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Modern Approaches to Faculty Evaluation in Leading Universities: A Narrative Review of Models, Challenges, and Practical Solutions

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Abstract

Background: Faculty evaluation is essential for improving quality and professional development in higher education. Criticisms of traditional evaluation methods worldwide have encouraged universities to adopt modern, structured, multi-criteria models. This study aims to review faculty evaluation models, criteria, and challenges in leading global universities and suggest practical solutions.

Materials and Methods: This narrative review involved independent searches by two reviewers across ERIC, PubMed, Scopus, Web of Science, and Google Scholar up to April 2025, using relevant keywords such as faculty evaluation, professor appraisal, lecturer assessment, teaching effectiveness, and multi-criteria decision-making. After screening and full-text assessment, studies meeting predefined criteria were selected.

Results: Findings indicate that modern faculty evaluation systems at leading universities successfully combine quantitative and qualitative methods, better recognizing diverse faculty roles. Advanced multi-criteria decision-making models—such as Spherical Fuzzy AHP, Grey MARCOS, and LOPCOW—enable comprehensive evaluations by appropriately weighting teaching, research, student engagement, social responsibility, and ethics. Tools like the balanced scorecard integrated with AHP and TOPSIS support multidimensional assessments aligned with institutional goals. Recent innovations, including shifting from traditional grading to ranking systems and using tailored feedback forms alongside multi-source input, have improved accuracy, transparency, and fairness. However, persistent challenges include student feedback bias, faculty resistance, implementation complexity, and the need for context-specific approaches. To enhance effectiveness, continual process reviews, broader stakeholder involvement, local model adaptation, and integration of diverse data sources are strongly recommended.

Conclusion: Effective faculty evaluation requires integrated, multi-source models, regular updates to criteria, and active faculty engagement. Combining qualitative and quantitative data with attention to local context is essential to promote transparency, fairness, and continuous quality improvement in higher education assessment systems.

Key Words: Evaluation Models, Faculty Evaluation, Higher Education, Prestigious Universities.

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1- INTRODUCTION

The evaluation of university professors is a central component in assuring quality and enhancing performance within global higher education systems. This process not only supports professional development and the continuous improvement of teaching and research quality but also promotes institutional transparency, accountability, and competitiveness (1–3). Leading universities have demonstrated that robust faculty evaluation requires diverse and multi-dimensional approaches. Multi-criteria decision-making (MCDM) models, such as Spherical Fuzzy AHP, Grey MARCOS, and LOPCOW, integrate both quantitative and qualitative criteria—ranging from teaching quality and research output to ethical conduct and community engagement—offering comprehensive and nuanced assessments of academic performance (1, 4–6).

Comparative and contextual studies emphasize that evaluation systems must be adapted to local institutional missions and cultures, with variable weights assigned to different criteria depending on strategic priorities (2, 7). Furthermore, scholars recommend innovations such as transitioning from purely numerical grading to ordinal ranking systems, as well as incorporating input from students, peers, and self-assessments to increase validity and reliability (8, 9).

Despite advancements in evaluation frameworks, ongoing challenges remain, including bias in student evaluations, faculty resistance to change, complexity in implementing blended models, and difficulties adapting frameworks to the specific contexts of individual institutions. Addressing these challenges is vital for the continued relevance and effectiveness of faculty evaluation processes worldwide (9–12). This study aims to review faculty evaluation models, identify key criteria and challenges in leading global universities, and present research-based strategies to improve evaluation systems.

2- MATERIALS AND METHODS

2-1. Study Design

This narrative review was conducted to synthesize the literature on evaluation methods, challenges, and improvement strategies for university professors. A comprehensive search for relevant studies was performed by two independent reviewers across the databases ERIC, PubMed, Scopus, Web of Science, and Google Scholar. The search included articles published in English or Persian up to April 2025. Keywords used (in both English and Persian) included “faculty evaluation,” “professor appraisal,” “lecturer assessment,” “teaching effectiveness,” “multi-criteria decision-making,” and “review.”

Titles and abstracts identified through the database search were independently screened by both reviewers. Full texts of potentially eligible articles were subsequently obtained and assessed for inclusion. Any disagreements between the reviewers regarding article selection or data extraction were resolved through discussion until consensus was reached.

2-2. Inclusion Criteria

- Review or narrative review articles focused on methods, challenges, or improvement strategies in faculty evaluation.
- Full-text availability in English or Persian.
- Articles providing substantive information on evaluation models or practical implementation issues.

2-3. Exclusion Criteria

- Editorials, commentaries, conference abstracts, letters to the editor, and short communications.

- Articles unrelated to faculty evaluation or lacking essential methodological or conceptual content.

2-4. Data Extraction

Data extracted from the included articles comprised study design, evaluation models and frameworks, main assessment criteria, key findings, implementation challenges, and recommended optimization strategies, as summarized in **Table 1**.

2-5. Ethical Considerations

This review fully adhered to the principles of academic integrity and research ethics. All sources were properly cited. Since this study was based on previously published literature and did not involve new research involving human or animal subjects, no additional ethical approval was required.

3- RESULTS

A comprehensive synthesis of recent studies and documentation demonstrates that modern systems for university professor evaluation are grounded in the integration of quantitative and qualitative methods, increased flexibility, and greater attentiveness to the diverse responsibilities of faculty members. The main findings of this review are summarized below and in **Table 1**.

3-1. Model-Based and Multi-Criteria Approaches

Multi-criteria decision-making (MCDM) models—such as Spherical Fuzzy AHP and Grey MARCOS—are employed to holistically incorporate subjective data (e.g., student feedback) and objective metrics (such as teaching quality, research, community participation, accessibility, and ethical behavior). These models use weighting mechanisms for each criterion, enhancing the precision of evaluations and reducing bias. Spherical Fuzzy AHP determines criterion weights by capturing uncertainty through fuzzy logic, while Grey MARCOS ranks faculty against ideal and anti-ideal solutions using grey system theory to handle imprecise data effectively. The LOPCOW method also provides a comprehensive framework to evaluate faculty performance in education, research, and community service, facilitating consensus among multiple evaluators and improving the objectivity of assessments (1, 4, 13).

3-2. Integration of Qualitative and Quantitative Approaches

Integrating the Balanced Scorecard (BSC) with techniques such as Analytic Hierarchy Process (AHP) and TOPSIS enables multi-dimensional evaluation of university professors across domains including teaching, research, service/administrative duties, and ethics. These frameworks typically incorporate sensitivity analysis and are validated using authentic, multi-source feedback—especially from students—which enhances their practical relevance and robustness. Evidence from leading universities and reviews demonstrates that composite approaches combining qualitative perspectives (such as peer and self-assessment) with quantitative decision-making tools result in more comprehensive and balanced faculty evaluations. As a result, such integrated models are increasingly recommended to support fairness, validity, and continuous improvement in faculty performance appraisal (1, 2, 4-6, 9,14).

3-3. Reform in Student Evaluation of Teaching (SET)

Recent research recommends transitioning from purely numerical evaluation systems to ordinal, ranking-based feedback and customized evaluation forms to better capture the nuanced strengths and weaknesses of teaching practices. Such reforms aim to reduce biases and improve the interpretability of evaluations.

Incorporating multiple perspectives—students, peers, self-assessment, and administrators—further enhances the fairness, transparency, and validity of faculty evaluations. For instance, a study analyzing reforms at Budapest University of Technology and Economics showed that changing the evaluation scales and questions increased student response rates and improved the representativeness of data, although some bias challenges remained. Furthermore, synthesizing student ratings as part of a broader dialogic process encourages reflective conversations about teaching quality, rather than reliance on decontextualized metrics (15, 16).

3-4. Key Criteria and Main Components:

Most faculty evaluation models currently encompass the following essential criteria:

- **Teaching quality and effectiveness:** This is a foundational element in faculty assessment, often measured through multi-source feedback including students, peers, and self-assessment, as highlighted in comprehensive frameworks that incorporate 360-degree evaluations (1, 17-19).
- **Research output and innovation:** Faculty research productivity, including publication quality and innovation, is a critical component of evaluation at many universities (4, 20).
- **Professional competence:** This includes disciplinary expertise, continuous professional development, and mastery of teaching skills (21).
- **Student accessibility and support:** Effective faculty evaluations consider availability and support provided to students outside of formal instruction (18).
- **Community engagement and administrative duties:** Service to the academic community and administrative responsibilities form part of holistic evaluation systems (19, 22).
- **Academic and professional ethics:** Ethical conduct in teaching, research, and service is recognized as a key criterion ensuring institutional integrity (1, 18).
- **Use of multi-source feedback:** Modern evaluation models employ data from students, peers, administrators, and self-assessments to generate balanced and reliable assessments (9, 18, 23).

3-5. Comparative Findings

Comparative studies show that Western universities emphasize research productivity and teaching effectiveness using outcome-based evaluation criteria, while Eastern institutions often prioritize traditional activity-based measures, such as seniority and administrative duties. Hybrid models that combine both approaches and adapt to local institutional cultures—while incorporating international best practices—have proven most effective (24, 25).

3-6. Implementation Challenges

Key challenges in faculty evaluation include bias and validity issues in student evaluations, faculty resistance to new models, the complexity of multi-source evaluation systems, and the need to adapt evaluations contextually to institutional missions and cultures. For instance, some studies highlight the limitations of relying solely on student evaluations, especially for adjunct or clinical faculty, and advocate for inclusion of multiple assessment sources to achieve reliability and fairness. Faculty resistance often arises due to lack of participation in system design, concerns about additional workload, and skepticism regarding validity. Implementing multi-source models such as 360-degree evaluation requires significant training, infrastructure,

and administrative support. Furthermore, successful adaptation to institutional goals and local culture is essential for system effectiveness (18, 19, 24, 26-28).

3-7. Optimization Strategies

Recommendations for improving evaluation systems include triangulating data sources (students, peers, self-assessment), conducting periodic and context-sensitive reviews of evaluation criteria, providing comprehensive faculty training, and actively involving stakeholders in assessment system development. Integrating qualitative data alongside quantitative ratings and systematically analyzing potential evaluator bias can also enhance the validity of performance evaluations (29-36).

In summary, as detailed in **Table 1**, the most effective professor evaluation systems are multi-criteria, multi-source, iterative, and adapted to each university's mission and culture. These models integrate a wide range of scientific indicators and promote transparency, equity, and continuous improvement (1, 5, 18, 31, 37).

Table-1: Summary of Modern Models, Key Criteria and Implementation Challenges in University Faculty Evaluation Systems.

Domain / Component	Modern Approach / Key Findings	Purpose & Impact	Key Examples	References
Model-Based, Multi-Criteria Assessment	Advanced MCDM models (Spherical Fuzzy AHP, Grey MARCOS, LOPCOW) combining subjective and objective data, using structured weighting mechanisms to enhance evaluation quality.	Improved precision and reduced bias resulting in comprehensive and balanced appraisals of faculty performance.	Spherical Fuzzy AHP, Grey MARCOS, LOPCOW	1, 4, 13
Integration of Quantitative & Qualitative	Integration of the BSC with multi-criteria techniques such as AHP and TOPSIS, incorporating sensitivity analysis and validated by multi-source (especially student) feedback.	Robust, comprehensive, and goal-aligned evaluation of faculty across teaching, research, service/administration, and ethics domains.	BSC + AHP + TOPSIS frameworks at leading universities	1, 2, 4-6, 9, 14
Reform in Student Evaluation of Teaching	Transition from purely numerical evaluation systems to ordinal, ranking-based feedback and customized evaluation forms; inclusion of multiple perspectives (students, peers, self, admins).	Enhanced fairness, transparency, validity; reduction of bias in faculty evaluations.	Budapest University SET reforms; dialogic feedback	15, 16
Essential Criteria for Evaluation	Broader inclusion of metrics spanning teaching, research, professional competence, student support, service, ethics, and multi-source data gathering.	Comprehensive and balanced assessment encompassing all faculty roles and responsibilities.	360-degree feedback, innovation and outcome measures	1, 4, 17–23
Comparative Findings: West vs. East	Western models often emphasize research and teaching outcomes, while Eastern models focus more on seniority and service contributions; hybrid models combine both tailored locally.	Provides contextualization of best practices for faculty evaluation globally and locally to optimize effectiveness.	Adapted hybrid evaluation models	24, 25
Implementation Challenges	Issues such as bias and validity problems in student feedback, faculty resistance to new evaluation models, complexity of multi-source evaluation, and need for cultural and strategic adaptation.	Informs focused improvements to address resistance, infrastructure demands, and stakeholder involvement for sustainable evaluation systems.	Faculty skepticism, training and infrastructure demands	18, 19, 24, 26–28
Optimization Strategies	Use of triangulation of multiple data sources, periodic and context-driven reviews, continuous faculty training, mixed-methods approaches, and bias monitoring to maintain system quality.	Maximizes validity, reliability, and fairness while supporting professional growth and alignment with institutional objectives.	Multi-rater input systems, participative design, ongoing bias control	29–36

Abbreviations: MCDM, Multi-Criteria Decision-Making; BSC, Balanced Scorecard; AHP, Analytic Hierarchy Process; TOPSIS, Technique for Order of Preference by Similarity to Ideal Solution; SET, Student Evaluation of Teaching.

4- DISCUSSION

The results of this review indicate that leading universities worldwide are increasingly transitioning from traditional, single-criterion faculty evaluation systems to more advanced, structured, and multi-criteria approaches. This shift is largely a response to persistent issues such as bias, lack of transparency, and the inadequacy of conventional models to fairly and accurately assess the diverse roles of academic staff (1, 4, 6).

A major development in this area is the adoption of multi-criteria decision-making (MCDM) models—including Spherical Fuzzy AHP, Grey MARCOS, and LOPCOW—which enable the integration of both subjective information (such as student and peer feedback) and objective indicators (such as research productivity, community engagement, and professional behavior) for more comprehensive and reliable evaluations (1, 4, 5, 13, 14). For instance, Spherical Fuzzy AHP helps manage uncertainty in evaluator judgments, Grey MARCOS improves fairness by ranking faculty relative to ideal standards, and the LOPCOW method enables balanced assessment across teaching, research, and service domains (5, 13).

Another noteworthy innovation is the combination of the Balanced Scorecard (BSC) with techniques like AHP and TOPSIS, supporting systematic, multidimensional performance assessments aligned with institutional goals. Within these frameworks, AHP is used to weight evaluation criteria according to expert judgment and strategic priorities, while TOPSIS ranks faculty performance by comparing actual results to best- and worst-case scenarios. This integrated approach enhances transparency, accuracy, and fairness, and allows for flexible adaptation to local institutional and cultural contexts (1, 4, 5).

Furthermore, faculty evaluation practices are evolving from reliance primarily on student ratings to using data gathered from multiple sources—including peers, department heads, self-assessments, and improved feedback forms. This comprehensive approach not only enriches the information available for decision-making but also helps minimize bias and increase the practical value of evaluations for faculty development (15, 18, 19). Nonetheless, ongoing challenges remain, such as student evaluation bias, implementation complexity, technical and training needs, and faculty resistance—especially when evaluation outcomes affect job security or promotion, or when faculty feel excluded from the design process (9, 18, 26–28).

Comparative studies show that Western universities generally emphasize research performance and teaching quality with a stronger focus on outcome-based indicators, while Eastern universities often prioritize traditional or administrative roles. Hybrid models that combine the strengths of both approaches, and are adapted to institutional culture, have demonstrated greater effectiveness (24, 25).

Best practices identified in this review include reliance on multi-source data (students, peers, self-assessment, administrators), regular updating of assessment criteria aligned with institutional needs, ongoing faculty training, and the combined use of quantitative and qualitative analyses to minimize bias and foster comprehensive professional development (9, 18, 23, 24, 29–36).

In summary, integrating multi-criteria decision-making models, leveraging diverse data sources, and ensuring continuous improvement can transform faculty evaluation from a routine administrative task into a robust tool for professional development, motivation, and

quality enhancement in higher education (1, 5, 24, 31, 37).

5- CONCLUSION

Modern faculty evaluation in leading universities has evolved far beyond traditional, single-criterion models. The most effective contemporary systems integrate both quantitative and qualitative methods within advanced multi-criteria decision-making frameworks such as Spherical Fuzzy AHP, Grey MARCOS, and LOPCOW, and employ comprehensive tools like the Balanced Scorecard combined with AHP and TOPSIS. By systematically weighting key dimensions—including teaching quality, research productivity, student engagement, social responsibility, and professional ethics—these models enable holistic and fair assessment of academic staff.

However, the successful implementation of modern evaluation systems requires ongoing attention to critical challenges such as bias in student evaluations, the complexity of multi-source approaches, faculty resistance, and the necessity of adaptation to each institution's mission and culture. Effectiveness can be further enhanced through regularly updating evaluation criteria, fostering active involvement from faculty and stakeholders, providing targeted training, and ensuring that both qualitative insights and quantitative data are utilized. By adopting these evidence-based strategies, universities can establish robust, transparent, and reliable evaluation systems that promote fairness, encourage professional growth, and continually advance the quality of teaching, research, and service in higher education.

6- AUTHORS' CONTRIBUTIONS

Study conception or design: MA, and BG; Data analyzing and draft manuscript preparation: FK and BG; Critical revision of the paper: MA; Supervision of the research: BG; Final approval of the version to be published: MA, FK, and BG.

7- CONFLICT OF INTEREST: None.

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