

Validity and Reliability Analysis of a Questionnaire Measuring Preschool Teachers Motivation in Beijing, China

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ABSTRACT

This study is about a psychometric analysis on an instrument created for the purpose of measuring preschool teachers' motivation in Beijing, China. This emphasizes perceived organizational support, reward systems, and personality traits as key drivers of teacher motivation in particular. This was a quantitative study design that focused on a pilot with 103 preschool teachers. The instrument's measurement results show good psychometric properties. The Kaiser Meyer Olkin values surpassed the recommended threshold of 0.60 and the Cronbach's alpha coefficients were consistently above 0.70, indicating adequate sampling and good internal consistency. Overall, these results demonstrate the reliability and validity of the instrument and, therefore, serve as a reference for future, large-scale empirical investigations of teacher motivation in the context of Chinese early childhood education.

Contribution/Originality: This study contributes to the existing literature by providing new empirical evidence on the validity and reliability of an instrument designed to measure perceived organisational support, personality traits, reward systems, and work motivation among preschool teachers in Beijing, China.

1. Introduction

Early Childhood Education (ECE) is regarded as a cornerstone of cognitive, social, and cultural development in children (Shin & Idang, 2025; Shin et al., 2025; Fong et al., 2025). Over the last few years, China's ECE sector underwent transformation by diversifying it through differing institutions and funding mechanisms (Honghu et al., 2023; Liu & Shin, 2025). The influence of parenting styles and child-parent relationship on home literacy environment: Empirical evidence from Malaysia, which has shown the change of the models of institutional models and financing channel. These transformations go hand in hand with broader national political and economic shifts. The task of enhancing the

quality of preschool education has become a cooperative effort at global level (Liang et al., 2025; Qinghua et al., 2022; Zhao & Shin, 2025). This commitment is reflected in policy support and cash inflows throughout China, where the central education budget was 174.4 billion yuan in 2025. This generous investment has contributed to the spread of preschool education with gross enrolment rate for three-year preschool programmes forecast to rise to more than 90% (Wang et al., 2025).

Despite this progress, teacher motivation remains a significant concern. Structural challenges, such as relatively low remuneration, for example per child funding of approximately 1,400 and 1,200 yuan in urban and rural areas of Gansu, respectively, and demanding workload expectations, continue to limit teacher engagement and overall well-being (Whitebook et al., 2009). Previous studies have shown that individual factors contribute to teacher motivation, such as perceived organisational support, reward system and personality qualities (Vogt, 2016). However, the dynamic interplay between these factors under the unique socio-economic environment of Beijing is very little understood. As explained above, the validity and reliability of the instruments used to explore antecedents of preschool teacher motivation need to be assessed.

1.1. Significance of Study

The present research contributes by filling in the gap and providing us with an important psychometrically accurate tool for making precise measurements of the preschool teachers' motivations in Beijing. There is ample evidence that teacher motivation drives educational quality and classroom effectiveness. As a result, motivated teachers are more likely to participate in professional development opportunities and engage in quality instructional practice to enhance children's development and learning. In fact, teacher motivation is related to student learning outcomes and related to teacher performance, classroom environment, and instructional quality. However, measuring motivation is critically important and yet, existing measurement tools frequently lack cultural sensitivity or are not easily applicable to all dimensions of motivation in early childhood contexts as it is usually the result of the development of multiple dimensions of motivation as well. This makes for a suitable assessment tool, both research- and practice-relevant in the Beijing preschool environment. This study proposes that through its development and validation, this tool could bring practical insights for educators, policymakers, as well as researchers to enhance teacher engagement, and subsequently, improve the quality of early childhood education.

1.2. Objective of the Study

This study aims to build and evaluate a research instrument to assess preschool teachers perceived organizational support (POS), reward systems, personality traits and motivation. It explores the validity and reliability of this instrument when measuring these constructs as major predictors of motivation in preschool teachers. These dimensions are major drivers of teachers' motivation and fit in with the strategic direction of teacher retention and educational quality improvement.

2. Literature Review

2.1. Antecedents of Preschool Teacher Motivation

Preschool teachers have an important role in the development of early childhood. However, teachers in Beijing also face specific obstacles that decrease their motivation and job satisfaction (Xia et al., 2023). Prior studies have disclosed various demotivation issues such as inadequate compensation, excessive workloads, and lack of professional recognition (Nong et al., 2025). However, how these factors relate to teachers' experience with organizational support and reward systems and individual personality traits is not yet well understood. Hong et al. (2023) mention an oversupply of preschool resources, adding to professional pressures in Beijing, particularly notable. According to Bodenheimer et al. (2020), studies on teacher burnout shed light on these risks of emotional burden. There hasn't been much work to investigate how certain personality traits like emotional resilience and diligence could relieve these stresses. This paper also seeks to close this gap by employing research methods which acknowledge and account for the complicated interactions of a collection of real-world factors, which affect preschool teachers' motivation, especially in the unique educational context of Beijing. The relationships among organizational structures, reward systems, and individual characteristics have significant implications for enhancing practices for fostering and preserving core teachers. The most important elements driving and sustaining preschool teachers' motivation are still a field of inquiry, especially in systems that are under great systemic strain like Beijing.

Perceived organizational support (POS) refers to employees feeling that their organization values their contributions and is focused on their well-being. Teachers who receive this type of support tend to keep their motivation alive or grow it (Ompok et al., 2021). Moreover, POS has also been consistently reported as a powerful predictor of teacher motivation, as it supports community belonging and diminishes professional isolation (Eisenberger et al., 1986; Klassen et al., 2012). For teachers and other preschool teachers dealing with high emotional demands and limited resources, having organizational support is important in the prevention of burnout and fostering high levels of job satisfaction. One such example is that teachers who feel supported by the organization are also much more committed and engaged (Wang & Hall, 2021). This is especially true in China, particularly Beijing, where the perceived support of educators is primarily driven by unequal resources in the public and private kindergartens.

Other important antecedents of teacher motivation include intrinsic and extrinsic rewards. Intrinsic rewards, such as recognition and a feeling of achievement, are commonly recognized as a central part of teacher satisfaction (Deci & Ryan, 2000). Moreover, salary and bonus opportunities to earn extrinsic rewards are essential (Han & Yin, 2016), which are often critical, particularly under conditions of financial pressure. In Beijing, the disparity is particularly prevalent with the amount of one-on-one preschool teaching and the accompanying rewards appearing to be insufficient. As a result, fair compensation and clear opportunities for career advancement can greatly improve teacher motivation and retention (Liu et al., 2022).

Personality characteristics, emotional stability, conscientiousness, and openness to experience are critical internal elements that influence the attitudes and response of teachers to their working environment. Research indicates that teachers experiencing high emotional stability and conscientiousness are less likely to be pressured by work,

and when teachers experience high openness, they are more likely to implement novel pedagogies (Judge & Bono, 2001; Wang & Li, 2023). In the context of early childhood education, which is defined by difficult social and emotional work it is probable that this dispositional element will play a role on the teacher's motivation and job performance. To take an example, teachers with high levels of emotional stability have higher resilience and are less susceptible to burnout even in high-stress environments (Alarcon, Eschleman, & Bowling, 2009).

3. Research Methodology

This study employed a quantitative research design to examine the validity and reliability of a questionnaire measuring preschool teachers' motivation in Beijing, China. The methodology is described below in terms of research participants, instrument development, data collection procedures, and statistical analysis.

3.1. Research Participants

The participants of this study were preschool teachers working in various public and private preschools across Beijing. A total of 103 preschool teachers were recruited using purposive sampling to ensure representation across different school types, teaching experiences and educational backgrounds. Participation was voluntary, and confidentiality of responses was strictly maintained.

3.2. Research Instrument

The primary research instrument used in this study was a structured questionnaire, designed to collect quantitative data from preschool teachers regarding their motivation, personality traits, perceived organisational support, job rewards, and demographic characteristics. The questionnaire was adapted from established and validated scales to ensure content validity and was pre-tested to confirm clarity and reliability in the context of Beijing, China. It consists of five sections, as described below.

3.2.1. Section A: Demographic details

This subsection comprises four items that capture the characteristics of preschool teachers. In the present study, four moderating variables were examined: gender, work experience, marital status, and school type. All questionnaire responses were pre-coded to facilitate data analysis. Specifically, gender was coded as 1 = male and 2 = female; work experience as 1 = less than 2 years, 2 = 2–10 years, and 3 = more than 10 years; marital status as 1 = unmarried and 2 = married; and school type as 1 = public, 2 = private, and 3 = international preschool.

3.2.2. Section B: Perceived Organizational Support (POS)

Perceived Organisational Support (POS) reflects early childhood educators' perceptions that their contributions are recognised and the organisation supports their well-being. It reflects how much teachers feel appreciated and cared for, which affects their attitudes, behaviours and motivation. Eisenberger et al. (1986) developed and validated a widely used measure of POS, widely found in organisational behaviour and human resource management literature. POS is positively correlated with job satisfaction, organisational commitment and reduced absenteeism among educators, therefore presenting findings in

light of teachers' experiences at educational institutions. The POS construct is rooted in Organisational Support Theory (OST), which argues that employees acquire generalised perceptions about organisational support and tend to perform better in effort, engagement, and commitment. POS, as a diagnostic tool, allows organisations to evaluate and enhance teacher experiences, leading to a successful enhancement of the engagement process and an increase in institutional effectiveness. At the most basic level, the POS questionnaire was modified from Eisenberger et al. (1986). Although the original scale consisted of 36 items, earlier research introduced shorter versions, including the 18-item short scale, developed by Armeli et al. (1998) holding items with the highest factor loadings. The study used the 18-item shorter form to include items like "My school values my contribution to its well-being" and reverse-worded items like "If my school could hire someone to replace me at a lower salary, it would do so." During statistical analysis, negatively worded items were recoded into positive form. The 18 items were organised into four dimensions: Organisational Value Perception (Items 1, 2, 5, 9, 15), Organisational Care (Items 3, 7, 10, 11, 12, 14), Availability of Organisational Support (Items 13, 17, 18), and Organisational Indifference (Items 4, 6, 8, 16).

3.2.3. Section C: Job Reward Scale

The questionnaire used in this study is adapted from Mottaz's (1985) classic work, *The Relative Importance of Intrinsic and Extrinsic Rewards as Determinants of Work Satisfaction*, and enhanced with the instrument developed by O'Driscoll and Randall (1999). The original scale consisted of four items looking at intrinsic rewards and seven items about extrinsic rewards. In our study, a slimmed down 15-item version was used. Sample items included statements such as "I feel adequately compensated for the work I do" and "I feel a sense of personal accomplishment from my work." The items were rigorously grouped into two discrete constructs. They formed both Intrinsic Rewards and Extrinsic Rewards. Items 3, 4, 7 & 14, exploring individual accomplishment, value of work, and use of skills, were listed under Intrinsic Rewards that pertain to internal drivers of satisfaction and personal satisfaction that come from work. Items 1, 2, 5, 6, 8–13, and 15, on the other hand, were placed under Extrinsic Rewards for respect and work-related contentment with external recognition, career opportunities, performance feedback, benefits, support from peers, resource availability, job security, work-life harmony, development, organisational recognition, and job-related autonomy. Combined, these elements constitute the material and social rewards from the organisation that provide employees with work-related satisfaction.

3.2.4. Section D: Survey of Personality

The Big Five Personality Inventory consists of five dimensions measuring the characteristics in each of the domains through a series of items, which represent traits specific to each domain. While some items can represent more than one dimension, the 30-item questionnaire created by Worrell (2004) is systematically designed in five separate domains. Items 1–6 examine Openness to Experience, which examines interests in art, music, and literature, as well as abstract thinking, originality, and creativity. Items 7–12 measure Conscientiousness with a focus on organisation, getting things started (i.e. starting things), reliability, tidiness, and perseverance. Items 13–18, Extraversion, cover social engagement, leadership tendencies, energy levels, sociability and activity levels. Items 19–24 relate to Agreeableness, which describes compassion, courtesy, warmth, respect, and acceptance of other people's imperfections. Finally, Items 25–30 assess

Neuroticism, including worry, sadness, emotional instability, anxiety, and emotional reactivity.

3.2.5. Section E: Work Motivation

The Work Motivation Scale (WM Scale; Work-related) is a multi-layered quantitative instrument that aims to identify the main things that motivate people to exert energy and effort while doing the job. The scale specifically classifies motivational drivers into two broad domains, based on Self Determination Theory (SDT), namely intrinsic motivation and extrinsic motivation (Deci and Ryan, 2000; Gagné and Deci, 2005). Intrinsic motivation is internally oriented and includes personal interest, satisfaction derived from the work itself, and the desire for personal growth and development. Whereas, extrinsic motivation comes from an outside source like rewards, social pressures, or an organisation's expectations. SDT also posits that humans are at higher performance when three essential psychological needs are met: autonomy, competence, and relatedness (Ryan and Deci, 2017). While financial rewards or recognition are perceived as extrinsic motivators in the short term, it has been found that intrinsic motivation significantly improves the likelihood of work commitment and job satisfaction more than external motivation (Gagné and Deci, 2005). Conversely, a motivation gap signifies a decrease in the willingness and positive emotions associated with work; therefore, intrinsic or extrinsic motivation has not been adequately engaged. Consequently, the Work Motivation Scale is used to help organizations to identify key motivational factors and to develop interventions to improve workers' engagement and productivity. The scale employed in this research is a modified version drawn from the initial work motivation scales proposed by Gagné et al. (2025). Sample items also include words such as "I like my job," "I derive personal fulfilment from my job," "I am interested in my tasks," "I work because I am paid to do so," "My job provides me with security," "I am motivated by benefits and rewards," "I work to support my family," "My job contributes to my personal development," "My job enables me to acquire new skills," "I find my job rewarding," "I work because I believe in the company's values," and "I am driven to work by others' expectations."

3.3. Pilot Test

Pilot study to test the usefulness, clarity and preliminary psychometrics of the research instrument in Beijing-based kindergartens. This pilot study involved 103 preschool teachers in Beijing, China, who filled out the questionnaire through an online WeChat form. Pilot testing is a crucial process in survey research for allowing researchers to understand the issues regarding the wording of items, formats of responses, and cultural sensitivity before initiating large scale survey-administered data collection. It also offers preliminary evidence of reliability and validity (Khanal and Chhetri, 2024). The pilot study gave the research team the opportunity to examine the internal consistency and clarity of items on the construct of organisational support, reward systems, personality characteristics and work motivation. The evaluation of ambiguous/ unclear items by participants was carried out and adjustments focused on the language usage and cultural appropriateness. These enhancements strengthened the reliability and validity of the instrument for the target population.

3.4. Validity Test

In this study, validity testing was performed as a systematic approach to determine the degree to which the measurements accurately represented the constructs that were targeted to be evaluated. Validity is a fundamental aspect of research, which makes sure that the findings are interpretable and meaningful in the right context (Thorkildsen and Jiang, 2024). Multiple forms of evidence, instead of a single variable, was used for establishment of validity, therefore showing a correlation between test items and underlying constructs. Consistent with existing literature, validity was evaluated over four major types, including content validity, criterion related validity, construct validity, and face validity (Masuwai et al., 2024). Content validity was evaluated to confirm that the questionnaire items sufficiently considered all dimensions of constructs (Chen & Shin, 2025). It was performed through expert review by two subject matter experts, who considered the relevance and comprehensiveness of the questions. Construct validity was assessed through exploratory and confirmatory factor analysis to confirm that the items fit the theoretical constructs to be measured including convergent and discriminant validity (Mokkink et al., 2010; Norbert & Shin, 2025). Face validity was verified by confirming that at the level of instruments concerned, they reflected the constructs that were to be measured so to foster the acceptability and interpretability of the instrument. Finally, the validity test was supplemented with reliability testing to ensure measurement instruments were accurate and consistent. This lays out a solid base for further analyses of preschool teachers perceived organisational support, reward systems, personality traits, and work motivation.

3.5. Reliability Test

Reliability testing is a vital component of measurement validation, checking for the stability and consistency of information in measurement. Reliability is essential for both scientific inquiry and practical application, as it determines if an instrument consistently reflects the construct of interest across repeated observations (Yang & Shin, 2025). Assessing reliability generally can be divided into two key groups: internal reliability and external reliability. Both categories are primarily assessed using statistical techniques.

Internal reliability measures the consistency of items within a scale, specifically whether items designed to measure a single construct produce responses that are consistent with each other. For this purpose, Cronbach's alpha coefficient is one of the most frequently reported statistics which estimates the correlations among items as well as an indicator of the homogeneity of the scale (Forero, 2024). Greater alpha values correspond to stronger internal consistency, giving individuals greater confidence in the reliability of measures to measure the same underlying construct. External reliability is the degree of measurement stability across multiple versions/administrations or different formats of an instrument. These consist of test-retest reliability and parallel form's reliability, usually calculated as correlation coefficients showing stability over time or equivalence across forms (Pentecost, 2021). Overall, the higher these reliability coefficients the more credible the measurement. While acceptable thresholds vary across disciplines, Cronbach's alpha values of 0.70 and higher are typically adequate for inclusion in research studies, while values greater than 0.80 indicate strong internal consistency among items (Zakariya, 2022).

4. Findings

The study instruments were systematically evaluated in terms of both validity and reliability to ensure their suitability for empirical research. Validity refers to the extent to which the instruments accurately measure the intended constructs, while reliability reflects the consistency and stability of measurement results when the instruments are administered repeatedly under similar conditions.

4.1. Validity of Study Instruments

Before establishing the validity of the data in factor analysis, the Kaiser Meyer Olkin measure of sampling adequacy and Bartlett's test of sphericity were conducted. The Kaiser Meyer Olkin statistic measures the degree of intercorrelation among variables, while Bartlett's test assesses whether the correlation matrix is significantly different from an identity matrix. A Kaiser Meyer Olkin value greater than 0.70 is considered acceptable for performing factor analysis, as is a statistically significant value of Bartlett's test at $p < 0.05$ (Hair et al., 2019).

For the adequacy of data for factor analysis, Kaiser Meyer Olkin measure of sampling adequacy and Bartlett's test of sphericity were used to test appropriateness for factor analysis. As Table 1 shows, the Kaiser Meyer Olkin values for all constructs exceed the guideline threshold of 0.60, meaning that data was sufficient for factor analysis (Kaiser, 1974). More specifically, we found that the Kaiser Meyer Olkin value for the construct Perceived Organisational Support with 18 items was 0.780 and Bartlett's test came up with $\chi^2(435) = 1759.542$, $p < .001$. For Rewards with 15 items, the Kaiser Meyer Olkin value was 0.920. Bartlett's test yielded a value of $\chi^2(153) = 1518.444$, $p < .001$. Personality with 30 items is scored as Kaiser Meyer Olkin = 0.761, with Bartlett's test $\chi^2(105) = 506.200$, $p < .001$. Finally, Teacher Motivation with 20 items received its Kaiser Meyer Olkin value of 0.861, and Bartlett's test of $\chi^2(190) = 1196.385$, $p < .001$. These results confirm that the data were suitable for factor analysis across all constructs.

Table : Validity Test for Pilot Study

Variables	Total Number of Items	KMO	Approximate chi-square	Degrees of freedom	P
POS	18	0.780	1759.542	435	<0.001
Rewards	15	0.920	1518.444	153	<0.001
Personality	30	0.761	506.200	105	<0.001
Motivation	20	0.861	1196.385	190	<0.001

4.2. Reliability of Study Instruments

Reliability testing was performed as the main aspect in assessing the instruments of measurement and questionnaires in this research and served as empirical assurance of the stability and consistency of the data collection processes. This practice helped establish the credibility and rigour of the research, and remains a requirement for academic and practitioner research. Reliability assessment was described in two basic forms. Internal reliability examined the degree of consistency across items of each scale to examine if they measured the same general construct. This was assessed using Cronbach's alpha, a measure of inter item correlations and the homogeneity of scale items.

When measuring the external reliability, on the other hand, the consistency of the measurement was compared over several administrations or instruments. Reliability was the primary factor and was captured as a correlation value, higher being indicated to be stabilized measurements. In the present investigation, coefficient values between 0.60 and 0.65 were considered marginally acceptable, coefficient values between 0.65 and 0.70 were considered as the minimum acceptable threshold and coefficient between 0.70 and 0.80 was considered satisfactory reliability (Faleye, 2008). The overall reliability of this study is shown in Table 3.

Table 3: Reliability Statistic (n=103)

Cronbach's Alpha	N of Items
0.846	83

Cronbach's alpha was used to assess the internal consistency of the measurement instruments applied in the pilot study to evaluate the reliability of each construct. In Table 4, all constructs exhibited acceptable to excellent reliability. In particular, Perceived Organizational Support (POS; 18 items) had a Cronbach's alpha of 0.864, Rewards (15 items) had a Cronbach's alpha of 0.843, and Personality (30 items) had a Cronbach's alpha of 0.870. Teacher Motivation (20 items), as the dependent variable, showed a Cronbach's alpha of 0.796. All values were above the cutoff value of 0.70, which suggests that the items in each scale were internally consistent and the reliability was acceptable for the main study. Reliability of all variables is presented in Table 4.

Table 4: Reliability Test for Pilot Study

Variables	Total Number of Items	Cronbach's Alpha	Remarks
POS	18	0.864	Independent
Rewards	15	0.843	Independent
Personality	30	0.870	Independent
Motivation	20	0.796	Dependent

For assessing the reliability and quality of the measurement tools in this study, internal consistency of the instruments was determined with Cronbach's alpha as the primary factor. Low-CITC items or items whose deletion substantially increased Cronbach's alpha may show the problems of lack of alignment with the underlying construct and hence are candidates for revision or deletion (Gliem & Gliem, 2003). Table 5 presents the item-total statistics of the Perceived Organizational Support (POS) scale, with respect to CITC values and the amount of changes from a Cronbach's alpha point of view in case of removal of individual items. These analyses guarantee that each of the items contributes to the internal consistency and robustness of the measurement instrument in a meaningful way.

The internal consistency of the Perceived Organizational Support (POS) scale was evaluated using Corrected Item-Total Correlation (CITC) and the impact of deleting individual items on Cronbach's alpha. As shown in Table 5, CITC values ranged from 0.421 to 0.800, indicating that all items contributed adequately to the overall scale reliability. Additionally, Cronbach's alpha would not increase substantially if any single item were deleted, with values ranging from 0.844 to 0.889. These results confirm that all 18 items

are appropriately aligned with the underlying construct, and the POS scale demonstrates strong internal consistency (Cronbach's $\alpha = 0.864$).

Table 5: The Item-Total Statistics of Perceived Organizational Support (n=103)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
POS1	60.21	109.228	0.547	0.855
POS2	61.22	124.705	0.421	0.883
POS3	59.57	110.443	0.509	0.856
POS4	61.62	122.983	0.46	0.882
POS5	59.66	108.364	0.593	0.853
POS6	61.55	125.21	0.438	0.885
POS7	59.85	107.086	0.693	0.849
POS8	61.51	128.076	0.435	0.889
POS9	59.82	106.113	0.716	0.848
POS10	59.94	102.957	0.782	0.844
POS11	59.85	106.557	0.671	0.85
POS12	59.83	105.747	0.729	0.847
POS13	59.76	104.656	0.785	0.845
POS14	59.86	104.923	0.733	0.847
POS15	59.81	104.805	0.8	0.845
POS16	59.76	105.323	0.745	0.847
POS17	59.71	105.346	0.747	0.847
POS18	59.66	106.599	0.712	0.848

Table 6 presents the item-total statistics for the Rewards scale, including the Corrected Item-Total Correlation (CITC) values and Cronbach's alpha if each item were deleted.

Table 6: The Item-Total Statistics of Reward (n=103)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
R1	49.89	88.567	0.544	0.83
R2	49.87	87.798	0.587	0.828
R3	50.27	88.984	0.447	0.835
R4	50.03	90.891	0.414	0.84
R5	50.04	90.724	0.428	0.838
R6	50.33	93.615	0.472	0.845
R7	50.39	86.887	0.526	0.831
R8	49.95	91.733	0.434	0.842
R9	50.08	87.19	0.516	0.831
R10	50.19	89.727	0.409	0.838
R11	50.09	88.453	0.463	0.835
R12	50.26	90.136	0.409	0.838
R13	50.24	88.656	0.516	0.832
R14	49.91	86.845	0.613	0.826
R15	49.83	85.165	0.71	0.821

The internal consistency of the Rewards scale was assessed through Corrected Item Total Correlation and the effect of deleting individual items on Cronbach's alpha. Corrected Item Total Correlation values (Table 6) showed that with values between 0.409 and 0.710, all

items contributed meaningfully to the reliability of this scale. Cronbach's alpha for the full scale was 0.843. Deleting any individual item did not result in a substantial increase in the alpha value, with the values ranging from 0.821 to 0.845 when each item was removed. These results suggest all 15 items are closely related to the underlying construct and the internal consistency of the scale is high.

Table 7 presents the item total statistics for the Teacher Personality scale, including the Corrected Item Total Correlation values and the changes in Cronbach's alpha associated with the deletion of individual items.

Table 7: The Item-Total Statistics of Personality (n=103)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
P1	99.62	220.689	0.417	0.866
P2	100.06	223.526	0.423	0.869
P3	99.78	220.332	0.431	0.865
P4	99.48	225.33	0.436	0.87
P5	99.56	218.229	0.443	0.865
P6	99.72	219.871	0.456	0.866
P7	99.12	217.731	0.525	0.863
P8	99.19	212.197	0.551	0.862
P9	98.95	214.105	0.568	0.862
P10	98.99	216.794	0.525	0.863
P11	98.92	210.915	0.665	0.859
P12	98.97	217.048	0.555	0.863
P13	99.58	215.677	0.53	0.863
P14	99.68	216.338	0.468	0.864
P15	99.4	212.713	0.582	0.861
P16	99.52	220.193	0.446	0.867
P17	98.81	212.354	0.638	0.86
P18	99.45	220.504	0.419	0.866
P19	98.78	213.332	0.614	0.861
P20	99.17	222.218	0.427	0.868
P21	98.84	216.152	0.569	0.862
P22	98.63	214.647	0.625	0.861
P23	98.61	214.416	0.587	0.861
P24	98.81	214.021	0.63	0.861
P25	99.53	224.389	0.429	0.871
P26	100.05	227.694	0.429	0.873
P27	100.16	231.113	0.44	0.875
P28	100.24	233.715	0.431	0.877
P29	100.31	237.099	0.418	0.881
P30	99.45	227.563	0.517	0.871

The internal consistency of the Personality scale was verified by taking Corrected Item-Total Correlation (CITC) values and the impact of the deletion of single items on Cronbach's alpha. As Table 7 shows, CITC values ranged from 0.417 to 0.665 and all items reported positive correlations with the overall scale and meaningfully contributed to the construct. The internal consistency of the Personality scale was high (Cronbach's alpha = 0.870). In addition, the "Cronbach's alpha if item deleted" values ranged from 0.859 to 0.881, which suggests that the deletion of an individual item would not produce dramatic

improvements in reliability. Several items showed slightly higher alpha values (e.g., P29), but the increase was small and did not warrant item removal. These outcomes suggest that all 30 items are in appropriate correlation with the overarching construct, and the Personality scale is showing strong reliability and internal consistency for subsequent analyses.

Table 8 presents the Item-Total Statistics for the Teacher's Motivation scale, including the Corrected Item-Total Correlation (CITC) values and the changes in Cronbach's alpha following the deletion of individual items.

Table 8: The Item-Total Statistics of Motivation (n=103)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
M1	62.72	103.106	0.491	0.779
M2	62.76	102.833	0.529	0.777
M3	62.72	100.989	0.614	0.772
M4	62.63	102.686	0.544	0.777
M5	63.07	106.064	0.466	0.787
M6	62.74	101.587	0.604	0.774
M7	62.83	100.44	0.641	0.771
M8	63.09	106.394	0.432	0.789
M9	62.76	101.676	0.573	0.775
M10	63.02	104.607	0.419	0.785
M11	62.61	102.73	0.547	0.777
M12	62.92	104.445	0.442	0.782
M13	63.44	103.072	0.463	0.781
M14	63.4	102.262	0.501	0.778
M15	63.81	108.589	0.416	0.796
M16	63.35	102.7	0.465	0.78
M17	64.67	115.713	0.453	0.814
M18	64.3	116.428	0.476	0.814
M19	64.38	113.61	0.427	0.808
M20	64.61	116.436	0.424	0.813

Internal consistency of the Teacher Motivation scale was validated using Corrected Item Total Correlation and the effect of deleting items on Cronbach's alpha. Corrected Item Total Correlation values presented in Table 8 were in the range of 0.416–0.641, thus, these corrected items gave positive effects on the reliability of the scale. The full scale found a Cronbach's α of 0.796 for the total scale. Not a single item was dropped that significantly changed the alpha, which ranged from 0.771–0.814 when deleting each item. All 20 items are significantly aligned with the underlying construct indicating that the Teacher Motivation scale shows good internal consistency and can be useful in the main study.

5. Discussion and Conclusion

Results from the reliability analyses reveal all four scales were used within the study. The Cronbach's alpha for the POS scale was 0.864, while the Corrected Item-Total Correlation (CITC) values varied from 0.421 to 0.800. This showed that all 18 items significantly contributed to the construct of perceived organizational support and confirm the reliability of the scale for teachers' perceptions of organizational care, value, and support.

Likewise, the Rewards scale had a Cronbach's alpha = 0.843, and the CITC values ranged from 0.409 to 0.710, indicating that the intrinsic and extrinsic reward items were reflective of teachers' perceptions of motivational incentives. The scale of Personality (Cronbach's alpha = 0.870; CITC = 0.417–0.638) also confirmed that all 30 items had the desired measures of personality dimensions (conscientiousness, emotional stability, and openness to experience). The results are consistent with those of several studies and support a significant effect of personality traits on teachers' motivation and coping capability in high-stress educational settings. Finally, the Teacher Motivation scale had acceptable reliability (Cronbach's alpha = 0.796), and the CITC values of the 20 items in this study ranged from 0.416 to 0.641, suggesting that intrinsic and extrinsic motivational characteristics are consistently assessed. These findings reveal a high correlation of items on each scale and general agreement of the measure of construct. The slightly lower alpha for motivation, relative to the other constructs, might suggest that teacher motivation is multidimensional in nature and has multiple bases of personal, social, as well as organizational influences (Deci & Ryan, 2000; Gagné & Deci, 2005).

In general, item-total statistics of these four scales presented confirmation that each item contributes positively to overall reliability and that deletion of a single item would not substantially improve Cronbach's alpha. This is evidence that scales for measuring are valid psychometrically and may be employed for investigating associations between perceived organizational support, reward, personality traits and teacher motivation in Beijing preschools. This evidence establishes a sound evidence base for future investigations of exploratory and confirmatory factor analyses and underpins the validity of such findings as they extend our understanding of preschool teachers' motivation. Validity and reliability are important aspects that must be given careful consideration in any research. The findings of the pilot study indicate that the research instrument used by the researcher demonstrates high validity and reliability values. Therefore, this instrument can be regarded as a reliable and appropriate measurement tool for use in future studies involving similar variables or populations.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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