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Article

Participation Breadth, Performance Concentration and the Effective Scoring Structure of the THE Sustainability Impact Ratings: Evidence from Uzbekistan

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Abstract: Sustainability-focused university rankings differ from conventional league tables in one decisive respect: participation is voluntary and selective, so published results reflect institutional reporting behavior as much as institutional performance. This study examines how Uzbekistan's higher education system responded to the Times Higher Education (THE) Sustainability Impact Ratings 2026, in which the overall score is built from a fixed effective structure: SDG 17 (22%) plus each institution's three strongest SDGs (26% each). A complete national participation matrix was compiled for all 50 ranked Uzbek institutions across all 17 SDG tables (471 filled observations of 850 possible cells) and validated in three independent steps. Although 90% of institutions reported performance in more than four SDGs, participation beyond the effective scoring structure was not associated with higher ranking performance: excess participation showed no significant correlation with best rank achieved, with top-100 entries, or with the mean of each institution's three strongest results. By contrast, an entropy-based concentration index of results was strongly associated with all three outcome measures (Spearman's rho = -0.824, +0.713, and -0.657, respectively; all $p < 0.001$), and the associations survived ordinal recoding and leave-best-out robustness checks. In total, 57.5% of reported SDG participation fell outside the effective scoring structure, and only 8 of the country's 24 top-100 results appeared in the official ministerial announcement. The findings indicate that international visibility in this rating rewards concentration rather than breadth, and that reading the design of a ranking metric is itself a component of institutional strategic capacity.

Keywords: University Rankings, Sustainable Development Goals, Participation Strategy, Performance Concentration, Higher Education in Uzbekistan

1. Introduction

Over the past decade, global university rankings have expanded beyond research reputation into the measurement of social and environmental impact. The most prominent instrument in this family is the Times Higher Education (THE) Sustainability Impact Ratings, launched in 2019 as the Impact Rankings and now in its eighth edition, published in June 2026 [1], [2]. The rating assesses the contribution of higher education institutions (HEIs) to the seventeen United Nations Sustainable Development Goals (SDGs) based on evidence compiled, submitted, and signed off by the institutions themselves. Two design features distinguish it from conventional league tables. First, participation is voluntary: no institution is compelled to enter. Second, participation is selective: an institution chooses which SDG tables to enter, subject only to a minimum eligibility requirement. As a

consequence, the published tables record not only how institutions perform but also how they choose to report, and a growing body of scholarship treats the rating as a window on institutional reporting behaviour as much as on sustainability performance itself [3], [4], [5]. The scholarly field surrounding global rankings is mature: their methodological foundations and system-level effects have been examined at length [6], [7], [8], while a parallel literature documents how the SDGs themselves have become an operational mandate for universities, reshaping teaching, reporting and governance practices well beyond the rankings arena [9], [10].

The scoring architecture sharpens this point considerably. Under the official methodology, an institution's overall score is calculated from exactly four components: SDG 17, which is mandatory for all participants and carries 22% of the overall score, and the institution's three strongest remaining SDGs, each carrying 26% [1, p. 8]. The three strongest goals are identified by scaled score, not by published rank position, and the overall result is averaged across the two most recent annual scores. Eligibility requires submission of SDG 17 plus at least three further goals. The arithmetic implication is stark and has been noted independently in the methodological literature [3], [5]: any participation beyond four SDG tables contributes nothing, by definition, to an institution's overall score. A fifth, tenth or seventeenth submission may serve many purposes, but raising the overall ranking position is not among them.

This structural property connects the rating to three strands of scholarship. The first is the sociology of rankings and reactivity. Espeland and Sauder demonstrated that public measures do not passively describe organisations but actively reshape them, as organisations internalise the logic of the measure and reallocate attention and resources accordingly [11], [12]. Rankings discipline, institutions respond. The second strand concerns institutional diversity and strategic positioning in higher education. Van Vught argued that reputation competition tends to homogenise systems while mission differentiation sustains their effectiveness [13], and Fumasoli and Huisman conceptualised institutional positioning as a deliberate exercise of strategic agency within a system [14]. The third strand is the critical literature on the Impact Rankings themselves, which has documented methodological inconsistencies, the reliance on self-reported evidence, and the emergence of distinct participation strategies among institutions [3], [4], [5], as well as the broader performance-measurement literature, which warns that metrics and the behaviour they induce frequently diverge [15], [16]. Institutional isomorphism offers a complementary explanation of why organisations in the same field converge on similar reporting behaviour irrespective of its instrumental payoff [17]. These strands rest on a broader sociology of quantification, which treats the act of measuring as constitutive rather than neutral [18], on the audit-society thesis [19], and on Campbell's early warning that indicators used for decision-making tend to corrupt the processes they monitor [20]. Organisation theory adds the complementary mechanisms of ceremonial conformity [21] and the repertoire of strategic responses, from acquiescence to manipulation, that organisations deploy toward institutional pressures [22].

What remains largely unexamined is how an entire national higher education system responds to this specific scoring design. Uzbekistan offers an instructive case. National participation in the rating has grown rapidly, from 12 institutions in 2021 to 30 in 2022, 47 in 2023, 53 in 2024 and 59 in 2025, before consolidating at 50 ranked institutions in the 2026 edition [2]. The rating carries direct policy weight: 24 Uzbek institutions entered the global top-1000 in 2026, an outcome announced at ministerial level [2], and international ranking performance is embedded in the national quality assurance and recognition framework. Yet no study has assembled the complete national participation matrix, measured how participation choices align with the effective scoring structure, or tested whether breadth of participation is associated with ranking outcomes. The present study addresses this gap.

The policy salience of the rating in Uzbekistan extends beyond communication. International ranking performance is formally embedded in the national recognition architecture: the list of foreign universities recognised for national purposes is defined through the top-1000 of the major international rankings, and a national rating of domestic institutions, linked from 2027 to differentiated budgetary incentives, runs in parallel with the international instruments. In such an environment, the question of how efficiently institutions convert reporting effort into international visibility is not merely reputational, it touches the allocation of institutional attention within a system undergoing rapid expansion, with more than 1.6 million students and rising enrolment. The three case goals examined under RQ3 were selected on substantive grounds before analysis: SDG 3 because health is the clearest case of profile-bound expertise concentrated in medical universities, SDG 5 because gender equality was the goal in which Uzbekistan recorded its single strongest world position in 2026, and SDG 7 because clean energy accounts for the largest number of national top-100 results and thus offers the widest field for comparing profile and non-profile leaders. Three legal instruments anchor this environment: the April 2026 presidential decree on additional measures for higher education, science and innovation [23], the February 2026 regulation establishing the national rating of higher education institutions with budgetary incentives from 2027 [24], and the joint resolution approving the list of recognised top-1000 foreign universities, defined through the major international rankings including THE [25]. The present article also continues the author's research line on ranking methodologies and institutional ranking strategy [26], [27].

Three research questions guide the analysis. RQ1: how is the observed participation of Uzbek HEIs distributed across the seventeen SDG tables, and which goals are over- and under-covered? RQ2: how are participation breadth and performance concentration associated with international ranking outcomes? RQ3: in the three thematic cases of SDG 3 (good health and well-being), SDG 5 (gender equality) and SDG 7 (affordable and clean energy), does national leadership correspond to institutional profile? Four hypotheses are tested. H1: participation is asymmetric, favouring social-educational goals over ecological ones. H2: participation breadth is not associated with ranking outcomes, whereas concentration of results is. H3: in several goal areas, national leadership does not correspond to institutional profile. H4: participation beyond the effective structure of the THE scoring model (SDG 17 plus three) is not associated with proportional ranking gains. The remainder of the paper describes the data and methods, reports the results, and discusses their implications for institutional strategy and national policy.

2. Materials and Methods

Data source and collection. The empirical basis of the study is the complete set of published country-filtered tables of the THE Sustainability Impact Ratings 2026 for Uzbekistan, extracted manually from the official rating website in August 2026. The observation unit is the institution-by-goal cell. Fifty Uzbek institutions appear in the 2026 edition, and seventeen SDG tables are published, yielding a potential matrix of 850 cells, of which 471 (55.4%) are filled. For each filled cell the study records the institution's published result in that SDG table, which THE reports in one of two forms: an exact rank position for institutions in the top 100 of a table, and a rank band (101-200, 201-300, 301-400, 401-600, 601-800, 801-1000, 1001-1500, 1501+) for all others. An empty cell indicates that the institution did not enter that SDG table. Because participation is voluntary and selective under the official methodology [1], empty cells are treated as observed non-participation rather than missing data, an interpretation consistent with recent analyses of participation patterns in this rating [5].

Validation. The matrix was validated in three independent steps. First, for the SDG tables collected under direct count control (SDG 9 through SDG 17), the number of Uzbek entries recorded in the matrix was reconciled against the result count displayed by the

rating website for the country filter, all nine columns matched exactly. Second, the matrix was cross-checked against each institution's published profile of its three strongest goals: all 150 profile entries (50 institutions x 3 goals) were present in the matrix in the corresponding cells, with no discrepancies. Third, the minimum-participation rule of the methodology (SDG 17 plus at least three further goals) was verified: no institution in the matrix participates in fewer than four tables, and exactly five institutions participate in exactly four, which is the pattern expected if no cells had been lost in collection. Four initially uncertain cells in the SDG 1 table were re-verified by name search on the rating website and confirmed as non-participation.

A methodological regularity emerged from the second validation step and is reported here as a subsidiary finding because it is useful to any researcher working with the public tables of this rating: in all 150 verifiable cases, an exact published score in an institution's goal profile corresponded to an exact rank position (top-100) in the goal table, and a banded score corresponded to a banded rank, with no exceptions. The display of an exact score is therefore a reliable marker of top-100 status in this rating's public data.

Variables. Participation breadth b is the number of SDG tables an institution enters (observed range 4 to 17). Excess participation e = max(0, b - 4) measures participation beyond the effective scoring structure of the methodology, since exactly four tables (SDG 17 plus the three strongest goals) enter the overall score [1]. Three outcome variables are used. Best rank is the institution's best result across all entered tables. Top-100 entries is the count of tables in which the institution holds an exact rank. Mean rank score is the institution's mean result across entered tables, computed on a midpoint scale that assigns each band its interval midpoint (101-200 = 150, 201-300 = 250, 301-400 = 350, 401-600 = 500, 601-800 = 700, 801-1000 = 900, 1001-1500 = 1250, 1501+ = 1700, open bands 401+, 601+ and 801+ = 480, 680 and 900 respectively) and exact ranks their own value. Lower scores indicate better results throughout.

Concentration index. To measure how strongly an institution's results are concentrated in a few goals rather than spread evenly, the study computes a normalised entropy-based index. For institution i with results $r_1, ..., r_b$, weights $w_j = 1/r_j$ are normalised to proportions $p_j = w_j / \sum(w)$, and the index is $C_i = 1 - H_i / \ln(b_i)$, where $H_i = -\sum(p_j \ln p_j)$ is the Shannon entropy of the proportions. C ranges from 0 (results spread evenly across entered goals) to values approaching 1 (results concentrated in a single strong goal). Across the fifty institutions, the index averages 0.106 with a median of 0.039, indicating that the system as a whole is dispersed rather than concentrated. The index is a normalised form of Shannon entropy [28], applied here to rank-derived weights, unlike raw entropy, it is comparable across institutions with different participation breadth because of the ln(b) normalisation.

Case analysis and typology construction. The three case goals are analysed descriptively through their full band distributions (share of participants per rank band) and their national leaders, and comparatively through participation counts and mean rank scores. The institutional typology crosses participation breadth with realised top-100 outcomes using two pre-registered thresholds: breadth of twelve or more tables is classified as broad, since it exceeds the effective scoring structure threefold, and breadth of seven or fewer as narrow, at least one exact rank classifies an institution as performing. The thresholds are conventions, and the correlation analysis, which uses the continuous variables, does not depend on them. All computations were performed with Python 3.12 using openpyxl for matrix handling and SciPy for rank statistics, directly from the validated matrix, every figure and table in this article is reproducible from that single source file.

Statistical approach. Given the ordinal character of banded ranks and the sample of fifty institutions, all associations are estimated with Spearman rank correlations, no causal claims are made, and all reported relationships are associations. Two robustness checks

address the two main measurement concerns. To test dependence on the midpoint scale, all analyses were repeated on a purely ordinal recoding of results (exact rank = 1, bands coded 2 through 9): the concentration-outcome association strengthened rather than weakened (rho = -0.899 for best rank), and the two versions of the index correlate at rho = 0.973. To test for mechanical circularity between the index and the best-rank outcome, the index was recomputed for each institution with its single best result removed, the associations persisted (rho = -0.692 with best rank, +0.670 with top-100 entries, -0.587 with mean rank score, all $p < 0.001$), indicating that concentration characterises the whole profile of an institution's results rather than being an artefact of one strong entry.

Limitations. Four limitations bound the interpretation of the results. The study is a single-year cross-section of the 2026 edition. The midpoint scale converts ordinal bands into interval values, which is an approximation, although the ordinal robustness check shows the conclusions do not depend on it. The underlying data are compiled from evidence that institutions themselves submit, a general property of this rating documented in prior work [4], [5]. Finally, the study measures reported participation, not the internal resources devoted to reporting, conclusions therefore concern the allocation of reporting effort across goals, not the cost of that effort.

3. Results

Participation asymmetry. Table 1 reports, for each of the seventeen goal tables, four quantities: the number of participating Uzbek institutions, the number of top-100 entries, the mean rank score of participants on the midpoint scale, and the best national result with the institution holding it. Table 1 and Figure 1 summarise participation across the seventeen goal tables. SDG 17, which is mandatory for eligibility, contains all 50 institutions. Among the sixteen elective goals, participation is strongly asymmetric and confirms H1. The most heavily covered goals are social-educational: SDG 4 (quality education, 39 institutions), SDG 5 (gender equality, 36) and SDG 7 (affordable and clean energy, 35), followed by SDG 2 (32) and SDG 1 (31). The least covered are ecological and infrastructural: SDG 14 (life below water) attracts only 9 institutions, SDG 15 (life on land) 18, and SDG 11 (sustainable cities and communities) 20. The gradient is fourfold between the most and least covered elective goals. Mean rank scores also vary widely across goals, from 345 in SDG 14 and 384 in SDG 15 to 906 in SDG 3 and 993 in the mandatory SDG 17, indicating that the goals in which the system participates most heavily are not the goals in which it performs best.

One inversion within the asymmetry merits explicit note. SDG 14, life below water, is the least entered table in the national matrix, with nine participants in a doubly landlocked country, yet it carries the best mean rank score of any goal (345) and includes a world rank of 55 achieved by an economics university. The apparent paradox dissolves on inspection of the methodology: the goal's indicators cover education, policy and stewardship of aquatic ecosystems generally, not marine research alone, which makes it accessible to institutions in a country whose defining environmental question is the Aral Sea. The inversion generalises: the four goals with the best national mean scores (SDG 14, 15, 13 and 2, at 345 to 417) are all in the lower half of the participation distribution, while the two most heavily entered elective goals, SDG 4 and SDG 5, carry mean scores of 678 and 676. Where the system crowds, it performs modestly, where few enter, those few perform comparatively well.

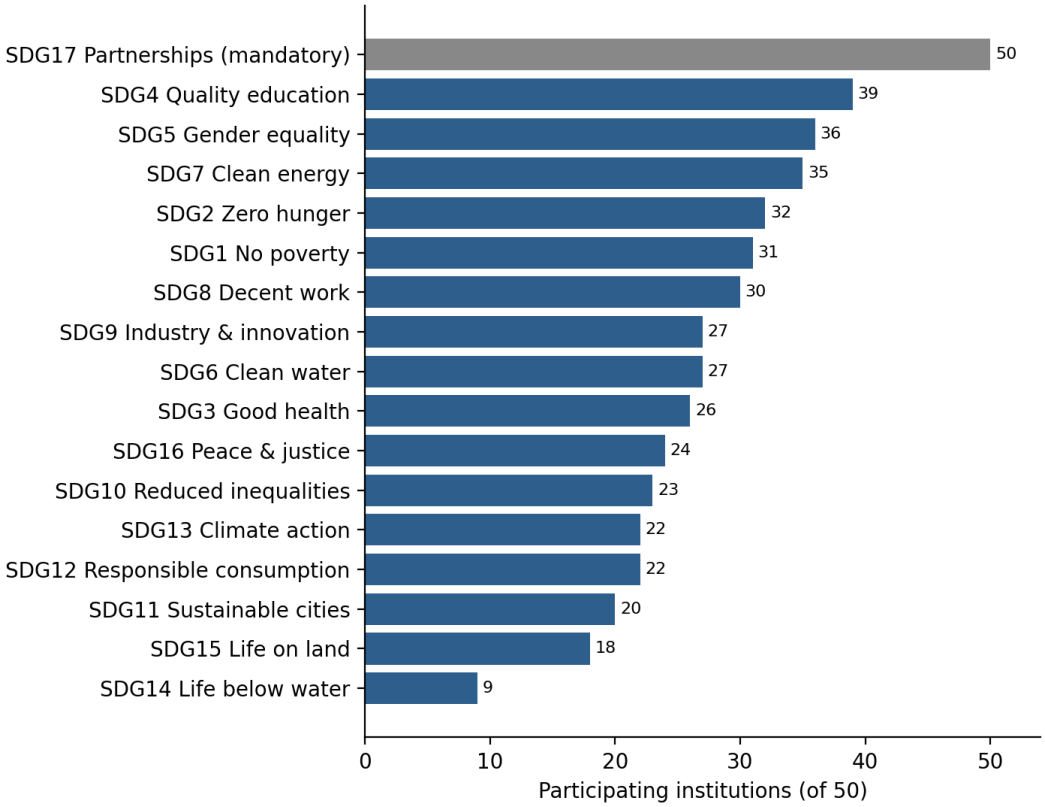


Figure 1. Participation of Uzbek institutions across the seventeen SDG tables, THE Sustainability Impact Ratings 2026. SDG 17 (grey) is mandatory for eligibility.

Table 1. Participation and results by SDG table, Uzbekistan, 2026 edition.

SDG	Goal	Participants (of 50)	Top-100 entries	Mean rank score	Best national result
1	No poverty	31	0	655	Tashkent SU of Uzbek Language and Literature (101-200)
2	Zero hunger	32	3	417	TIIAME National Research University (10)
3	Good health and well-being	26	2	906	Tashkent State Medical University (81)
4	Quality education	39	2	678	Tashkent State University of Economics (14)
5	Gender equality	36	2	676	Tashkent SU of Uzbek Language and Literature (8)
6	Clean water and sanitation	27	2	434	Fergana State Technical University (87)
7	Affordable and clean energy	35	6	453	Tashkent State Technical University (5)
8	Decent work and economic growth	30	1	605	Tashkent State University of Economics (51)
9	Industry, innovation and infrastructure	27	0	574	Tashkent University of Information Technologies (201-300)
10	Reduced inequalities	23	0	657	Tashkent State University of Economics (201-300)
11	Sustainable cities and communities	20	1	493	Tashkent State University of Economics (19)

12	Responsible consumption and production	22	0	547	Tashkent SU of Economics, Bukhara State University (201-300)
13	Climate action	22	2	408	Tashkent State University of Economics (41)
14	Life below water	9	1	345	Tashkent State University of Economics (55)
15	Life on land	18	1	384	Tashkent State University of Economics (39)
16	Peace, justice and strong institutions	24	1	591	Tashkent State University of Economics (85)
17	Partnerships for the goals (mandatory)	50	0	993	Tashkent State University of Economics (101-200)

National results inventory. Across the seventeen tables, Uzbek institutions hold 24 top-100 positions distributed over 11 institutions (Table 2). The strongest national results are rank 5 in SDG 7 (Tashkent State Technical University), rank 6 in SDG 7 (Fergana State Technical University), rank 8 in SDG 5 (Alisher Navo'i Tashkent State University of Uzbek Language and Literature) and rank 10 in SDG 2 (TIIAME National Research University). One institution stands apart: Tashkent State University of Economics holds 8 of the 24 top-100 positions (in SDG 2, 4, 8, 11, 13, 14, 15 and 16), participating in all seventeen tables while sustaining top-100 results in eight of them. Of the 24 top-100 results, 8 appeared in the official ministerial announcement of the 2026 outcomes [2], the remaining 16, including four of the eight results of Tashkent State University of Economics' and the rank-24 result of Bukhara State University in SDG 7, were not publicly announced. Table 2 lists all 24 positions in rank order with each institution's overall band and, in the final column, whether the result was reported in the ministerial press release of 25 June 2026 [2], the column contrasts two public sources, the rating tables themselves and national official communication, not official with unofficial data.

The inventory carries a second-order observation about the geography of results. The eleven institutions holding top-100 positions span four cities beyond the capital: Fergana, Bukhara, Termez and Samarkand together account for 9 of the 24 positions, including two of the six top-100 entries in clean energy and both entries in good health. International visibility in goal tables is therefore not a capital-city monopoly, although the single most productive institution, with a third of all national top-100 positions, is based in Tashkent. At the other end of the distribution, three of the nine institutions that entered all seventeen tables finished without a single exact rank and with mean rank scores above 700, which places their typical result in the 601-800 band or below across every goal they entered.

Table 2. National top-100 inventory: 24 positions held by 11 institutions. Final column: presence in the ministerial press release of 25 June 2026.

SDG	World rank	Institution	Overall band	In ministerial press release
7	5	Tashkent State Technical University	401-600	Yes
7	6	Fergana State Technical University	401-600	Yes
5	8	Tashkent SU of Uzbek Language and Literature	101-200	Yes
2	10	TIIAME National Research University	201-300	No
2	13	Tashkent State University of Economics	101-200	No
4	14	Tashkent State University of Economics	101-200	No
11	19	Tashkent State University of Economics	101-200	No
5	20	National Pedagogical University of Uzbekistan	401-600	Yes

7	24	Bukhara State University	301-400	No
4	28	Tashkent SU of Uzbek Language and Literature	101-200	No
7	36	Termez State University	401-600	Yes
15	39	Tashkent State University of Economics	101-200	No
13	41	Tashkent State University of Economics	101-200	No
7	48	Tashkent University of Information Technologies	401-600	Yes
8	51	Tashkent State University of Economics	101-200	No
14	55	Tashkent State University of Economics	101-200	No
2	69	Fergana State Technical University	401-600	No
7	69	National Pedagogical University of Uzbekistan	401-600	No
3	81	Tashkent State Medical University	601-800	Yes
3	82	Samarkand State Medical University	301-400	Yes
13	85	Termez State University	401-600	No
16	85	Tashkent State University of Economics	101-200	No
6	87	Fergana State Technical University	401-600	No
6	94	Tashkent State Technical University	401-600	No

Table 3. Typology of participation profiles (n = 50).

Profile	Criterion	n	Share	Illustrative institutions
Broad and performing	b >= 12, top-100 >= 1	4	8%	Tashkent SU of Economics (17 tables, 8 entries), Tashkent State Technical U (17, 2), Termez State U (17, 2)
Narrow and performing	b <= 7, top-100 >= 1	5	10%	Tashkent SU of Uzbek Language and Literature (5, 2), TIIAME NRU (5, 1), National Pedagogical U (7, 2)
Broad without results	b >= 12, none	11	22%	includes 3 institutions entering all 17 tables with no exact rank
Intermediate	8 <= b <= 11	10	20%	-
Narrow without results	b <= 7, none	20	40%	includes the 5 institutions at the minimum b = 4

Typology of participation profiles. Crossing participation breadth with top-100 outcomes yields five profiles (Table 3). Broad-and-performing institutions (b >= 12 with at least one top-100 entry) number only 4 of 50. Narrow-and-performing institutions (b <= 7 with at least one top-100 entry) number 5, including the two strongest concentration cases: the University of Uzbek language and literature (5 tables entered, world rank 8 in SDG 5) and the TIIAME National Research University (5 tables, rank 10 in SDG 2). Broad-without-results institutions (b >= 12, no top-100 entry) number 11, and narrow-without-results institutions (b <= 7, none) form the largest group at 20, with 10 institutions in the intermediate range. Nine institutions enter all seventeen tables, five enter the minimum four. The mean concentration index across the system is 0.106 (median 0.039): most institutions spread their results thinly across many goals.

Table 4. Associations between participation, concentration and outcomes (Spearman, n = 50).

Association	Spearman's rho	p-value
Breadth b - best rank	-0.045	0.754
Breadth b - top-100 entries	+0.163	0.257
Breadth b - mean rank score	+0.153	0.289
Excess e - best rank	-0.045	0.754
Excess e - top-100 entries	+0.163	0.257
Excess e - mean of three strongest results	-0.134	0.354
Concentration C - best rank	-0.824	< 0.001
Concentration C - top-100 entries	+0.713	< 0.001
Concentration C - mean rank score	-0.657	< 0.001

Breadth, excess participation and outcomes. Table 4 reports the central associations, and Figure 2 displays them. Participation breadth is not significantly associated with any outcome measure: with best rank, rho = -0.045 (p = 0.754), with the number of top-100 entries, rho = +0.163 (p = 0.257), with mean rank score, rho = +0.153 (p = 0.289). The test of H4 sharpens this result by isolating participation beyond the effective scoring structure. Excess participation e = max(0, b - 4) is unrelated to best rank (rho = -0.045, p = 0.754), to top-100 entries (rho = +0.163, p = 0.257), and, decisively, to the mean of each institution's three strongest results, which is the quantity the overall score is actually built from (rho = -0.134, p = 0.354). Forty-five of the fifty institutions (90%) participate beyond four tables, in total, 271 of the 471 filled cells, or 57.5% of all reported SDG participation, fall outside the effective scoring structure. H4 is supported: participation beyond the structure is not associated with proportional ranking gains.

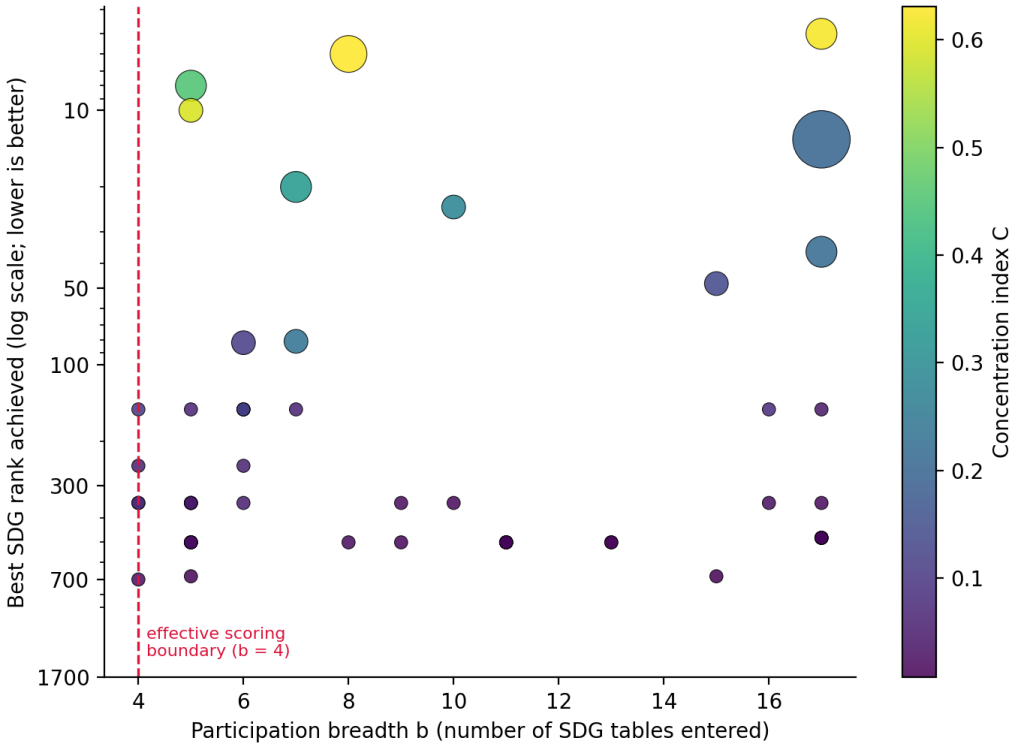


Figure 2. Participation breadth versus best SDG rank achieved (log scale) for the 50 Uzbek institutions. Marker size is proportional to the number of top-100 entries, colour encodes the concentration index C, the dashed line marks the effective scoring boundary (b = 4).

Concentration and outcomes. In sharp contrast, the concentration index is strongly associated with every outcome measure: rho = -0.824 with best rank, +0.713 with the number of top-100 entries, and -0.657 with mean rank score (all $p < 0.001$). Institutions whose results are concentrated in few goals achieve better best ranks, more top-100 entries and better average results than institutions whose results are dispersed. Both robustness checks reported in the methods section sustain these associations: under ordinal recoding the best-rank association strengthens to rho = -0.899, and with each institution's best result removed from the index the associations remain significant (rho = -0.692, +0.670 and -0.587). H2 is supported in both of its parts: breadth is not associated with outcomes, concentration is.

Table 5. Three thematic cases compared.

Indicator	SDG 3 Good health	SDG 5 Gender equality	SDG 7 Clean energy
Participants	26	36	35
Top-100 entries	2	2	6
Mean rank score	906	676	453
National leader	Tashkent State Medical U (81)	Tashkent SU of Uzbek Lang. and Lit. (8)	Tashkent State Technical U (5)
Runner-up	Samarkand State Medical U (82)	National Pedagogical U (20)	Fergana State Technical U (6)
Leader-profile correspondence	Full (both medical)	Absent (language, pedagogy)	Partial (technical, classical university at rank 24)
Share at 801 or below	18 of 26 (69%)	15 of 36 (42%)	3 of 35 (9%)
Case type	Narrow and expected	Broad and unexpected	Broad and strong

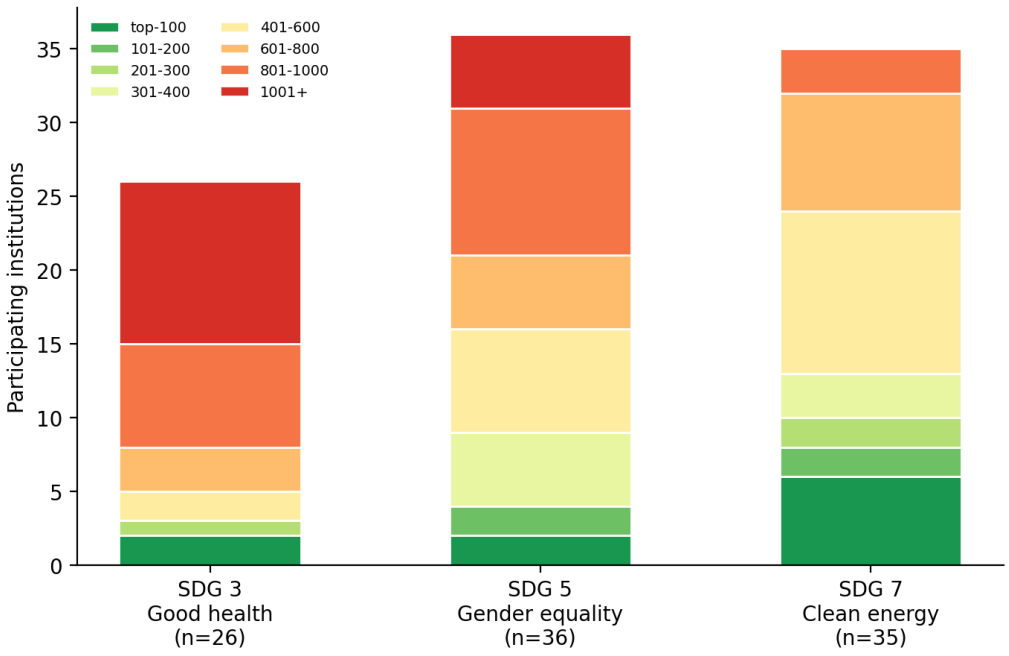


Figure 3. Rank-band distribution of participants in the three case goals.

4. Discussion

The central finding of this study is a structural mismatch between the design of the rating and the observed behaviour of the system entering it. The THE Sustainability Impact Ratings reward concentration by construction: exactly four goal scores, SDG 17 plus the three strongest, determine the overall result [1], a property of the methodology confirmed independently in the critical literature [3], [5]. The observed national participation pattern, however, is skewed towards breadth: 90% of institutions enter more than four tables, and 57.5% of all reported participation lies outside the structure that the overall score is computed from. Since excess participation is not associated with any outcome measure, including the mean of the three strongest results, the pattern exhibits, from the perspective of ranking optimisation, diminishing marginal returns: beyond the fourth table, additional entries produce no measurable ranking benefit in these data.

Two interpretive cautions attach to the participation-performance inversion. First, goal-level means are shaped by self-selection: tables entered by few institutions are entered disproportionately by institutions with something to show, so a favourable mean in a low-participation goal partly reflects who chose to enter rather than how easy the goal is. The cross-institutional analysis is unaffected, because breadth, concentration and outcomes are measured within institutions, but goal-level comparisons should be read as descriptions of the observed field, not as difficulty rankings. Second, the consolidation of national participation from 59 institutions in 2025 to 50 in 2026 [2] is itself an observable system-level adjustment, and the present cross-section cannot determine whether it reflects exit by weakly prepared entrants, administrative factors, or early strategic learning of the kind this article argues for, the panel extension proposed in the conclusion would resolve the question directly.

Participation beyond the effective scoring structure should not, however, automatically be interpreted as irrational behaviour. Additional SDG reporting may serve institutional accountability, stakeholder communication, national policy priorities, or internal sustainability governance, the reporting process itself can build data infrastructure and institutional self-knowledge that have value independent of rank positions [4]. Institutional isomorphism supplies a further, non-instrumental explanation: organisations in the same field imitate the reporting behaviour of peers, particularly under uncertainty about what the measure rewards, so broad participation can spread through a national system regardless of its payoff [17]. Nevertheless, from the perspective of ranking optimisation the observed pattern exhibits diminishing marginal returns, and institutions pursuing visibility through this instrument should be aware of the distinction. Recent work pushes this point further, arguing that authentic SDG engagement is better captured by institutional maturity models than by audit-based rankings [29], and that sustainability reporting practices have intrinsic governance value documented well beyond the rankings context [10].

The findings extend the reactivity literature in a specific direction. Espeland and Sauder showed that organisations restructure themselves around the logic of public measures [11], and that rankings induce tight coupling between the measure and organisational behaviour [12]. The Uzbek case documents what may be called incomplete reactivity: the system responds vigorously to the existence of the rating, as the growth from 12 participants in 2021 to the present 50 demonstrates [2], but not yet to its internal architecture. Institutions have learned that the rating matters, the evidence suggests most have not yet acted on how it computes. In the terms of the performance-measurement literature, the familiar pathology is over-fitting to a metric [15], [16], the pattern observed here is the mirror image, under-reading of a metric, and it carries its own cost in foregone visibility. Reading the design of a measure is itself a component of institutional strategic capacity, and the capacity is unevenly distributed across the system.

The concentration results speak directly to the mission differentiation literature. Van Vught argued that reputation competition homogenises higher education systems and that differentiated missions sustain system effectiveness [13], Fumasoli and Huisman conceptualised positioning as strategic agency [14]. The two strongest concentration cases in the data are exactly such positioned institutions: a university of language and literature that entered only five tables and reached world rank 8 in gender equality, and a national research university of irrigation and agricultural mechanisation that entered five tables and reached rank 10 in zero hunger. Their profiles are narrow, aligned with institutional identity, and, under this rating's architecture, structurally efficient. The one systematic exception, an economics university that combines full breadth with eight top-100 entries, indicates that breadth and concentration are not mutually exclusive where institutional capacity suffices, but it is an exception, not the pattern. Eleven institutions occupy the opposite quadrant, entering twelve or more tables without a single top-100 result. The pattern also echoes the third-mission literature, in which institutional strategies form between isomorphic pressure and heterogeneous local pathways [30]: the narrow leaders here are precisely cases where a local pathway prevailed over field imitation.

These profiles refine the participation typologies proposed in prior work. Bautista-Puig and colleagues distinguished interested, strategic, committed and outperformer institutions on the basis of submission behaviour [3], and Urbano and colleagues identified overall performance and geography as predictors of full-set reporting [5]. The typology developed here crosses participation breadth with realised outcomes and shows that within a single national system the same submission breadth can correspond to opposite results: nine institutions enter all seventeen tables, but only some convert breadth into top-100 positions, and the conversion is predicted by concentration, not by breadth itself. For systems of the Global South, for which the Impact Rankings have been described as a visibility opportunity unavailable in research-heavy league tables [3], [31], the practical reading is that the opportunity is captured by focus rather than by coverage.

The national-level null result for breadth invites comparison with international-level evidence, where it appears at first to conflict. Dickson's longitudinal analysis of global submissions finds that institutions submitting more SDGs tend to be larger and to score higher, and that institutions typically resubmit the same goals while expanding their count over time [32], Bautista-Puig and colleagues likewise note that full-set submitters average higher scores than minimal submitters [3]. The two findings are reconcilable through selection: globally, breadth proxies institutional capacity, because large, well-resourced universities can afford both broad reporting and strong evidence, so breadth and performance co-vary across a heterogeneous world population. Within a single national system at an early stage of engagement, capacity varies less and breadth is adopted imitatively, so the proxy breaks: in these data nine institutions carry identical maximal breadth to opposite outcomes, and the association vanishes. The national lens therefore does not contradict the global one, it removes the confound that produces it, which is precisely what a within-system design is for.

A final result concerns the national information circuit. Of the 24 top-100 results achieved by Uzbek institutions in 2026, only 8 appeared in the official ministerial announcement [2]. Among the unannounced were the country's fourth-, fifth- and sixth-strongest results overall, including eight top-100 positions of a single university and a rank-24 result in clean energy. Whatever the editorial reasons, the asymmetry means that the national signalling system currently transmits a partial picture of national performance, which weakens both the reputational return to the institutions concerned and the demonstration effect for peers deciding where to focus. A fuller public accounting of goal-level results would cost little and would align national communication with the structure of the instrument being communicated.

The exact-score regularity documented in the methods section deserves a brief separate note because it concerns the usability of the rating's public data rather than the behaviour of its participants. The public goal tables display two visually distinct result formats, and across every verifiable case in this national dataset the format itself encodes top-100 status without exception. For ministries, quality assurance agencies and researchers who work from the public tables rather than from institutional submissions, this regularity converts a presentational detail into a reliable analytical marker, and it enabled the complete national inventory of exact positions assembled here. Its verification across 150 cases in one country is not proof of universality, and the rule should be re-checked in each edition, but as a working instrument for national monitoring it is simple, costless and, in these data, error-free.

The findings also bear on the debate over whether selective participation in this rating constitutes gaming. Prior work has framed selective submission as potentially strategic self-presentation, in which institutions reveal strong goals and conceal weak ones [3], [4]. The Uzbek pattern complicates that framing from the opposite direction: the dominant national behavior is not concealment but over-disclosure, entering far more tables than the score computation uses, frequently with weak results that then become publicly visible in the goal tables. Whatever else this is, it is not sophisticated impression management, it is more consistent with isomorphic imitation under uncertainty [17] than with calculated self-presentation. This matters for the interpretation of participation data internationally: breadth of submission cannot be read, at least in this system, as evidence of either commitment or strategy, which reinforces the caution urged in recent analyses against inferring institutional intent from participation counts alone [5].

Policy implications follow directly. For institutions, the evidence supports treating SDG-table selection as an explicit strategic decision: identify the three goals with the strongest evidence base, concentrate reporting quality there, and treat further entries as accountability instruments rather than ranking instruments. For system-level policy, the findings caution against equating breadth of SDG reporting with sustainability commitment when interpreting ranking outcomes and suggest that guidance to institutions should include the architecture of the measure, not only the desirability of participation. None of this implies abandoning broad sustainability reporting where it serves governance purposes, it implies knowing which purpose a given entry serves. The recommendation converges with the reform literature on sustainability rankings, which has urged contextualization of SDG-focused instruments [33], [34] and a principled rethink of ranking design generally [35]: a national system that understands the architecture of the measure is also better placed to demand improvements to it.

5. Conclusion

This study assembled and validated the first complete national participation matrix for a higher education system in the THE Sustainability Impact Ratings, covering all 50 ranked institutions of Uzbekistan across all 17 SDG tables of the 2026 edition - 471 filled observations out of 850 possible cells, each one either confirmed against the published tables or verified as genuine non-participation. Three questions were posed at the outset, and each can now be answered directly. First, observed participation is strongly asymmetric: social-educational goals attract up to 39 of 50 institutions, while life below water attracts only 9, and - more consequentially - the goals with the heaviest participation are not the goals with the best results. Where the system crowds, it performs modestly, where few enter, those few perform comparatively well (H1 supported). Second, participation breadth is not associated with any of the three ranking outcomes examined, whereas concentration of results is strongly associated with all of them, and the association survives both ordinal recoding and the removal of each institution's single best result (H2 supported). Participation beyond the effective scoring structure of the methodology -

which comprises 57.5% of all reported participation in the national matrix - shows no association with ranking gains of any kind, including with the mean of the three strongest results from which the overall score is actually computed (H4 supported). Third, in two of the three thematic cases national leadership does not correspond to institutional profile: a university of language and literature leads gender equality at world rank 8, and a classical regional university places among the national leaders in clean energy, ahead of several profile institutions (H3 supported).

The contribution of the study is threefold. Empirically, it provides the first complete, validated national matrix for this rating together with a 24-item inventory of national top-100 results, two-thirds of which were absent from official national communication - a documented information gap that carries its own policy significance, since unannounced results generate neither reputational return for the institutions concerned nor a demonstration effect for peers deciding where to concentrate their own efforts. Methodologically, it documents a verified regularity of the rating's public data - the equivalence of exact displayed scores and top-100 status, confirmed without exception across 150 cases - which converts a presentational detail of the public tables into a reliable analytical marker for ministries, quality assurance agencies and researchers, and it introduces a leave-best-out robustness check for concentration indices computed from rank data, a procedure applicable to any similar dataset. Conceptually, it reframes national SDG-ranking analysis from a description of positions into an analysis of the fit between a metric's effective structure and a system's observed reporting behaviour, and identifies the reading of metric design as a distinct, measurable and unevenly distributed component of institutional strategic capacity.

The practical implications follow the same logic at two levels. For individual institutions, SDG-table selection deserves the status of an explicit strategic decision: identify the three goals with the strongest evidence base, concentrate reporting quality there, and treat any further entries as instruments of accountability and stakeholder communication rather than of ranking advancement - a distinction that costs nothing to draw and prevents effort from being mistaken for strategy. For system-level policy, the findings caution against equating breadth of SDG reporting with sustainability commitment when interpreting ranking outcomes, and suggest that national guidance to institutions should communicate the architecture of the measure, not only the desirability of participation in it.

Two extensions follow naturally. A panel design across successive editions would show whether the system's participation pattern converges towards the effective scoring structure as familiarity with the instrument grows, and would date the strategic learning that the present cross-section can only infer, the consolidation of national participation from 59 institutions in 2025 to 50 in 2026 already hints that such an adjustment may be under way. An explanatory design incorporating institutional covariates-ownership, profile, region, and scale - would identify which institutions read the metric first and why. Both extensions preserve the core lesson of the present analysis: in a rating whose score is built from four numbers, visibility belongs to systems that know which four.

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