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05.01.00 – Axborot texnologiyalari, boshqaruv va kompyuter grafikasi
05.01.01 – Muhandislik geometriyasi va kompyuter grafikasi. Audio va video texnologiyalari
05.01.02 – Tizimli tahlil, boshqaruv va axborotni qayta ishlash
05.01.03 – Informatikaning nazariy asoslari
05.01.04 – Hisoblash mashinalari, majmualari va kompyuter tarmoqlarining matematik va dasturiy ta'minoti
05.01.05 – Axborotlarni himoyalash usullari va tizimlari. Axborot xavfsizligi
05.01.06 – Hisoblash texnikasi va boshqaruv tizimlarining elementlari va qurilmalari
05.01.07 – Matematik modellashtirish
05.01.11 – Raqamli texnologiyalar va sun'iy intellekt
05.02.00 – Mashinasozlik va mashinashunoslik
05.02.08 – Yer usti majmualari va uchish apparatlari
05.03.02 – Metrologiya va metrologiya ta'minoti
05.04.01 – Telekommunikasiya va kompyuter tizimlari, telekommunikasiya tarmoqlari va qurilmalari. Axborotlarni taqsimlash
05.05.03 – Yorug'lik texnikasi. Maxsus yoritish texnologiyasi
05.05.05 – Issiqlik texnikasining nazariy asoslari
05.05.06 – Qayta tiklanadigan energiya turlari asosidagi energiya qurilmalari
05.06.01 – To'qimachilik va yengil sanoat ishlab chiqarishlari materialshunosligi
05.08.03 – Temir yo'l transportini ishlatish
05.08.06 – "G'ildirakli va gusenisali mashinalar va ularni ishlatish" (texnika fanlari)
05.09.01 – Qurilish konstruksiyalari, bino va inshootlar
05.09.04 – Suv ta'minoti. Kanalizatsiya. Suv havzalarini muhofazalovchi qurilish tizimlari
10.00.06 – Qiyosiy adabiyotshunoslik, chog'ishtirma tilshunoslik va tarjimashunoslik
10.00.04 – Yevropa, Amerika va Avstraliya xalqlari tili va adabiyoti
08.00.01 – Iqtisodiyot nazariyasi
08.00.02 – Makroiqtisodiyot
08.00.03 – Sanoat iqtisodiyoti
08.00.04 – Qishloq xo'jaligi iqtisodiyoti
08.00.05 – Xizmat ko'rsatish tarmoqlari iqtisodiyoti
08.00.06 – Ekonometrika va statistika
08.00.07 – Moliya, pul muomalasi va kredit
08.00.08 – Buxgalteriya hisobi, iqtisodiy tahlil va audit
08.00.09 – Jahon iqtisodiyoti
08.00.10 – Demografiya. Mehnat iqtisodiyoti
08.00.11 – Marketing
08.00.12 – Mintaqaviy iqtisodiyot
08.00.13 – Menejment
08.00.14 – Iqtisodiyotda axborot tizimlari va texnologiyalari
08.00.15 – Tadbirkorlik va kichik biznes iqtisodiyoti
08.00.16 – Raqamli iqtisodiyot va xalqaro raqamli integratsiya
08.00.17 – Turizm va mehmonxona faoliyati

Ma'lumot uchun, OAK Rayosatining 2024-yil 28-avgustdagi 360/5-son qarori bilan "Dissertatsiyalar asosiy ilmiy natijalarini chop etishga tavsiya etilgan milliy ilmiy nashrlar ro'yxati"ga texnika va iqtisodiyot fanlari bo'yicha "Muhandislik va iqtisodiyot" jurnali ro'yxatga kiritilgan.

Muassis: "Tadbirkor va ishbilarmon" MChJ

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ALIGNING NATIONAL AND INTERNATIONAL UNIVERSITY RANKING INDICATORS: A CROSSWALK METHODOLOGY



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Abstract: This article provides a systematic mapping of the correspondence between the indicators of Uzbekistan's national ranking of higher education institutions and those of four international ranking systems: the THE World University Rankings, the QS World University Rankings, the Academic Ranking of World Universities (ARWU), and the THE Sustainability Impact Ratings. The study employs document analysis, comparative content analysis, and crosswalk mapping. All 25 indicators of the national ranking were coded against the four international systems on a three-level scale (full match, partial match, no match), and the degree of correspondence was quantified using a weight-based Alignment Index calculated at the block and category levels. The results reveal that alignment is sharply block-specific rather than uniform: of the 100 points in the national ranking, 57 align with THE, 39 with QS, and only 8 with ARWU. Alignment is highest in the research block (88 percent), yet not a single indicator in this block constitutes a full match: the underlying constructs are identical, whereas the measurement and normalization procedures differ. The graduate outcomes block diverges completely from THE (0 percent) while showing 67 percent alignment with QS. Three structural asymmetries are identified: category-differentiated national weights as opposed to uniform international weights; recursive references to international rankings embedded within national indicators; and the absence from the national system of constructs measuring sustainability, international co-authorship, and field-normalized citation impact.

Keywords: national ranking, international university rankings, indicator crosswalk, alignment index, document analysis, rankings-based governance, higher education competitiveness.

Annotatsiya: Maqolada O'zbekiston oliy ta'lim tashkilotlarining milliy reytingi indikatorlari bilan xalqaro reyting tizimlari (THE World University Rankings, QS World University Rankings, ARWU, THE Sustainability Impact Ratings) indikatorlari o'rtasidagi muvofiqlik darajasi tizimli ravishda xaritalanadi. Tadqiqot hujjatlar tahlili, qiyosiy kontent-tahlil va crosswalk mapping metodlariga asoslanadi. Milliy reytingning 25 ta indikatori to'rtta xalqaro tizim bilan uch darajali shkala (to'liq mos, qisman mos, mos emas) bo'yicha kodlandi; muvofiqlik darajasi indikator og'irliklariga tayangan muvofiqlik indeksi (Alignment Index) orqali blok va toifa kesimida hisoblandi. Natijalar muvofiqlikning bir tekis emas, balki keskin blokli tabiatga ega ekanini ko'rsatdi: milliy reytingning 100 ballidan THE bilan 57, QS bilan 39, ARWU bilan atigi 8 ball muvofiqlashadi. Ilmiy faoliyat blokida muvofiqlik eng yuqori (88 foiz), biroq bironta ham to'liq mos indikator yo'q: konstruktlar bir xil, o'lchov va normallashtirish usullari esa farqli. Bitiruvchilar sifati bloki THE bilan to'liq divergensiyada (0 foiz), QS bilan esa 67 foiz muvofiqlikda. Shuningdek uchta strukturaviy assimetriya aniqlandi: toifa bo'yicha differensiallashgan milliy og'irliklarga qarshi yagona xalqaro og'irliklar; milliy indikatorlar ichiga o'rnatilgan xalqaro reytinglarga rekursiv havolalar; barqarorlik, xalqaro hammualliflik va soha bo'yicha normallashtirilgan iqtiboslik konstruktlarining milliy tizimda umuman aks etmasligi.

Kalit so'zlar: milliy reyting, xalqaro universitet reytinglari, indikatorlar crosswalk, muvofiqlik indeksi, hujjatlar tahlili, reytingga asoslangan boshqaruv, oliy ta'lim raqobatbardoshligi.

Аннотация: В статье системно картируется степень соответствия между индикаторами национального рейтинга высших учебных заведений Узбекистана и индикаторами четырёх международных рейтинговых систем: THE World University Rankings, QS World University Rankings, ARWU и THE Sustainability Impact Ratings. Исследование основано на методах анализа документов, сравнительного контент-анализа и картирования соответствий (crosswalk mapping). Все 25 индикаторов национального рейтинга закодированы относительно четырёх международных систем по трёхуровневой шкале (полное соответствие, частичное соответствие, несоответствие); степень соответствия количественно оценена с помощью взвешенного индекса соответствия (Alignment Index), рассчитанного в разрезе блоков и категорий. Результаты показывают, что соответствие носит выраженный блочный, а не равномерный характер: из 100 баллов национального рейтинга 57 согласуются с THE, 39 с QS и лишь 8 с ARWU. Наиболее высокое соответствие наблюдается в блоке научной деятельности (88 процентов), однако ни один индикатор этого блока не является полностью совпадающим: конструкты идентичны, тогда как процедуры измерения и нормализации различаются. Блок качества выпускников полностью расходится с THE (0 процентов), но на 67 процентов согласуется с QS. Выявлены три структурные асимметрии: дифференцированные

по категориям национальные веса в противовес единым международным; рекурсивные ссылки на международные рейтинги, встроенные в национальные индикаторы; отсутствие в национальной системе конструктов, измеряющих устойчивое развитие, международное соавторство и нормализованную по областям цитируемость.

Ключевые слова: национальный рейтинг, международные рейтинги университетов, кроссуолк индикаторов, индекс соответствия, анализ документов, управление на основе рейтингов, конкурентоспособность высшего образования.

INTRODUCTION

The role of measurement instruments in the governance of higher education systems has changed fundamentally over the past two decades. University rankings originally emerged as informational reference tools, but they have since become governance instruments that shape public policy, resource allocation, and institutional strategy. In the literature, this process is described through the concept of rankings-based governance [8; 9; 13]; the power of measures and indicators to reshape organizational behaviour, examined through the lenses of reactivity, audit culture, and the dominance of metrics, has become a distinct field of inquiry in the social sciences [10; 11; 12]. A substantial body of scholarship has also formed around the role of rankings in higher education policy, the concept of the world-class university, and markets for academic quality [14; 15; 16; 17; 35].

In Uzbekistan, this process entered a new stage in 2026. The Regulation on maintaining the national ranking of higher education institutions, approved by Order No. 8 of 6 February 2026 of the Director of the National Agency for Quality Assurance in Education [1], established that the national ranking is to be maintained based on four blocks and 25 indicators. Importantly, the Regulation formalizes the national ranking not merely as an informational product but as a basis for governance decisions: the objectives section explicitly states that the results are to serve as a foundation for strategic decisions on the development of the sector. Measures adopted to improve the system of higher education, science and innovation [2] further chart a course towards linking ranking results to funding mechanisms. The national ranking is thus evolving from an assessment tool into an instrument of resource allocation, which sharply raises the stakes attached to what its indicators actually measure.

At the same time, Uzbekistan's higher education institutions are increasingly active in international ranking systems. According to the results of the THE Sustainability Impact Ratings 2026, 50 of the country's higher education institutions were listed in the ratings, of which 24 entered the world's Top 1000 [3]. This participation has expanded steadily: 12 institutions were listed in 2021, 30 in 2022, 47 in 2023, 53 in 2024, and 59 in 2025 [3].

As a result, a single higher education institution is now subject to two measurement systems simultaneously: national ranking indicators at home and international ranking methodologies abroad. Both directly influence institutional behavior and both impose a reporting burden. Yet whether they measure the same constructs, whether they incentivize the same behaviour, and whether data collected for one system can be reused for the other are questions that have so far received no systematic answer.

This gap matters both practically and academically. Practically, if the correspondence between national and international indicators remains unmapped, higher education institutions are forced to operate two parallel reporting logics: data cannot be reused, and administrative capacity is consumed by documentation rather than analysis. Academically, the bulk of the rankings literature is devoted either to cross-comparisons of the global rankings themselves [19; 21; 22; 25] or to their institutional effects [27; 28]; national ranking systems remain comparatively understudied and are frequently treated as simplified copies of the global rankings [18; 19]. Yet national and international rankings differ in their unit of analysis: the former measures distribution within a system, while the latter measures position in a global competitive field [20]. Empirical evidence on how these two layers of measurement interact in developing systems is scarce.

This article aims to construct a crosswalk matrix between the 25 indicators in Uzbekistan's national ranking and those of four international ranking systems and to quantify the degree of alignment at the block and category levels.

Four research questions follow from this aim:

RQ1. Which indicators of the national ranking correspond fully to international indicators, which correspond partially, and which are nationally specific?

RQ2. How is the degree of alignment distributed across the assessment blocks (academic, research, international, graduate outcomes)?

RQ3. How do the category-differentiated weights of the national system affect the overall degree of alignment?

RQ4. Which constructs measured by international systems are entirely absent from the national ranking?

The working hypothesis was formulated as follows: alignment will be highest in the research block and lowest in the social-infrastructural and graduate blocks, because research indicators rest on international bibliometric databases and are therefore naturally comparable.

The scholarly novelty of the article lies in the fact that a complete crosswalk matrix of national and international ranking indicators is constructed for the first time, and the degree of alignment is measured through a quantitative index that accounts for indicator weights. The practical value runs in three ranking; anddirections: (i) (i) a data-reuse map for higher education institutions; (ii) evidence-based proposals for improving the methodology of the national ranking; (iii) the possibility of using the matrix as an indicator base for constructing an integrated competitiveness index.

LITERATURE REVIEW

The study draws on five interrelated streams of scholarship.

The first stream examines rankings as instruments of governance. Hazelkorn documents how rankings, initially conceived as consumer information, have been absorbed into national policy and institutional strategy across a wide range of systems [8], and Marginson traces their transformation into a regulatory force within the global higher education field [9]. Erkkilä and Piironen situate rankings within a broader regime of global knowledge governance in which numerical comparison itself becomes a policy technology [13]. At the same time, Pusser and Marginson offer a critical account of the power relations that rankings encode and reproduce [14]. The sociology of measurement reinforces this governance perspective: Espeland and Sauder demonstrate empirically that public measures reshape the behaviour of the organizations they measure through mechanisms of reactivity [10]; Power's analysis of the audit society shows how verification rituals can displace substantive activity [11]; and Muller catalogues the systemic dysfunctions that arise when metrics become ends in themselves [12]. Together, these works establish that the design of a ranking indicator is never a purely technical choice.

The second stream concerns the concept of academic excellence that rankings operationalize. Salmi's framework of the world-class university identifies the concentration of talent, resources, and governance autonomy as its defining features and has served as a template for national excellence initiatives [17]; Altbach analyses how the globalization of rankings has exported this template to systems whose missions differ substantially from those of research-intensive universities [16]; and Dill and Soo, in a cross-national analysis, show that ranking systems embed distinct and often incompatible definitions of academic quality [15]. The edited volume of Marope, Wells and Hazelkorn assembles the uses and misuses of rankings from a policy perspective across regions [35]. For the present study, this stream matters because the national ranking under examination encodes its own definition of institutional quality, which may or may not coincide with the excellence model embedded in the global rankings.

The third stream, methodological in character, compares the global rankings with one another. Usher and Savino's early global survey established that league tables differ markedly in indicators and weights [19]; Shin and Toutkoushian review the historical trajectory of ranking methodologies and their impacts on higher education [21]; and Moed's critical comparative analysis of five world university rankings demonstrates that they measure different underlying constructs with limited convergence [22]. Safón's search for the "X factor" behind global rankings shows that a small number of latent dimensions account for most of the variance across systems [23], while Saisana, d'Hombres and Saltelli quantify the statistical volatility of ranking outcomes under alternative weighting and normalization choices [24]. Docampo examines what the Shanghai ranking in particular can and cannot reveal about the research performance of national systems [25]. Kehm and Stensaker's collection situates these methodological debates within the diversification of the higher education landscape [29], and van Vught and Ziegele's U-Multirank project represents the most systematic attempt to design a multidimensional alternative to composite league tables [26]. Rauhvargers' review for the European University Association synthesizes these findings for policymakers and warns against uncritical reliance on any single ranking [18]. This stream supplies the comparative logic on which the present study builds, but with a crucial difference: whereas the existing literature compares global rankings with one another, the present study compares a national ranking with the global ones.

The fourth stream, considerably thinner, addresses national ranking systems and their relationship to international rankings. Millot draws the essential conceptual distinction: international rankings measure the position of individual institutions in a global competitive field, whereas system-level and national assessments measure distribution within a system, so that the two instruments answer different questions and cannot be treated as substitutes [20]. Lim's study of the work of global rankers illuminates the construction of ranking

expertise and, by implication, the difficulty that national systems face in importing it [27], while Vernon, Balas and Momani's systematic review finds limited evidence that rankings improve research performance, which raises the question of what national rankings should be designed to achieve [28]. Sustainability rankings form a related sub-stream: Bautista-Puig, Orduña-Malea and Perez-Esparrells analyse the methodology and incentives of the THE Impact Rankings [30], and De la Poza and colleagues use the same rankings to model universities' contribution to the Sustainable Development Goals [31]. What is missing from this stream is precisely what the present study supplies: a systematic, indicator-level mapping of the correspondence between a national ranking and the international systems that operate on the same institutions.

The fifth stream provides the methodological foundations of the study. Bowen's account of document analysis as a qualitative research method establishes the procedures for extracting and evaluating evidence from official texts [32]; Krippendorff's treatment of content analysis supplies the coding logic and the reliability requirements applied here [33]; and Bowker and Star's analysis of classification systems supplies the theoretical rationale for crosswalk mapping: every classification is built for a particular purpose, and comparing two classifications reveals the difference between their purposes [34].

Taken together, the literature offers a well-developed critique of global rankings and a rich understanding of their governance effects, but it leaves the relationship between national and international ranking indicators largely unexamined at the level of measurement. The present study addresses this gap.

RESEARCH METHODOLOGY

3.1. Research design

The study rests on a document-analytic design that combines qualitative and quantitative elements. Three methods were applied in sequence: **document analysis**, extracting indicators, their definitions, formulas, and weights from normative and methodological sources [32]; **comparative content analysis**, comparing national and international indicators with respect to the construct measured, the unit of measurement, the denominator, and the normalization procedure [33]; and **crosswalk mapping**, coding inter-indicator correspondence on a predefined scale and formalizing it as a matrix. The methodology of mapping classification systems onto one another has been developed in information science and measurement theory: every classification is built for a particular purpose, and comparing two classifications reveals the difference between their purposes [34].

The rationale for this design is that the object of the study is not outcomes, but **the measurement rules themselves**. These rules are set out fully and openly in official documents, so the document text is a sufficient and reliable primary source.

3.2. Data sources

The analysis draws on the following primary sources.

The national axis. Annex 3 to the Regulation on maintaining the national ranking of higher education institutions, entitled "Indicators of the national ranking of higher education institutions and the procedure for calculating the corresponding measures" [1]. The annex supplied the full set of 25 indicators: their names, their points across the four institutional categories (applied sciences; medical sciences; social sciences and humanities; arts (sports)), their calculation formulas, and the type of data source. The categorization scheme was taken from Annex 2 of the Regulation, and the score-normalization rule from its Chapter 4. The sums of indicator weights by block and by category were checked line by line against the text of the Regulation: in each of the four categories the total equals 100 points.

The international axis. The THE World University Rankings 2026 methodology (5 pillars, 18 indicators) [4]; the QS World University Rankings 2026 methodology (5 lenses, 10 indicators) [5]; the Academic Ranking of World Universities methodology (6 indicators) [6]; and the THE Sustainability Impact Ratings 2026 methodology [7]. The choice of these four systems is not arbitrary: THE, QS and ARWU are named explicitly in the national Regulation itself and are formalized as the international benchmarks recognized within the national ranking [1], while the THE Sustainability Impact Ratings is the international system in which Uzbekistan's higher education institutions participate most widely [3].

All international methodologies were taken in their current (2026) editions from official sources; the weights were re-verified at the end of the analysis.

3.3. Coding protocol

Each national indicator was compared separately with each of the four international systems. The comparison was coded on a three-level scale:

T (full match): the indicator measures the same construct and the measurement procedure is essentially identical (for example, the faculty-to-student ratio and the QS Faculty-Student Ratio).

Q (partial match): the construct measured is similar, but the unit of measurement, the denominator, or

the normalization procedure differs (for example, the national citation indicator is calculated as a simple ratio of Scopus citations to the number of faculty, whereas THE applies field-normalized citation impact).

M (no match / nationally specific): no equivalent construct exists in the international system (for example, the average age of faculty holding academic degrees).

The coding criteria were fixed before coding began and applied unchanged across the entire matrix. The decision for each cell was reached by answering four questions in sequence: (1) is the construct measured the same; (2) is the unit of calculation the same; (3) is the denominator the same; (4) is the normalization procedure comparable. A negative answer to the first question yields code M; a positive answer to the first and a negative answer to at least one of the remaining questions yields code Q; positive answers to all four yield code T.

Coding was performed by the author on the basis of the predefined T/Q/M criteria and was repeated in full after a two-week interval without reference to the initial results; the two rounds were compared to check coding stability, divergent cells were re-examined against the criteria, and the final code was assigned.

Coding proceeded in two directions: **national to international** (can a national indicator serve as evidence for an international ranking submission) and **international to national** (which constructs measured by international systems are not covered by the national ranking at all). The second direction answers RQ4.

3.4. The Alignment Index

The share of alignment was calculated not in the number of indicators but in **indicator weights**, because the points assigned to indicators in the national ranking vary sharply, from 1 to 30, and a simple count would distort the degree of alignment. For this purpose, the Alignment Index was defined as follows:

$$AI(b,s) = \frac{\sum_{i \in b} w_i \delta_i(s)}{\sum_{i \in b} w_i} \times 100$$

where b is the set of indicators (a block or the entire system); s is the international system being compared; $w(i)$ is the score of indicator i in the relevant category; and $\delta(i, s)$ is the alignment coefficient, equal to 1 for code T, to α for code Q, and to 0 for code M.

The index was computed in two interpretations. The **broad interpretation** (α = 1) treats a partially matching indicator as fully matching and yields the upper bound of alignment: it answers the question of how closely the systems correspond at the level of constructs. The **strict interpretation** (α = 0.5, denoted *AIw* in this article) counts partial matches at half weight and penalizes measurement differences: it answers the question of how closely the systems correspond at the level of data reuse. The size of the gap between the two interpretations carries independent meaning: the larger the gap, the more nominal the alignment, that is, present at the level of constructs but absent at the level of measurement.

For each block and each category, the weight shares of indicators coded T, Q and M were computed together with the AI and AIw values. The calculations were repeated separately for all four categories, which made it possible to isolate the effect of category-differentiated weights on alignment (RQ3). All calculations were performed in reproducible form.

3.5. Limitations

First, the analysis was conducted at the level of measurement rules; empirical verification using actual institution-level values falls outside the scope of this article and is left to the next stage of the research. Second, international methodologies are revised annually [22; 24], so the results hold for the 2026 editions. Third, the calculation details of certain international indicators (in particular, the weighting schemes of the reputation surveys) are not fully disclosed; in those cases, the coding relied on the descriptions published in the official methodologies. Fourth, the value α = 0.5 is a conventional coefficient adopted to penalize partial matches, and changing it shifts the AIw values proportionally; the main conclusions of this article therefore rest on the **relative** distribution of AI and AIw rather than on their absolute values.

ANALYSIS AND RESULTS

4.1. The crosswalk matrix: an overview

Comparing the 25 indicators of the national ranking with the four international systems produced a matrix of 100 cells (Table 1).

Table 1. Crosswalk matrix of national ranking indicators against international ranking systems

No.	Indicator	Points AS/MS/SSH/CS	THE WUR	QS	ARWU	THE SIR
1	Share of faculty holding academic degrees or titles	9/9/9/9	T	M	M	M
2	Average age of faculty holding academic degrees	2/2/2/2	M	M	M	M
3	Share of faculty with degrees or master's diplomas from foreign HEIs	3/3/3/3	M	M	M	M
4	Share of international faculty engaged in teaching and research	1/1/1/1	T	T	M	M
5	Faculty-to-student ratio (SFR)	6/6/6/6	T	T	M	M
6	Facilities and conditions provided for students	3/3/3/3	Q	M	M	Q
7	Student satisfaction with the quality of education	3/3/3/3	Q	M	M	Q
8	Conditions provided for faculty	3/3/3/3	M	M	M	Q
9	Publications in Scopus-indexed journals	5/5/3/2	Q	M	Q	Q
10	Citation performance in international databases	4/4/4/1	Q	T	M	Q
11	Faculty Hirsch index (h-index)	3/3/2/1	M	M	Q	M
12	Patents for inventions, utility models and industrial designs	2/2/1/-	Q	M	M	Q
13	Patents indexed in Scopus	2/2/2/-	Q	M	M	M
14	Funds attracted	6/6/5/4	Q	M	M	Q
15	Effectiveness of postgraduate training	3/3/3/2	Q	M	M	M
16	International reputation	5/5/5/3	Q	Q	M	M
17	Share of international students	3/3/3/2	T	T	M	Q
18	International academic mobility of students	3/3/3/2	Q	M	M	M
19	International academic mobility of faculty	2/2/2/2	Q	M	M	M
20	Effectiveness of joint educational programmes with foreign HEIs	2/2/2/1	M	M	M	M
21	Reputation of graduates among employers	5/5/5/5	M	T	M	M
22	Graduate employment status	10/10/15/30	M	Q	M	Q
23	Time to employment of graduates	5/5/5/5	M	Q	M	M
24	Average income of graduates	5/5/5/5	M	M	M	Q
25	Digitalization of educational and administrative activities	5/5/5/5	M	M	M	M

Note: T - full match; Q - partial match; M - no match / nationally specific. In the Points column, the categories are: AS - applied sciences, MS - medical sciences, SSH - social sciences and humanities, CS - arts (sports). A "-" sign means the indicator is not applied in that category. Source: compiled by the author.

The overall picture of the matrix is as follows: of the 100 cells, 14 received code T, 26 received code Q, and 60 received code M. In other words, in two-thirds of the cells the national indicator has no international equivalent at all. The structure of alignment is shown as a heat map in Figure 1: the green (T) cells cluster mainly in Block I and in the THE and QS columns, the ARWU column is almost entirely red (M), and Block IV forms an unbroken red band in the THE column (figure 1).

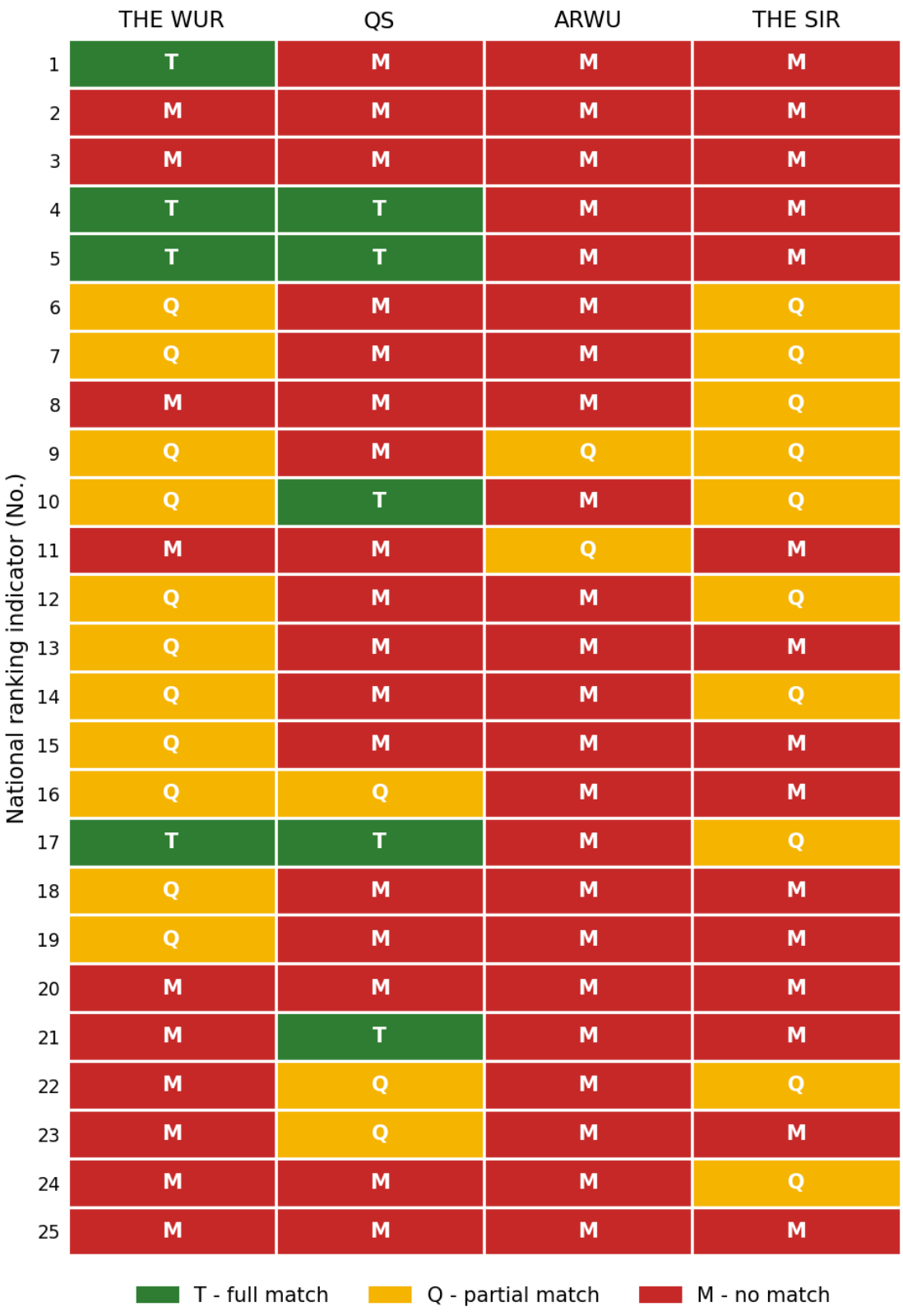


Figure 1. Heat map of the crosswalk matrix (25 × 4). Source: compiled by the author.

Cell counts, however, ignore indicator weights and therefore give an incomplete picture; the analysis below proceeds on a weighted basis.

4.2. Block-level alignment (RQ1, RQ2)

Table 2 reports, for each block, the weight shares of indicators coded T, Q and M together with the Alignment Index (applied sciences category).

Table 2. Weighted block-level alignment, % (applied sciences category)

Cells show the T / Q / M shares, with the Alignment Index (AI = T + Q) in parentheses. Source: author's calculations.

Block	THE WUR	QS	ARWU	THE SIR
I. Academic activity	53 / 20 / 27 **(AI 73)**	23 / 0 / 77 **(AI 23)**	0 / 0 / 100 **(AI 0)**	0 / 30 / 70 **(AI 30)**
II. Research activity	0 / 88 / 12 **(AI 88)**	16 / 0 / 84 **(AI 16)**	0 / 32 / 68 **(AI 32)**	0 / 68 / 32 **(AI 68)**
III. International activity	20 / 67 / 13 **(AI 87)**	20 / 33 / 47 **(AI 53)**	0 / 0 / 100 **(AI 0)**	0 / 20 / 80 **(AI 20)**
IV. Graduate quality and digitalization	0 / 0 / 100 **(AI 0)**	17 / 50 / 33 **(AI 67)**	0 / 0 / 100 **(AI 0)**	0 / 50 / 50 **(AI 50)**
Total (100 points)	**19 / 38 / 43 (AI 57)**	**19 / 20 / 61 (AI 39)**	**0 / 8 / 92 (AI 8)**	**0 / 44 / 56 (AI 44)**

The results **partly confirm and partly refute** the working hypothesis.

The first part of the hypothesis, that alignment would be high in the research block, is confirmed: in Block II, the Alignment Index with THE reaches 88, among the highest values across all blocks. Yet this block contains **not a single T code**: the entire volume of alignment consists of Q codes. The constructs are identical (publications, citations, patents, grant funds), but the measurement procedures differ in every case: the national system applies quartile and percentile weighting and divides by the number of faculty, whereas THE uses field-normalized citation impact and different denominators. For this reason, the gap between AI and AIw is widest in Block II: 88 against 44. This is the most "nominal" point of alignment: complete at the level of constructs, but only half at the level of data reuse.

The second part of the hypothesis, that alignment would be low in the graduate block, is confirmed only with respect to THE (AI = 0) and is refuted with respect to QS (AI = 67). The reason is methodological: QS carries Employer Reputation (15%) and Employment Outcomes (5%) indicators, whereas the THE World University Rankings contains neither an employer survey nor any employment measure. The national ranking's heaviest block is thus entirely invisible to one international system while constituting the principal measurement field of another.

In the academic block (Block I), alignment with THE is both the highest and the most "genuine": the T share reaches 53 percent, meaning that data can be reused directly. In the international block (Block III), AI with THE reaches 87 percent, but most of it consists of Q codes.

The ARWU result deserves particular attention: the overall Alignment Index is only 8. ARWU rests on prizes (Nobel, Fields), highly cited researchers, and publications in flagship journals [25], none of which is measured by the national ranking. This result serves as a methodological contrast: the national ranking's "closeness" to international systems is not a general property but depends entirely on which system it is compared with.

4.3. Overall alignment and the category effect (RQ3)

At the level of the entire system, the Alignment Index is distributed as follows: THE 57, QS 39, THE Sustainability Impact Ratings 44, ARWU 8 (applied sciences category). Under the strict interpretation (AIw), these values fall to 38.0, 29.0, 22.0 and 4.0 respectively.

An important structural feature of the national ranking is that indicator weights are differentiated by institutional category, whereas international rankings apply a single set of weights to all institutions. As a consequence, the degree of alignment itself becomes category-dependent (Table 3).

Table 3. Overall Alignment Index by institutional category

Cells show AI (broad interpretation, α = 1), with AIw (strict interpretation, α = 0.5) in parentheses. Source: author's calculations.

Category	THE WUR	QS	ARWU	THE SIR
Applied sciences	57 (38.0)	39 (29.0)	8 (4.0)	44 (22.0)
Medical sciences	57 (38.0)	39 (29.0)	8 (4.0)	44 (22.0)
Social sciences and humanities	53 (36.0)	44 (31.5)	5 (2.5)	45 (22.5)
Arts (sports)	40 (29.0)	53 (34.0)	3 (1.5)	53 (26.5)

The results reveal a clear regularity: as category weights shift, the national system's alignment with international systems moves **in opposite directions**. Moving from the applied and medical sciences categories

to the arts (sports) category, alignment with THE falls from 57 to 40, while alignment with QS rises from 39 to 53. The reason is that in the arts (sports) category the research block shrinks to 10 points while the graduate block expands to 50 points; THE rests on the research block, whereas QS measures employment and employer reputation.

A practical conclusion follows: the strategy of performing well in the national ranking and the strategy of preparing for an international ranking coincide to different degrees for institutions of different categories. For an institution in the arts and sports category, effort directed at the national ranking yields the least benefit for THE and the greatest benefit for QS.

4.4. Reverse-direction gaps (RQ4)

The second direction of coding, identifying constructs measured by international systems that have no equivalent in the national ranking, revealed the following gaps.

Sustainability and the Sustainable Development Goals. In the QS methodology the Sustainability indicator carries a 5 percent weight, and THE maintains an entire separate rating, the Sustainability Impact Ratings [30; 31]. Among the 25 indicators of the national ranking there is not a single indicator measuring sustainability. This gap deserves particular attention because it is precisely in this international system that the country participates most widely: with fifty higher education institutions in 2026 [3].

International co-authorship. The THE International Outlook pillar measures the share of publications with at least one international co-author. The national ranking weights publications by quartile but takes no account of co-authorship geography. The national system thus rewards the **quality** of a publication, while the international system additionally rewards its **connectedness**.

Field-normalized citation impact. The national citation indicator is calculated as the ratio of raw citations to the number of faculty. This approach does not control for field effects and gives a systematic advantage to institutions in the natural sciences, since citation cultures differ sharply across fields [22].

Research networks and external recognition. The QS International Research Network indicator, as well as ARWU's layer of prizes and highly cited researchers, are entirely absent from the national system.

Industry income as a separate indicator. In the national system, funds attracted are merged into a single indicator (foreign funds, state-programme funds, and contract funds from economic entities appear in one formula with different coefficients), whereas THE measures research income and industry income in separate pillars.

4.5. Recursive dependence

The analysis revealed a structural feature that does not follow from the matrix itself but is methodologically significant: the national ranking has embedded international rankings **inside** its own indicators.

This dependence is observed in five indicators. In indicator No. 3, faculty degrees are weighted by the foreign institution from which they were obtained ("TOP-100" with a coefficient of 10, "TOP-300" with 6, "TOP-500" with 4, "TOP-1000" with 2). In indicator No. 4, international faculty are differentiated by the "TOP-500" criterion. In indicators No. 18 and No. 20, student mobility and joint programmes are weighted by the partner institution's position in the international rankings. In indicator No. 16, the highest-coefficient portion of international reputation votes comes precisely from foreign experts reached through the international ranking organizations (THE, QS and ARWU). The Regulation's note specifies that where a foreign institution appears in more than one list, its highest position is taken into account [1].

The combined weight of these indicators in the applied sciences category is 15 points. One-sixth of the national ranking's points is thus indirectly tied to the classifications of international ranking organizations. This is a distinct form of alignment that the matrix does not capture: the national measure is linked to the international measure not at the level of indicators but at the level of **legal text**.

5.1. Alignment is block-specific, not general

The central finding of the study is that the general claim that "the national ranking is converging with international rankings" breaks apart when tested at the level of measurement. Alignment is not a single property: it ranges from 0 to 88 across blocks and from 8 to 57 across systems. It is therefore methodologically unsound to characterize the relationship between national and international rankings wholesale as "convergence" or "divergence"; the characterization must be given by block and by system.

This finding provides evidence against the view that treats national rankings as simplified copies of the global ones [18; 19]. Uzbekistan's national ranking is a structurally independent measurement system whose heaviest block (graduate quality and digitalization, 30 to 50 points) has no equivalent whatsoever in the THE methodology.

5.2. Nominal alignment and data reuse

The gap between AI and AIw has a direct practical meaning. In Block II, AI = 88 while AIw = 44: data collected for national research reporting cannot be transferred directly to an international submission and must be recalculated. Conversely, in Block I the T share is 53 percent: here data can genuinely be collected once

and used twice.

A concrete recommendation for higher education institutions follows: data-collection systems should be built not at the indicator level but at the level of **primary data**. For instance, if a primary register of faculty and students is maintained once, it can generate both national indicators No. 1 and No. 5 and the THE staff-to-student and doctorate-to-staff ratios. For publications, the primary database should simultaneously store the quartile, the percentile, the field code, and the co-authorship geography: only then can a single database serve both systems.

5.3. Category differentiation: a strength of the national system

The category-differentiated weights of the national ranking constitute a methodological advantage over international rankings. One of the most criticized features of the global rankings is that they measure institutions with different missions on a single scale [20; 26; 29]. The national system resolves this problem by adapting weights to categories: for an institution in the arts and sports category, the research block carries 10 points and the graduate block 50.

This solution, however, comes at a price in terms of alignment: as the weights shift by category, alignment with international systems shifts as well, and it differs across institutions of different categories. Winning first place in the national ranking therefore does not signify a uniform degree of readiness for international rankings: the relationship is category-dependent. In a context where national ranking results are being linked to funding [2], this aspect should be taken into account at the policy level.

5.4. The two faces of recursive dependence

Embedding international ranking classifications inside national indicators is an effective methodological device. It expresses quality differences through an objective, external, easily verifiable criterion.

At the same time, this device ties the national measure to the methodological decisions of external organizations. If an international ranking agency changes its methodology or redraws its ranking bands, the national ranking scores change directly, even though nothing has changed inside the national system itself. This dependence currently amounts to 15 points, one-sixth of the total score. The instability, statistical sensitivity, and annual revisions of ranking methodologies are documented in the literature as a distinct problem [22; 23; 24]; the national system has, in effect, imported this instability into itself.

A practical recommendation follows: for indicators referring to international classifications, the data-collection date and the ranking edition year should be fixed rigidly at the level of the Regulation. This would limit the accidental impact of external changes on national results.

5.5. The sustainability gap: the largest policy implication

Among the gaps identified under RQ4, the most significant is the complete absence of sustainability measurement from the national ranking. The situation is as follows: fifty of the country's higher education institutions participate in the THE Sustainability Impact Ratings 2026, twenty-four enter the Top 1000, and several rank among the world's top ten on individual Sustainable Development Goals [3], yet the national ranking neither records nor rewards this activity through a single indicator.

Two consequences follow. First, preparation for the international sustainability rating yields no result within the national assessment system, so for an institution it remains an additional, voluntary burden. Second, sustainability data collection is not institutionalized at the national level: each institution assembles it independently, from scratch, every year.

International experience with sustainability indicators is well developed and has been critically analysed [30; 31], so a ready methodological basis exists for incorporation into the national ranking. The proposal: in the next revision, a sustainability block, or at minimum one aggregate indicator, should be introduced into the national ranking, with its evidence base aligned to the requirements of international submissions.

5.6. Implications for further research

The crosswalk matrix constructed in this article is a self-standing result and at the same time a foundation for the next stage. First, the block structure of the matrix can serve as the indicator hierarchy for constructing an integrated competitiveness index. Second, the T, Q and M codes supply a criterion for indicator selection: indicators coded T and Q secure international comparability within the integrated index, while indicators coded M preserve the specific features of the national context. Third, the gaps identified under RQ4 provide an evidence-based list of additional indicators for inclusion in the index.

CONCLUSION AND SUGGESTIONS

A complete crosswalk matrix between the 25 indicators of Uzbekistan's national ranking and four international ranking systems has been constructed. The degree of alignment has been measured through a weight-based Alignment Index (AI).

Alignment is sharply block-specific rather than uniform: the overall index reaches 57 with THE, 44 with the THE Sustainability Impact Ratings, 39 with QS, and only 8 with ARWU. Characterizing the relationship between national and international rankings wholesale as “convergence” is therefore unfounded.

The working hypothesis is partly confirmed. Alignment is highest in the research block (AI = 88), yet not a single indicator there is a full match: the constructs are identical while the measurement procedures differ. The gap between AI and AIw is widest in this block (88 against 44), meaning that alignment exists at the level of constructs, but only half survives at the level of data reuse.

The graduate quality block diverges completely from THE (AI = 0) while aligning strongly with QS (AI = 67). The national ranking’s heaviest block is invisible to one international system and the principal measurement field of another.

Category-differentiated weights change the degree of alignment: moving from the applied sciences category to the arts (sports) category, alignment with THE falls from 57 to 40 while alignment with QS rises from 39 to 53. A high national ranking result does not signify a uniform degree of readiness for international rankings.

The national ranking has recursively embedded international ranking classifications through five indicators carrying a combined 15 points. This device increases objectivity but ties the national measure to external methodological changes.

Constructs measured internationally but absent from the national ranking have been identified: sustainability, international co-authorship, field-normalized citation impact, and research networks. The sustainability gap is the most significant, because it is precisely in that international rating that the country participates most widely.

Recommendations: (i) build data-collection systems at the level of primary data rather than indicators; (ii) introduce a sustainability indicator in the next revision of the national ranking; (iii) store the field code and co-authorship geography in the publications database alongside the quartile; (iv) fix, at the level of the Regulation, the ranking edition year used for indicators that refer to international classifications.

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