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Depicting the Development of University Humanities and Social Sciences through a Multidimensional Indicator System: A Review of *Development Report of Humanities and Social Sciences in Chinese Universities 2025*

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Abstract: Against the backdrop of global contractions in humanities and social sciences (HSS) resources in higher education and China's shift from scale expansion to quality enhancement, *Development Report of Humanities and Social Sciences in Chinese Universities 2025* (hereafter, "the Report") adopts an "evaluation for development" orientation to construct a multidimensional indicator system and an integrated evaluation methodology, thereby portraying cross-institutional differences and structural characteristics of HSS development in Chinese universities. Building on a review of evaluation theories and practical dilemmas, the Report proposes a "5–14–24" indicator framework and comparatively selects technical procedures for data standardization, weighting, and aggregation. It develops a full process from data collection and preprocessing to tiered release of results. Methodologically, it introduces Sigmoid standardization to mitigate distribution-induced "natural weight" bias and applies the Generalized Weighted Bonferroni Mean (GWBM) operator for correlation-sensitive aggregation. Collectively, the Report offers an actionable and replicable technical route that may improve the scientific rigor, transparency, and operability of HSS evaluation in China.

Keywords: University humanities and social sciences; Multidimensional indicator system; Composite evaluation; Data standardization; GWBM operator

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标题: 以多维指标体系刻画高校人文社科发展——评《中国高校人文社科发展报告2025》

摘要: 面对全球高校人文社科资源收缩与国内人文社科由规模扩张转向质量提升的新阶段,《中国高校人文社科发展报告 2025》(以下简称《报告》)以“评价促建”为导向,构建多维指标体系与综合评价方法,刻画我国高校人文社科发展的状态差异与结构特征。《报告》在梳理评价理论与现实困境基础上,提出“5-14-24”的指标框架,比较并选择数据标准化、赋权与聚合算子,形成从数据采集、预处理到结果分档发布的流程。其以 Sigmoid 标准化缓解“自然权重”偏差,并采用广义加权 Bonferroni 平均(GWBM)进行关联聚合,为提升我国高校人文社科评价的科学性、透明度与可操作性提供了可借鉴的技术路线。

关键词: 高校人文社科; 多维指标体系; 综合评价; 数据标准化; GWBM 算子

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Humanities and social sciences (HSS) in universities not only perform foundational functions in knowledge production and talent cultivation, but also play distinctive roles in value formation, cultural inheritance, social service, and the modernization of national governance. Compared with the relatively mature metric systems in the natural sciences, however, HSS evaluation has long faced structural challenges—often summarized as “difficult to quantify, difficult to compare, and difficult to reach consensus.” On the one hand, HSS outputs are heterogeneous (journal articles, books, policy briefs, consultation reports, public communication, cultural products, and more), with long life cycles and strong externalities. On the other hand, disciplinary traditions, regional ecosystems, and institutional missions vary substantially, making it difficult for any single indicator to serve as a fair basis for ranking. In this context, without clear theoretical boundaries and a robust technical route, evaluation systems can easily fall into path dependence—such as privileging quantity, papers, or awards—thereby shaping incentives, resource allocation, and disciplinary ecology in undesirable ways.

The Development Report of Humanities and Social Sciences in Chinese Universities 2025 is a systematic response to these long-standing dilemmas. Its central contribution lies less in producing an “ultimate ranking”

than in proposing a reusable evaluation framework. The Report first addresses the foundational questions—why evaluate, what to evaluate, how to evaluate, and according to which standards—before turning to operational questions such as data provenance, preprocessing, aggregation, interpretation, and feedback. In so doing, it functions not only as an annual observation of HSS development but also as a practice-oriented methodological handbook. This review examines the Report along three main threads: its problem awareness, its indicator system, and its methodological workflow, and then discusses implications and potential areas for further refinement.

The Report is produced by a research team led by Professor Yu Liping. Professor Yu is affiliated with Zhejiang Gongshang University as a “Xihu Scholar” Distinguished Professor and doctoral supervisor. He serves as Director of the Institute for Academic Evaluation and Science & Technology Statistics, and also holds leadership roles in professional committees of the China Association for Science of Science and S&T Policy, including the Committee on Scientometrics and Informetrics and the Committee on Science & Technology Management and Evaluation. His long-term research focuses on academic evaluation and science and technology statistics, while also extending into interdisciplinary fields such as digital humanities and computational social science, with systematic scholarly accumulation and practical influence in foundational theories of science and technology evaluation and innovation economics. He has led five National Social Science Fund projects and nine provincial- or ministerial-level projects (including Ministry of Education HSS projects), authored ten academic monographs, and published 310 CSSCI-indexed journal articles as first author, alongside more than twenty SCI/SSCI-indexed papers. In addition, twenty of his papers have been reprinted in outlets such as Xinhua Digest and the Renmin University of China Reprinted Series. He has received one provincial second prize and two provincial third prizes, was selected for Zhejiang Province’s “New Century 151 Talent Project,” and has been recognized as an Outstanding Teacher in Zhejiang Province and a disciplinary leader under Jiangsu Province’s “Qinglan Project.” His work has also drawn media attention and interviews from Nature, the Times Higher Education World University Rankings, and major Chinese media outlets.

1. From Evaluation Dilemmas to a Systematic Response: Problem Awareness and Narrative Logic

(1) Global “contraction” in HSS and mounting evaluation pressures

Using international comparisons as context, the Report notes that some universities in developed countries have recently experienced reductions in HSS programs, tightened enrollments, and even departmental restructuring. These changes are associated with fiscal pressures and cost constraints, labor-market expectations, digital disruptions, and shifting disciplinary competition. For Chinese readers, such external signals underscore that HSS development is not naturally stable. In the absence of sustained institutional support and reasonable evaluation mechanisms, short-term resource allocation may intensify the marginalization risks facing HSS. Consequently, evaluation systems capable of articulating value, explaining differences, and supporting public communication become a shared need for both universities and policy makers.

(2) Dual tasks in China: capacity expansion and quality transition

In contrast to the global “contraction” narrative, the Report indicates that over the past decade China’s HSS

has expanded rapidly in both research personnel and institutional platforms, depicting an overall landscape of “expanding capacity while improving quality.” It reports that the number of social science researchers with intermediate professional titles or above has exceeded 513,000, key social science research institutions number about 3,640, the total volume of social science projects in the past five years surpasses 700,000, and accumulated high-quality outcomes exceed one million. More importantly, the central contradiction for evaluation has shifted: from “whether there is” to “how good it is,” from incremental growth to structural optimization, and from isolated highlights to systemic capacity. This shift calls for evaluation that goes beyond a small set of elite institutions or single output types, covers a broader range of institutions, and identifies genuine multidimensional gaps and bottlenecks.

(3) Organizing logic: an “evaluation–resource allocation–capacity building” loop

At the theoretical level, the Report frames university HSS evaluation through a systems-science lens, arguing that the evaluation system consists of evaluation purposes, evaluation objects, evaluation content, and evaluation standards—elements that interact and jointly shape methodological choices and indicator design. Accordingly, the Report emphasizes not only academic attributes but also managerial and public attributes of evaluation: results should support internal diagnosis and improvement within universities while also serving governmental decision-making and public information needs. In a “multi-goal, multi-actor, multi-constraint” context, the Report treats indicator construction and methodological selection as a coordinated “institution–method–data” project rather than a simple assemblage of indicators. It also diagnoses typical shortcomings in existing practices, including weak macro-level positioning, overemphasis on research outputs, insufficient comprehensiveness, fairness challenges arising from regional and institutional heterogeneity, and relatively weakened attention to social impact and socio-economic benefits. This diagnosis provides the point of departure for its subsequent design choices in indicator screening, standardization, and tiered presentation.

2. A Structured Representation of the Indicator System: Five Dimensions and Multilevel Indicators

(1) Clear specification of purpose, objects, and content

Regarding the question “what to evaluate,” the Report defines its evaluation objects as undergraduate institutions that host HSS-related disciplines, covering a large sample of universities nationwide. More substantively, it conceptualizes HSS development in universities as the concrete manifestation of core university functions in this domain, namely: academic staff, talent cultivation, scientific research, cultural inheritance and social service, and international exchange and collaboration. This conceptualization avoids reducing HSS development to “publishing papers” or “winning grants,” thereby providing a necessary foundation for multidimensional evaluation.

(2) Embedding political, academic, and social value standards

Rather than presenting evaluation as purely technical, the Report emphasizes that evaluation standards are essentially externalized value choices. It proposes a tripartite standard system: political standards, academic value standards, and social value standards. Political standards stress correct orientation and goal alignment, requiring HSS development to serve national and societal needs. Academic value standards emphasize value

relevance, scientific rigor, and innovation, requiring adherence to scholarly norms and breakthroughs in theory, methods, or practice. Social value standards highlight social influence, cultural inheritance, and service contributions, focusing on how research responds to real-world problems and generates public value. The juxtaposition of these standards acknowledges that HSS evaluation cannot be fully “devalued” or purely technocratic, and it implies that indicator selection must balance measurability with expressiveness.

(3) Establishing the “5-14-24” indicator framework

The Report articulates design principles such as goal orientation, comprehensiveness, scientific validity, comparability, operability, and the integration of stability with dynamism. It further proposes screening principles including cost-effectiveness, discriminative power, authority, comparability, and result orientation. Notably, comparability is repeatedly emphasized: indicator meanings, statistical calibers, and calculation methods should remain consistent to enable cross-university and cross-year comparison; meanwhile, “biased” indicators should be avoided to safeguard fairness.

On this basis, the Report constructs an indicator framework consisting of five first-level indicators, fourteen second-level indicators, and twenty-four third-level indicators, yielding a compact yet operational list:

Academic staff: emphasizing high-end talents and team building through indicators such as the number of national-level talents and national-level teaching teams.

Talent cultivation: focusing on curricula and textbooks, training levels, and teaching quality through indicators such as the number of National Textbook Awards, national first-class undergraduate courses, doctoral/master’s programs in first-level disciplines, and national-level teaching achievement awards.

Scientific research (the highest-weight component): disaggregated into research projects, publications, research bases, and research awards. Projects include those funded by the National Natural Science Foundation (Management Science Department), National Social Science Fund, and the Ministry of Education HSS programs; publication outputs are captured through equivalent counts of SCI (HSS)/SSCI, A&HCI, and CSSCI papers; research platforms and landmark outcomes are reflected via numbers of research bases and prestigious awards such as the Ministry of Education Outstanding Achievement Awards in HSS.

Cultural inheritance and social service: expressed through indicators such as the equivalent share of Chinese core journals and think tank construction (including the number of national high-end think tanks, university think tanks, CTTI top-100 university think tanks, and excellent think tank outcomes), reflecting policy advisory and governance contributions.

Internationalization: depicted through international exchange and cooperation as well as international impact, including indicators such as the number of joint educational institutions and programs, the share of internationally co-authored papers, normalized citation impact, and the proportion of highly cited papers—forming a “collaboration–output–impact” chain.

Overall, the framework strikes a balance between limiting the number of indicators (to avoid data inaccessibility and interpretive overload) and ensuring functional coverage of key domains of university HSS development, thereby enabling multidimensional interpretation.

3. An Engineering-Oriented Methodological System: Standardization, Weighting, and Composite Evaluation

(1) “Natural weight” bias and the choice of Sigmoid standardization

In multidimensional composite evaluation, the core challenge is often not whether indicators exist but how they enter a common scale and are weighted reasonably. The Report introduces the concept of “natural weights”: even when designed weights are equal, differences in indicator means and distributions may cause standardized indicators to be “naturally amplified” or “naturally attenuated,” thus distorting actual weights relative to designed weights. Using journal evaluation as an example, it shows that if total citations and impact factor are aggregated with equal weights but their means differ substantially, the indicator with the lower mean may contribute less in practice, producing a hidden bias derived from the distribution itself. To mitigate this issue, after comparing alternative methods, the Report adopts Sigmoid-function standardization. It first performs Z-score normalization on raw indicators and then maps them into the (0, 1) interval via the Sigmoid function. The method’s appeal lies in its weaker dependence on the original distribution form and its tendency to bring indicator means closer, thereby reducing “natural weight” effects due to mean differences. This choice signals the Report’s sensitivity to mathematical details and provides an operational remedy for a common pitfall in composite evaluation.

(2) Expert-based weighting and stability across years

The Report compares subjective and objective weighting methods. It argues that subjective weighting better reflects decision intentions and the perceived importance ordering of attributes, while objective weighting—despite its mathematical basis—may deviate from human judgment and vary with data, undermining cross-year comparability. Given the professional and practical nature of HSS evaluation and the need for temporal comparability, the Report adopts an expert-based evaluation method for determining indicator weights. Experts score the importance of third-level indicators on a four-point scale; these scores are converted into weights and then aggregated upward to obtain second-level and first-level weights. This approach makes value judgments explicit, stabilizes weights for longitudinal comparison, and facilitates interpretability for evaluated institutions.

The resulting first-level weights are: academic staff (0.11), talent cultivation (0.14), scientific research (0.51), cultural inheritance and social service (0.15), and internationalization (0.09). The dominance of scientific research (over half the total weight) indicates that the Report still treats research capacity and outputs as the main differentiator of university HSS performance, with meaningful supplementary roles assigned to talent cultivation and social service, and a more modest role to internationalization. While this aligns with prevailing evaluation practices emphasizing research, it also opens room for debate on whether HSS evaluation should further elevate social value weights.

(3) From linear weighting to correlation-sensitive aggregation via GWBM

The Report does not stop at traditional linear weighted summation. It explicitly recognizes complementarities, correlations, and preference relations among indicators. In practice, university HSS development often

exhibits chain-like coupling structures—such as “platform–projects–papers–awards” and “talent–teams–outputs.” Simple addition may ignore interactions among indicators. To better capture such interdependence, the Report introduces the Bonferroni Mean (BM) and its extensions, including the Generalized BM (GBM) and the Generalized Weighted Bonferroni Mean (GWBM) operator, using GWBM for information aggregation. By incorporating interaction terms in a weighted combination, GWBM seeks a more robust representation between “averaging” and “extremes.”

From the standpoint of evaluation science, introducing GWBM enhances the model’s expressive capacity for indicator associations and reflects the Report’s interdisciplinary integration of operations research and multi-attribute decision theory. At the same time, a potential cost of nonlinear aggregation is reduced interpretability: linear models allow more intuitive decomposition of contributions, whereas GWBM requires clearer explanation of parameter settings and interaction mechanisms, ideally accompanied by sensitivity analyses to avoid “black-box” concerns. Nonetheless, the Report’s methodological stance—prioritizing robustness while acknowledging interdependence—usefully brings the association problem to the forefront and points to future improvements in explainability.

(4) End-to-end workflow: data collection, quality checks, and preprocessing

If the indicator system and aggregation operator determine “what to compute” and “how to compute,” data practices determine “whether computation is feasible” and “whether results are reliable.” The Report provides a relatively complete process design. The preparatory phase includes defining objects, objectives, and principles, forming an expert panel, building the indicator system, and selecting methods. The implementation phase includes data acquisition, preprocessing, expert weighting, and composite computation. The analysis phase includes writing the report, releasing results, and collecting feedback. This three-stage structure improves organizational feasibility and traceability.

Regarding data sources, the Report emphasizes the use of publicly available online data, integrating official channels such as university websites and government agencies related to education and research management, as well as funding and discipline platforms. It also incorporates databases such as InCites, Web of Science, Scopus, CNKI, and CSSCI. For data quality control, it proposes visualization screening, range checks, missing-value and duplicate-value checks, data source reliability checks, and historical comparisons—explicitly embedding a data-governance mindset into evaluation practice. For qualitative variables, it distinguishes “direct quantification” and “indirect quantification,” adopting the latter: enumerating possible values, recording each institution’s value, and then assigning numerical scores (e.g., by journal tier or award level). This enhances computational feasibility and comparability by reducing narrative subjectivity.

In presenting results, the Report adopts a tiered classification rather than a single precise ranking. Based on percentile positions of composite scores, universities are divided into four categories (A, B, C, D) and further into twelve grades, such as A+ (top 2%), A (2–5%), A– (5–10%), and so forth. Tiered presentation reduces the volatility and arbitrariness of fine-grained rank orders, improves the stability of interpretation, and aligns with a public-governance logic of “classification-based guidance and differentiated policy making.”

Implications

First, the Report is systematic. It begins with theory and practical dilemmas, develops an evaluation-element framework and indicator system, and then addresses standardization, weighting, and aggregation before moving to data acquisition, quality checks, preprocessing, and tiered publication—forming a closed “theory–method–data–application” loop and avoiding the reduction of HSS evaluation to a single metric contest.

Second, it is methodologically explicit. The Report provides formula-based and step-by-step descriptions of key technical components of composite evaluation. Its discussion of standardization methods, “natural weight” bias and Sigmoid processing, expert weighting and hierarchical aggregation, and the selection of aggregation operators helps readers understand not only “what is computed” but also “why it is computed this way.”

Third, it demonstrates strong operability. By controlling indicator numbers, emphasizing data availability, and specifying quality checks and preprocessing rules, the Report exhibits an engineering-oriented mindset. Most of the 24 third-level indicators are obtainable through public channels; tiered publication supports communication and policy use, lowering barriers to implementation.

Fourth, it has direct practical transferability. Government agencies can reference the framework for resource allocation and policy evaluation; universities can use it for internal diagnosis, benchmarking, and improvement. The governance logic of “evaluation for development” also provides insight for composite evaluations in other public domains.

Fifth, its interdisciplinary integration is noteworthy. The Report draws on systems science, management studies, scientometrics, multi-attribute decision theory, and data governance, seeking a workable technical expression amid the tensions among political, academic, and social value standards—reflecting a trend toward methodological synthesis in evaluation research.

Besides, the Report also leaves room for further deepening.

First, the indicator structure remains relatively research-output-centric, with heavy emphasis on grants and papers. It underrepresents long-term, accumulation-based HSS outputs (high-quality scholarly monographs, critical editions and translations, databases and reference works, public cultural products) and “slow variables” of influence (intellectual contributions, community-building, agenda-setting in public debates). Future editions could, while maintaining operability, explore measurable pathways for monograph evaluation, policy uptake of consultation outcomes, public communication, and social participation, and introduce more discipline-sensitive indicator combinations.

Second, the transparency and interpretability of weighting and nonlinear aggregation could be strengthened. Expert weighting enhances stability but introduces concerns about expert selection, scoring consistency, and preference heterogeneity. GWBM improves correlation expression but requires fuller disclosure of parameter settings and sensitivity. Future releases might include weight-sensitivity analyses, contribution decomposition, and clearer parameter documentation, and consider selectively opening computational procedures and code to enhance reproducibility and trust.

Third, heterogeneity and fairness deserve more granular treatment. Differences in institutional scale, regional development levels, disciplinary structures, and institutional missions may mean that the same indicator carries different implications across institutions. Comparisons based on absolute counts may amplify

scale advantages. Future versions could incorporate per-capita, intensity, and efficiency indicators; adopt grouped evaluation within comparable institutional types (research-intensive, teaching-oriented, local application-oriented); and provide clearer technical schemes for regional and disciplinary-structure adjustments.

Conclusion

The Development Report of Humanities and Social Sciences in Chinese Universities 2025 represents a meaningful step in China's transition from experience-based to system-based HSS evaluation. By translating university HSS development into a multidimensional and comparable structural portrait, and by constructing an executable evaluation chain through standardization, weighting, and aggregation, the Report offers new tools for policy makers optimizing resource allocation, for universities improving disciplinary development, and for the public understanding the value of HSS.

At the same time, the Report also reminds readers that evaluation is not merely a technical question but also a matter of values and governance. Only by maintaining appropriate orientation, respecting disciplinary logics, strengthening data governance, and improving transparency can evaluation systems truly function to “incentivize improvement” rather than “manufacture anxiety.” For education administrators, university HSS managers, and evaluation researchers, this Report merits careful reading and practical engagement.

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