Development and Validation of an Ethical Leadership Scale for University Faculty Members in Jiangsu Province, China

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Abstract

As ethical leadership becomes increasingly vital in higher education, this study developed and validated an ethical leadership scale tailored to university faculty members in Jiangsu Province, China. Based on expert consultations and existing literature, an initial 40-item scale was constructed, reflecting key competences, including role model, fairness and equity, transparent communication, academic integrity, sense of responsibility, respect and inclusivity, student-centered approach, empowerment, behavioral reinforcement and social contribution. A total of 383 valid responses were collected from faculty members across 33 provincially affiliated universities in Jiangsu Province. Exploratory factor analysis (EFA) extracted 10 factors, accounting for 88.36% of the total variance, with factor loadings ranging from 0.796 to 0.939. Confirmatory factor analysis (CFA) demonstrated good model fit (χ^2/df = 2.347, CFI = 0.943, TLI = 0.928, RMSEA = 0.059, SRMR = 0.047). The scale exhibited strong internal consistency (Cronbach's α = 0.967) and acceptable convergent and discriminant validity (AVE > 0.50, CR > 0.80). These results support the scale's reliability and validity, offering a robust tool for evaluating and enhancing ethical leadership among university faculty.

Keywords: Ethical Leadership, University Faculty Members, Scale Development, Validity Test, Reliability Test

Introduction

As higher education continues to rapidly evolve, university faculty members have increasingly assumed roles that extend beyond the mere delivery of knowledge, acting as moral guides who shape

students' values, behaviors, and overall character (Blazar & Kraft, 2017). Within this context, ethical leadership grounded in core values such as integrity, fairness, and responsibility becomes critically important because it not only promotes students' academic, psychological, and moral growth through exemplary behavior in teaching, research, and governance but also plays a significant role in influencing university culture, reputation, and the relational dynamics within academic communities (Brown & Treviño, 2006; De Hoogh & Den Hartog, 2008).

In China, the growing emphasis on ethical leadership in higher education is closely tied to national goals such as fostering virtue through education, cultivating socialist successors, enhancing talent cultivating quality, and building a leading country in education (Zhou, 2025), which highlights the role of university faculty members not only as educators and researchers but also as moral exemplars shaping students' values and character. Jiangsu Province, as a leading region in China's higher education, has made notable progress in faculty development, introducing various initiatives to improve teaching, research, and international competence (Jiao, 2023). However, these efforts have largely overlooked faculty leadership, particularly ethical leadership and targeted actions in this area remain limited (Sun, 2021), and empirical research is still lacking, indicating a critical gap in both theory and practice.

Although ethical leadership has attracted considerable attention in fields like business and organizational management where various quantitative measurement tools have been widely used (Argyropoulou & Spyridakis, 2022), the specific context of university faculty members, given their unique responsibility in nurturing students' academic development and ethical values, remains underexplored. Existing research in this area is primarily conceptual or based on case studies (Jenlink & Jenlink, 2015; Hunzicker, 2017), with a notable lack of standardized instruments for systematic evaluation. Consequently, the development of a measurement tool specifically designed to assess ethical leadership among university faculty members is necessary to fill this gap and to provide universities with a robust, evidence-based foundation for improving faculty development, evaluation, and motivation practices.

Research questions

To develop a scale measuring the ethical leadership of university faculty members in Jiangsu Province, China and to examine its reliability and validity.

Conceptual framework

Ethical leadership has emerged as a highly prominent area of research, with a primary focus on how leaders effectively guide and influence members of an organization to consistently adhere to well-established ethical standards while simultaneously fostering and maintaining a positive, supportive, and ethically sound organizational environment through the leaders' demonstration of strong personal character, their function as behavioral role models, and their ability to engage in meaningful and constructive interpersonal interactions (Ko et al., 2018). Brown et al. (2005) defined ethical leadership as a distinct leadership style fundamentally rooted in core ethical principles, wherein leaders actively promote and encourage ethical conduct by exemplifying such behavior themselves and by fostering open, two-way communication with their followers. Shapiro and Stefkovich (2016) expand on this definition by arguing that educational leaders carry the important responsibility of integrating considerations of justice, fairness, and student well-being into their decision-making processes, thereby demonstrating a deep and sustained commitment to the highest standards of educational ethics and moral responsibility. To quantify the concept of ethical leadership, scholars have developed a variety of measurement instruments that aim to capture its multifaceted nature from different perspectives. For instance, Brown et al. (2005) designed the widely used Ethical Leadership Scale (ELS), which primarily emphasizes leaders' role modeling behaviors and their capacity for ethical decision-making, while De Hoogh and Den Hartog (2008) expanded on this by integrating perceptions of ethical leadership with specific observable leadership behaviors to provide a more behaviorally grounded assessment. Yukl et al. (2013) contributed by developing a comprehensive scale that assesses critical dimensions including adherence to ethical standards and the way leaders exercise power and influence. Recent research has expanded the scope of ethical leadership measurement by incorporating new dimensions relevant to contemporary organizational and cultural contexts. Shakeel et al. (2020) introduced the Broader Ethical Leadership Scale (BELS), which integrates elements such as sustainability, diversity, and resilience. Abu Bakar and Connaughton (2023) proposed the Ethical Leadership Communication Scale (ELCS), emphasizing ethical communication as a core component of leadership. In the education sector, Yin & Chu (2021) developed a multidimensional framework tailored to teacher roles, addressing governance, mentoring, and academic responsibilities. Although existing instruments have laid a solid foundation for quantitative research on ethical leadership and have facilitated more nuanced investigations across various organizational and professional contexts, they remain largely rooted in corporate or general organizational settings (Ko et al., 2018). There, they may not fully capture the educational nuances of faculty-student relationships, academic freedom, and educational responsibilities (Tenuto & Gardiner,

2018; Ahmed, 2023). Moreover, many of these tools rely heavily on subordinate evaluations and fail to reflect the multifaceted roles faculty members play in higher education, including curriculum design, disciplinary leadership, and public services (Evans et al., 2022).

In the context of higher education, Strike (2006) and Sun (2021) proposed that the ethical leadership of university faculty members is primarily manifested through three dimensions, including role modeling, interpersonal care, and institutional guidance. The role modeling dimension highlights the importance of personal character and self-discipline, through which faculty members set behavioral examples that inspire others to adhere to ethical standards, contributing to the construction of university culture (Alhaidan, 2025). The interpersonal care dimension focuses on emotional connection, fair evaluation, and personalized care in faculty-student and collegial relationships, significantly improving their sense of responsibility and academic conduct (Snijders et al., 2022). The institutional guidance dimension emphasizes the use of rules, incentives, and accountability mechanisms to ensure compliance with ethical norms, thereby enhancing the credibility of education and fostering an ethical organizational climate (Tesar et al., 2021).

Based on the literature review, this study identifies three core dimensions of ethical leadership among university faculty members, namely character-based, interpersonal care, and behavioral guidance, and introduces a new scale that overcomes the limitations of previous tools by capturing the complex ethical responsibilities in higher education and providing a more context-specific and comprehensive assessment that goes beyond subordinate-focused and corporate-oriented models. The character-based dimension highlights university faculty members' personal ethical qualities, role modeling, and academic integrity, requiring them to demonstrate fairness, honesty, and a strong sense of responsibility in both teaching and daily life, thus becoming ethical exemplars for students and colleagues (Banks et al., 2021). The interpersonal care dimension emphasizes respect, inclusivity, and open communication in interactions with students and peers, advocating a student-centered teaching philosophy and a collaborative, innovative educational environment that values individual differences (Strike, 2006). The behavioral guidance dimension focuses on how university faculty members use institutional mechanisms, incentive structures, and social responsibilities to guide others' behaviors and values, thereby enhancing the overall ethical standard and collaborative efficiency of the educational organization (Branson, 2010). These three dimensions are interrelated and form the structural framework of university faculty members' ethical leadership, providing a clear pathway for them to fulfill their responsibilities in modern higher education. In conclusion, based on the literature review, this study has synthesized the ethical leadership model of university faculty members, as illustrated in Figure 1.
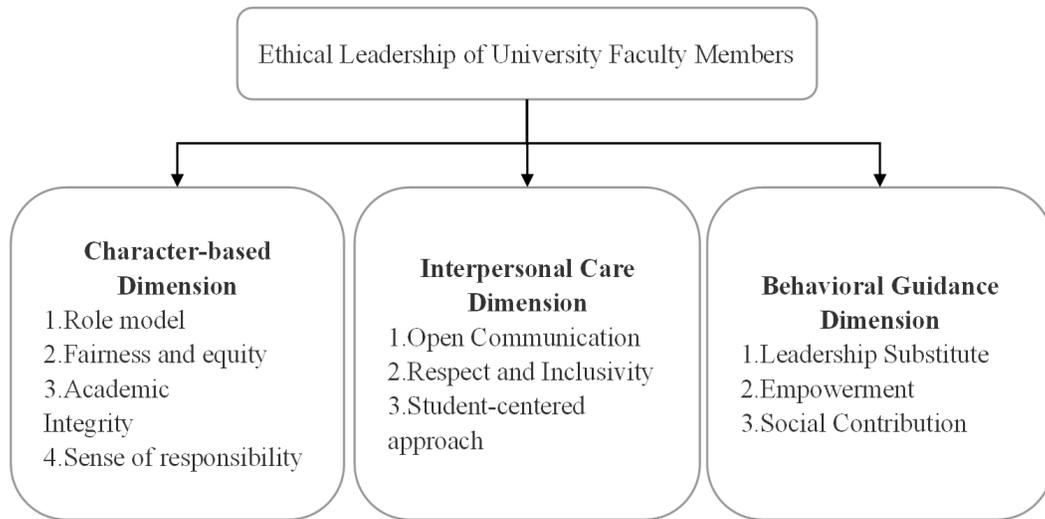
Figure 1 Model of University Faculty Member Ethical Leadership

Methodology

Initial scale development

Building upon existing validated ethical leadership scales and carefully adapting them to reflect the unique professional characteristics and contextual realities of university faculty members in Jiangsu Province, China, this study undertook the design of a comprehensive set of measurement items. Throughout the development process, the researcher engaged in two rounds of detailed and rigorous discussions with a panel of five experts, including specialists in ethical leadership as well as experienced university administrators, to ensure the relevance, clarity, and comprehensiveness of the items. As a result of this collaborative and iterative process, an ethical leadership scale specifically tailored for university faculty members was constructed, comprising a total of 40 carefully formulated items (see Table 1). This scale utilizes a five-point Likert response format, with options ranging from 1, representing "strongly disagree," to 5, representing "strongly agree," where higher aggregate scores are indicative of higher levels of perceived ethical leadership among faculty members.

Table 1 Initial Scale of University Faculty Member Ethical Leadership (Partial).

Competence	Item
Role Model	Members of my faculty consistently demonstrate high performance standards through their own behavior.
Fairness and Equity	Members of my faculty treat all students and colleagues as equals.
Transparent Communication	Members of my faculty always keep colleagues and students informed timely and transparently about the important matters that affect them.
Academic Integrity	Members of my faculty stick to academic honesty and encourage colleagues and students to uphold the same standards.
Sense of Responsibility	Members of my faculty have a deep sense of obligation to others.
Respect and Inclusivity	Members of my faculty listen to what colleagues and students say.
Student-centered Approach	Members of my faculty are concerned about disadvantaged and vulnerable students.
Empowerment	Members of my faculty try to discover students' problems and provide necessary help.
Behavioral Reinforcement	Members of my faculty reward ethical behaviors among colleagues and students through meaningful and effective means.
Social Contribution	Members of my faculty demonstrate systemic thinking by considering the broader impact of their actions on the whole society.

Participants and methods

This study conducted a survey of faculty members from 33 provincially affiliated universities in Jiangsu Province, China, utilizing an online questionnaire distributed through the wjx app. The questionnaire was divided into two sections: demographic information and ethical leadership, with the latter comprising 40 items. Out of 430 questionnaires distributed, 383 valid responses were retained after removing invalid submissions, such as those completed unusually quickly or showing signs of careless responses. The demographic characteristics of the participants are summarized in Table 2. The sample had a nearly equal gender split, with 51.7% male and 48.3% female. Most participants were early or mid-career faculty members, with 79.3% aged 40 or below and 66.3% having less than six years of teaching experience. In terms of academic qualifications, 70.5% held doctoral degrees and 29.5% held master's degrees. Academic ranks were well distributed, including 13.1% assistant lecturers, 25.1%

lecturers, 36.0% associate professors, and 25.8% professors. Overall, the sample was representative of the faculty population in Jiangsu Province in terms of gender, career stage, academic qualifications, and professional titles. To further ensure data quality and reduce response bias, the questionnaire items were presented in random order to mitigate order effects. Anonymity and confidentiality were emphasized to encourage honest responses, and balanced, neutral wording was used to minimize social desirability bias.

Table 2 Demographic Information of the Survey Participants.

Variable	Choice	Count	Percentage	Variable	Choice	Count	Percentage
Gender	Male	198	51.7%	Work Experience	Within 2	86	22.4%
	Female	185	48.3%		2-5	168	43.9%
Age	30 or below	112	29.2%		6-10	43	11.2%
	31-40	192	50.1%		11-15	55	14.4%
	41-50	57	14.9%		Above 15	31	8.1%
	51-60	22	5.8%	Professional Title	Assistant Lecturer	50	13.1%
Education	Master's Degree	113	29.5%		Lecturer	96	25.1%
	Doctoral Degree	270	70.5%		Associate Professor	138	36.0%
					Professor	99	25.8%

Statistical methods

This study employed SPSS 23.0 and MPlus 8.3 software for data processing and statistical analysis. Initially, independent sample t-tests and Pearson correlation analyses were conducted to evaluate the discrimination power of individual items. Subsequently, principal component analysis (PCA) was applied as part of the exploratory factor analysis (EFA) to preliminarily identify the underlying factor structure and to remove items that exhibited low factor loadings or poor alignment with the hypothesized constructs. Following the EFA results, confirmatory factor analysis (CFA) was performed using robust maximum likelihood estimation (MLR) to rigorously test the factor structure. The assessment of model fit and structural validity was based on multiple indices, including the chi-square to degrees of freedom ratio (χ^2/df), comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). To further establish

convergent and discriminant validity, inter-factor correlations, average variance extracted (AVE), and composite reliability (CR) were examined. Lastly, the internal consistency reliability of the scale was assessed using Cronbach's α.

Research results

Item analysis

This study utilized critical ratio and correlation analyses to identify items with poor discrimination or weak correlations. Using SPSS 23.0, total scores were calculated across all 40 items and participants were ranked accordingly; those scoring below one standard deviation from the mean (M – 1SD = 358.47, n = 69, bottom 18%) constituted the low-score group, while participants scoring above one standard deviation from the mean (M + 1SD = 490.01, n = 69, top 18%) formed the high-score group. Independent samples t-tests revealed statistically significant differences across all 40 items ($p < 0.001$), demonstrating strong discriminative power and supporting the retention of all items. Furthermore, Pearson correlation coefficients between each item and the total score ranged from 0.339 to 0.862 (all $p < 0.05$), providing additional evidence for the appropriateness of including all items in subsequent analyses.

Validity analysis

Structural validity: Exploratory factor analysis yielded a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.921, indicating excellent suitability for factor analysis, while Bartlett's test of sphericity was highly significant (χ^2 = 19605.175, df = 780, $p < 0.001$), confirming that the correlation matrix was appropriate for factor extraction (see Table 3). Items were selected and retained based on multiple criteria, including factor loadings greater than 0.40 on their primary factor, minimal cross-loadings (less than 0.30) on other factors, and theoretical relevance to the construct. Items with low communalities (below 0.30) or those that compromised the interpretability of the factor structure were removed to enhance overall scale validity and reliability.

Table 3 KMO and Bartlett's Test for the Scale.

KMO Measure of Sampling Adequacy		.921
Bartlett's Test of Sphericity	Approx. χ^2	19605.175
	df	780
	Significance	.000

As shown in Table 4, principal component analysis with Varimax rotation (performed over 25 iterations) extracted 10 distinct factors that together explained 88.355% of the total variance, with individual variance contributions of 35.296%, 14.156%, 11.710%, 8.080%, 6.561%, 4.418%, 2.996%, 2.084%, 1.712%, and 1.342%, respectively. Factor loadings ranged from 0.796 to 0.939, all exceeding the recommended threshold of 0.5. Importantly, no items exhibited loadings below 0.4, and each factor contained at least three items, meeting common criteria for factor reliability. While some items demonstrated cross-loadings on multiple factors, they were retained for subsequent confirmatory factor analysis given that the overall factor structure was consistent with the theoretical framework and the items displayed strong discriminative ability and explanatory power.

Table 4 Exploratory Factor Analysis Results.

Item	Rotated Component Matrix										CFV
	Fac1	Fac2	Fac3	Fac4	Fac5	Fac6	Fac7	Fac8	Fac9	Fac10	
1	.786	.087	.007	.382	.301	.184	.001	.038	.016	.009	.898
2	.784	.039	.014	.396	.352	.122	.022	.029	.029	.013	.915
3	.753	.036	.060	.418	.371	.137	.010	.018	.060	.016	.907
4	.670	.034	.009	.443	.389	.157	.086	.052	.016	.018	.833
5	.376	.646	.476	.023	.234	.425	.029	.055	.041	.000	.908
6	.339	.603	.465	.108	.272	.451	.067	.049	.022	.033	.882
7	.384	.634	.382	.058	.242	.462	.072	.168	.047	.067	.894
8	.375	.632	.452	.028	.265	.431	.054	.073	.003	.049	.896
9	.234	.206	.802	.137	.292	.022	.016	.138	.198	.087	.911
10	.249	.161	.771	.128	.311	.036	.038	.236	.217	.118	.914
11	.251	.165	.789	.088	.318	.038	.006	.145	.240	.136	.921
12	.230	.200	.781	.146	.325	.020	.041	.162	.201	.139	.918
13	.058	.147	.144	.846	.266	.109	.053	.292	.019	.083	.939
14	.046	.157	.150	.831	.273	.106	.044	.305	.028	.053	.925
15	.063	.181	.123	.844	.253	.101	.060	.298	.018	.011	.931
16	.068	.164	.142	.820	.242	.112	.034	.347	.039	.040	.921
17	.273	.066	.187	.000	.785	.099	.115	.032	.251	.068	.821
18	.210	.115	.257	.116	.783	.036	.002	.219	.077	.163	.832
19	.258	.039	.161	.008	.766	.085	.138	.083	.048	.283	.796

Item	Rotated Component Matrix										CFV
	Fac1	Fac2	Fac3	Fac4	Fac5	Fac6	Fac7	Fac8	Fac9	Fac10	
20	.150	.030	.090	.032	.603	.054	.132	.359	.595	.165	.927
21	.348	.034	.329	.086	.018	.683	.408	.008	.033	.084	.880
22	.384	.074	.311	.051	.023	.691	.371	.057	.060	.020	.876
23	.405	.066	.329	.068	.020	.724	.346	.013	.076	.013	.933
24	.402	.104	.331	.067	.038	.678	.328	.126	.080	.056	.881
25	.255	.258	.040	.302	.287	.441	.590	.002	.001	.025	.851
26	.252	.211	.010	.302	.254	.435	.627	.003	.013	.053	.849
27	.258	.220	.054	.227	.257	.415	.649	.001	.010	.017	.829
28	.264	.219	.072	.214	.185	.443	.645	.027	.037	.008	.818
29	.165	.329	.107	.215	.328	.012	.065	.712	.070	.224	.868
30	.095	.393	.103	.217	.323	.059	.107	.710	.017	.055	.848
31	.121	.370	.116	.210	.316	.010	.092	.715	.101	.198	.878
32	.101	.356	.130	.265	.306	.019	.142	.701	.061	.200	.874
33	.002	.461	.114	.223	.310	.025	.102	.002	.698	.169	.898
34	.013	.459	.114	.196	.233	.004	.000	.064	.731	.245	.915
35	.025	.444	.148	.221	.221	.025	.019	.036	.734	.172	.887
36	.016	.415	.079	.237	.253	.007	.133	.029	.724	.206	.884
37	.373	.492	.081	.233	.198	.051	.362	.005	.045	.633	.902
38	.368	.438	.035	.205	.091	.103	.407	.035	.100	.631	.847
39	.371	.481	.043	.208	.117	.100	.348	.048	.096	.666	.890
40	.299	.543	.037	.187	.139	.131	.287	.061	.055	.646	.846
Eigenvalue	14.119	5.662	4.684	3.232	2.624	1.767	1.198	0.834	0.685	0.537	
VE (%)	35.296	14.156	11.71	8.08	6.561	4.418	2.996	2.084	1.712	1.342	
CVE (%)	35.296	49.452	61.162	69.242	75.803	80.221	83.218	85.301	87.013	88.355	

*Note: Fac = Factor, VE = Variance Explained, CVE = Cumulative Variance Explained

Confirmatory Factor Analysis (CFA) was conducted using data from 383 valid responses, resulting in a sample-to-item ratio of approximately 9.6:1, which meets the recommended guideline of 5 to 10 participants per item for robust CFA. Guided by the exploratory factor analysis findings, a 10-factor model was specified and tested in MPlus 8.3, with standardized factor loadings ranging from 0.590 to 0.846 across all items. The model demonstrated a good overall fit, as evidenced by multiple fit indices: chi-square to degrees of freedom ratio (χ^2/df) of 2.471, root mean square error of approximation (RMSEA)

of 0.062, standardized root mean square residual (SRMR) of 0.077, comparative fit index (CFI) of 0.948, and Tucker–Lewis index (TLI) of 0.941, collectively indicating a strong alignment between the proposed measurement model and the observed data (see Table 5).

Table 5 Model Fit Indices of the Confirmatory Factor Analysis.

χ^2	Df	χ^2/df	RMSEA	SRMR	CFI	TLI
Critical Value	—	—	<3 good fit, <5 acceptable	<0.05 good fit, <0.08 acceptable	<0.05 good fit	>0.9 good fit
Simulation Index	1717.581	695	2.471	0.062	0.077	0.948
Fit Results	—	—	Good	Acceptable	Good	Good

Convergent validity: The factor loadings for the dimensions of Role Model, Fairness and Equity, Open Communication, Academic Integrity, Sense of Responsibility, Respect and Inclusivity, Student-centered Approach, Leadership Substitutes, Behavioral Reinforcement, and Social Service all exceed 0.7, demonstrating that each item strongly represents its respective factor. Furthermore, the Average Variance Extracted (AVE) values for all factors are above 0.5, and the Composite Reliability (CR) values exceed 0.6, collectively indicating satisfactory convergent validity and confirming that the items within each construct reliably measure the intended latent variable (see Table 6).

Table 6 Confirmatory Factor Analysis Parameter Estimates.

Factor	CR	AVE	Factor	CR	AVE
Role Model	0.8364	0.5621	Respect and Inclusivity	0.7881	0.4820
Fairness and Equity	0.6083	0.3956	Student-centered Approach	0.7225	0.3946
Open Communication	0.8659	0.6175	Leadership Substitutes	0.8022	0.5034
Academic Integrity	0.9023	0.6978	Behavioral Reinforcement	0.8131	0.5211
Sense of Responsibility	0.8257	0.5449	Social Service	0.6271	0.4149

*Note: An AVE between 0.36 and 0.50 is considered acceptable.

Discriminant validity: As shown in Table 7, all latent variables demonstrate statistically significant correlations at the $p < 0.01$ level, with values ranging from 0.044 to 0.863, indicating meaningful

relationships among the constructs. Notably, the correlations between Open Communication and Sense of Responsibility (r = 0.779), Leadership Substitutes and Behavioral Reinforcement (r = 0.863), and Respect and Inclusivity and Social Service (r = 0.638) slightly exceed the square roots of their respective AVEs (approximately 0.738, 0.709, 0.722, and 0.544). Despite these few instances of higher correlation, all other inter-construct correlations remain below the square roots of their corresponding AVEs, indicating that the majority of constructs exhibit acceptable discriminant validity. These results suggest that, overall, the measurement model achieves satisfactory distinction among most latent variables.

Table 7 Discriminant Validity Test Results.

	Role Model	Fairness and Equity	Open Communication	Academic Integrity	Sense of Responsibility	Respect and Inclusivity	Student-centered Approach	Leadership Substitutes	Behavioral Reinforcement	Social Service
Role Model	0.7497									
Fairness and Equity	.162**	0.5289								
Open Communication	.335***	.425***	0.7858							
Academic Integrity	.251***	.244***	.727***	0.8351						
Sense of Responsibility	.295***	.330***	.779***	.775***	0.7379					
Respect and Inclusivity	.152**	.263***	.371***	.193***	.245***	0.6943				
Student-centered Approach	.180***	.259***	.116*	.191***	.147**	.116*	0.6282			
Leadership Substitutes	.244***	.143**	.398***	.594***	.529***	.109*	.242***	0.7095		
Behavioral Reinforcement	.233***	.290*	.401***	.643***	.535***	.404*	.273***	.863***	0.7219	
Social Service	.100*	.141**	.215***	.156**	.205***	.638***	.186***	.195***	.155**	0.5442

Reliability Analysis

The overall Cronbach's **α** for the ethical Leadership scale for university faculty is 0.984. The Cronbach's **α** values for each factor are 0.936, 0.976, 0.925, 0.979, and 0.976 (see Table 8).

Table 8 Questionnaire Reliability.

Competence	Number of Items	Cronbach's α	Competence	Number of Items	Cronbach's
Role Model	4	0.954	Respect and Inclusivity	4	0.956
Fairness and Equity	4	0.956	Student-centered Approach	4	0.931
Open Communication	4	0.969	Leadership Substitutes	4	0.952
Academic Integrity	4	0.978	Behavioral Reinforcement	4	0.965
Sense of Responsibility	4	0.878	Social Service	4	0.943

Results of Ethical Leadership Assessment

Table 9 presents the mean scores, standard deviations, levels, and rankings of ten core competencies across three dimensions of ethical leadership among university faculty members of Jiangsu Province.

Table 9 Ethical Leadership Level of University Faculty Members.

Ethical Leadership	M	SD	Level	Rank
Character-based Dimension	3.90	1.355	Moderate	2
1. Role Model	3.64	1.37017	Moderate	8
2. Fairness and Equity	3.91	1.41202	Moderate	5
3. Transparent Communication	4.15	1.15918	High	2
4. Academic Integrity	3.90	1.35401	Moderate	6

Ethical Leadership	M	SD	Level	Rank
Interpersonal Care Dimension	3.86	1.295	Moderate	1
5. Sense of Responsibility	3.99	1.22166	Moderate	4
6. Respect and Inclusivity	4.04	1.25272	High	3
7. Student-centered Approach	3.56	1.28921	Moderate	10
Behavioral Guidance Dimension	3.84	1.705	Moderate	3
8. Empowerment	3.72	1.56894	Moderate	7
9. Behavioral Reinforcement	3.63	1.63193	Moderate	9
10. Social Contribution	4.16	1.79686	High	1
Overall	3.87		Moderate	

The overall level of ethical leadership among university faculty members was moderate (M = 3.87), indicating room for improvement. Among the three dimensions, the Interpersonal Care Dimension scored the highest (M = 3.86), followed closely by the Character-based Dimension (M = 3.90), while the Behavioral Guidance Dimension showed the lowest score (M = 3.84), suggesting this area requires greater attention.

At the competence level, Social Contribution (M = 4.16) ranked highest, highlighting faculty members' strong sense of societal responsibility. Transparent Communication (M = 4.15) and Respect and Inclusivity (M = 4.04) also scored high, reflecting positive interpersonal and communication practices. Conversely, Student-centered Approach (M = 3.56) and Behavioral Reinforcement (M = 3.63) were rated lowest, indicating a need to enhance guidance and motivation strategies for students.

These results imply that while university faculty members in Jiangsu Province demonstrate a solid foundation in ethical leadership, particularly in fairness, transparency, and social responsibility, targeted development efforts could focus on enhancing interpersonal and behavioral guidance skills. For instance, professional development programs might emphasize strategies to deepen faculty's student-centered practices and strengthen behavioral reinforcement techniques. Universities in Jiangsu Province should consider fostering a culture that encourages faculty to serve as visible role models, promote inclusive and respectful interactions, and engage in ongoing ethical training. By addressing weaker dimensions, universities can cultivate more holistic ethical leadership that not only upholds integrity but also actively supports and empowers students, thereby enhancing the overall educational environment.

Research limitations

Despite providing a useful measurement tool for assessing ethical leadership among university faculty members in Jiangsu Province, this study has several limitations. Its sample is limited to universities in a single province, which may affect the generalizability of the results. The cross-sectional research design also prevents the examination of changes in ethical leadership over time. Moreover, the lack of cross-cultural or cross-university comparisons limits the understanding of how contextual factors may shape faculty ethical leadership. Finally, the study focuses exclusively on ethical leadership without exploring its connections with other relevant constructs such as creativity, professional identity, or organizational citizenship behavior, which could offer a more comprehensive perspective on faculty leadership in higher education.

Recommendation

Recommendations for practices

To improve ethical leadership of faculty members, universities in Jiangsu Province should implement structured and actionable training programs that focus on ethical decision-making, context-based judgment, and value conflict resolution, which can be embedded into faculty onboarding and ongoing professional development, with modules co-designed by ethicists, education experts, and experienced faculty leaders to ensure relevance and applicability to help faculty navigate complex moral challenges in educational settings (Sharma et al., 2019). Pedagogical methods such as case-based teaching, interactive workshops, and role-playing exercises should be tailored to reflect real-world ethical challenges in university settings, thereby deepening faculty members' ethical awareness, enhance their moral reasoning skills, and strengthen their ability to act as ethical role models in diverse classroom and institutional contexts. Beyond individual training, universities should also invest in building professional communities dedicated to ethical leadership development, fostering an environment that encourages collaborative learning, peer mentoring, reflective dialogue, and the sharing of ethical dilemmas and best practices (Steinert, 2020). These communities can serve as platforms for continuous professional development and institutional learning, promoting a culture of integrity and shared responsibility. Moreover, it is crucial for policymakers in Jiangsu Province to formally embed ethical leadership into faculty performance evaluations, promotion criteria, and incentive structures (Jiao, 2023). By aligning institutional rewards with ethical behaviors and leadership practices, universities can reinforce the importance of moral conduct and create systemic support for sustained ethical engagement. Such an integrated approach, combining individual capacity building, community support, and policy

reinforcement can significantly elevate the overall ethical climate and governance capacity of higher education institutions in the region. To evaluate the effectiveness of these interventions, Universities in Jiangsu can adopt a mixed-methods approach to evaluate the effectiveness of these interventions, using tools such as pre- and post-training surveys, self-assessments, student feedback, and institutional metrics to capture both perceived and objective changes in ethical behaviors (Steinert, 2020). At the same time, qualitative methods, such as interviews, reflective journals, and focus groups can provide rich insights into faculty attitudes, perceived changes, and cultural shifts across departments (Cadez & Zaman, 2017). Moreover, longitudinal tracking and benchmarking progress against institutional goals enable assessment of long-term effects and support iterative improvement (Stupnisky et al., 2019).

Recommendations for further research

Future studies should broaden the sample scope by including more provinces and a wider range of universities, such as research-oriented, teaching-focused, and private institutions, to improve the generalizability and applicability of the scale. Longitudinal research designs are recommended to examine how university faculty members' ethical leadership develop over time in response to policy changes and organizational dynamics. Building on this foundation, cross-cultural or cross-national comparative research could further uncover both the differences and commonalities in ethical leadership among university faculty in diverse cultural settings. Finally, ethical leadership could be examined in conjunction with related constructs, such as creativity, professional identity, and organizational citizenship behavior, to develop a more comprehensive and integrated theoretical framework for faculty leadership in higher education.

Conclusion

Theoretical contribution

This study deepens the theoretical understanding and conceptualization of ethical leadership among university faculty by systematically proposing and validating a measurement scale tailored to the context of higher education, thereby addressing a critical gap in both structured assessment tools and theoretical frameworks within this domain. The findings reveal that faculty ethical leadership is not merely reflected in compliance with ethical norms and professional codes, but is also embodied through a broad spectrum of practices including ethical teaching, fairness, academic integrity, open communication, and a strong sense of responsibility, which plays a particularly significant role in guiding students' value formation, fostering inclusive educational environments, and promoting the professional development of academic staff. In contrast to previous studies, such as Brown et al. (2005), which

conceptualized ethical leadership mainly within organizational or business settings, or Gurley & Dagley (2021), which focused on school principals' ethical behaviors in basic education, this study shifts the analytical lens to university faculty members, a group that exercises ethical influence not through formal administrative power, but through daily academic and pedagogical interactions. The proposed model delineates the core dimensions of faculty ethical leadership, offering a scientific foundation and practical framework for faculty development, evaluation, and capacity-building. Moreover, compared with existing measurement tools adapted from non-academic settings, the scale developed in this study is specifically designed for the higher education context in China, incorporating culturally and institutionally relevant dimensions such as moral exemplarity in teaching, academic fairness, and a commitment to students' holistic growth (Jiao, 2023). Moreover, it offers greater contextual validity and practical utility for Chinese universities, while providing theoretical support for universities in Jiangsu Province striving to fulfill the fundamental mission of ethical education and to enhance governance capacity in the context of contemporary educational reform. By bridging conceptual gaps and offering a context-sensitive instrument, this study contributes a novel perspective to the growing literature on ethical leadership in higher education and provides a concrete foundation for future research and practice.

Practical significance

This study advances the understanding of ethical leadership in higher education by proposing and validating a measurement model tailored to this context, addressing the gap in structured tools and theoretical frameworks, finding that ethical leadership in university faculty members extends beyond adherence to norms and is evident in practices related to teaching, fairness, academic integrity, communication, and responsibility. The ethical leadership of university faculty members is crucial in guiding students' values, fostering an inclusive environment, and promoting faculty professional growth. The model clarifies the core dimensions of ethical leadership, providing a scientific foundation for faculty development, assessment, and training, while supporting universities in Jiangsu Province in advancing moral education and improving governance.

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