category itself is also an indicator called "exemplary governance" and evaluates issues such as ethics culture, open-access publishing, student unions, and student representation in governance (QS Quacquarelli Symonds, 2024j).

14.2 METHOD

The aim of this study is to present sustainability contributions of universities by region, based on QS WUR Sustainability 2024. To achieve this aim, the 'QS WUR Sustainability 2024' list was accessed via the 'QS Top Universities' web page (QS Topuniversities, 2024). In this descriptive research study, universities in the QS WUR Sustainability 2024 list were grouped under six regions. Average, maximum, and minimum scores of sustainability categories and their related indicators for each region were calculated using descriptive statistics in IBM SPSS Statistics 22. Regions were ranked according to their average scores for each sustainability category and their related indicators. Figure 14.1 presents the regional distribution of universities in QS WUR Sustainability 2024. Of the 1,397 universities within the scope of research, 35.36% are in Europe, 33.86% in Asia, 17.18% in North America, 7.23% in Latin America, 3.29% in Oceania, and 3.08% in Africa.

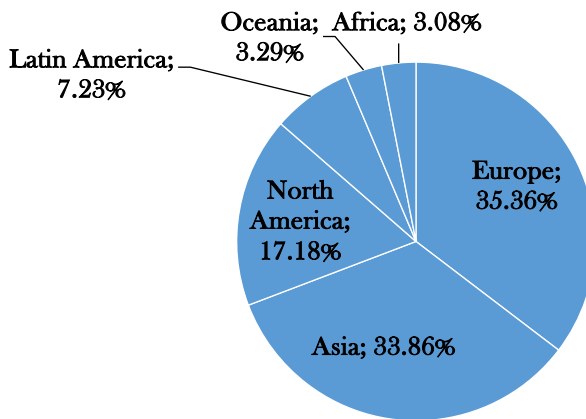


Figure 14.1 Regional distribution of universities in QS WUR Sustainability 2024

14.3 CATEGORIES OF ENVIRONMENTAL IMPACT, SOCIAL IMPACT, AND GOVERNANCE

Table 14.1 shows the average, maximum, and minimum scores of categories of QS WUR Sustainability 2024. Sustainability contributions of all universities (world) for social impact, environmental impact, and governance are 60.78%, 46.34% and 52.93%, respectively. Oceania has the highest average scores (82.07, 65.81, 78.81, respectively) in social impact, environmental impact, and governance. The lowest average score (51.17) in social impact belongs to Africa, followed (with very close averages of 51.19 and 52.37) by Latin America and Asia, respectively. Latin America has the lowest average score (39.45) in environmental impact. In governance, the lowest average score (42.44) belongs to North America.

Table 14.2 yields the results when we rank the regions based on their average scores in each category. In both social and environmental impact, Oceania, North America, and Europe are ranked first, second, and third, respectively. Europe is also ranked third in governance.

Table 14.1 The average, maximum, and minimum scores of categories of QS WUR Sustainability 2024

Region	N	Social Impact			Environmental Impact			Governance		
		Average	Min.	Max.	Average	Min.	Max.	Average	Min.	Max.
Africa	43	51.17	29.00	85.70	44.13	25.00	85.50	50.99	9.70	91.40
Asia	473	52.37	25.30	91.70	43.57	13.00	97.50	54.59	13.70	94.00
Europe	494	65.69	26.00	97.70	47.94	9.10	98.20	54.37	13.80	100.00
Latin America	101	51.19	30.80	87.50	39.45	15.70	79.70	52.12	16.50	94.70
North America	240	68.93	34.50	99.10	48.07	13.00	100.00	42.44	16.60	98.60
Oceania	46	82.07	46.60	100.00	65.81	23.40	97.70	78.81	18.10	99.30
World	1,397	60.78	25.30	100.00	46.34	9.10	100.00	52.93	9.70	100.00

Table 14.2 Ranking of regions on category basis

Region	Social Impact	Environmental Impact	Governance
Africa	6th	4th	5th
Asia	4th	5th	2nd
Europe	3rd	3rd	3rd
Latin America	5th	6th	4th
North America	2nd	2nd	6th
Oceania	1st	1st	1st

14.4 INDICATORS OF SOCIAL AND ENVIRONMENTAL IMPACT

Table 14.3 presents the average, maximum, and minimum scores of indicators in the social impact category. Average scores of Oceans are the highest (87.51, 78.33, 81.33, 74.26, 88.77, respectively) in indicators of equality, knowledge exchange, impact of education, employability and opportunities, and health and wellbeing. Asia has the lowest average scores (50.20, 41.61, 55.84, respectively) in indicators of equality, impact of education, health, and wellbeing. On the other hand, the lowest

average scores (61.04, 40.93, respectively) of knowledge exchange, employability, and opportunities belong to Latin America.

Table 14.3 The average, maximum, and minimum scores of indicators of social impact

Region	N	Equality			Knowledge Exchange			Impact of Education			Employability and Opportunities			Health and Wellbeing		
		Average	Min.	Max.	Average	Min.	Max.	Average	Min.	Max.	Average	Min.	Max.	Average	Min.	Max.
Africa	43	51.49	21.20	91.40	66.13	12.50	98.70	43.25	2.40	84.50	42.17	11.80	79.60	56.30	34.00	85.90
Asia	473	50.20	13.50	91.50	62.72	22.30	99.40	41.61	4.90	95.70	52.72	9.20	99.70	55.84	11.50	95.00
Europe	494	67.00	19.80	99.90	64.65	8.10	100.00	67.03	13.40	97.80	61.37	12.50	99.80	72.11	12.70	100.00
Latin America	101	55.92	28.20	90.10	61.04	25.90	99.00	43.92	12.00	91.00	40.93	13.80	90.00	57.82	28.40	89.90
North America	240	70.06	30.70	100.00	63.10	18.10	99.80	68.41	20.50	97.00	70.65	21.70	100.00	73.46	36.00	95.80
Oceania	46	87.51	60.60	99.20	78.33	30.80	99.70	81.33	23.40	100.00	74.26	35.90	99.40	88.77	47.10	98.20
World	1,397	61.24	13.50	100.00	63.97	8.10	100.00	56.73	2.40	100.00	58.39	9.20	100.00	65.86	11.50	100.00

When the regions are ranked according to their average scores on a basis of indicators of social impact, Table 14.4 has the following results. Oceania, North America, and Europe are ranked first, second, and third, respectively, for all indicators except knowledge exchange. In knowledge exchange, Africa is ranked second; Oceania and Europe are also ranked first and third, respectively.

Table 14.4 Ranking of regions on basis of indicators of social impact

Region	Equality	Knowledge Exchange	Impact of Education	Employability and Opportunities	Health and Wellbeing
Africa	5th	2nd	5th	5th	5th
Asia	6th	5th	6th	4th	6th
Europe	3rd	3rd	3rd	3rd	3rd
Latin America	4th	6th	4th	6th	4th
North America	2nd	4th	2nd	2nd	2nd
Oceania	1st	1st	1st	1st	1st

Table 14.5 reveals the average, maximum, and minimum scores of indicators of environmental impact. Oceania has the highest average scores (50.60, 62.66, 84.08, respectively) in indicators of environmental sustainability, education, and research. The lowest average score (24.22) in environmental sustainability belongs to North America, followed (with very close average score of 24.46) by Latin America, which also has the lowest average score (50.36) of environmental research. The lowest average score (40.79) of environmental education belongs to Asia.

Table 14.5 The average, maximum, and minimum scores of indicators of environmental impact

Region	N	Environmental Sustainability			Environmental Education			Environmental Research		
		Average	Min.	Max.	Average	Min.	Max.	Average	Min.	Max.
Africa	43	29.31	1.50	89.90	44.65	15.50	87.20	58.37	30.70	89.80
Asia	473	33.30	1.30	95.70	40.79	1.00	99.90	56.99	1.80	100.00
Europe	494	30.27	1.20	97.60	44.72	1.00	98.00	70.14	7.50	99.80
Latin America	101	24.46	3.10	65.40	42.93	9.70	90.90	50.36	10.10	89.40
North America	240	24.22	1.10	96.60	47.25	1.00	100.00	74.23	27.70	98.40
Oceania	46	50.60	10.90	100.00	62.66	1.00	98.30	84.08	27.50	98.40
World	1,397	30.48	1.10	100.00	44.28	1.00	100.00	65.06	1.80	100.00

Table 14.6 ranks Oceania, North America, and Europe as the top three regions for environmental education and research. In environmental sustainability, Asia is ranked second; Oceania and Europe are also ranked first and third, respectively.

Table 14.6 Ranking of regions on basis of indicators of environmental impact

Region	Environmental Sustainability	Environmental Education	Environmental Research
Africa	4th	4th	4th
Asia	2nd	6th	5th
Europe	3rd	3rd	3rd
Latin America	5th	5th	6th
North America	6th	2nd	2nd
Oceania	1st	1st	1st

14.5 RESULT AND DISCUSSION

This study examined the contributions of universities in the field of sustainability across six regions, using the QS WUR Sustainability 2024 framework. Environmental impact was found to be the category in which all universities made their smallest sustainability contribution. Within the environmental impact category, it was seen that universities made the least contribution to environmental sustainability. In this context, improvements should be made in sustainable policies and strategies, net zero commitment, emissions efficiency, renewables generated, etc.

Oceania has been the most successful region in all three sustainability categories, namely, social impact, environmental impact, and governance. In terms of social impact, Oceania made the highest contribution to health and well-being, while in environmental impact, it contributed significantly to environmental research. On the other hand, Oceania's contribution to environmental sustainability is around 50%.

Latin America has the lowest average score in environmental impact. Latin America made the least contribution to the environmental impact on environmental sustainability. The lowest average score in

social impact belongs to Africa, followed by Latin America and Asia, respectively. The least successful indicators of Africa in social impact are employability and opportunities and the impact of education, respectively. In this context, for example, the education provision and the connection or partnership with employers should be strengthened.

In governance, the lowest average score belongs to North America. Governance should prioritize ethics culture, open-access publishing, the student union, and student representation at the institutional level.

REFERENCES

- Bayhantopçu, E., & Özuyar, P. G. (2021). Sürdürülebilir üniversitelerin yönetim-strateji çalışmaları ve iletişimi için karşılaştırma bazlı bir yaklaşım önerisi [A comparison-based approach proposal for the governance-strategy studies and communication of sustainable universities]. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (45), 396–412. <https://doi.org/10.52642/susbed.929913>
- Ferrer-Balas, D., Adachi, J., Banas, S., Davidson, C. I., Hoshikoshi, A., Mishra, A., Motodoa, Y., Onga, M., & Ostwald, M. (2008). An international comparative analysis of sustainability transformation across seven universities. *International Journal of Sustainability in Higher Education*, 9(3), 295–316. <https://doi.org/10.1108/14676370810885907>
- Gedikkaya Bal, P., Ayas, M. Ö., Bozaykut, T., Yavuz Tiftikçigil, B., & Afacan Fındıklı, M. (2022). Sürdürülebilir kalkınma bağlamında uluslararası üniversite sıralama indeksleri ve Türkiye'deki üniversiteler [International university ranking indices and universities in Türkiye in the context of sustainable development]. *Doğuş Üniversitesi Dergisi*, 23(1), 331–349. <https://doi.org/10.31671/doujournal.1035962>
- Huang, M.-H. (2012). Opening the black box of QS world university rankings. *Research Evaluation*, 21(1), 71–78. <https://doi.org/10.1093/reseval/rvr003>

- QS Quacquarelli Symonds. (2024a). *QS sustainability rankings*. <https://support.qs.com/hc/en-gb/articles/8551503200668-QS-Sustainability-Rankings>
- QS Quacquarelli Symonds. (2024b). *Equality*. <https://support.qs.com/hc/en-gb/articles/8551406114332-Equality>
- QS Quacquarelli Symonds. (2024c). *QS sustainability rankings*. <https://support.qs.com/hc/en-gb/articles/8551503200668-QS-Sustainability-Rankings>
- QS Quacquarelli Symonds. (2024d). *QS sustainability rankings*. <https://support.qs.com/hc/en-gb/articles/8551503200668-QS-Sustainability-Rankings>
- QS Quacquarelli Symonds. (2024e). *Employability and opportunities*. <https://support.qs.com/hc/en-gb/articles/8551944658588-Employability-and-Opportunities>
- QS Quacquarelli Symonds. (2024f). *Health and wellbeing*. <https://support.qs.com/hc/en-gb/articles/8552030346140-Health-and-Wellbeing>
- QS Quacquarelli Symonds. (2024g). *Environmental sustainability*. <https://support.qs.com/hc/en-gb/articles/8568859719708-Environmental-Sustainability>
- QS Quacquarelli Symonds. (2024h). *Environmental education*. <https://support.qs.com/hc/en-gb/articles/8569453505052-Environmental-Education>
- QS Quacquarelli Symonds. (2024i). *Environmental research lens*. <https://support.qs.com/hc/en-gb/articles/6180837842716-Environmental-Research-Lens>
- QS Quacquarelli Symonds. (2024j). *Good governance*. <https://support.qs.com/hc/en-gb/articles/8575855263644-Good-Governance>
- QS TopUniversities. (2024). *QS World University Rankings: Sustainability 2024*. <https://www.topuniversities.com/sustainability-rankings>
- Simina, P.-R. A. (2022). The importance of sustainability for university competitiveness. *Studies in Business and Economics*, 17(1), 187–201. <https://doi.org/10.2478/sbe-2022-0013>
- United Nations. (2024). *The 17 goals*. <https://sdgs.un.org/goals>

- United Nations Environment Programme. (2021). *The UNEP sustainable university framework: Defining a sustainable university and creating a global pathway to recognising and becoming one*. <https://wedocs.unep.org/handle/20.500.11822/36341>
- Velazquez, L., Munguia, N., Platt, A., & Taddei, J. (2006). Sustainable university: What can be the matter? *Journal of Cleaner Production*, 14(9–11), 810–819. <https://doi.org/10.1016/j.jclepro.2005.12.008>
- Wikipedia contributors. (n.d.). *QS World University Rankings*. In *Wikipedia*. https://en.wikipedia.org/wiki/QS_World_University_Rankings
- Yarime, M., & Tanaka, Y. (2012). The issues and methodologies in sustainability assessment tools for higher education institutions: A review of recent trends and future challenges. *Journal of Education for Sustainable Development*, 6(1), 63–77. <https://doi.org/10.1177/097340821100600113>