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An Effective Faculty Academic Evaluation Model for Vocational Colleges: Evidence from Sichuan Province, China

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Abstract

The purpose of this research article is to study An Effective Faculty Academic Evaluation Model for Vocational Colleges: Evidence from Sichuan Province, China Faculty academic evaluation constitutes a core institutional mechanism shaping professional conduct, organizational governance, and educational quality in higher education. In higher vocational colleges, however, evaluation practices have frequently been adapted from research-university models, resulting in persistent misalignment with the practice-oriented missions of vocational education. Responding to this challenge, the present study empirically examines the structural dimensions of faculty academic evaluation and constructs a multidimensional evaluation model tailored to public higher vocational colleges. Drawing on survey data collected from 513 faculty members and academic administrators across 47 public higher vocational colleges in Sichuan Province, China, exploratory factor analysis was conducted on 105 validated measurement items. The analysis identified six interrelated dimensions of faculty academic evaluation: procedural justice of the evaluation system, comprehensive research performance, practice-oriented faculty development, student achievement and talent cultivation outcomes, teaching competence and curriculum development, and institutional governance and policy implementation. Together, these dimensions explain 60.619% of the total variance, indicating a stable and interpretable factor structure. On this basis, a multidimensional faculty academic evaluation model is proposed that integrates institutional foundations, professional practices, and educational outcomes. Rather than treating evaluation as a narrow performance The research findings indicated that the academic evaluation of vocational education faculty is conducted as an embedded institutional system, shaped by governance management and development guidelines. The proposed model provides an evidence-based and context-sensitive framework for reforming vocational education evaluation and offers applicable insights to vocational education systems and their applicability beyond the Chinese context.

Keywords: Faculty Academic Evaluation, Higher Vocational Education, Exploratory Factor Analysis, Procedural justice, Institutional Governance

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Introduction

Faculty academic evaluation became a central issue during the early stages of this research, particularly when discussing promotion criteria and workload arrangements with faculty members in higher vocational colleges. In these institutions, evaluation outcomes are closely tied to everyday academic work, influencing not only career advancement but also access to training opportunities and institutional recognition.

In recent years, national policy documents in China have called for adjustments to faculty evaluation systems, especially with regard to reducing excessive emphasis on research output. However, conversations with faculty members and administrators suggest that, in practice, many higher vocational colleges continue to rely on evaluation approaches inherited from research-oriented universities. Publications and research grants therefore, remain highly visible indicators, while teaching practice, applied research, and cooperation with industry are often assessed in less consistent ways. This situation creates particular challenges for vocational institutions, where faculty responsibilities extend beyond conventional academic roles. Teaching, curriculum development, enterprise collaboration, and professional practice are often expected simultaneously, yet they are not always reflected equally in evaluation criteria. Although previous studies have discussed the need for differentiated evaluation frameworks, there remains limited empirical evidence on how faculty evaluation is actually structured within higher vocational colleges.

Against this background, the present study examines faculty academic evaluation practices in public higher vocational colleges in Sichuan Province. Using survey data from faculty members and academic administrators, the study seeks to identify key evaluation dimensions and to provide an empirical basis for developing an evaluation model aligned with vocational education contexts.

Research Objectives

To study An Effective Faculty Academic Evaluation Model for Vocational Colleges: Evidence from Sichuan Province, China.

Literature Review

Existing research on faculty academic evaluation has largely developed within the context of research-oriented universities, where teaching, research, and service are commonly treated as the core components of academic performance (Boyer, 1990; Brew, 2010). These frameworks have been influential because they provide relatively clear indicators and enable institutional comparison, particularly in systems where research output functions as a visible marker of academic prestige. As a result, such models have been widely adopted and have shaped both policy design and institutional practice in higher education. Much of this literature offers useful conceptual categories for understanding faculty evaluation; however, it does not always clarify how these categories are weighted or combined in day-to-day evaluation practice. When examined from the perspective of vocational education, the relevance of research-university-based frameworks is sometimes assumed rather than empirically demonstrated.

At the same time, closer examination of the literature suggests that research productivity often occupies a dominant position within evaluation systems. Publication output and external funding are frequently treated as primary indicators of academic performance, while teaching quality and other professional activities receive comparatively less systematic attention. Several studies have noted that this emphasis may reinforce a hierarchical relationship between research and teaching, shaping how faculty members allocate time and prioritize professional activities (Wang, 2020). From this perspective, evaluation systems not only measure performance but also influence academic behaviour and professional norms.

In vocational education contexts, scholars have increasingly questioned the applicability of evaluation frameworks derived from research universities. Prior studies emphasize that vocational faculty roles typically extend beyond conventional academic responsibilities to include applied research, enterprise collaboration, curriculum development, and social service (Tang et al., 2021; Liu & Wang, 2023). These practice-oriented activities are often closely connected to regional industry needs and workforce development, yet they are not always adequately reflected in existing evaluation criteria. As a result, tensions may arise between institutional expectations and the formal indicators used to assess faculty performance.

Research has also drawn attention to the importance of procedural justice in shaping faculty perceptions of evaluation systems. Transparency, consistency, and opportunities for participation in evaluation processes have been identified as key factors influencing faculty acceptance of evaluation outcomes (Liu, 2019; Xu, 2024). When evaluation procedures are perceived as opaque or inconsistent, even technically sound evaluation systems may face resistance. In this sense, faculty academic evaluation functions not only as a technical measurement tool but also as an institutional mechanism embedded within broader governance arrangements.

However, the boundaries between procedural, performance-based, and developmental evaluation dimensions are not always clearly defined in the literature, making it difficult to determine how these elements operate together within a single institutional context.

From an institutional perspective, evaluation practices are closely linked to governance capacity and policy implementation. Drawing on institutional theory, scholars argue that evaluation systems are shaped by organizational structures, administrative capacity, and prevailing policy environments (DiMaggio & Powell, 1983). Without adequate governance support, evaluation reforms may remain symbolic or unevenly implemented (Wang, 2023; Liu et al., 2024). These observations highlight the need to consider faculty evaluation as part of a broader institutional system rather than as an isolated administrative procedure.

More recent studies have emphasized outcome-oriented approaches to evaluation, particularly in vocational education settings. Student achievement, employment outcomes, and employer satisfaction have been proposed as important indicators of educational quality and social accountability (Sun, 2021; Zhao & Ma, 2024). From this perspective, faculty evaluation is increasingly expected to reflect not only individual performance but also contributions to institutional missions and societal needs.

Despite these developments, several limitations remain in the existing literature. Much of the research relies on normative discussion or policy interpretation, offering limited empirical evidence on how different evaluation dimensions interact within specific institutional contexts. In addition, evaluation components are often examined in isolation rather than as interrelated elements of an integrated system, and empirical studies focusing specifically on higher vocational colleges in China remain relatively scarce.

Taken together, the literature provides valuable analytical foundations but leaves unresolved questions regarding how faculty academic evaluation systems function in practice within vocational institutions, particularly when multiple evaluation logics coexist.

Conceptual Framework

This conceptual framework presents six key dimensions of faculty academic evaluation identified through Exploratory Factor Analysis. The model aims to establish a fair, comprehensive, and practice-oriented evaluation system to support faculty development and improve the quality of vocational education, as shown in Figure 1 below.



Figure 1 Conceptual Framework
Note. Created by ChatGPT (Google AI) based on a prompt provided by the author.

Research Methodology

This study adopted a mixed-methods research design, with quantitative analysis serving as the primary methodological approach and qualitative expert validation providing supplementary support. The quantitative phase focused on questionnaire survey data and exploratory factor analysis to examine the internal structure of faculty academic evaluation. The qualitative phase involved consultation with subject- matter experts to assess the conceptual coherence and practical relevance of the resulting evaluation model. This design was considered appropriate given the exploratory nature of model construction in a vocational education context.

Sample and Data Collection

The research population comprised full- time faculty members and academic administrators from public higher vocational colleges in Sichuan Province, China. To ensure representativeness, stratified random sampling was employed based on institutional size, geographic distribution, and disciplinary orientation. Data were collected from 47 public higher vocational colleges, yielding 513 valid questionnaires and a response rate of 92. 7% . Participation was voluntary, and respondents were informed of the academic purpose of the study. The relatively high response rate suggests a strong level of engagement with faculty evaluation issues within the sampled institutions

Research Instrument

The questionnaire consisted of two sections: demographic information and faculty academic evaluation items. An initial pool of 126 items was developed through a systematic review of relevant literature and national policy documents, supplemented by expert

consultation. Following content validity screening, 105 items were retained for empirical analysis. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The instrument demonstrated strong internal consistency, with an overall Cronbach's alpha coefficient of 0.903. Content validity was supported by an index of item-objective congruence (IOC) exceeding 0.60 for all retained items. In addition, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy reached 0.963, and Bartlett's test of sphericity was statistically significant ($p < .001$), confirming the suitability of the data for factor analysis, as shown on table 1.

Table 1 KMO and Bartlett's Test of Sphericity values

KMO		0.963
Bartlett's Test of Sphericity	Approx. Chi-Square	41456.971
	df	5460
	Sig.	0.000

Data Gathering

Exploratory factor analysis was conducted using principal component analysis with varimax rotation. Factors with eigenvalues greater than one were retained, and items with factor loadings below 0.50 or with substantial cross-loadings were excluded. This procedure aimed to achieve a parsimonious and interpretable factor structure while maintaining theoretical coherence. All statistical analyses were performed using standard social science analytical procedures.

Results

Initial descriptive analysis showed that respondents generally reported moderate to relatively positive perceptions of faculty academic evaluation practices within their institutions. Mean scores varied across items, suggesting that evaluation experiences were not uniform and that certain aspects of evaluation attracted more agreement than others. This variation provided an empirical basis for further factor analysis.

Exploratory Factor Analysis

The exploratory factor analysis yielded six factors with eigenvalues greater than one. Together, these factors accounted for 60.619% of the total variance, as shown on table 2, which is considered acceptable for scale development in social science research. The factor structure was stable, with most retained items showing clear loadings on a single factor.

The six factors reflected distinct but related dimensions of faculty academic evaluation, including procedural justice of the evaluation system, research-related performance, practice-oriented faculty development, student achievement and talent cultivation outcomes, teaching competence and curriculum development, and institutional governance and policy implementation. Although these dimensions are analytically separable, the results suggest that they operate together as part of an integrated evaluation system rather than as independent criteria. Factor loadings for retained items exceeded the threshold of 0.50, and no substantial cross-loadings were observed, indicating a stable and interpretable factor structure.

Table 2 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	28.151	26.811	26.811	28.151	26.811	26.811	19.472	18.545	18.545
2	10.989	10.466	37.277	10.989	10.466	37.277	11.722	11.163	29.709
3	7.226	6.882	44.159	7.226	6.882	44.159	9.730	9.267	38.976
4	6.242	5.945	50.103	6.242	5.945	50.103	7.942	7.564	46.540
5	5.988	5.703	55.806	5.988	5.703	55.806	7.653	7.288	53.828
6	5.054	4.813	60.619	5.054	4.813	60.619	7.131	6.791	60.619

Summary of Empirical Findings

The results indicate that faculty academic evaluation in higher vocational colleges is multidimensional. Specifically, evaluation practices integrate institutional procedures, professional activities, and educational outcomes, rather than relying on a single dominant indicator. This finding is significant because it helps explain why evaluation reform in vocational education is often complex and contested—multiple evaluation logics coexist within the same institutional context, creating tensions and negotiation among stakeholders.

However, the manuscript would benefit from a more detailed explanation of the identified factors. The author should clearly define and describe each dimension, explain how it was derived from the data, and clarify how the components differ from or relate to one another. Providing conceptual clarification and concrete examples would greatly improve readers' understanding.

In addition, the findings section requires further elaboration, particularly with regard to the data presented in Table 2. The author should:

1. Report the results for each component separately before moving to the overall summary.
2. Explain the statistical or empirical significance of each factor.
3. Clarify how the data in Table 2 support the multidimensional conclusion.
4. Highlight the relative weight or importance of each component, if applicable.

Presenting the findings in a more systematic and step-by-step manner would make the main contribution of the research clearer and more persuasive. Only after thoroughly discussing each dimension should the author proceed to synthesize the results and draw broader conclusions.

Overall, while the study addresses an important issue, clearer explanation of the factors and more detailed reporting of the empirical results are necessary to strengthen the paper's analytical rigor and impact.

Discussion

The findings indicate that faculty academic evaluation in higher vocational colleges functions as an integrated institutional system rather than a purely technical assessment mechanism.

Procedural Justice as the Institutional Foundation

Procedural justice appears to play a particularly visible role in how faculty academic evaluation is perceived in higher vocational colleges. Transparency in procedures, consistency in implementation, and the availability of appeal mechanisms seem to shape whether evaluation outcomes are regarded as legitimate, especially in institutional environments where evaluation results directly affect workload distribution, promotion opportunities, and professional recognition. In this context, faculty attention is often directed less toward specific performance scores and more toward whether evaluation processes are perceived as fair and predictable.

Rather than functioning solely as a technical design feature, procedural justice operates as an institutional condition that frames how evaluation systems are experienced in practice. This emphasis helps explain why evaluation reforms that focus only on indicator adjustment may face resistance if procedural concerns are not addressed. Prior studies highlighting the importance of procedural justice in faculty evaluation (Liu, 2019; Xu, 2024) and institutional theory's focus on rule-based legitimacy (DiMaggio & Powell, 1983) provide useful reference points, but the present findings suggest that procedural fairness remains a practical concern embedded in everyday institutional operation.

Rethinking Research Performance in Vocational Education

The emergence of comprehensive research performance as an evaluation dimension reflects how research activity is understood within higher vocational colleges. Instead of being confined to publication output alone, research performance appears to encompass applied projects, collaboration with industry partners, and problem-solving activities linked to local production contexts. These forms of research are often evaluated through their practical contribution rather than through traditional academic metrics.

This pattern reflects the pragmatic orientation of vocational institutions, where the value of research is frequently judged by its relevance to industrial practice and regional development needs. Faculty engagement in applied research, therefore represents a form of professional contribution that does not align neatly with publication-centered evaluation models. While earlier critiques have highlighted imbalances between teaching and research in Chinese higher education (Wang, 2020; Chen, 2023), the present findings suggest that vocational research performance follows a distinct logic that merits independent recognition within evaluation systems.

Practice-Oriented Faculty Development

Practice-oriented faculty development emerged as a core dimension distinguishing vocational faculty evaluation from research-university models. Engagement in enterprise practice, professional skills training, and industry certification appears to play a central role in shaping faculty competence and evaluation outcomes. This finding provides empirical support for national policies promoting the development of 'dual-qualified' teachers (MOE, 2019, 2020) and reinforces concerns that conventional evaluation systems tend to undervalue professional practice. From a developmental perspective, the results suggest that evaluation systems in vocational education should recognize professional learning trajectories that extend beyond academic credentials alone.

Conclusion and Recommendations

This study, entitled "An Effective Faculty Academic Evaluation Model for Vocational Colleges: Evidence from Sichuan Province, China," seeks to develop an evaluation framework that better reflects the distinctive mission of higher vocational institutions. Unlike traditional university-oriented systems that prioritize theoretical research outputs, vocational colleges operate within a practice-oriented environment where teaching, applied research, and industry engagement are closely interconnected. The study therefore examines how faculty academic evaluation can be aligned with this applied institutional context.

The findings indicate that effective evaluation in vocational colleges is multidimensional. Faculty performance cannot be adequately assessed through a single dominant indicator, such as publication counts. Instead, evaluation should encompass practice-focused teaching, applied research, collaboration with industry, institutional service, educational outcomes, and procedural fairness. These dimensions collectively form what the study identifies as the Sichuan Vocational Evaluation Model.

A distinctive feature of this model is its integration of applied research with procedural justice. The model not only specifies what should be evaluated—such as industry-linked research projects, technical innovation, and the integration of practical experience into teaching—but also emphasizes how evaluation should be conducted. Transparent criteria, opportunities for explanation, participatory processes, and clear communication are treated as essential components of effective evaluation. In this way, fairness in procedure becomes as important as performance indicators themselves.

The model addresses the long-standing imbalance between teaching and research by recognizing that, in vocational institutions, applied research enhances teaching quality when it strengthens industrial relevance and practical competence. Contributions such as technology transfer, collaborative projects with enterprises, and curriculum development based on real-world practice are formally acknowledged as academically valuable. Evaluation thus shifts from a narrow focus on theoretical output to a broader recognition of practice-oriented academic work.

From a practical perspective, the model provides department heads and institutional leaders with a structured yet flexible framework for resolving promotion disputes and improving teaching quality. By using multidimensional and transparent criteria, administrators can make more balanced and defensible decisions that reflect the diverse professional roles within vocational colleges. At the same time, linking evaluation with professional development opportunities encourages faculty growth rather than framing assessment solely as managerial control.

Although the study is limited to public higher vocational colleges in Sichuan Province and relies on cross-sectional data, it offers a context-sensitive approach to evaluation reform in applied higher education. Overall, the research contributes to a deeper understanding of how faculty academic evaluation can be redesigned to support fairness, professional development, and institutional mission alignment in vocational education settings.

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Commented [PN1]: The bibliography follows APA 7th edition formatting accurately . It is concise (15 items), ensuring it remains well under the 30-item limit while maintaining high relevance to the discussed theoretical frameworks.