

Evaluation of Validity and Reliability of Questionnaires on Personality Traits, Self-Efficacy, Emotional Labor and Subjective Well-Being

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ABSTRACT

This study aims to test the reliability and validity of a scale used to measure the subjective well-being of preschool teachers in China. It provides standardized measurement tools for related research and offers a scientific basis for maintaining the occupational health of preschool teachers and promoting educational quality. This study was grounded in the positivist paradigm and used the purposive sampling method to conduct a pilot survey with 424 preschool teachers. The core focus of the study was on the verification process of measurement tools. Reliability and validity were verified through expert evaluation, exploratory factor analysis, Cronbach's α analysis, and the KMO test. The study showed that the KMO value for the scale consisting of 51 items exceeded the required threshold for adequacy, and the Cronbach's alpha coefficients for all items were above 0.70. These findings underscore the scale's strong reliability and validity, suggesting that it can serve as a dependable tool for future research on the subjective well-being of preschool teachers.

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KEYWORDS:

Personality Traits

Self-Efficacy

Emotional Labor

Subjective Well-Being Validity

Reliability

CITATION:

Chang, X., & Connie, S. (2026). Evaluation of Validity and Reliability of Questionnaires on Personality Traits, Self-Efficacy, Emotional Labor and Subjective Well-Being. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 11(5), e003971.

<https://doi.org/10.47405/mjssh.v11i5.3971>

Contribution/Originality: This study provides a validated questionnaire that covers personality traits, self-efficacy, emotional labor, and subjective well-being. It serves as a reliable tool for conducting research and enhancing the subjective well-being of preschool teachers in practice.

1. Introduction

Subjective well-being is one of the key concepts in positive psychology, which denotes the comprehensive assessment of individuals' quality of life by themselves using certain criteria (Zhao & Shin, 2026). It acts as an essential psychological measure for evaluating one's satisfaction with life (Diener, 1984). Early childhood education (ECE) is not only a golden period for knowledge acquisition, but also a crucial stage for the formation of

character (Shin & Idang, 2025; Shin et al., 2025; Fong et al., 2025; Liu & Ompok, 2025; Emison et al., 2022). Considering that preschool teachers are not just educators but also collaborators, facilitators, and guides in children's activities, the issue of their well-being is of particular significance (Ompok et al., 2018; Ompok et al., 2019, Ompok et al., 2021; Ling et al, 2018). Apart from being beneficial to teachers' mental well-being, it ensures a positive emotional transmission to children, thus promoting healthy development. Additionally, preschool teachers' subjective well-being is critical to the stability of the workforce and future trends in preschool education (Corthorn et al., 2024; Li et al., 2024).

A large body of research has been conducted on the factors influencing preschool teachers' subjective well-being. Studies have found that internal factors such as personality traits, self-efficacy, emotional labor, motivation, and interests, as well as external factors like genetics, culture, family environment, and economic conditions, all have an impact on subjective well-being. Currently, research on preschool teachers' subjective well-being is relatively limited, and the existing studies mainly focus on external variables such as working hours (Zhu et al., 2025), salary and benefits (Liu et al., 2023), job demands (Ostermeier et al., 2023), and social support (Fu et al., 2022). Most of these studies concentrate on university teachers, with a lack of in-depth exploration and systematic analysis of the endogenous variables affecting preschool teachers' subjective well-being.

Although some studies have explored the impact of endogenous variables on subjective well-being (Ermiş & Güler, 2024), research on the influence of the overall construct of personality traits, self-efficacy, and emotional labor on subjective well-being is relatively scarce. Meanwhile, most research on teachers' psychological functioning tends to focus on negative psychological indicators such as teacher stress and burnout, with relatively few studies addressing the positive construction of teachers' subjective well-being (Yang et al., 2022).

1.1. Research Objectives

Drawing on the identified gap in existing research literature, the present study is an attempt at developing a measure that would be capable of validating and assessing the reliability of the following concepts: personality traits, self-efficacy, emotional labor, and subjective well-being among preschool teachers. All of these variables are considered vital predictors of subjective well-being. By examining their connections, the research hopes to obtain important insights into professional life and mental state of teachers. The results of the research will be of practical significance in promoting teachers' subjective well-being.

1.2. Significance of The Study

Since the 21st century, the pursuit of high-quality development in ECE has become a global consensus (Liang et al., 2025; Qinghua et al., 2022; Zhao & Shin, 2025). In China, as an important province in terms of economy and education, Jiangsu has made great accomplishments in allocating resources and training teachers, being ahead of other provinces in funding for early childhood education. Nevertheless, under the impact of changing demographics and declining birth rates, Jiangsu has become one of the regions with a noticeable reduction in the need for preschool teachers. It is evident that preschool teachers face a higher level of career instability and more problems associated

with their subjective well-being. At present, such issues have become the major obstacle hindering the career development of preschool teachers and improving the quality of early childhood education.

In order to understand better the antecedents of the subjective well-being of preschool teachers, this study plans to build and verify a scientific scale. Grounded in rigorous reliability and validity testing, this study develops a scientifically robust assessment instrument that can inform educational management decisions while also supporting teacher development. This study seeks to address a notable gap in the literature by developing systematic assessment tools for preschool teachers' subjective well-being, a need that has become increasingly salient within the broader context of demographic transition.

2. Literature Review

2.1. Research Framework

The formation of subjective well-being arises from the interaction of internal and external factors. Subjective well-being is characterized as a complicated phenomenon, which requires an integrated theory for investigation. The study is based on the theories of Maslow's Hierarchy of Needs and Self-Determination Theory, suggesting that the subjective well-being of individuals largely results from internal psychological factors.

As far as the analysis of mental health among preschool teachers is concerned, the definition of subjective well-being can be seen as a multi-dimensional concept. Subjective well-being consists of three dimensions, which are usually considered to be measurable dimensions, including life satisfaction, positive affect, and negative affect (Diener et al., 1999). Life satisfaction is defined as a cognitive appraisal of quality of life, thus representing the cognitive dimension of subjective well-being. Individual emotional reactions to life situations, categorized as positive and negative affect, collectively form the affective dimension of subjective well-being. While these three dimensions operate somewhat independently, they are interconnected components involving both cognitive and emotional evaluations.

In the current research, subjective well-being is described as the general appraisal of life quality through self-set standards. According to Diener (1984), subjective well-being can be considered subjective, holistic, and relatively stable, which makes it a critical tool for measuring the quality of life of an individual comprehensively. Because of their unique educational goals, complex job duties, specialized professional needs, and comparatively low social prestige and salary, preschool teachers are regarded as a special occupational group in modern society. These characteristics affect the professional identity and sense of belonging, resulting in considerable effects on their subjective well-being (Hyseni et al., 2025). Clarifying the key factors influencing preschool teachers' subjective well-being not only facilitates the regulation of their mental states but also supports the enhancement of their overall quality of life, as a clear understanding of these determinants lays a foundation for targeted psychological support and lifestyle adjustments.

This study holds that the subjective well-being of preschool teachers results from the dynamic interaction of three key factors, namely stable personality traits, positive self-efficacy, and contextual emotional labor. This construct offers an analytical foundation

for examining the ways in which these factors interact to enhance preschool teachers' subjective well-being, particularly within high-pressure professional environments.

2.2. Antecedents of Subjective Well-Being

Being a psychological attribute of a person's relative stability, personality traits provide a solid basis for the explanation of individual differences in behavior and emotions. A fully developed personality is considered a key feature of any successful teacher in terms of social requirements; meanwhile, being one of the essential aspects of personality, it becomes a crucial feature for a modern high-level teacher. Meta-analysis has shown that personality features are some of the most stable and the most predictable individual features (Steel et al., 2008). Among all theories dealing with personality, the Big Five Personality Model has gained popularity as the leading theory in personality studies due to its structure and high cross-cultural stability. This model characterizes an individual's core personality traits from five dimensions: extraversion, agreeableness, conscientiousness, openness, and neuroticism, and is widely used in empirical research in the fields of education and mental health. Kobylińska et al. (2022) have shown that positive personality traits improve the subjective well-being of teachers. In a similar vein, according to Taati et al. (2025), teachers who possess positive personality traits such as extraversion and agreeableness will be better equipped to cope with the harmful consequences of job-related stress.

In light of demographic changes and quality-oriented education, teachers have experienced an increased role demands and intensified occupational stress. Stable individual differences also affect individuals' stress perceptions and emotion regulation. Diverse personalities have significant differences in their basic emotions, stress resistance, and emotional regulation. Individuals with higher neuroticism experience more negative emotions, while those with high levels of extraversion and conscientiousness tend to maintain positive emotions, thus affecting subjective well-being continuously (Shdaifat et al., 2024). It is therefore crucial to explore the relationships between the Big Five personality traits and subjective well-being among early childhood education teachers.

Self-efficacy is a measure of the confidence and judgment of people about their ability to perform certain actions competently (Dai et al., 2023). Teacher self-efficacy plays a crucial role in guiding teachers towards continuous professional development and self-improvement and directly impacts both teacher behavior and teaching efficiency (Hußner et al., 2024). Being an essential element predicting subjective well-being, self-efficacy not only influences activity selection and environment preference but also determines how a person copes with hard situations. Individuals with high self-efficacy are much more capable of dealing with problems adequately and solving instructional tasks due to greater effort and thus attaining success and praise from other teachers, students, and parents. People with low self-efficacy are rather likely to choose avoidance coping which might lead to higher levels of psychological tension (Gao et al., 2024). This function enables individuals to stimulate stronger motivation and adopt more effective coping strategies when facing challenges, while enhancing their self-confidence, fostering positive emotions, and ultimately boosting their subjective well-being.

Emotional labor is a common psychological process among preschool teachers in work contexts. Due to the specific nature of early childhood education, preschool teachers are required to engage in frequent and high-intensity interactions with children and

parents, placing them in sustained emotional regulation demands to maintain harmonious teacher–child relationships and a positive working environment (Gu et al., 2025). Existing studies have shown that different emotional labor strategies have differential effects on individuals' psychological states. Surface acting tends to increase emotional exhaustion and occupational burnout, thereby reducing subjective well-being, whereas deep acting helps achieve congruence between internal emotions and external expressions, enhances work engagement and professional accomplishment, and serves as a protective factor for subjective well-being (Song & Yang, 2026). In China, kindergarten teachers generally experience high levels of emotional labor, and their emotion regulation strategies significantly influence their mental health and well-being (Yuan et al., 2025). Therefore, emotional labor should not be overlooked in the formation of preschool teachers' subjective well-being.

To conclude, personality traits, self-efficacy, and emotional labor are the main factors that affect the subjective well-being of preschool teachers. The selection of valid and reliable instruments for measuring them is imperative in order to reveal their interrelationships. Consequently, the reliability and validity of the questionnaire should be tested to achieve measurement precision and increase the scientific rigor of the study (Lei & Shin, 2026; Yang et al., 2026). Moreover, the subjective well-being of preschool teachers is highly connected with mental health and can affect the quality of preschool education and child development. Hence, the accurate assessment of the discussed constructs is vital for making data-based decisions on enhancing the quality of early childhood education (Qinghua & Shin, 2025; Qinghua & Shin, 2022a, Qinghua & Shin, 2022b; Shin et al., 2025). In scientific research, robust measurement, reliability, and validity are indispensable, as they establish the very credibility of findings. Without them, it's impossible to derive credible conclusions from statistical analyses.

3. Research Methods

The current study employed an empirical research design that adopted quantitative methods, with the central objective being the analysis of the relationships between personality traits, self-efficacy, emotional labor, and subjective well-being. Survey questionnaires were used to collect data from the participants. The collected data were subjected to statistical analysis to enhance the validity and reliability of the results for a wider target population.

3.1. Research Participants

The study employed purposive sampling techniques in data collection. The respondents consisted of 426 in-service preschool teachers from public and private kindergartens in Jiangsu Province, who took part in the online questionnaire survey. There were 424 valid responses obtained from the survey, giving a response rate of 99.53%. The participants ranged in age from 20 to 55 years and came from different types of kindergartens, with diverse teaching experiences and educational backgrounds.

3.2. Research Instruments

In this study, a structured questionnaire was used for data collection. The questionnaire was prepared on the basis of the practical situation among preschool teachers, and it included four different parts: personality traits, self-efficacy, emotional labor, and subjective well-being. The questionnaire used here was taken from some well-known

scales available in the literature, but changes were made considering the Chinese context. Following expert review, ambiguous and logically confusing items were scientifically revised, and the final questionnaire was rated using a Likert-type scale.

3.2.1. Ten-Item Personality Inventory (TIPI-10)

For measuring personality traits among preschool teachers, the Ten-Item Personality Inventory (TIPI) developed by Gosling et al. (2003) was used in this research. This scale was culturally adapted into Chinese language by Li Jinde, and several empirical tests were conducted on this scale for validation, which is proven reliable and valid from several perspectives. The TIPI Scale is a set of ten questions that measures the five fundamental dimensions of personality according to Big Five Theory, which include extroversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

The modification that occurred in this study involved adjusting the original 7-point Likert scale to a 5-point Likert scale in line with the nature of the research design and participants involved. This was described as: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree. The TIPI scale is well known for its brevity and easy administration, taking less time to fill out. It is therefore appropriate for use among preschool teachers who are occupied in their busy schedule.

3.2.2. General Self-Efficacy Scale

Self-efficacy was measured using the General Self-Efficacy Scale (GSES-10) developed by Schwarzer and Jerusalem (1995), which is based on Bandura's social cognitive theory. The Chinese adaptation of the test was conducted by Wang Caikang, and he carefully evaluated the test's reliability and validity. This modified test is proven appropriate for use in China and is extensively employed in empirical studies conducted within the country. It is unidimensional and comprises 10 questions measuring general confidence and competence in dealing with different situations.

In order to maintain uniformity throughout the questionnaire and ensure appropriate responses, the existing 4-point Likert scale was changed to a 5-point Likert scale in this research. This was done with the intention that having an option for neutrality would help avoid response bias and burden on the respondents. High total score reflected high self-efficacy.

3.2.3. Emotional Labor Scale

The Emotional Labor Scale adopted in this study was developed by Diefendorff et al. (2005). The scale has 14 items measuring three different aspects of emotional labor, which include surface acting, deep acting, and natural emotional expression. Among the scales adopted for the measurement of emotional labor in this study, surface acting is made up of seven items with representative phrases such as *I hide my true feelings about the situation*. The deep acting scale contains four items, and an example of the items is *I try to actually experience the emotions that I need to display*. Lastly, there are three items used to measure natural emotional expression, and a typical phrase for this scale is *the emotions I express to children are genuine*.

The wording of the questions was correctly adjusted to the study context. All the scales adopted the five-point Likert scale in measuring the items in all the dimensions adopted in this study.

3.2.4. Subjective Well-Being Scale

A composite measurement was applied to evaluate subjective well-being among preschool teachers, which was composed of three aspects: life satisfaction, positive affect, and negative affect. Life satisfaction was assessed through the Satisfaction with Life Scale (SWLS), designed by Diener et al. (1985). It contains five items and evaluates individuals' overall cognitive appraisal of quality of life. Affective experience was evaluated through the Scale of Positive and Negative Experiences (SPANE), designed by Diener et al. (2009). It contains twelve items in total, six for positive and six for negative emotions.

In order to achieve consistency in answer style, the 7-point Likert scale used in the original survey was standardized and reduced to a 5-point Likert scale, which ranged from 1 (disagree) to 5 (agree). During data scoring, reverse coding was applied to all negative affect items. The total score was obtained by adding up all items in the three subscales, with a higher total score suggesting greater subjective well-being among preschool teachers.

3.3. Pilot Test

A pilot study refers to a small-scale preliminary study conducted prior to formal research. It can not only assess the practical feasibility of the research but also test the reliability and validity of measurement tools (Zhou, 2023). Through small-scale preliminary testing, researchers can systematically examine the rationality of questionnaire items, judge whether the wording of each item is clear and accurate, and whether it can effectively correspond to the target research constructs. Identifying and revising questionnaire defects in a timely manner before formal investigation helps save research resources, improve the quality of the data collected, and further ensure the scientific rigor and standardization of the overall research.

The pilot study was conducted from March to April 2025. The initial questionnaire was administered using the online application named Wenjuanxing, directed at preschool teachers from Jiangsu Province. To maximize diversity in the sampling process, participants covered diverse regions, kindergarten types and educational backgrounds. Before collecting data, participants received standardized instructions concerning responding to questions and necessary information to consider, thus reducing response bias. Upon the completion of the questionnaire administration, the data were carefully analyzed, and random completion, and high amounts of missing values were eliminated from the analysis. Experience from the pilot study served to make modifications concerning the wording of items and questionnaire format, which laid a strong basis for conducting the main study.

Based on findings obtained during the pilot test stage, the reliability and validity of the questionnaire were examined and improved through changes in the wording of items and the overall questionnaire design, which increased its relevance.

3.4. Validity Test

Validity mainly evaluates the accuracy and effectiveness of a scale, reflecting the degree of consistency between the actual measurement results of the scale and the theoretical construct to be measured, and is a core indicator for ensuring measurement quality. Validity can take several forms, including face validity, content validity, criterion-related validity, and structural validity (Ginty, 2020). Rigorous validity testing enables the measurement instrument to closely reflect the theoretical meanings embedded in the research variables, thereby strengthening the scientific credibility of the findings while enhancing their potential for practical application.

Face validity can be understood as an intuitive appraisal of how well questionnaire items correspond to the intended construct, a perceived alignment that helps foster participants' trust and encourages their cooperation (Chen & Shin, 2025; Andoh et al., 2021). Content validity is used to test whether a question item can fully represent the key dimensions of the concept being tested. In this study, subject-matter specialists were invited to provide feedback on every question included in a scale. Feedback was considered while adjusting wording and discarding irrelevant questions.

In measuring the validity of the scale, EFA was used to ascertain whether the dimensions of the scale were consistent with theoretical predictions (Chen et al., 2025). Discriminant validity and convergent validity are two key sub-dimensions in the verification of construct validity (Norbert & Shin, 2025; Liu & Shin, 2026). Convergent validity is the ability of items from a similar dimension to be internally consistent. Discriminant validity involves empirical distinctions between different constructs. As such, combining these considerations provides evidence regarding the theoretical basis of the instrument.

Whereas validity focuses on the accuracy of measurement, reliability entails the stability and consistency of the data. Validity and reliability are important in assessing the effectiveness of the measurement. For this reason, reliability testing will be conducted in the next phases.

3.5. Reliability Test

Reliability refers to the stability and consistency of a tool for measuring, and hence reflects how consistent the outcomes can be when testing the same object of study at various time points or conditions (Yang & Shin, 2025). Some commonly used methods to assess the level of reliability include alpha, split-half, and test-retest reliability, with Cronbach's alpha being the most commonly applied in empirical studies.

Cronbach's Alpha is a measure of the internal consistency of scales used to measure the same latent variables. Its value ranges between 0 and 1, where higher scores reflect higher internal consistency. Based on the established standards, an alpha greater than 0.9 is highly reliable; values ranging from 0.7-0.8 are considered to be moderately reliable; while values less than 0.6 suggest poor internal consistency (Chen et al., 2022).

The interpretation of the alpha coefficient should be done with care, since this measure can be affected by the number of items used in the scale. The more items that are used in the scale, the higher the alpha coefficient will be, while the use of few items will result in low alpha coefficients (Fleischhauer et al., 2019). With this in mind, this study

investigates the reliability of the questionnaire considering the number of items per dimension.

4. Results

The current study assessed the research instruments using both validity and reliability approaches in order to determine whether the instruments are appropriate and suitable for measuring the study variables. Validity is concerned with how well the instrument measures what it is intended to measure, while reliability is concerned with consistency.

4.1. Validity of the Research Instruments

This study conducted validation tests on the face validity and the content validity. There were two subject-matter experts in educational management who validated the items in terms of their relevancy, representativity, and clarity concerning the constructs of the study.

Exploratory factor analysis, one of the important statistical tools to validate structural validity, was conducted in this study. To assess the appropriateness of data before factor analysis, the data was subjected to KMO test and Bartlett's test of sphericity. The acceptable KMO level is above 0.6 but not exceeding 1.0, while Bartlett's test significance at $p < 0.001$ indicates suitability for factor analysis (Parul et al., 2025).

To assess the structural adequacy of the measurement tools for each variable, the study performed KMO and Bartlett's tests on all scales. The relevant results were presented in Table 1.

Table1: Validity Test for Pilot Study

Variables	Total number of Items	KMO	Approx. Chi-Square	df	Sig.
Personality Traits	10	0.530	1986.105	45	<0.001
Self-efficacy	10	0.956	2170.384	45	<0.001
Emotional Labor	14	0.910	2808.293	91	<0.001
Subjective well-being	17	0.946	4028.883	136	<0.001

As shown in Table 1, the KMO values of the three variables – self-efficacy, emotional labor, and subjective well-being – were 0.956, 0.910, and 0.946, respectively. All the aforementioned values were higher than the critical threshold of 0.6, and the value of p in the Bartlett's test of sphericity was lower than 0.001.

Notably, the Ten-Item Personality Inventory (TIPI-10) is a brief tool for assessing personality traits. It consists of just 10 items, with each personality dimension represented by only two questions. Such brevity inherently leads to a lower KMO value (0.530), which is a common statistical characteristic of short scales (Gosling et al., 2003; Thørrisen & Sadeghi, 2023). According to Kaiser (1974), KMO values in the range of 0.50–0.59 are categorized as miserable but not unacceptable for factor analysis. In this study, Bartlett's test of sphericity yielded $\chi^2 = 1986.105$ with $df = 45$, $p < 0.001$, indicating significant correlations among variables. Thus, the relatively low KMO value does not invalidate the scale or the subsequent factor analysis results.

4.2. Reliability of the Research Instruments

In this study, internal consistency reliability was analyzed via SPSS. To measure the reliability levels of each of the constructs, the researcher used Cronbach's α coefficient, which is used to find out whether all items measure the same variable (Chen et al., 2025). As shown in Table 2, the reliability coefficient for the total test composed of 51 items was 0.850, which was higher than the ideal value of 0.8. Accordingly, the full measurement instrument demonstrated good internal consistency and stability.

Each of the measurement instruments' reliability is the following. Ten-Item Personality Inventory (10 items) recorded a Cronbach's alpha of 0.701, Self-Efficacy Scale (10 items) scored 0.919; the Emotional Labor Scale (14 items) scored 0.882; and the Subjective Well-Being Scale (17 items) scored 0.924. All of them exceed the minimum acceptable value of 0.7. Thus, considering the findings related to internal consistency reliability of all measurement tools in the current research, all scales presented qualified reliability that met academic standards and were appropriate for further analytical procedures.

Table 2: Reliability Test for Pilot Study

Variable	Number of Items	Cronbach Alpha
Total Variables	51	0.865
Personality Traits	10	0.701
Self-Efficacy	10	0.919
Emotional Labor	14	0.882
Subjective Well-Being	17	0.924

The CITC test was conducted in the item analysis to determine the correlation between each item and the overall scale score. In general, a qualified CITC coefficient should exceed 0.30. In addition, the Cronbach's Alpha if Item Deleted was analyzed to assess whether deleting an item from the set would affect the internal consistency of the entire scale. An increase in the α value meant that the specific item could be a source of inconsistency in the test, making it necessary to delete the item (Hair et al., 2019; Ren & Shin, 2026).

The item-total statistics of the Ten-Item Personality Inventory are presented in Table 3. It should be noted that there were just two items in each dimension in the current investigation and, hence, no other items for conducting internal consistency analysis. For this reason, there was no information about changes in the Cronbach's α coefficient after removal of particular items. Nevertheless, all CITC coefficients fell between 0.759 and 0.789 and exceed 0.3 by a large margin.

Table 3: Results of Reliability Analysis of Ten-Item Personality Inventory

Dimension	Code	Corrected Item-Total Correlation
Extraversion	E1	0.767
	E2	0.767
Agreeableness	A1	0.789
	A2	0.789
Conscientiousness	C1	0.759
	C2	0.759
Neuroticism	N1	0.773

	N2	0.773
Openness to Experiences	O1	0.765
	O2	0.765

The item-total correlation statistics for the Self-Efficacy Scale are provided in Table 4. The CITC for each of the items varied between 0.644 and 0.739, all above the threshold value of 0.3. Hence, all the items were highly homogeneous within the whole scale. Furthermore, the Cronbach's Alpha if Item Deleted value was not significantly higher than the overall α of 0.919, implying that none of the items need to be deleted. Overall, the Self-Efficacy Scale was reliable since its scientific design was adequate for further data processing.

Table 4: Results of Reliability Analysis of General Self-Efficacy Scale

Dimension	Code	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Self-Efficacy	SE1	0.644	0.913
	SE2	0.666	0.912
	SE3	0.687	0.911
	SE4	0.662	0.912
	SE5	0.714	0.909
	SE6	0.710	0.909
	SE7	0.711	0.909
	SE8	0.701	0.910
	SE9	0.739	0.908
	SE10	0.717	0.909

According to Table 5, the CITC values of the Emotional Labor Scale were between 0.568 and 0.766, which are above the required level of 0.3. The results demonstrated that all the items have strong homogeneity with the total score. Furthermore, the deletion of any item did not help to improve the Cronbach's α coefficient, which remained below 0.882. The obtained findings suggest that all of the items positively affect the internal consistency of the test and should be retained. Thus, the scale was characterized by high-quality items and a good internal consistency level.

Table 5: Results of Reliability Analysis of Emotional Labor Scale

Dimension	Code	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Surface acting	SA1	0.728	0.894
	SA2	0.691	0.898
	SA3	0.677	0.899
	SA4	0.705	0.896
	SA5	0.748	0.892
	SA6	0.750	0.892
	SA7	0.766	0.890
Deep acting	DA1	0.702	0.788
	DA2	0.684	0.796
	DA3	0.642	0.814
	DA4	0.678	0.799
Expression of naturally felt emotions	ENFE1	0.568	0.757
	ENFE2	0.628	0.693
	ENFE3	0.669	0.642

Table 6 shows the CITC for the dimensions of the Subjective Well-being Scale ranged between 0.658 and 0.783, all much higher than the acceptable value of 0.3. In other words, all the items demonstrated high homogeneity with the rest of the scale. Furthermore, deleting any particular item from the scale did not raise Cronbach's α coefficient and left it lower than the original 0.924 value. It can therefore be concluded that each item positively contributes to the internal consistency of the scale and no items need to be eliminated.

Table 6: Results of Reliability Analysis of Subjective Well-Being Scales

Dimension	Code	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Satisfaction with Life	SWL1	0.706	0.834
	SWL2	0.682	0.840
	SWL3	0.670	0.843
	SWL4	0.658	0.846
	SWL5	0.726	0.829
Positive Experience	PE1	0.723	0.880
	PE2	0.732	0.879
	PE3	0.729	0.879
	PE4	0.689	0.885
	PE5	0.700	0.884
	PE6	0.782	0.871
Negative Experience	NE1	0.697	0.884
	NE2	0.687	0.884
	NE3	0.705	0.881
	NE4	0.697	0.883
	NE5	0.783	0.870
	NE6	0.780	0.871

5. Conclusion

The results of the reliability analysis showed that all four scales adopted in this study have good reliability. The TIPI-10 (Cronbach's alpha = 0.701; CITC = 0.759 – 0.789) effectively measured each dimension of personality. This result was consistent with the findings of multiple studies, further supporting the stable measurement value of personality traits in high-pressure early childhood educational settings. The self-efficacy scale (Cronbach's alpha = 0.919; CITC = 0.644 – 0.739) presented satisfactory item homogeneity and accurately reflected preschool teachers' general self-efficacy. The emotional labor scale (Cronbach's alpha = 0.882; CITC = 0.568 – 0.766) adequately covered core emotional labor constructs and could stably assess the three types of emotional labor performances of preschool teachers: surface acting, deep acting, and natural emotional expression. The subjective well-being scale also had acceptable reliability (Cronbach's alpha = 0.924), with the CITC values of the 17 items ranging 0.658 to 0.783, indicating that life satisfaction, positive, and negative experience items effectively reflect teachers' subjective well-being.

From the comprehensive data, it can be seen that the correlations among the items of each scale are high, and the consistency of the construct measurement is good. Among them, the α coefficients of the TIPI 10 scales were lower than those of the other scales. The main reason for this is that this scale is a simplified short-form scale with a limited

number of items, which somewhat weakens the overall internal consistency (Gosling et al., 2003; Thørrisen & Sadeghi, 2023).

In general, the items of the four scales - the overall statistical results all indicate that each item has a positive contribution to the overall reliability. Deleting any single item would not significantly increase the Cronbach's alpha coefficient. These results provide essential information regarding the factors affecting the subjective well-being of preschool teachers, especially in light of China's ongoing demographic changes and its emphasis on achieving high-quality growth in early childhood education. The results can be applied to improve the subjective well-being of preschool teachers. Educational administrative agencies should consider providing more attention and policy support to the professional and living conditions of preschool teachers. At the same time, preservice teacher training institutions should include relevant courses related to interpersonal relationship building, emotion management, resilience building, and well-being improvement.

To conclude, the scales utilized in this study exhibited high reliability and validity when measuring the subjective well-being of Chinese preschool teachers. Not only do the results confirm the appropriateness of the scales, but they also serve as a guide for future research on this topic. In the future, researchers can conduct further studies on this topic using a larger sample size and a more complex research design.

Ethics Approval and Consent to Participate

This study was reviewed and approved by the Research Ethics Committee of Universiti Malaysia Sabah. All procedures involving human participants complied with institutional ethical standards, and informed consent was obtained from all participants.

Acknowledgement

Thanks to all the preschool teachers who participated in this survey.

Funding

This study received no funding.

Conflict of Interest

The authors declare that there are no conflicts of interest.

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