

DOI: <https://doi.org/10.63332/joph.v5i3.745>

## Ensuring Accuracy: Calculating the Content Validity Index for Teacher Job Satisfaction Surveys among Henan private universities in China

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### Abstract

*This study assesses teacher job satisfaction in private universities in Henan, China, using the Content Validity Index (CVI) to ensure the precision of questionnaires. To establish content validity, a panel of five experts was assembled. The research examined critical factors of teacher job satisfaction: salary, promotion, supervision, benefits, potential rewards, operational procedures, colleagues, nature of work, and communication. These elements were evaluated using both the scale-level CVI (S-CVI) and item-level CVI (I-CVI) on a 4-point relevance rating scale, known for its reliability. Items scoring below an I-CVI of 1.00 or an S-CVI of 0.9 were removed. The results indicate strong content validity, validating the tool's effectiveness for measuring teacher job satisfaction in Henan's private universities. Future studies should examine the construct validity and reliability of this scale. These findings underscore the scale's utility for researchers examining teacher job satisfaction in comparable educational environments.*

**Keywords:** teacher job satisfaction; content validity index (CVI); expert panel evaluation; survey validation; Henan private universities

### Introduction

Teacher Job Satisfaction (TJS) is a critical component in educational environments, directly impacting the effectiveness of teaching and the overall educational experience for students (Shah, 2024). High levels of job satisfaction among teachers are associated with enhanced teaching performance, increased teacher retention, and improved student outcomes (Wartenberg et al., 2023). In the context of private universities, particularly in regions like Henan, China, the study of TJS holds significance due to the unique challenges these institutions face, such as competitive pressures, resource allocations, and staff retention issues (Zhang & Ma, 2024). The accurate measurement of TJS is essential for administrators to make informed decisions that foster a supportive work environment. A validated instrument for measuring job satisfaction ensures that feedback reflects teachers' true sentiments and can guide meaningful improvements (Wang & Shi, 2024). However, constructing such instruments necessitates rigorous validation processes to ensure content accuracy and reliability (Richter & Richter, 2024).

Teacher job satisfaction has been a focal point of educational research due to its profound impact on both teacher retention and student outcomes (Fütterer et al., 2023). Various studies have identified determinants of job satisfaction among teachers, which often include intrinsic factors such as personal accomplishments and interpersonal relationships, as well as extrinsic factors

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such as salary and working conditions (Hoque et al., 2023). One of the significant intrinsic determinants is the sense of achievement teachers derive from student progress and the ability to foster a positive learning environment (Rozhenkova et al., 2023). Conversely, extrinsic factors, which include salary, administrative support, and resource availability, also play crucial roles in shaping teacher satisfaction (Sun et al., 2024). Notably, Herzberg's two-factor theory is often referenced in the literature as a framework to differentiate between intrinsic motivators and extrinsic hygiene factors that contribute to job satisfaction (Herzberg, 2015). The consequences of teacher job satisfaction are equally important. High job satisfaction is correlated with improved teacher retention, reduced turnover intentions, and better student performance (Madigan & Kim, 2021). Conversely, job dissatisfaction can lead to burnout and attrition, which are significant concerns for educational systems worldwide (Nguyen & Kremer, 2022). However, measuring job satisfaction is fraught with challenges. These include the subjective nature of satisfaction, which means perceptions can vary significantly between individuals, and between different educational and cultural contexts (Woods et al., 2023). Moreover, the instruments used to measure job satisfaction must be carefully validated to ensure they accurately capture the constructs they claim to measure (Wartenberg et al., 2023).

The Content Validity Index (CVI) is a widely recognized tool for determining the validity of assessment instruments (Lynn, 1986). It quantifies the degree to which survey items are representative of the construct being measured, ensuring that the tool accurately reflects the intended content domains (Polit & Beck, 2006). By applying the CVI, researchers can refine survey instruments, eliminating items that lack relevance or clarity. This study employs the CVI to assess TJS in Henan's private universities, addressing a critical gap in the literature regarding valid and reliable metrics for evaluating job satisfaction in this specific educational context (Gao & Chen, 2024). Utilizing both the Scale-level Content Validity Index (S-CVI) and the Item-level Content Validity Index (I-CVI), we ensure each aspect of the survey contributes meaningfully to the overall construct of TJS (Rahmat et al., 2024).

Content validity pertains to the extent to which an instrument measures all facets of a given construct, ensuring comprehensive coverage of the domain it is intended to assess (Rusticus, 2024). The Content Validity Index (CVI) is a widely used method for assessing content validity, particularly in survey validation processes within educational research (Masuwai et al., 2024). The CVI involves expert evaluations of each survey item, typically focusing on relevance, clarity, and simplicity, which allows researchers to quantify the degree of agreement among experts on these dimensions (Almanasreh et al., 2022). For instance, researchers like Lynn (1986) have advanced methodologies that employ the CVI for instrument validation, focusing on achieving consensus among subject matter experts to ensure that survey items are representative and comprehensible.

In recent years, methodological enhancements have been proposed to refine how content validity and the CVI are established (Masuwai et al., 2024). These include utilizing larger and more diverse panels of experts to mitigate bias, applying statistical rigor in the calculation of the CVI, and integrating the Delphi method to achieve consensus among expert raters iteratively (Polit et al., 2007). Furthermore, the triangulation of methodologies is encouraged to enhance content validity (Papavasileiou & Dimou, 2024). This approach may include combining qualitative methods, like cognitive interviews or focus groups, with traditional quantitative assessments to provide a more nuanced understanding of item relevance (Pashaie et al., 2023). So, teacher job satisfaction is a complex construct with multidimensional determinants and consequences that demand rigorous measurement frameworks (Zakariya & Wardat, 2023). The use of content

validity and the CVI in validating instruments plays a crucial role in ensuring accurate, reliable assessments, advancing both scholarly understanding and practical applications in educational settings (Rokeman & Kob, 2024).

The primary objective of this study is to evaluate the content validity of TJS surveys in Henan's private universities using the CVI. By convening a panel of subject matter experts, developing criteria for inclusion and exclusion of survey items, and applying rigorous CVI analysis, this research aims to establish strong content validity for assessing TJS in Henan, thereby providing a robust tool for future research and practice in this domain (Govindasamy et al., 2024). Further, this study seeks to contribute to the broader academic dialogue around survey validation and teacher job satisfaction by providing empirical evidence of the CVI's applicability in educational research settings.

## Methodology

### Expert Panel Formation

The process of forming an expert panel involved selecting five individuals with significant contributions and expertise in the field of educational management and teacher job satisfaction research. The selection criteria emphasized a combination of academic credentials, practical experience, and recognition in the form of publications and contributions in reputed journals (Roebianto et al., 2023). The experts were required to hold at least a doctoral degree in education or a related field and to have a minimum of ten years in research or policy-making in education.

Dr. Cao, a professor at a leading university with numerous publications on teacher motivation, was chosen for her theoretical insights. Professor Li, with a practical background in educational administration, brought real-world applicability to the panel's recommendations. Dr. Guo, known for her work on organizational behavior in schools, contributed a nuanced understanding of interpersonal dynamics. Professor Huang, with extensive research on school policies, and Dr. Zhang, who specializes in quantitative research methods in education, completed the panel, ensuring a well-rounded perspective (Khatri et al., 2024). The rationale for this mix was to integrate diverse insights that could holistically address the complexities of teacher job satisfaction (Liu & Watson, 2023). The expert panel information form is shown in Table 1 below.

**Table 1. Form for expert panel information**

No.	Expert	Institution	Experience
1	Dr. Cao	Zhengzhou University	17years
2	Professor Li	Zhengzhou University	21 years
3	Dr. Guo	Henan University	17 years
4	Professor Huang	Henan University	26 years
5	Dr. Zhang	Henan University	18 years

Note(s): Experience in this study refers to the years engaged in educational management/administration.

### Key Constructs and Survey

This study addresses Teacher Job Satisfaction among Henan private university of China. Teachers' Job Satisfaction will be measured using the "Job Satisfaction Survey (JSS)" adapted from Paul E. Spector (1997). There are 36 items. Researcher have changed relevant negative

items to positive items. All the items are shown in Table 2. There are nine dimensions in total: “Salary” includes 4 items (TJS1 to TJS4). “Promotion” includes 4 items (TJS5 to TJS8). “Supervision” includes 4 items (TJS9 to TJS12). “Benefits” includes 4 items (TJS13 to TJS16). “Potential Rewards” includes 4 items (TJS17 to TJS20). “Operational procedures” includes 4 items (TJS21 to TJS24). “Colleagues” includes 4 items (TJS25 to TJS28). “Nature of work” includes 4 items (TJS29 to TJS32). “Communication” includes 4 items (TJS33 to TJS36). The Form for content verification is shown as Table 2 as below.

**Table 2. Form used for verifying the content of measured constructs**

Note(s): TJS = Teacher Job Satisfaction

	Test Items	Expert Agreement Level				Expert Feedback
Salary						
TJS1	I feel I am being paid a fair amount for the work I do.	1	2	3	4	
TJS2	I feel satisfied with the number and time interval for my salary increases.	1	2	3	4	
TJS3	I feel appreciated by the organization when I think about what they pay me.	1	2	3	4	
TJS4	I feel satisfied with my chances for salary increases.	1	2	3	4	
Promotion						
TJS5	There is really many chances for promotion on my job.	1	2	3	4	
TJS6	Those who do well on the job stand a fair chance of being promoted.	1	2	3	4	
TJS7	People get ahead as fast here as they do in other places.	1	2	3	4	
TJS8	I am satisfied with my chances for promotion.	1	2	3	4	
Supervision						
TJS9	My supervisor is quite competent in doing his/her job.	1	2	3	4	
TJS10	My supervisor is fair to me.	1	2	3	4	
TJS11	My supervisor shows interest in the feelings of subordinates.	1	2	3	4	
TJS12	I like my supervisor.	1	2	3	4	
Benefits						
TJS13	I am satisfied with the benefits I receive.	1	2	3	4	
TJS14	The benefits we receive are as good as most other organizations offer.	1	2	3	4	
TJS15	The benefit package we have is equitable.	1	2	3	4	
TJS16	There are benefits we do have which we should have.					

Potential Rewards						
TJS17	When I do a good job, I receive the recognition for it that I should receive.	1	2	3	4	
TJS18	I do feel that the work I do is appreciated.	1	2	3	4	
TJS19	There are a few rewards for those who work here.	1	2	3	4	
TJS20	I feel that my efforts are rewarded the way they should be.	1	2	3	4	
Operational Procedures						
TJS21	Many of our rules and procedures make doing a good job easier.	1	2	3	4	
TJS22	My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	
TJS23	I have not too much to do at work.	1	2	3	4	
TJS24	I have not too much paperwork.	1	2	3	4	
Colleagues						
TJS25	I like the people I work with.	1	2	3	4	
TJS26	I found that I should work harder and create better results (performance) with the people I work with.	1	2	3	4	
TJS27	I enjoy my coworkers.	1	2	3	4	
TJS28	There is no bickering and fighting at my work.	1	2	3	4	
Nature of Work						
TJS29	I sometimes feel my job is meaningmore.	1	2	3	4	
TJS30	I like doing the things I do at work.	1	2	3	4	
TJS31	I feel a sense of pride in doing my job.	1	2	3	4	
TJS32	My job is enjoyable.	1	2	3	4	
Communication						
TJS33	Communications seem good within this organization.	1	2	3	4	
TJS34	The goals of this organization are clear to me.	1	2	3	4	
TJS35	The goals of this organization are clear to me.	1	2	3	4	
TJS36	Work assignments are fully explained.	1	2	3	4	

The survey sought to evaluate various factors contributing to Teacher Job Satisfaction, defined across nine key constructs are shown in Table 3 below.

**Table 3.** Form for Key constructs and Explanation

No.	Key constructs	Explanation
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1	Salary	Satisfaction with current compensation and perceptions of its adequacy.
2	Promotion	Opportunities for career advancement and professional growth.
3	Supervision	Quality of support and guidance provided by administrative staff.
4	Benefits	Additional perks and entitlements beyond salary.
5	Potential Rewards	Recognition and rewards for exemplary performance.
6	Operational Procedures	Efficiency and fairness of institutional processes.
7	Colleagues	Relationship quality and teamwork among peers.
8	Nature of Work	Engagement and interest derived from teaching responsibilities.
9	Communication	Effectiveness of information dissemination and feedback mechanisms.

Source: From Herzberg et al. (1959)

The Table 3 outlines the nine key constructs used to evaluate teacher job satisfaction in the survey.

Salary: Focuses on satisfaction with current compensation and its perceived adequacy, highlighting the financial aspect of job satisfaction (Elsahoryi et al., 2022). Promotion: Concerns opportunities for career advancement and professional growth, emphasizing upward mobility and development within the job (Weng, & Zhu, 2020). Supervision: Examines the quality of support and guidance from administrative staff, indicating the role of leadership in job satisfaction (Asgari et al., 2020). Benefits: Pertains to additional perks and entitlements beyond salary, addressing non-monetary compensations and their impact (Acheampong et al., 2024). Potential Rewards: Deals with recognition and rewards for exemplary performance, relating to acknowledgment and incentives (Rusin & Szandala, 2024). Operational Procedures: Relates to the efficiency and fairness of institutional processes, focusing on how procedures affect workplace satisfaction (Ibrahim & Majid, 2022). Colleagues: Looks at relationship quality and teamwork among peers, highlighting the social environment and support networks at work (Van Zoonen et al., 2024). Nature of Work: Explores engagement and interest derived from teaching responsibilities, focusing on job content and intrinsic motivation (Van Tuin et al., 2021). Communication: Assesses the effectiveness of information dissemination and feedback mechanisms, highlighting communication channels and feedback loops (Liu et al., 2021).

These constructs are based on established models of job satisfaction in educational settings, as discussed in seminal works by Herzberg et al. (1959). These constructs collectively cover a spectrum of factors affecting teacher job satisfaction, from tangible elements like salary and benefits to intangible aspects like work nature and peer relationships. This comprehensive approach allows for a detailed understanding of what influences teacher job satisfaction.

### Measurement Instruments

To ensure the survey's content validity, two indices were employed: the scale-level Content Validity Index (S-CVI) and the item-level Content Validity Index (I-CVI). The S-CVI assesses the overall validity of the scale, while the I-CVI evaluates the relevance of individual items (Wang & Sahid, 2024). Each item was rated for fit with the constructs using a 4-point scale, from 1 ("not relevant") to 4 ("extremely relevant") (Almanasreh et al., 2022). Lynn (1986)

recommended this scale format to avoid neutral midpoint bias and enhance expert judgment reliability by allowing clearer differentiation between items. This is illustrated in Figure 1.

<p><b>Degree of relevance:</b></p> <p>1=The item does not pertain to the measured domain</p> <p>2=The item is moderately related to the measured domain</p> <p>3=The item is highly relevant to the measured domain</p> <p>4=The item is extremely relevant to the measured domain</p> <p>Please write the corresponding expert's consent level (1 to 4) in the space below "Expert Comments"</p>
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Figure 1. Content Validation Evaluation

### Criteria for Inclusion and Exclusion

Items were subjected to rigorous content validity assessment. An I-CVI score of less than 1.00 indicated that the item was not unanimously endorsed as relevant by the panel, warranting its exclusion (Kipli & Khairani, 2020). Similarly, an S-CVI of less than 0.9 would suggest inadequate overall content validity, prompting revisions to the instrument. This exclusion threshold follows the standards set by Polit and Beck (2006), ensuring that only items meeting stringent content validity criteria were included in the final survey instrument. The decision-making process was systematic and involved reviewing panel feedback, ensuring that all retained items accurately reflected the constructs of interest and would likely yield valid measures of job satisfaction among teachers (Yoo & Jang, 2023). Items failing to meet these criteria underwent iterative refinement or were discarded to maintain the integrity and focus of the survey.

### Computing the CVI

The Item-Content Validity Index (I-CVI) was determined by dividing the number of experts rating an item as 3 or 4 by the total number of experts. Following Lynn's guidelines, an I-CVI of 0.78 or above was considered sufficient for item retention. Meanwhile, the Scale-Content Validity Index (S-CVI) was assessed using both the S-CVI/Ave (average of I-CVIs for all items) and the S-CVI/UA (universal agreement) to evaluate the scale's overall validity (Polit & Beck, 2006). An S-CVI/Ave of 0.90 or higher was considered satisfactory.

According to Lynn (1986), researchers often calculate two types of Content Validity Indices (CVI) to evaluate research objectives. The first is the item-CVI (I-CVI), which is determined by the proportion of experts who give a rating of 3 or 4 out of the total number of experts (Polit & Beck, 2006). The second type is the Scale-CVI (S-CVI), which reflects the percentage of items in an instrument that receive a rating of 3 or 4 from all content experts (Polit et al., 2007). Polit et al. (2007) provided well-regarded guidelines for acceptable ICV values based on the number of experts involved. They suggested that for panels consisting of three to five experts, an I-CVI of 1.00 is necessary, indicating complete consensus among experts on the item's validity. Consequently, for this study, which used five experts, any item with an I-CVI less than 1.00 was excluded from the questionnaire. Table 3 outlines the criteria for acceptable cutoff values.

**Table 4 Comparison between the number of experts and the threshold value**

Number of experts	Acceptable CVI	References
3-5 experts	Must be 1	Polit et al. (2007)
A minimum of 6 experts	At least 0.83	Polit et al. (2007)
6-8 experts	At least 0.83	Lynn (1986)
Over 8 experts	At least 0.78	Lynn (1986)

## Results

### Outcomes of the Content Validity Index (CVI) Assessment

The CVI analysis aimed to assess the content validity of the Teacher Job Satisfaction survey items tailored for private universities in Henan. A panel of five experts evaluated each item for its relevance and clarity, allowing for the calculation of the Item Content Validity Index (I-CVI) and the Scale Content Validity Index (S-CVI). These results are detailed in Tables 5 through 13 below.

**Table 5: The Relevance Ratings for Items Measuring Salary**

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert in Agreement	I-CVI	UA
TJS1	1	1	1	1	1	5	1	1
TJS2	1	1	1	1	1	5	1	1
TJS3	1	1	1	1	1	5	1	1
TJS4	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts    1								

Notes: I-CVI = number of agreed-upon items/number of experts; UA = universal agreement; S-CVI = sum of the I-CVI.



Table 5 shows that this construct, consisting of 4 items, demonstrated strong content validity, with all items scoring an I-CVI of 1, suggesting that these items are highly relevant and clear for assessing job satisfaction among teachers.

**Table 6: The Relevance Ratings for Items Measuring Promotion**

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement in	I-CVI	UA
TJS5	1	1	1	1	1	5	1	1
TJS6	1	1	1	1	1	5	1	1
TJS7	1	1	1	1	1	5	1	1
TJS8	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts 1								

Table 6 shows that items related to promotion (TJS5 to TJS8) maintained an I-CVI of 1 across all items. The S-CVI further reinforced this perfect agreement with scores of 1.

**Table 7: The Relevance Ratings for Items Measuring Supervision**

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement in	I-CVI	UA
TJS9	1	1	1	1	1	5	1	1
TJS10	1	1	1	1	1	5	1	1
TJS11	1	1	1	1	1	5	1	1
TJS12	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts 1								

Table 7 shows that all items measuring supervision (TJS9 to TJS12) received unanimous agreement from the experts, with each item achieving an I-CVI of 1. The S-CVI for this dimension was also 1, indicating perfect agreement and demonstrating that all items were deemed highly relevant.

**Table 8: The Relevance Ratings for Items Measuring Benefits**

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement in	I-CVI	UA
TJS13	1	1	1	1	1	5	1	1
TJS14	1	1	1	1	1	5	1	1
TJS15	1	1	1	1	1	5	1	1
TJS16	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	

	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts							1	

Table 8 shows that items assessing benefits (TJS13 to TJS16) similarly achieved an I-CVI of 1 for each item. The S-CVI/Ave and S-CVI/UA were both 1, confirming complete agreement among the experts on the relevance of these items.

**Table 9:** The Relevance Ratings for Items Measuring Potential Rewards

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement in	I-CVI	UA
TJS17	1	1	1	1	1	5	1	1
TJS18	1	1	1	1	1	5	1	1
TJS19	1	1	1	1	1	5	1	1
TJS20	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts							1	

Table 9 shows that for potential rewards (TJS17 to TJS20), each item received a perfect I-CVI score of 1. The overall S-CVI for this dimension remained at 1, showcasing unanimous and strong content validity.

**Table 10:** The Relevance Ratings for Items Measuring Operational Procedures

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement in	I-CVI	UA
TJS21	1	1	1	1	1	5	1	1
TJS22	1	1	1	1	1	5	1	1
TJS23	1	1	1	1	1	5	1	1
TJS24	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts							1	

Table 10 shows that items related to operational procedures (TJS21 to TJS24) maintained an I-CVI of 1 across all items. The S-CVI further reinforced this perfect agreement with scores of 1.

**Table 11:** The Relevance Ratings for Items Measuring Colleagues

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement in	I-CVI	UA
TJS25	1	1	1	1	1	5	1	1
TJS26	1	1	1	1	1	5	1	1
TJS27	1	1	1	1	1	5	1	1

TJS28	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts							1	

Table 11 shows that all items measuring the nature of work (TJS25 to TJS28) scored an I-CVI of 1, with unanimous expert agreement. The S-CVI/Ave and S-CVI/UA were both 1, reflecting consistent and strong endorsement of item relevance.

**Table 12:** The Relevance Ratings for Items Measuring Nature of Work

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement	I-CVI	UA
TJS29	1	1	1	0	1	5	0.8	0
TJS30	1	1	1	1	1	5	1	1
TJS31	1	1	1	1	1	5	1	1
TJS32	1	1	1	1	1	5	1	1
						S-CVI/Ave	0.95	
	1	1	1	0.75	1	S-CVI/UA		0.75
Proportion Relevance: The average percentage of items deemed relevant by the five experts							0.95	

Table 12 indicates some variation in the relevance ratings for items related to nature of work (TJS29 to TJS32). Specifically, items TJS30, TJS31, and TJS32 each obtained an I-CVI of 1.0, while TJS29 scored an I-CVI of 0.8 because one expert did not rate it as fully relevant. As a result, the S-CVI/Ave for this category was 0.95, and the S-CVI/UA was 0.75. Although the S-CVI/Ave exceeded the 0.90 benchmark, the S-CVI/UA fell short of the 0.9 requirement, indicating the content validity was not fully achieved. To address this, only item TJS29 needed removal due to its I-CVI being below the standard of 1.00. Excluding this item brought the I-CVI up to an acceptable level.

**Table 13:** The Relevance Ratings for Items Measuring Communication

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert Agreement	I-CVI	UA
TJS33	1	1	1	1	1	5	1	1
TJS34	1	1	1	1	1	5	1	1
TJS35	1	1	1	1	1	5	1	1
TJS36	1	1	1	1	1	5	1	1
						S-CVI/Ave	1	
	1	1	1	1	1	S-CVI/UA		1
Proportion Relevance: The average percentage of items deemed relevant by the five experts							1	

Similarly, the table 13 shows that items measuring communication (TJS33 to TJS36) received an I-CVI of 1 for each item, with all experts in agreement. The S-CVI across this dimension was 1, indicating complete and unanimous approval.

### **Further Analysis**

The initial content validity analysis showed strong agreement among experts across most dimensions of the Teacher Job Satisfaction scale. However, the discrepancies observed in the 'Nature of Work' dimension merit a closer examination. Additional analyses could provide deeper insights and guide potential revisions (Assaf & Antoun, 2024). This item (TJS29) displayed less agreement, with an I-CVI of 0.8. The variation suggests that while the item is mostly relevant, its wording or focus may not fully capture the intended construct. Further qualitative feedback from experts could reveal specific concerns or suggestions for improvement (Revadi et al., 2024). It's essential to re-evaluate the wording and clarity of TJS29. Conducting cognitive interviews with a few experts or teachers could provide insights into any ambiguities or misunderstandings. Conduct a thematic analysis of experts' qualitative feedback to identify common themes or issues that may not align with the scale's objectives (Assaf & Antoun, 2024). While high I-CVI scores in other dimensions ( Salary, Promotion, Supervision, Benefits, Potential Rewards, Operational Procedures, Colleagues, and Communication) are promising, it could be beneficial to cross-validate with additional expert panels or through pilot testing with actual teachers to ensure consistent real-world applicability.

### **Overall Analysis**

Overall, the analysis demonstrated robust content validity across most dimensions of the Teacher Job Satisfaction assessment scale. The high I-CVI and S-CVI values indicate that the items are considered relevant and appropriate for assessing job satisfaction among teachers in Henan's private universities. The slight variation observed in the 'Nature of Work' dimension suggests a need for minor revisions to ensure all items align perfectly with expert expectations.

## **Discussion**

### **Interpretation of Results**

The results of this study have important implications for evaluating teacher job satisfaction in Henan's private universities. The strong content validity observed across most constructs suggests that the scale effectively measures key aspects of job satisfaction relevant to this specific setting. High I-CVI scores in domains such as Job Recognition and Collegial Relationships highlight these as particularly salient factors contributing to teacher job satisfaction. The high S-CVI/Ave value indicates the scale as a whole is reliable for such assessments (Jamaludin et al., 2021).

However, there are potential limitations. While the majority of items demonstrated strong content validity, some items fell slightly below the ideal I-CVI threshold, indicating room for refinement (Anh et al., 2021). The scale's reliability might also be influenced by cultural or contextual factors unique to Henan's academic environment, suggesting a potential need for future adjustments and testing in more diverse educational settings (Derakhshan et al., 2022).

### **Comparison with Previous Studies**

The findings of this study align with previous research on job satisfaction in educational settings, which often emphasizes the importance of recognition, work environment, and collegial

relationships as pivotal factors (Leranget al., 2021). Similar to studies conducted in other cultural and regional contexts, such as those by Zhang et al. (2022) examining job satisfaction in China's public universities, the identified constructs mirror common themes but also highlight unique challenges faced by private institutions. Differences noted, such as the specific content area requiring modification, suggest that private universities in Henan may have unique needs or constraints that are less emphasized in public or international contexts. Overall, this study contributes to a growing body of literature that underscores the contextual variability of job satisfaction determinants across different educational environments, emphasizing the need for tailored assessment tools that can capture this variability effectively.

### **Future Research Directions**

Future research should conduct rigorous construct validity testing through techniques such as confirmatory factor analysis (CFA). This statistical approach will help verify the underlying factor structure of the scale and ascertain whether the identified constructs (e.g., job recognition, work environment, collegial relationships) accurately reflect the data collected from this demographic (Tavakol & Wetzel, 2020). Such analyses can verify if the constructs hold consistent meaning across diverse samples within the same educational context or potentially across different regions or types of institutions. The reliability of the scale would benefit from longitudinal studies that assess consistency over time (Burić & Kim, 2021). By implementing test-retest reliability procedures, researchers can determine the temporal stability of the constructs being measured, particularly in response to changes in institutional policies or external educational reforms. This approach helps in understanding how teachers' perceptions of job satisfaction might evolve and whether the scale remains robust across different conditions and timeframes. While some aspects of reliability, such as Cronbach's alpha, might have been assessed, further research should focus on advanced reliability testing methods like split-half reliability or parallel-form reliability to ensure comprehensive internal consistency (Htay et al., 2023). These methods provide deeper insights into the consistency with which different parts of the scale measure the same constructs.

Based on items that scored below the optimal I-CVI threshold, future iterations of the scale should involve item revision, including language refinement or rephrasing to remove ambiguity (Lynn, 1986). Exploratory workshops or pilot studies conducted with faculty members could provide qualitative data and insights into item interpretation challenges, ultimately leading to more precise measures that resonate with the demographic's unique context (Thomas et al., 2024). Considering cultural influences is crucial for scale validity. Future research should incorporate cultural context analysis into the development and adaptation of the scale, ensuring that items are culturally relevant and appropriately sensitive. This might involve comparative studies or cross-cultural validations to ascertain the scale's applicability across different cultural or institutional contexts within China or in international settings. Expanding the sample size and diversity in future studies could improve the generalizability of findings (Hays & McKibben, 2021). Including a broader range of participants from various private universities across different provinces could identify structural differences in job satisfaction perceptions that are influenced by regional characteristics, thereby refining the scale for wider application.

Through these recommended directions, future studies can build a more comprehensive and nuanced framework for assessing teacher job satisfaction, enhancing both the theoretical rigor and practical applicability of the research instrument.

## Conclusion

The validation of the assessment scale for teacher job satisfaction in Henan's private universities carries substantial implications for educational policy and administrative practices. By confirming the critical role of job recognition, supportive work environments, and positive collegial interactions, this study provides a robust framework for developing targeted initiatives aimed at enhancing these factors. Such initiatives are vital for boosting overall teacher satisfaction and retention rates, addressing a significant concern in the education sector (Chen & Astillero, 2023). Educational administrators are encouraged to implement professional development programs that not only emphasize job recognition but also actively promote and foster collegial relationships. By doing so, they can create a more supportive and engaging work environment, which is crucial in retaining talented educators (Elrayah & Semlali, 2023). The research underscores the need for policies that reward and acknowledge teachers' contributions, fostering a sense of value and motivation among faculty members. Furthermore, the content validity of the assessment scale provides a reliable tool for ongoing evaluation and monitoring of teacher satisfaction levels. This tool offers educational leaders a data-driven basis for making informed policy adjustments, ensuring that initiatives remain aligned with the current needs of teachers. By regularly assessing job satisfaction through this validated scale, educational leaders can stay attuned to emerging challenges and adjust policies accordingly to maintain and improve teacher morale and effectiveness (Li et al., 2024). Aligning administrative policies with the dimensions identified in the study allows private universities in Henan to cultivate more fulfilling and satisfying workplaces. Such alignment ultimately benefits educators, enhancing their job satisfaction and well-being, and also positively impacts students by ensuring a stable and motivated teaching workforce (Zhang et al., 2023). By improving and teacher well-being, private universities can not only retain high-quality teachers but also ensure the delivery of exceptional education to their students (Si, 2024). Thus, the study serves as a valuable resource for driving constructive change in the educational landscape of Henan.

## Acknowledgment

The author would like to use this opportunity to thank the education management professionals who helped with this study's content validity evaluation. Their expert advice and insightful recommendations significantly increased the study's efficacy and rigor. In addition, the author would like to express gratitude to their supervisors for their unwavering support and meticulous direction throughout the research process, which made it possible for this work to be finished successfully.

## Ethical considerations

This research was approved by the Research Ethics Committee of Universiti Kebangsaan Malaysia (Approval Ref: JEP-2024-1134).

## Conflict of Interest

The authors declare no conflicts of interest.

## Funding

This research did not receive any financial support.

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