

# A Validity and Reliability Study of the Development of a Teacher Attitude Scale towards Inclusive Education (TASI)

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## Abstract

*The idea of inclusive education is based on the premise that education is a basic human right. No student should be subjected to systematic exclusion practices based on a difference or exceptionality such as gender, disability, race, religion or ethnic subgroup, poverty, sexual orientation or non- citizenship (asylum seeker, refugee, migrant). Instead of an understanding of inclusion that is mostly perceived as removing legal and physical barriers to participation for people with disabilities and neglecting other groups with individual differences, there is a need for a more inclusive understanding that includes all learning differences and disabilities. No such valid and reliable measurement tool exists that reveals teacher attitudes. Therefore, the purpose of this study is to develop and validate the Teacher Attitudes Toward Inclusive Education Scale (TASI) to assess teacher attitudes towards inclusive education, aiming to contribute to research and the elimination of negative attitudes towards inclusive practices. The pilot form of the Teacher Attitudes Toward Inclusive Education Scale (TASI) consists of 68 Likert-type items. Independent reviewers verified the scale's content validity, and an exploratory factor analysis was used to determine the scale's construct validity. The scale's final form, which had six factors and 24 items, was produced after the exploratory factor analysis. In order to examine the fit of the structural model obtained as a result of exploratory factor analysis with the data, the final form was reapplied to 1017 teachers and confirmatory factor analysis was performed. It is expected that the developed scale would be used to assess teacher*

*attitudes in research on inclusive education and contribute to eliminating of negative attitudes. The TASI offers a valuable tool for researchers and practitioners to measure teacher attitudes, identify areas for professional development, and evaluate the impact of inclusive education initiatives. Future research may explore the scale's cross-cultural validity and its predictive relationship with teacher behavior and student outcomes.*

**Key words:** *attitudes towards inclusive education; inclusive education; measurement tool; systematic exclusion; teacher attitudes*

## Introduction

Inclusive education, grounded in the fundamental right to education for all, aims to create learning environments where every student, regardless of their background or individual differences, can thrive (UNESCO, 2009). However, despite widespread international support and policy directives promoting inclusive education, the realization of truly inclusive classrooms remains a significant challenge. An important factor affecting the success of inclusion lies in the attitudes of teachers, who play an important role in shaping the learning experiences of all students.

### *Measuring attitudes towards inclusive education*

Accurately measuring teacher attitudes towards inclusive education is essential for understanding current practices, identifying professional development needs, and evaluating the effectiveness of inclusion initiatives. Numerous instruments have been developed to assess these attitudes, including the Revised Scale of Emotions, Attitudes, and Concerns about Inclusive Education (SACIE-R) (Forlin, Earle, Loreman, & Sharma, 2011), Attitudes Toward Inclusive Education Scale (ATIES) (Wilczenski, 1995), School Principals' Attitudes Toward Inclusive Education PATIE (Bailey, 2004), Multidimensional Attitudes Towards Inclusive Education Scale (MATIES) (Mahat, 2008), Teachers' Attitudes Towards Inclusion Scale (TAIS) (Monsen, Ewing & Boyle, 2015), and Teacher Attitudes Towards Inclusion (TATIS-p) (Gregory & Noto, 2012). Ewing, Monsen, and Kielblock (2018) examined nine of these instruments, highlighting MATIES, SACIE-R, and TAIS for their strong psychometric properties. Existing instruments offer valuable insights into measuring attitudes toward inclusive education, but they also present certain limitations. A key issue is the conceptualization of inclusion. Many existing scales, including some adapted for Turkish use like the SACIE and SACIE-R (Cansız & Türker, 2011; Bayar et al., 2015), often focus primarily on students with disabilities, neglecting the broader spectrum of diversity encompassed by inclusive education. This limited perspective fails to capture the complexities of inclusive education, which aims to address the needs of all learners, including those marginalized due to factors such as gender, race, ethnicity, socioeconomic status, sexual orientation, or immigration status (Danforth & Naraian, 2015; Karim, 2023). Although Ewing et al. (2018) highlighted the strong psychometric properties of MATIES, SACIE-R, and TAIS, these scales primarily focus on disabilities and often overlook the broader dimensions of inclusive education, such as those related to social, cultural, and economic marginalization.

Inclusive education creates environments where no learner, regardless of their differences or challenges, faces systematic exclusion. These differences can include, but are not limited to, gender, disability, race, religion, ethnicity, socioeconomic status, sexual orientation, or immigration status. The goal of inclusion is to recognize and value diversity, ensuring that all learners have equal opportunities to learn and grow. The idea of inclusion argues that we should not view these distinctions in terms of superior-inferior, higher-than, or lower-than hierarchies. Age, physical characteristics, interests, personality traits, requirements, and many other factors make students different from one another. Students also vary in numerous aspects such as physical traits, behavior, interests, personalities, needs, and strengths and weaknesses (Danforth & Naraian, 2015). It's crucial, though, that these distinctions do not lead to inequality or any sort of hierarchical relationship between them, which is the main objective behind inclusive education (Karim, 2023). There exists a critical necessity to assess the construct of inclusive education along with educators' perspectives towards it, as this educational principle anticipates the establishment of suitable environments, policies, and practices that enable individuals with diverse educational requirements—stemming from their socio-cultural identities and other variances—to pursue education collectively, rather than constraining the evaluation of inclusion merely to individuals with special educational needs. To effectively implement inclusive education, it's essential to assess educators' attitudes towards inclusive practices. This study aims to develop and validate the Teacher Attitudes Toward Inclusive Education Scale (TASI) to measure teachers' attitudes towards a more nuanced understanding of inclusion.

Inclusive education envisions a transformation of schools and learning environments to better serve all children. This includes boys and girls, students from ethnic minorities, those affected by illness and endemics, homeless children, children with learning disabilities, and those affected by endemic diseases (Alborz, Slee & Miles, 2013). Inclusive education aims to increase the involvement and chances of success for all children and adults by creating schools that are sensitive to the diversity of students' backgrounds, interests, experiences (Kricke & Neubert, 2017). This approach to inclusion is referred to as the moral theory of inclusion (Hábl, 2019), as opposed to the understanding of inclusion as a better version of special education, i.e., only meeting the needs of students with disabilities, which has actually been more frequently seen in the literature for the last couple of decades. Due to its emphasis on concerns of human value and social engagement, the moral theory of inclusion is more inclusive in its very nature (Mwinjuma, 2019).

The inclusionary principle seeks to end all exclusionary practices and create a democratic society. Although legislation based on policy decisions mandate the inclusion of students with exceptionalities or those who are disadvantaged into the classroom, it is not enough to change a school's culture and thus the society's view of a disadvantaged group member being in the classroom. Turning the policy changes into real changes of behavior and understanding depends on the attitudes of teachers, who are the fundamental precondition for an inclusive classroom, school and society. Schools are an integral part of society, not merely places where children learn to integrate into it. They form the

bedrock of society, influencing and extending their impact beyond the classroom into the streets and workplaces (Shyman, 2015). Any teacher in an inclusive school should be aware that every student has unique requirements and that in order to meet those needs, various learning environments must be created. As a result, he or she must be honest and diligent while creating curricula, institutional structures, and instructional methods that are suitable for all students, especially for those who are disadvantaged or have exceptional qualities. The efficiency of an inclusive education policy depends largely on teachers' beliefs, which are reflected in their attitudes towards students with certain differences (Main, Chambers & Sarah, 2016).

United Nations Educational Scientific and Cultural Organization (UNESCO) has advocated for inclusive education, emphasizing that everyone should have equal access to fundamental education for further study or societal engagement. This includes people with disabilities and all other victims of prejudice. Despite this global definition of inclusion, regulations adopted in response to this demand still often prioritize the inclusion of those with disabilities in many nations (Armstrong & Barton, 2016). The debate in Türkiye largely centers on the conceptualization of special education as integration or mainstreaming, rather than a moral equality-based view of inclusion. Therefore, there is a need to measure the concept of inclusive education and teachers' attitudes towards it as an educational principle that envisages the provision of appropriate environments, policies and practices so that individuals with different educational needs due to their socio-cultural identities and any other differences can receive education together, rather than the measurement of the concept of inclusion solely based on individuals with special needs. To meet this need, the purpose of this research is to develop and validate the Teacher Attitudes Toward Inclusive Education Scale (TASI) to offer a dependable method for evaluating and understanding teacher attitudes towards an improved understanding of inclusive education, ultimately aiming to mitigate negative attitudes and support more inclusive educational practices for all types of learner differences.

This study aimed to develop and validate the Teacher Attitudes Toward Inclusive Education Scale (TASI), a new instrument designed to address the limitations of existing measures and assess teacher attitudes towards a more comprehensive understanding of inclusive education. The TASI is grounded in a contemporary understanding of inclusion, encompassing all learners regardless of their individual differences and educational needs. Specifically, this study sought to (1) develop a comprehensive measure of teacher attitudes towards inclusive education, (2) evaluate the psychometric properties of the TASI, and (3) examine the factor structure of the scale. The research question guiding this study was: Does the TASI provide a valid and reliable measure of teacher attitudes towards a broader, more equitable understanding of inclusive education, encompassing diverse learner needs beyond those traditionally associated with special education? The subsequent sections of this paper detail the development and validation process of the TASI, present the results of the psychometric analyses, and discuss the implications of the findings for research and practice.

## Methodology

### Study group

The study population includes preschool, primary, secondary, and high school teachers from both public and private schools. Participants were selected using a convenience sampling method, considering the importance of a representative sample (Erkuş, 2012).

After obtaining ethical approval, data were collected from two separate groups. The first data set for the exploratory factor analysis was collected online in Fall 2019, while the second data set for the confirmatory factor analysis was collected in Spring and Fall 2020. The exploratory factor analysis sample included teachers from 44 provinces and 31 disciplines, while the confirmatory factor analysis sample included teachers from 63 provinces and 43 disciplines.

The demographic information of the study groups for EFA and CFA is presented in Table 1. The sample for the exploratory factor analysis consisted of 492 teachers, 50.4% of whom were female. Regarding education levels, 69.7% held bachelor's degrees, 28.7% held master's degrees, and 1.6% held doctoral degrees. In terms of years of experience, 7.9% had less than 5 years, 20.7% had 5-10 years, 24.4% had 11-15 years, 23.8% had 16-20 years, 15.7% had 21-25 years, and 7.5% had 26 years or more. For the confirmatory factor analysis, data were collected from 1,163 volunteer teachers. The sample included 58% female teachers and 42% male teachers. Regarding years of experience, 7.7% had less than 5 years, 19.5% had 5-10 years, 26.9% had 11-15 years, 23.1% had 16-20 years, 15.2% had 21-25 years, and 7.6% had 26 years or more. In terms of education levels, 75.5% held bachelor's degrees, 23% held master's degrees, and 1.5% held doctoral degrees.

Table 1  
Demographic information of study groups for EFA and CFA

|                    | Study gorup 1 (for EFA) |      | Study gorup 2 (for CFA) |      |
|--------------------|-------------------------|------|-------------------------|------|
|                    | f                       | %    | f                       | %    |
| Gender             |                         |      |                         |      |
| Female             | 248                     | 50.4 | 675                     | 58.0 |
| Male               | 244                     | 49.6 | 488                     | 42.0 |
| Educational Status | f                       | %    | f                       | %    |
| Bachelor's degree  | 343                     | 69.7 | 878                     | 75.5 |
| Master's degree    | 141                     | 28.7 | 268                     | 23.0 |
| Doctoral degree    | 8                       | 1.6  | 17                      | 1.5  |
| Seniority          | f                       | %    | f                       | %    |
| Less than 5        | 39                      | 7.9  | 89                      | 7.7  |
| 5-10 year          | 102                     | 20.7 | 227                     | 19.5 |
| 11-15 year         | 120                     | 24.4 | 313                     | 26.9 |
| 16-20 year         | 117                     | 23.8 | 269                     | 23.1 |
| 21-25 year         | 77                      | 15.7 | 177                     | 15.2 |
| 26+                | 37                      | 7.5  | 88                      | 7.6  |

### **Scale development process**

The relevant literature (Bailey, 2004; Forlin et al., 2011; Mahat, 2008; Monsen et al., 2015; Wilczenski, 1995 et al.) to identify the dimensions of the Teacher Attitudes Toward Inclusive Education Scale (TASI) was reviewed. The scale items were developed to cover the cognitive, affective, and behavioral dimensions of attitude. Expert review was conducted to assess content validity and identify potential issues in the pilot form. The experts consisted of five academicians holding doctorates in the fields of educational measurement and evaluation, curriculum and instruction, and educational administration and planning. Following the expert review, problematic items were revised or removed, and some items were reassigned to different dimensions. The final pilot form of TASI consists of 68 items (33 negative and 35 positive) on a 6-point Likert scale (strongly agree, agree, partially agree, partially disagree, disagree, and strongly disagree), with negative items reverse-scored. The lowest possible score on the scale is 68, while the highest is 408. A higher score reflects a more positive attitude toward inclusive education.

### **Data analysis**

In the first stage of the study, exploratory factor analysis (EFA) was conducted using IBM SPSS Statistics (Version 26) and R 4.2.2 (R Core Team, 2023) to reveal the structure of the TASI. Before EFA, negative items were reverse-scored and the data were examined for missing values, outliers, normality, multicollinearity, problematic items and suitability for factor analysis. No missing data were detected in the online administration. Univariate outlier analysis was conducted using z-scores, excluding cases with z-scores exceeding  $\pm 4$  (Çokluk, Şekerciođlu, & Büyüköztürk, 2010). Multivariate outlier analysis was performed according to Mahalanobis distance. The item-total test score was examined, and items with a correlation below 0.20 were excluded from the analysis. The assumption of multivariate normality was assessed using Mardia's (1970) kurtosis and skewness coefficients. Additionally, the assumption of multicollinearity was evaluated using the variance inflation factor (VIF) and tolerance values. According to Tabachnick and Fidell (2019), the Variance Inflation Factor (VIF) should be less than 10 and the tolerance value (TV) should be greater than 0.10. Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were taken into consideration to determine whether the data were appropriate for factor analysis.

The principal axis factoring technique, robust to violations of multivariate normality (Costello & Osborne, 2005), was used for factor extraction. To determine the scale structure, items with a common variance greater than 0.40 and a factor loading greater than 0.32 were retained. Following Tabachnick and Fidell (2019), an oblique rotation (direct oblimin) was used due to the high correlation between factors. The number of factors was determined using the Kaiser-Guttman criterion, scree plot, explained variance ratio, and parallel analysis (Horn, 1965).

In the second stage of the study, confirmatory factor analysis (CFA) was conducted using R 4.2.2 software to test the fit of the structural model consisting of six factors and 24 items. Outliers were identified and removed from the CFA data. In addition, Mardia's

kurtosis and skewness coefficient and multivariate normality assumption were tested on the CFA data using the “MVN” package (Korkmaz et al., 2014). Due to the fact that the data was in the ordinal scale and did not meet the multivariate normality assumption, Robust Maximum Likelihood estimation method was used in the estimation of factor loadings and standard errors in CFA. In CFA analyses, “lavaan 0.6-12” (Rosseel, 2012) and “semPlot 1.1.6” (Epskamp, 2022) packages were used to obtain the path diagram. Model fit was assessed using Root Mean Square Coefficient of Error Convergence (RMSEA), Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Goodness of Fit Index (GFI).

Cronbach’s  $\alpha$  and McDonald’s  $\omega$  coefficients were calculated to assess the reliability of each sub-dimension. For the entire scale, stratified alpha using sirt package (Robitzsch, 2024), Cronbach’s  $\alpha$ , and Spearman-Brown’s split-half reliability coefficients were calculated. Additionally, composite reliability (CR) and Average Variance Extracted (AVE) values were calculated to assess internal consistency and convergent validity, utilizing the *lavaan* and *semPlot* packages in R. The factorial structures of the model were examined for measurement invariance across genders using multi-group confirmatory factor analysis. The significance of the difference in the chi-square and differences in the goodness of fit indices ( $\Delta$ CFI and  $\Delta$ RMSEA) were used as criteria for the comparison of models.  $\Delta$ CFI  $\leq$  0.010 and  $\Delta$ RMSEA  $\leq$  0.015 have been established as cutoff values (Chen, 2007). Measurement invariance was examined sequentially based on the fit indices obtained from configural, metric, scalar, and strict invariance.

Due to the COVID-19 pandemic, the research was conducted online, and further validation of the scale is recommended with larger data groups and confirmatory factor analysis.

## Results

### *Exploratory factor analysis*

As a result of the outlier analysis, a total of 131 observations were removed from the analysis and the study was conducted on 361 participants. Thirty-three items with poor item-test correlation (below 0.20) were excluded from the analysis. The mean of the item-total score correlation is 0.495 which shows the Mardia’s (1970) kurtosis and skewness coefficients were examined for the multivariate normality assumption and it was determined that the multivariate normality assumption ( $p < 0.05$ ) was not met. Since the variance inflation factor (VIF) varies between 1.25-2.33 and the tolerance value varies between 0.43-0.8, it can be said that there is no multicollinearity problem (VIF  $< 10$  and TV  $> 0.10$ ). KMO (0.87) value showed that the correlation matrix was suitable for factorization, Bartlett’s Sphericity test ( $= 4236,363$ ;  $p < 0.05$ ) showed that the correlation matrix was significantly different from the unit matrix and the data had a structure suitable for factor analysis.

In EFA, the number of factors was investigated by using Kaiser-Guttman, scree plot, explained variance ratio and parallel analysis methods. In the factor rotation, 2 items

that did not load on any factor and 4 items that loaded on more than one factor were removed from the analysis respectively. Then, factor analysis of the 35-item trial form showed that there were 24 items with eigenvalues above 1. Although the scree plot in Figure 1 indicates that the structure of the scale has 3 factors, it was observed that the variance ratio explained in the 3-factor structure was low (34.96%). Parallel analyses performed with the help of “*psych*” package in R (Revelle, 2023) showed that a 6-factor structure was appropriate for the data. In the factor analysis of 24 items, the KMO value was found to be at a good level (0.875) and Bartlett’s test of sphericity was found to be significant ( $=411.714, p<0.05$ ).

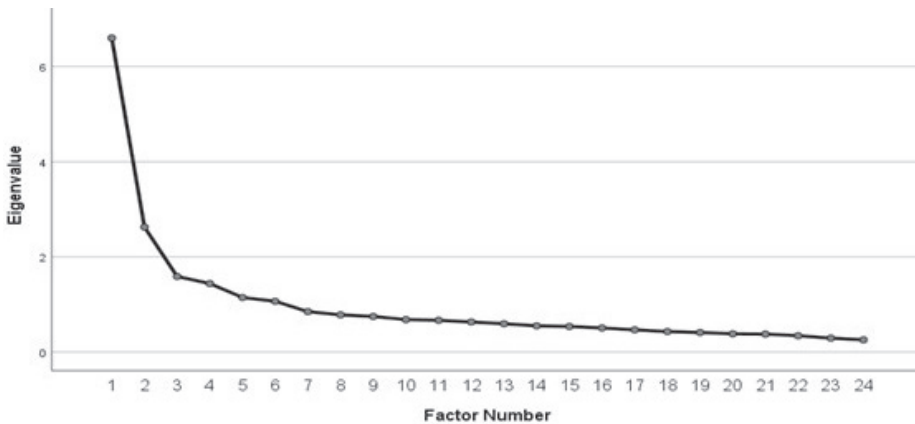


Figure 1. Scree plot

The post-rotation factor structure of the final form of TASI, which consists of 24 items and 6 factors, is presented in Table 2, along with item statistics in Table 3. The six factors explain 60.29% of teachers’ attitudes towards inclusive education. Bandalos and Finney (2019) stated that there should be at least three items for each factor, and at least two items per factor if the factors are related. The fourth factor, consisting of 2 items, explains an important aspect of teachers’ attitudes, and since there is a relationship between the factors, it was included in the scale. The common variances of the six factors ranged between 0.436 and 0.801, and item-scale correlation coefficients ranged between 0.375 and 0.615, which are sufficient to reveal item discrimination (Table 3). The average correlation value of 0.499 indicates a strong internal consistency among the items, as it is close to the threshold of 0.50, which Cohen (1988) considers a high level of correlation. This supports the suitability of the data for factor analysis, as all the individual correlation values exceed the commonly accepted threshold of 0.30 (Tabachnick & Fidell, 2013).

Table 2  
 Teacher Attitudes Toward Inclusive Education Scale (TASI)

| Item Nr. | Items   | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 |
|----------|---|----------|----------|----------|----------|----------|----------|
| 1        | I enjoy participating in professional development activities related to inclusive education.                            | 0.536    |          |          |          |          |          |
| 8        | I can benefit from the experiences of more experienced teachers about students with exceptionalities.                   | 0.531    |          |          |          |          |          |
| 22       | I try to communicate with students whose second language is Turkish.  | 0.486    |          |          |          |          |          |
| 7        | I strive for an education that meets the needs of all children at the same time.  | 0.436    |          |          |          |          |          |
| 4        | It is possible to ensure the participation of students with exceptionalities in classroom activities.                   | 0.427    |          |          |          |          |          |
| 15       | It does not bother me if my child befriends students with exceptionalities.   |          | -0.855   |          |          |          |          |
| 3        | It does not bother me if my child receives education together with students with exceptionalities.                      |          | -0.784   |          |          |          |          |
| 9        | Having students with disabilities in my class does not bother me.   |          | -0.570   |          |          |          |          |
| 24       | Having students with different beliefs in my class does not bother me.  |          | -0.566   |          |          |          |          |
| 11       | If a student with autism spectrum disorder comes to my child's school I would like to take my child out of that school. |          |          | 0.694    |          |          |          |
| 5        | I would not want to have a student whose parents are paper collectors.  |          |          | 0.654    |          |          |          |
| 20       | I direct male students to science and female students to social sciences.   |          |          | 0.594    |          |          |          |
| 16       | If a student with a disability came to my child's class. I would want to change my child's class.                       |          |          | 0.524    |          |          |          |
| 6        | All students in my class can freely express their needs and concerns.   |          |          |          | 0.764    |          |          |
| 12       | Students in my class can freely express their feelings and thoughts on every subject.                                   |          |          |          | 0.705    |          |          |
| 14       | Children whose mother tongue is not Turkish should be educated in other classes.  |          |          |          |          | 0.768    |          |

| Item Nr.                  | Items   | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 |
|---------------------------|---|----------|----------|----------|----------|----------|----------|
| 21                        | Students whose mother tongue is not Turkish decrease classroom success.                           |          |          |          |          | 0.663    |          |
| 10                        | It worries me that my student's mother tongue is not Turkish.                                     |          |          |          |          | 0.626    |          |
| 17                        | It is difficult to communicate with students with exceptionalities.                               |          |          |          |          |          | 0.739    |
| 18                        | I worry that my students have different characteristics.  |          |          |          |          |          | 0.634    |
| 19                        | I worry that my stress will increase when I have exceptional students in my class.                |          |          |          |          |          | 0.555    |
| 13                        | I doubt that I can effectively teach the whole class in classrooms with exceptional students.     |          |          |          |          |          | 0.473    |
| 23                        | Students with exceptional qualities have low social skills.                                       |          |          |          |          |          | 0.450    |
| 2                         | I worry that my workload will increase when there are students with exceptionalities in my class. |          |          |          |          |          | 0.419    |
| <b>Eigenvalue</b>         |   | 6.60     | 2.628    | 1.589    | 1.440    | 1.147    | 1.068    |
| <b>Variance explained</b> |   | 27.498   | 10.949   | 6.620    | 5.999    | 4.780    | 4.450    |

Table 3  
Item stats for TASI.

| Item Number | p     | sd    | Corrected Item-Total Cor. | Cronbach's Alpha if Item Deleted |
|-------------|-------|-------|---------------------------|----------------------------------|
| 1           | 4.918 | 1.049 | 0.375                     | 0.877                            |
| 2           | 4.148 | 1.422 | 0.572                     | 0.873                            |
| 3           | 5.533 | 0.604 | 0.462                     | 0.875                            |
| 4           | 5.286 | 0.850 | 0.561                     | 0.874                            |
| 5           | 5.679 | 0.539 | 0.446                     | 0.872                            |
| 6           | 5.599 | 0.597 | 0.505                     | 0.874                            |
| 7           | 5.157 | 0.720 | 0.455                     | 0.871                            |
| 8           | 5.511 | 0.543 | 0.512                     | 0.870                            |
| 9           | 5.456 | 0.613 | 0.615                     | 0.875                            |
| 10          | 3.767 | 1.482 | 0.540                     | 0.873                            |
| 11          | 5.571 | 0.573 | 0.516                     | 0.875                            |
| 12          | 5.824 | 0.381 | 0.437                     | 0.875                            |
| 13          | 5.574 | 0.568 | 0.534                     | 0.872                            |
| 14          | 4.050 | 1.263 | 0.544                     | 0.873                            |
| 15          | 4.162 | 1.372 | 0.572                     | 0.872                            |

| Item Number | p     | sd    | Corrected Item-Total Cor. | Cronbach's Alpha if Item Deleted |
|-------------|-------|-------|---------------------------|----------------------------------|
| 16          | 4.316 | 1.252 | 0.536                     | 0.872                            |
| 17          | 5.714 | 0.464 | 0.430                     | 0.871                            |
| 18          | 3.984 | 1.138 | 0.477                     | 0.874                            |
| 19          | 4.687 | 1.245 | 0.445                     | 0.873                            |
| 20          | 4.195 | 1.237 | 0.567                     | 0.872                            |
| 21          | 5.841 | 0.367 | 0.377                     | 0.871                            |
| 22          | 5.165 | 0.700 | 0.553                     | 0.872                            |
| 23          | 5.250 | 0.585 | 0.526                     | 0.872                            |
| 24          | 4.635 | 1.172 | 0.423                     | 0.872                            |

Table 4 presents descriptive item statistics for the sub-factors of the scale. The six factors were analyzed and labeled as follows: “open attitude to learning”; “openness to differences”; “exclusionary attitude”; “free/without reservation classroom environment”; “mother tongue barrier”; and “competence anxiety”.

Table 4  
Descriptive statistics on sub-dimensions of TASI.

| Factors                                      | N of Items | $\bar{X}$ | Var   | sd   | Min   | Max   |
|--|------------|-----------|-------|------|-------|-------|
| Open attitude to learning                    | 5          | 26.00     | 5.82  | 2.41 | 18.00 | 30.00 |
| Openness to differences                      | 4          | 21.95     | 4.00  | 2.00 | 16.00 | 24.00 |
| Exclusionary attitude                        | 4          | 22.95     | 1.87  | 1.36 | 18.00 | 24.00 |
| Free/ reservation-free classroom environment | 2          | 11.17     | 1.10  | 1.05 | 8.00  | 12.00 |
| Mother tongue barrier                        | 3          | 12.24     | 11.35 | 3.37 | 3.00  | 18.00 |
| Competence anxiety                           | 6          | 25.69     | 26.21 | 5.11 | 7.00  | 36.00 |

The internal consistency of the sub-factors of the scale was assessed using McDonald's and Cronbach's reliability coefficient. Given that the scale is multidimensional, McDonald's hierarchical coefficient and stratified coefficients were calculated to determine the overall reliability of the scale. Additionally, Cronbach's and Spearman-Brown split-half reliability coefficients were computed. The obtained reliability coefficients are presented in Table 5.

According to Table 5, the McDonald hierarchical omega coefficient, stratified alpha, and Spearman-Brown Split Half reliability coefficient are considered high for scale. The reliability of the sub-factors of the scale was examined by calculating McDonald's and Cronbach's reliability coefficients. The sub-factors' reliability coefficients fall within acceptable limits with values above the threshold of 0.70, as suggested by Nunnally and Bernstein (1994). Cohen and Swerdlik (2018) consider reliability coefficients below 0.65 to be unacceptable. It can be concluded that the reliability coefficients for the entire scale are high whereas the reliability coefficients for the sub-factors fall within acceptable limits. Composite reliability (CR) is an indicator of the shared variance among the

observed variables that serve as indicators of a latent construct (Fornell and Larcker, 1981). Average Variance Extracted (AVE) is the total variance of the items loaded under the same factor (Hair, et al., 2019). The internal consistency and convergent validity were assessed by examining the AVE and CR values. The CR value greater than 0.7 and the AVE value greater than 0.50 indicate that convergent validity is achieved (Hair et al., 2019). For the model, the CR value was found to be 0.944 and the AVE value was 0.581. Therefore it could be said that convergent validity was achieved.

Table 5  
Internal consistency measures of TASI

|   | Stratified<br>$\alpha$ | Spearman-Brown<br>Split Half | $\alpha$ | McDonald's<br>$\omega$ |
|---|------------------------|------------------------------|----------|------------------------|
| Open attitude to learning                       |                        |                              | 0.703    | 0.70                   |
| Openness to differences                         |                        |                              | 0.823    | 0.67                   |
| Exclusionary attitude                           |                        |                              | 0.749    | 0.76                   |
| Free/ reservation-free<br>classroom environment |                        |                              | 0.804    | 0.66                   |
| Mother tongue barrier                           |                        |                              | 0.752    | 0.77                   |
| Competence anxiety                              |                        |                              | 0.790    | 0.73                   |
| Total   | 0.894                  | 0.888                        | 0.852    | 0.90                   |

### Confirmatory factor analysis

Confirmatory factor analysis was performed to assess how well the structural model produced by EFA fit the data. The assumptions were tested before performing CFA. As a result of the outlier analysis, 146 observations were excluded from the analysis and the analysis was performed on 1017 observations. No missing data was found as a result of the analysis. Mardia's (1970) kurtosis and skewness coefficients were used to test the multivariate normality assumption and the results showed that multivariate normality was not obtained ( $p < 0.05$ ). Since the normality assumption was not met, Robust Maximum Likelihood method was used as the estimation method (Aybek, 2022). After the analysis,  $\chi^2=782.727$  and  $df=237$ . When the goodness of fit indices after CFA were examined, RMSEA (90% CI) =0.048 (0.044-0.051); SRMR=0.041; CFI=0.928; GFI=0.939 and TLI=0.916 were obtained. Tabachnick and Fidell (2019) suggested reporting RMSEA and CFI with confidence intervals when the sample size is large. Acceptable model-data fit was determined by using RMSEA less than 0.06., SRMR less than 0.08 (Tabachnick & Fidell, 2019). CFI, TLI, and GFI (Hair et al., 2019) values are greater than 0.90 (Table 6).

Table 6  
Fit indices obtained for the model.

| Modification Status | df      | RMSEA | SRMR  | CFI   | GFI   | TLI   |       |
|---------------------|---------|-------|-------|-------|-------|-------|-------|
| Before Modification | 782.727 | 237   | 0.048 | 0.041 | 0.928 | 0.939 | 0.916 |
| After Modification  | 749.941 | 236   | 0.046 | 0.040 | 0.932 | 0.942 | 0.920 |

As a result of CFA, modification indices were examined and the error variances of these items were correlated by modifying items 4, 16, 3, and 20. which had high chi-square decrease, were under the same factor and had similar meanings. After CFA with modification,  $\chi^2=749.941$  and  $df=236$ . When the goodness of fit indices was examined, RMSEA (90% CI) =0.046 (0.042-0.050); SRMR=0.040; CFI=0.932; GFI=0.942 and TLI=0.920 values were obtained (Table 6). These values indicate that the model's model-data fit is satisfactory.

Figure 2 shows the path diagram for the tested model together with standardized estimates of factor loadings, error variances, and covariances. The standardized factor loadings range between 0.422 and 0.820. as shown in Figure 2.

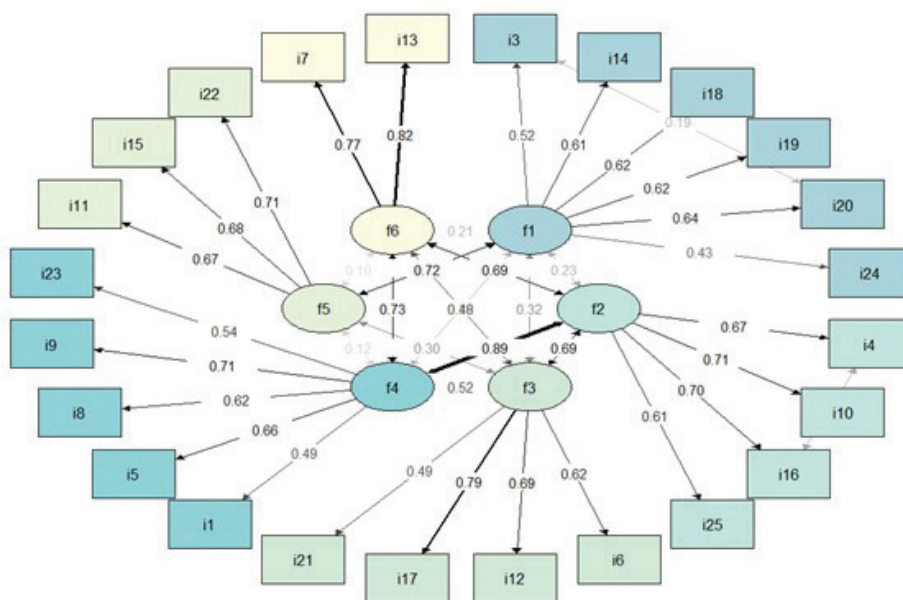


Figure 2. Path diagram obtained from confirmatory factor analysis (standard coefficients)

### Measurement invariance

In the examination of measurement invariance according to gender, the fit indices obtained for configural, metric, scalar, and strict invariance are presented in Table 7.

When Table 7 is examined, the fit indices obtained for configural invariance are within the acceptable range ( $X^2/df = 2.14$ . RMSEA = 0.047. CFI = 0.930. TLI = 0.918. SRMR = 0.040). According to the results obtained, the measurement model is validated for male and female teachers.

In the next stage, metric invariance was tested. When the results obtained for this stage are analyzed, it is seen that the fit indices are within the acceptable range similar to the previous step ( $X^2/df = 2.11$ . RMSEA = 0.047. CFI = 0.929. TLI = 0.920. SRMR = 0.046). In addition to the fit indices, the chi-square difference value obtained for the

Table 7  
Results of measurement invariance obtained by gender.

|                       | $\chi^2$ | df  | $\chi^2/df$ | CFI   | TLI   | SRMR  | RMSEA | RMSEA | CFI   | p     |
|-----------------------|----------|-----|-------------|-------|-------|-------|-------|-------|-------|-------|
| Configural Invariance | 1004.68  | 470 | 2.14        | 0.930 | 0.918 | 0.040 | 0.047 | NA    | NA    | NA    |
| Metric Invariance     | 1031.29  | 488 | 2.11        | 0.929 | 0.920 | 0.046 | 0.047 | 0.001 | 0.001 | 0.087 |
| Scalar Invariance     | 1115.98  | 506 | 2.21        | 0.920 | 0.913 | 0.048 | 0.049 | 0.002 | 0.009 | 0.000 |
| Strict Invariance     | 1181.88  | 530 | 2.23        | 0.915 | 0.911 | 0.049 | 0.049 | 0.000 | 0.005 | 0.000 |

comparison of the configural model and the metric model is not statistically significant ( $p > 0.05$ );  $\Delta CFI$  value is within  $\pm 0.01$ . and  $\Delta RMSEA$  value is within  $\pm 0.015$ . At this stage, it can be interpreted that metric invariance is accepted. As a result of the acceptance of metric invariance, scalar invariance was tested in the next step. When the results obtained for this stage are examined, it is seen that the fit indices are within the acceptable range similar to the previous step ( $X^2 / df = 2.21$ .  $RMSEA = 0.049$ .  $CFI = 0.920$ .  $TLI = 0.913$ .  $SRMR = 0.048$ ). However, the chi-square difference value obtained is statistically significant ( $p < 0.05$ );  $\Delta CFI$  value is within  $\pm 0.01$ . and  $\Delta RMSEA$  value is within  $\pm 0.015$ . Although the chi-square test is the most frequently used method for comparing the baseline model and the restricted model created in the measurement invariance steps, it is recommended to use the  $\Delta CFI$  and  $\Delta RMSEA$  (Chen, 2007; Cheung & Rensvold, 2002) due to the chi-square test's sensitivity to sample size (Chen, 2007). According to this result, the scalar invariance stage is also accepted. In the last stage, strict invariance was tested. It is seen that the fit indices are within the acceptable range ( $X^2 / df = 2.23$ .  $RMSEA = 0.049$ .  $CFI = 0.915$ .  $TLI = 0.911$ .  $SRMR = 0.049$ ). Although the chi-square difference value obtained is statistically significant ( $p < 0.05$ ),  $\Delta CFI$  and  $\Delta RMSEA$  values are acceptable range ( $\Delta CFI=0.005$ ;  $\Delta RMSEA=0.009$ ). Therefore, the strict invariance is accepted. As a result, measurement invariance is provided up to the strict invariance stage in the model where gender is included.

As a result of the study a 6-factor and 24-item scale consisting of "open attitude to learning", "openness to diversity", "exclusionary attitude", "free/unreserved classroom environment", "mother tongue barrier" and "competence anxiety" was developed. The "open attitude to learning" sub-factor consists of 5 items. The "openness to diversity" factor consists of 4 items. The "exclusionary attitude" factor consists of 4 items. The "free/unreserved classroom environment" sub-factor consists of 2 items. The "mother tongue barrier" sub-factor consists of 3 items and the "competence anxiety" sub-factor consists of 6 items. In the scale 11 items contain positive and 13 items contain negative statements. The minimum score that can be obtained from the scale is 24 and the maximum score is 144. A high score on the scale indicates a high attitude towards inclusive education.

## **Discussion**

In the 21st century, education policies and practices have adopted an individual-oriented perspective to ensure inclusive education for all learners, including those with disabilities and marginalized groups. While inclusive education emphasizes the right of all children to receive education under similar conditions, various factors influence its implementation. One crucial factor is teachers' attitudes, as negative attitudes can hinder inclusive practices.

Scale adaptation is a challenging process due to cultural differences. A test with strong psychometric properties may not maintain the same properties when adapted, or too many items may need to be changed, making the development of a new culture-specific measurement tool preferable to an adaptation study (Akbaş & Korkmaz, 2007). Despite numerous scale adaptation studies on teachers' attitudes towards inclusive education, these scales often limit their focus to students with special educational needs. A culturally sensitive, local scale is needed to examine attitudes towards a broader, moral equality-based understanding of inclusive education. This research differs from studies like MATIES, SACIE-R, and TAIS by considering the attitudes of teachers towards inclusive practices for not only special education students but also other disadvantaged students who are excluded for various reasons, such as physical, cultural, or socioeconomic factors.

This study directly addressed the need for a comprehensive and culturally sensitive instrument to measure teacher attitudes towards inclusive education by developing and validating the Teacher Attitudes Scale towards Inclusive Education (TASI). The TASI, with its six factors (openness to learning, acceptance of diversity, exclusionary attitudes, classroom environment, language barriers, and proficiency concerns) and 24 items, offers a nuanced assessment of teacher attitudes, going beyond the traditional focus on special educational needs to encompass a broader understanding of inclusion. Specifically, this research sought to (1) develop a comprehensive measure of teacher attitudes towards inclusive education, (2) evaluate the psychometric properties of the TASI, and (3) examine the factor structure of the scale. The results of the psychometric analyses, detailed in the previous sections, demonstrate that the TASI possesses sound psychometric properties, including strong evidence of validity and reliability. The confirmatory factor analysis confirmed the hypothesized six-factor structure, indicating that the TASI effectively captures the multifaceted nature of teacher attitudes toward inclusive education.

This study has several limitations. First, the online data collection method due to the COVID-19 pandemic may have excluded certain groups of teachers, potentially limiting the generalizability of the findings. Second, the criterion validity of the study was not assessed, and further research is needed to establish the construct validity of the scale. Third, while the study sample included teachers from various provinces and disciplines, further validation with larger and more diverse samples is necessary to enhance the reliability and applicability of the results. Lastly, the reliance on self-reported attitudes may have introduced response biases, and cultural nuances could have influenced participants' interpretations of the scale items. Addressing these limitations in future

research would provide a more comprehensive understanding of teachers' attitudes toward inclusive education.

## Conclusion

This study successfully developed and validated the TASI, a new instrument that addresses the limitations of existing measures by offering a more comprehensive and culturally sensitive assessment of teacher attitudes toward inclusive education. The TASI contributes to the field by providing researchers and practitioners with a valuable tool to measure teacher attitudes, identify areas for professional development, and evaluate the impact of inclusive education initiatives. While limitations exist, this study provides a significant step towards understanding and promoting positive teacher attitudes, ultimately fostering more inclusive learning environments for all students.

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# Studija valjanosti i pouzdanosti razvoja skale stavova učitelja prema inkluzivnom obrazovanju (TASI)

## Sažetak

Ideja inkluzivnoga obrazovanja temelji se na pretpostavci da je obrazovanje osnovno ljudsko pravo. Nijedan učenik ne bi trebao biti podvrgnut sustavnim praksama isključivanja na temelju razlika ili iznimnosti kao što su spol, invaliditet, rasa, religija ili etnička podskupina, siromaštvo, seksualna orijentacija ili nedostatak državljanstva (tražitelj azila, izbjeglica, migrant). Umjesto razumijevanja inkluzije koje se uglavnom percipira kao uklanjanje pravnih i fizičkih prepreka za sudjelovanje osoba s invaliditetom i zanemarivanje drugih skupina s individualnim razlikama, postoji potreba za inkluzivnijim razumijevanjem koje uključuje sve razlike u učenju i invaliditete. Ne postoji valjan i pouzdan mjerni instrument koji otkriva stavove učitelja. Stoga je svrha ovoga istraživanja razviti i validirati Skalu stavova učitelja prema inkluzivnom obrazovanju (TASI) kako bi se procijenili stavovi učitelja prema inkluzivnom obrazovanju, s ciljem doprinosa istraživanju i eliminaciji negativnih stavova prema inkluzivnim praksama. Pokusni oblik Skale stavova učitelja prema inkluzivnom obrazovanju (TASI) sastoji se od 68 čestica Likertova tipa. Neovisni recenzenti potvrdili su valjanost sadržaja ljestvice, a eksploratorna faktorska analiza korištena je za određivanje konstruktne valjanosti ljestvice. Konačni oblik ljestvice, koji se sastoji od šest faktora i 24 čestice, proizveden je nakon eksploratorne faktorske analize. Kako bi se ispitalo stupanj podudarnosti strukturnoga modela dobivenoga eksploratornom faktorskom analizom s podacima, konačni oblik ponovno je primijenjen na 1017 učitelja te je provedena potvrdna faktorska analiza. Očekuje se da će razvijena ljestvica biti korištena za procjenu stavova učitelja u istraživanjima o inkluzivnom obrazovanju i doprinijeti eliminaciji negativnih stavova. TASI nudi vrijedan alat istraživačima i praktičarima za mjerenje stavova učitelja, identificiranje područja za profesionalni razvoj i evaluaciju utjecaja inkluzivnih obrazovnih inicijativa. Buduća istraživanja mogu ispitati međukulturalnu valjanost ljestvice i njezin prediktivni odnos s ponašanjem učitelja i ishodima učenika.

**Ključne riječi:** inkluzivno obrazovanje; mjerni instrument; stavovi učitelja; stavovi prema inkluzivnom obrazovanju; sustavno isključivanje

## Uvod

Inkluzivno obrazovanje, utemeljeno na temeljnome pravu na obrazovanje za sve, nastoji stvoriti okružja za učenje u kojima svaki učenik, bez obzira na svoje porijeklo ili individualne razlike, može napredovati (UNESCO, 2009). Međutim, unatoč širokoj međunarodnoj podršci i političkim smjernicama kojima se promiče inkluzivno obrazovanje, ostvarivanje doista inkluzivnih učionica i dalje predstavlja značajan izazov. Važan čimbenik koji utječe na uspjeh inkluzije su stavovi učitelja, koji imaju ključnu ulogu u oblikovanju iskustava učenja svih učenika.

### ***Mjerenje stavova prema inkluzivnom obrazovanju***

Točno mjerenje stavova učitelja prema inkluzivnom obrazovanju ključno je za razumijevanje trenutačnih praksi, identificiranje potreba za stručnim usavršavanjem i procjenu učinkovitosti inkluzivnih inicijativa. Razvijeni su brojni instrumenti za procjenu ovih stavova, uključujući revidiranu ljestvicu emocija, stavova i zabrinutosti u vezi s inkluzivnim obrazovanjem (SACIE-R) (Forlin, Earle, Loreman i Sharma, 2011), ljestvicu stavova prema inkluzivnom obrazovanju (ATIES) (Wilczenski, 1995), ljestvicu stavova ravnatelja škola prema inkluzivnom obrazovanju (PATI E) (Bailey, 2004), multidimenzionalnu ljestvicu stavova prema inkluzivnom obrazovanju (MATIES) (Mahat, 2008), ljestvicu stavova učitelja prema inkluziji (TAIS) (Monsen, Ewing i Boyle, 2015) i ljestvicu stavova učitelja prema inkluziji (TATIS-p) (Gregory i Noto, 2012). Ewing, Monsen i Kielblock (2018) ispitali su devet od ovih instrumenata, ističući MATIES, SACIE-R i TAIS zbog njihovih snažnih psihometrijskih svojstava. Postojeći instrumenti nude vrijedne uvide u mjerenje stavova prema inkluzivnom obrazovanju, ali također imaju određena ograničenja. Ključno pitanje odnosi se na konceptualizaciju inkluzije. Mnoge postojeće ljestvice, uključujući neke prilagođene za uporabu u Turskoj, poput SACIE i SACIE-R (Cansız i Türker, 2011; Bayar i sur., 2015), često se prvenstveno usredotočuju na učenike s invaliditetom, zanemarujući širi spektar različitosti obuhvaćenih inkluzivnim obrazovanjem. Ova ograničena perspektiva ne uspijeva obuhvatiti složenost inkluzivnoga obrazovanja koje nastoji odgovoriti na potrebe svih učenika, uključujući onih marginaliziranih zbog čimbenika kao što su spol, rasa, etnička pripadnost, socioekonomski status, seksualna orijentacija ili imigrantski status (Danforth i Naraian, 2015; Karim, 2023). Iako su Ewing i sur. (2018) istaknuli snažna psihometrijska svojstva MATIES-a, SACIE-R-a i TAIS-a, ove ljestvice prvenstveno se usredotočuju na invaliditet i često zanemaruju šire dimenzije inkluzivnoga obrazovanja, poput onih povezanih sa socijalnom, kulturnom i ekonomskom marginalizacijom.

Inkluzivno obrazovanje stvara okružja u kojima nijedan učenik, bez obzira na svoje razlike ili izazove, ne doživljava sustavno isključivanje. Te razlike mogu uključivati, ali nisu ograničene na spol, invaliditet, rasu, religiju, etničku pripadnost, socioekonomski status, seksualnu orijentaciju ili imigrantski status. Cilj inkluzije jest prepoznati i vrednovati različitost, osiguravajući da svi učenici imaju jednake prilike za učenje i razvoj. Ideja inkluzije naglašava da ove razlike ne bismo trebali promatrati kroz hijerarhije superiornosti

i inferiornosti, višega ili nižega ranga. Dob, fizičke karakteristike, interesi, osobine ličnosti, potrebe i mnogi drugi čimbenici čine učenike različitima jedne od drugih. Učenici se također razlikuju u brojnim aspektima, poput fizičkih karakteristika, ponašanja, interesa, osobnosti, potreba te snaga i slabosti (Danforth i Naraian, 2015). Međutim, ključno je da te razlike ne dovode do nejednakosti ili bilo kakvoga hijerarhijskog odnosa među njima, što je osnovni cilj inkluzivnoga obrazovanja (Karim, 2023). Postoji kritična potreba za procjenom konstrukta inkluzivnoga obrazovanja, kao i stavova odgojno-obrazovnih djelatnika prema njemu jer ovaj obrazovni princip predviđa uspostavu prikladnih okružja, politika i praksi koje omogućuju pojedincima s različitim obrazovnim potrebama—proizašlim iz njihovih sociokulturnih identiteta i drugih varijacija—da se obrazuju zajedno, umjesto da se procjena inkluzije ograniči isključivo na pojedince s posebnim obrazovnim potrebama. Za učinkovitu provedbu inkluzivnoga obrazovanja nužno je procijeniti stavove odgojno-obrazovnih djelatnika prema inkluzivnim praksama. Cilj ovoga istraživanja jest razviti i validirati Skalu stavova učitelja prema inkluzivnom obrazovanju (TASI) kako bi se izmjerili stavovi učitelja prema dubljem razumijevanju inkluzije.

Inkluzivno obrazovanje zamišlja transformaciju škola i okružja za učenje kako bi bolje služilo svoj djeci. To uključuje dječake i djevojčice, učenike iz etničkih manjina, one pogođene bolestima i endemijama, djecu bez doma, djecu s teškoćama u učenju i one pogođene endemskim bolestima (Alborz, Slee i Miles, 2013). Cilj inkluzivnoga obrazovanja jest povećati uključenost i šanse za uspjeh sve djece i odraslih stvaranjem škola koje su osjetljive na raznolikost podrijetla, interesa i iskustava učenika (Kricke i Neubert, 2017). Ovaj pristup inkluziji naziva se moralnom teorijom inkluzije (Hábl, 2019), za razliku od shvaćanja inkluzije kao poboljšane verzije posebnoga obrazovanja, tj. isključivo zadovoljavanja potreba učenika s invaliditetom, što je zapravo bilo češće prisutno u literaturi tijekom posljednjih nekoliko desetljeća. Zbog naglaska na pitanjima ljudske vrijednosti i društvene uključenosti, moralna teorija inkluzije sama po sebi je inkluzivnija (Mwinjuma, 2019).

Inkluzivno načelo nastoji okončati sve isključujuće prakse i stvoriti demokratsko društvo. Iako zakonski propisi temeljeni na političkim odlukama nalažu uključivanje učenika s iznimnostima ili onih koji su u nepovoljnom položaju u učionicu, to nije dovoljno da promijeni školsku kulturu, a time i društveni stav prema članovima marginaliziranih skupina u učionici. Pretvaranje političkih promjena u stvarne promjene u ponašanju i razumijevanju ovisi o stavovima učitelja, koji su temeljni preduvjet za inkluzivnu učionicu, školu i društvo. Škole su sastavni dio društva, a ne samo mjesta gdje djeca uče kako se integrirati u njega. One čine temelj društva, utječući i šireći svoj utjecaj izvan učionice, na ulice i radna mjesta (Shyman, 2015). Svaki učitelj u inkluzivnoj školi treba biti svjestan da svaki učenik ima jedinstvene potrebe te da je za njihovo zadovoljavanje potrebno stvarati različita okružja za učenje. Kao rezultat toga, mora biti iskren i predan pri kreiranju kurikula, institucionalnih struktura i nastavnih metoda koje su prikladne za sve učenike, posebno za one koji su u nepovoljnom položaju ili imaju iznimne karakteristike.

Učinkovitost politike inkluzivnoga obrazovanja uvelike ovisi o uvjerenjima učitelja, koja se odražavaju u njihovim stavovima prema učenicima s određenim razlikama (Main, Chambers i Sarah, 2016).

Organizacija Ujedinjenih naroda za obrazovanje, znanost i kulturu (UNESCO) zagovarala je inkluzivno obrazovanje, naglašavajući da svi trebaju imati jednak pristup osnovnom obrazovanju radi daljnje studija ili društvenoga angažmana. To uključuje osobe s invaliditetom i sve druge žrtve predrasuda. Unatoč ovoj globalnoj definiciji inkluzije, propisi doneseni kao odgovor na ovaj zahtjev u mnogim se zemljama i dalje često usredotočuju prvenstveno na uključivanje osoba s invaliditetom (Armstrong i Barton, 2016). Rasprava u Turskoj uglavnom se fokusira na konceptualizaciju posebnoga obrazovanja kao integracije ili uključivanja u redovni sustav, umjesto na moralno shvaćanje inkluzije temeljeno na jednakosti. Stoga postoji potreba za mjerenjem koncepta inkluzivnoga obrazovanja i stavova učitelja prema njemu kao obrazovnom načelu koje predviđa osiguravanje odgovarajućih okružja, politika i praksi, kako bi pojedinci s različitim obrazovnim potrebama, proizašlim iz njihovih sociokulturnih identiteta ili bilo kojih drugih razlika, mogli zajednički pohađati obrazovanje, umjesto da se inkluzija mjeri isključivo na temelju pojedinaca s posebnim potrebama. Kako bi se zadovoljila ta potreba, svrha ovoga istraživanja jest razviti i validirati Skalu stavova učitelja prema inkluzivnom obrazovanju (TASI) te ponuditi pouzdanu metodu za procjenu i razumijevanje stavova učitelja prema poboljšanom shvaćanju inkluzivnoga obrazovanja, s krajnjim ciljem smanjenja negativnih stavova i podrške inkluzivnijim obrazovnim praksama za sve vrste razlika među učenicima.

Ova studija imala je za cilj razviti i validirati Skalu stavova učitelja prema inkluzivnom obrazovanju (TASI), novi instrument osmišljen kako bi prevladao ograničenja postojećih mjernih instrumenata i procijenio stavove učitelja prema sveobuhvatnijem razumijevanju inkluzivnoga obrazovanja. TASI se temelji na suvremenom shvaćanju inkluzije, obuhvaćajući sve učenike, bez obzira na njihove individualne razlike i obrazovne potrebe. Konkretno, ovom studijom nastojalo se (1) razviti sveobuhvatan mjerni instrument za stavove učitelja prema inkluzivnom obrazovanju, (2) procijeniti psihometrijska svojstva TASI-ja i (3) ispitati faktorsku strukturu ljestvice. Istraživačko pitanje koje je vodilo ovu studiju bilo je: Pruža li TASI valjano i pouzdano mjerenje stavova učitelja prema širem i pravednijem shvaćanju inkluzivnoga obrazovanja, koje obuhvaća raznolike potrebe učenika izvan onih tradicionalno povezanih s posebnim obrazovanjem? Sljedeći dijelovi ovoga rada detaljno opisuju proces razvoja i validacije TASI-ja, predstavljaju rezultate psihometrijskih analiza i raspravljaju o implikacijama nalaza za istraživanje i praksu.

## **Metodologija**

### ***Istraživačka skupina***

Istraživačku populaciju čine učitelji predškolskoga, osnovnoškolskoga, srednjoškolskoga i gimnazijskoga obrazovanja iz javnih i privatnih škola. Sudionici su odabrani metodom pogodnoga uzorkovanja, uzimajući u obzir važnost reprezentativnoga uzorka (Erkuş, 2012).

Nakon dobivanja etičkoga odobrenja, podatci su prikupljeni od dvije zasebne skupine. Prvi skup podataka za eksploratornu faktorsku analizu prikupljen je putem interneta u jesen 2019. godine, dok je drugi skup podataka za potvrdnu faktorsku analizu prikupljen u proljeće i jesen 2020. godine. Uzorak za eksploratornu faktorsku analizu uključivao je učitelje iz 44 pokrajine i 31 discipline, dok je uzorak za potvrdnu faktorsku analizu obuhvaćao učitelje iz 63 pokrajine i 43 discipline.

Demografski podatci istraživačkih skupina za EFA i CFA prikazani su u Tablici 1. Uzorak za eksploratornu faktorsku analizu sastojao se od 492 učitelja, od kojih je 50,4 % bilo žena. Što se tiče stupnja obrazovanja, 69,7 % imalo je diplomu prvostupnika, 28,7 % magisterij, a 1,6 % doktorat. S obzirom na radno iskustvo 7,9 % ispitanika imalo je manje od 5 godina iskustva, 20,7 % između 5-10 godina, 24,4 % između 11-15 godina, 23,8 % između 16-20 godina, 15,7 % između 21-25 godina, a 7,5 % ispitanika imalo je 26 ili više godina iskustva. Za potvrdnu faktorsku analizu, podatci su prikupljeni od 1 163 učitelja volontera. Uzorak je uključivao 58 % učiteljica i 42 % učitelja. S obzirom na radno iskustvo 7,7 % ispitanika imalo je manje od 5 godina iskustva, 19,5 % između 5 - 10 godina, 26,9 % između 11 - 15 godina, 23,1 % između 16 - 20 godina, 15,2 % između 21 - 25 godina, a 7,6 % ispitanika imalo je 26 ili više godina iskustva. Što se tiče stupnja obrazovanja, 75,5 % ispitanika imalo je diplomu prvostupnika, 23 % magisterij, a 1,5 % doktorat.

Tablica 1

### **Proces razvoja ljestvice**

Relevantna literatura (Bailey, 2004; Forlin i sur., 2011; Mahat, 2008; Monsen i sur., 2015; Wilczenski i sur., 1995) pregledana je kako bi se identificirale dimenzije Skale stavova učitelja prema inkluzivnom obrazovanju (TASI). Stavke ljestvice razvijene su tako da obuhvate kognitivnu, afektivnu i bihevioralnu dimenziju stava. Stručna recenzija provedena je kako bi se procijenila valjanost sadržaja i identificirali mogući problemi u pokusnoj inačici ljestvice. Stručni tim sastojao se od pet akademika s doktoratima iz područja obrazovnog mjerenja i evaluacije, kurikula i nastave te obrazovne administracije i planiranja. Nakon stručne recenzije, problematične stavke su revidirane ili uklonjene, a neke stavke su preraspodijeljene u različite dimenzije. Konačna pokusna inačica TASI-ja sastoji se od 68 stavki (33 negativne i 35 pozitivnih) na Likertovoj ljestvici sa 6 stupnjeva (u potpunosti se slažem, slažem se, djelomično se slažem, djelomično se ne slažem, ne slažem se i u potpunosti se ne slažem), pri čemu su negativne stavke bodovane obrnutim redoslijedom. Najniži mogući rezultat na ljestvici je 68, dok je najviši 408. Viši rezultat odražava pozitivniji stav prema inkluzivnom obrazovanju.

### **Analiza podataka**

U prvoj fazi studije provedena je eksploratorna faktorska analiza (EFA) pomoću IBM SPSS Statistics (verzija 26) i R 4.2.2 (R Core Team, 2023) kako bi se otkrila struktura TASI-ja. Prije EFA, negativne stavke su bodovane obrnutim redoslijedom, a podatci su

ispitani na nedostajuće vrijednosti, ekstremne vrijednosti, normalnost, multikolinearnost, problematične stavke i prikladnost za faktorsku analizu. U *online* administraciji nisu otkrivene nedostajuće vrijednosti. Analiza univarijantnih ekstremnih vrijednosti provedena je pomoću z-vrijednosti, pri čemu su isključeni slučajevi sa z-vrijednostima većim od  $\pm 4$  (Çokluk, Şekercioğlu i Büyüköztürk, 2010). Multivarijantna analiza ekstremnih vrijednosti provedena je prema Mahalanobisovoj udaljenosti. Ispitan je korelacijski odnos između stavki i ukupnoga rezultata testa, pri čemu su iz analize isključene stavke s korelacijom manjom od 0,20. Pretpostavka multivarijantne normalnosti procijenjena je pomoću Mardijinih (1970) koeficijentata spljoštenosti i iskošenosti. Također, pretpostavka multikolinearnosti procijenjena je pomoću faktora inflacije varijance (VIF) i vrijednosti tolerancije. Prema Tabachnicku i Fidellu (2019), faktor inflacije varijance (VIF) trebao bi biti manji od 10, a vrijednost tolerancije (TV) veća od 0,10. Kaiser-Meyer-Olkinov (KMO) test i Bartlettov test sferičnosti uzeti su u obzir kako bi se utvrdilo je li skup podataka prikladan za faktorsku analizu.

Za ekstrakciju faktora korištena je tehnika glavnih osi (*principal axis factoring*), koja je otporna na povrede pretpostavke multivarijantne normalnosti (Costello i Osborne, 2005). Kako bi se utvrdila struktura ljestvice, zadržane su stavke sa zajedničkom varijancom većom od 0,40 i faktorskim opterećenjem većim od 0,32. Slijedeći Tabachnicka i Fidella (2019), zbog visoke korelacije između faktora primijenjena je oblična rotacija (*direct oblimin*). Broj faktora određen je pomoću Kaiser-Guttmanova kriterija, *scree plot*a, omjera objašnjene varijance i paralelne analize (Horn, 1965).

U drugoj fazi studije provedena je potvrdna faktorska analiza (CFA) pomoću softvera R 4.2.2 kako bi se testirala prikladnost strukturnoga modela koji se sastoji od šest faktora i 24 stavke. Ekstremne vrijednosti identificirane su i uklonjene iz podataka za CFA. Osim toga, Mardijin koeficijent spljoštenosti i iskošenosti te pretpostavka multivarijantne normalnosti testirani su na podacima CFA pomoću paketa „MVN” (Korkmaz i sur., 2014). S obzirom na to da su podaci na ordinalnoj ljestvici i da nisu zadovoljili pretpostavku multivarijantne normalnosti, u procjeni faktorskih opterećenja i standardnih pogrešaka u CFA korištena je metoda Robust Maximum Likelihood. U CFA analizama korišteni su paketi „lavaan 0.6-12” (Rosseel, 2012) i „semPlot 1.1.6” (Epskamp, 2022) za dobivanje dijagrama putova. Prilagodba modela procijenjena je pomoću Root Mean Square Coefficient of Error Convergence (RMSEA), Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI) i Goodness of Fit Index (GFI).

Za procjenu pouzdanosti svake poddimenzije izračunati su Cronbachov  $\alpha$  i McDonaldov  $\omega$  koeficijenti. Za cijelu ljestvicu izračunati su stratificirani alfa (koristeći sirt paket; Robitzsch, 2024), Cronbachov  $\alpha$  i Spearman-Brownov koeficijent pouzdanosti metode podjele na polovice. Dodatno, izračunate su kompozitna pouzdanost (CR) i prosječno izdvojena varijansa (AVE) kako bi se procijenila unutarnja konzistentnost i konvergentna valjanost, koristeći lavaan i semPlot pakete u R-u. Faktorske strukture modela ispitane su radi mjerenja invarijantnosti među spolovima pomoću multigrupne potvrdne faktorske

analize. Značajnost razlike u hi-kvadrat vrijednosti ( $\chi^2$ ) i razlike u indeksima podudarnosti ( $\Delta CFI$  i  $\Delta RMSEA$ ) korištene su kao kriteriji za usporedbu modela. Postavljene su granične vrijednosti  $\Delta CFI \leq 0.010$  i  $\Delta RMSEA \leq 0.015$  (Chen, 2007). Mjerenje invarijantnosti ispitano je sekvencijalno na temelju indeksâ podudarnosti dobivenih iz konfiguracijske, metričke, skalarne i stroge invarijantnosti.

Zbog pandemije COVID-19, istraživanje je provedeno *online* te se preporučuje daljnja validacija ljestvice na većim skupinama podataka i provedbom potvrdne faktorske analize.

## Rezultati

### *Eksploratorna faktorska analiza*

Kao rezultat analize ekstremnih vrijednosti, ukupno 131 opažanje uklonjeno je iz analize, te je studija provedena na 361 sudioniku. Trideset i tri stavke s niskom korelacijom stavka-test (ispod 0,20) isključene su iz analize. Prosječna korelacija između stavki i ukupnoga rezultata testa iznosi 0,495, što ukazuje na odgovarajuću povezanost stavki s ukupnim rezultatom. Koeficijenti spljoštenosti i iskošenosti prema Mardiji (1970) ispitani su radi provjere pretpostavke multivarijantne normalnosti te je utvrđeno da pretpostavka multivarijantne normalnosti nije zadovoljena ( $p < 0,05$ ). Budući da faktor inflacije varijance (VIF) varira između 1,25 - 2,33, a vrijednost tolerancije (TV) između 0,43 - 0,8, može se zaključiti da ne postoji problem multikolinearnosti ( $VIF < 10$  i  $TV > 0,10$ ). Vrijednost Kaiser-Meyer-Olkinovog (KMO) testa iznosi 0,87, što pokazuje da je korelacijska matrica prikladna za faktorizaciju. Barlettov test sferičnosti ( $\chi^2 = 4236,363$ ;  $p < 0,05$ ) pokazao je da se korelacijska matrica značajno razlikuje od jedinične matrice, što ukazuje da podatci imaju strukturu prikladnu za faktorsku analizu.

U EFA-u, broj faktora istražen je pomoću metoda Kaiser-Guttmanova kriterija, scree plota, omjera objašnjene varijance i paralelne analize. Tijekom rotacije faktora, dvije stavke koje nisu imale značajno opterećenje na ni jedan faktor i četiri stavke koje su imale značajno opterećenje na više faktora uklonjene su iz analize. Nakon toga, faktorska analiza probne verzije s 35 stavki pokazala je da 24 stavke imaju eigenvalue veću od 1. Iako scree plot (Slika 1) ukazuje na tromjesečnu faktorsku strukturu, utvrđeno je da omjer objašnjene varijance u tromjesečnoj strukturi iznosi samo 34,96 %, što je relativno nisko. Paralelne analize provedene pomoću paketa „psych” u R-u (Revelle, 2023) pokazale su da je šestofaktorska struktura prikladna za podatke. U faktorskoj analizi 24 stavke, vrijednost KMO testa utvrđena je na visokoj razini (0,875), a Bartlettov test sferičnosti bio je značajan ( $\chi^2 = 411,714$ ,  $p < 0,05$ ).

Slika 1.

Struktura faktora nakon rotacije za konačnu verziju TASI-ja, koja se sastoji od 24 stavke i 6 faktora, prikazana je u Tablici 2, dok su statistike stavki navedene u Tablici 3. Šest faktora objašnjava 60,29 % varijance stavova učitelja prema inkluzivnom obrazovanju. Prema Bandalosu i Finneyu (2019), svaki faktor trebao bi sadržavati najmanje tri stavke, a najmanje dvije stavke po faktoru ako su faktori međusobno povezani. Četvrti faktor,

koji se sastoji od dvije stavke, objašnjava važan aspekt stavova učitelja, te je, budući da postoji povezanost između faktora, zadržan u ljestvici. Zajedničke varijance šest faktora kreću se između 0,436 i 0,801, dok se korelacijski koeficijenti stavka-ukupni rezultat kreću između 0,375 i 0,615, što je dovoljno za otkrivanje diskriminativnosti stavki (Tablica 3). Prosječna vrijednost korelacije od 0,499 ukazuje na snažnu unutarnju konzistentnost među stavkama jer je blizu praga od 0,50, koji Cohen (1988) smatra visokom razinom korelacije. Ovo potvrđuje prikladnost podataka za faktorsku analizu jer sve individualne korelacijske vrijednosti prelaze općeprihvaćeni prag od 0,30 (Tabachnick i Fidell, 2013).

Tablica 2

Skala stavova učitelja prema inkluzivnom obrazovanju (TASI)

| Broj stavke | Stavke   | Faktor 1 | Faktor 2 | Faktor 3 | Faktor 4 | Faktor 5 | Faktor 6 |
|-------------|--|----------|----------|----------|----------|----------|----------|
| 1           | Uživam sudjelovati u aktivnostima stručnoga usavršavanja vezanim za inkluzivno obrazovanje.  | 0,536    |          |          |          |          |          |
| 8           | Mogu imati koristi od iskustava iskusnijih učitelja o učenicima s posebnim potrebama.  | 0,531    |          |          |          |          |          |
| 22          | Pokušavam komunicirati s učenicima čiji je drugi jezik turski.   | 0,486    |          |          |          |          |          |
| 7           | Nastojim osigurati obrazovanje koje istovremeno zadovoljava potrebe sve djece.   | 0,436    |          |          |          |          |          |
| 4           | Moguće je osigurati sudjelovanje učenika s posebnim potrebama u razrednim aktivnostima.  | 0,427    |          |          |          |          |          |
| 15          | Ne smeta mi ako se moje dijete sprijatelji s učenicima s posebnim potrebama.   |          | -0,855   |          |          |          |          |
| 3           | Ne smeta mi ako moje dijete pohađa nastavu zajedno s učenicima s posebnim potrebama.   |          | -0,784   |          |          |          |          |
| 9           | Ne smeta mi prisutnost učenika s invaliditetom u mojem razredu.  |          | -0,570   |          |          |          |          |
| 24          | Ne smeta mi prisutnost učenika s različitim uvjerenjima u mojem razredu.   |          | -0,566   |          |          |          |          |
| 11          | Ako učenik s poremećajem iz autističnoga spektra dođe u školu mogega djeteta, želio/željela bih ispisati svoje dijete iz te škole. |          |          | 0,694    |          |          |          |
| 5           | Ne bih želio/željela imati učenika čiji su roditelji skupljači papira.   |          |          | 0,654    |          |          |          |
| 20          | Usmjeravam muške učenike na prirodne znanosti, a ženske učenice na društvene znanosti.   |          |          | 0,594    |          |          |          |

| Broj stavke | Stavke  | Faktor 1 | Faktor 2 | Faktor 3 | Faktor 4 | Faktor 5 | Faktor 6 |
|-------------|---|----------|----------|----------|----------|----------|----------|
| 16          | Ako bi učenik s invaliditetom došao u razred mogega djeteta, htio/htjela bih promijeniti razred svog djeteta. |          |          | 0,524    |          |          |          |
| 6           | Svi učenici u mojem razredu mogu slobodno izraziti svoje potrebe i brige.                                     |          |          |          | 0,764    |          |          |
| 12          | Učenici u mojem razredu mogu slobodno izraziti svoje osjećaje i misli o svakoj temi.                          |          |          |          | 0,705    |          |          |
| 14          | Djeca čiji materinski jezik nije turski, trebala bi biti obrazovana u drugim razredima.                       |          |          |          |          | 0,768    |          |
| 21          | Učenici čiji materinski jezik nije turski, smanjuju uspjeh razreda.   |          |          |          |          | 0,663    |          |
| 10          | Zabrinjava me što materinski jezik mogega učenika nije turski.  |          |          |          |          | 0,626    |          |
| 17          | Teško je komunicirati s učenicima s iznimnim potrebama.   |          |          |          |          |          | 0,739    |
| 18          | Brinem se da moji učenici imaju različite karakteristike.   |          |          |          |          |          | 0,634    |
| 19          | Brinem se da će mi se stres povećati kada imam učenike s posebnim potrebama u razredu.                        |          |          |          |          |          | 0,555    |
| 13          | Sumnjam da mogu učinkovito poučavati cijeli razred u učionicama s učenicima s posebnim potrebama.             |          |          |          |          |          | 0,473    |
| 23          | Učenici s iznimnim kvalitetama imaju niske socijalne vještine.  |          |          |          |          |          | 0,450    |
| 2           | Brinem se da će mi se opterećenje povećati kada u razredu imam učenike s posebnim potrebama.                  |          |          |          |          |          | 0,419    |
|             | Eigenvrijednost   | 6,60     | 2,628    | 1,589    | 1,440    | 1,147    | 1,068    |
|             | Objašnjena varijanca  | 27,498   | 10,949   | 6,620    | 5,999    | 4,780    | 4,450    |

Tablica 3

Tablica 4 prikazuje opisne statistike stavki za podfaktore ljestvice. Šest faktora analizirano je i označeno na sljedeći način: „otvoren stav prema učenju”, „otvorenost prema razlikama”, „isključujući stav”, „slobodno/bez rezerve učioničko okružje”, „jezična barijera u materinskom jeziku” i „anksioznost povezana s kompetencijama”.

Tablica 4

Unutarnja konzistentnost podfaktora ljestvice procijenjena je pomoću McDonald'soa  $\omega$  i Cronbachova  $\alpha$  koeficijenta pouzdanosti. S obzirom na to da je ljestvica višedimenzionalna,

izračunati su McDonald'sov hijerarhijski  $\omega$  koeficijent i stratificirani  $\alpha$  koeficijenti kako bi se odredila ukupna pouzdanost ljestvice. Dodatno, izračunati su Cronbachov  $\alpha$  i Spearman-Brownovi koeficijenti pouzdanosti metode podjele na polovice. Dobiveni koeficijenti pouzdanosti prikazani su u Tablici 5.

#### Tablica 5

Prema Tablici 5, McDonald'sov hijerarhijski omega koeficijent, stratificirani alfa i Spearman-Brownov Split Half koeficijent pouzdanosti smatraju se visokima za ljestvicu. Pouzdanost podfaktora ljestvice ispitana je izračunavanjem McDonald'sova  $\omega$  i Cronbachova  $\alpha$  koeficijenta pouzdanosti. Koeficijenti pouzdanosti podfaktora nalaze se unutar prihvatljivih granica s vrijednostima iznad praga od 0,70, kako su predložili Nunnally i Bernstein (1994). Cohen i Swerdlik (2018) smatraju da su koeficijenti pouzdanosti manji od 0,65 neprihvatljivi. Može se zaključiti da su koeficijenti pouzdanosti za cijelu ljestvicu visoki, dok se koeficijenti pouzdanosti za podfaktore nalaze unutar prihvatljivih granica. Kompozitna pouzdanost (CR) pokazatelj je zajedničke varijance među promatranim varijablama koje služe kao indikatori latentne varijable (Fornell i Larcker, 1981). Prosječno izdvojena varijansa (AVE) predstavlja ukupnu varijancu stavki učitanih pod isti faktor (Hair i sur., 2019). Unutarnja konzistentnost i konvergentna valjanost procijenjene su ispitivanjem AVE i CR vrijednosti. Vrijednost CR veća od 0,7 i vrijednost AVE veća od 0,50 ukazuju na postignutu konvergentnu valjanost (Hair i sur., 2019). Za model je utvrđena vrijednost CR od 0,944 i vrijednost AVE od 0,581. Stoga se može reći da je konvergentna valjanost postignuta.

#### Potvrдна faktorska analiza

Potvrдна faktorska analiza provedena je kako bi se procijenilo koliko dobro strukturni model proizveden EFA-om odgovara podacima. Prije provođenja CFA testirane su pretpostavke. Kao rezultat analize ekstremnih vrijednosti, 146 opažanja isključeno je iz analize te je analiza provedena na 1017 opažanja. Nisu pronađeni nedostajući podatci. Mardijini (1970) koeficijenti spljoštenosti i iskošenosti korišteni su za testiranje pretpostavke multivarijatne normalnosti, a rezultati su pokazali da multivarijatna normalnost nije zadovoljena ( $p < 0,05$ ). Budući da pretpostavka normalnosti nije zadovoljena, metoda procjene korištena je Robust Maximum Likelihood metoda (Aybek, 2022). Nakon analize, dobivene su vrijednosti  $\chi^2 = 782,727$  i  $df = 237$ . Kada su ispitani indeksi podudarnosti nakon CFA, dobivene su vrijednosti RMSEA (90 % CI) = 0,048 (0,044 – 0,051); SRMR = 0,041; CFI = 0,928; GFI = 0,939 i TLI = 0,916. Tabachnick i Fidell (2019) sugeriraju izvještavanje o RMSEA i CFI vrijednostima s intervalima pouzdanosti kada je veličina uzorka velika. Prihvatljivo podudaranje modela s podacima određeno je korištenjem RMSEA manjega od 0,06, SRMR manjega od 0,08 (Tabachnick i Fidell, 2019). Vrijednosti CFI, TLI i GFI (Hair i sur., 2019) su veće od 0,90 (Tablica 6).

#### Tablica 6

Kao rezultat CFA, indeksi modifikacije su ispitani i varijance pogreške ovih stavki su korelirane modificiranjem stavki 4, 16, 3 i 20, koje su imale visoko smanjenje chi-

kvadrata, bile pod istim faktorom i imale slična značenja. Nakon CFA s modifikacijom,  $\chi^2 = 749,941$  i  $df = 236$ . Kada su ispitani indeksi dobrote podudarnosti, dobivene su vrijednosti RMSEA (90% CI) = 0,046 (0,042 – 0,050); SRMR = 0,040; CFI = 0,932; GFI = 0,942 i TLI = 0,920 (Tablica 6). Ove vrijednosti ukazuju na to da je podudarnost modela s podacima zadovoljavajuća.

Slika 2 prikazuje dijagram putanja za testirani model zajedno sa standardiziranim procjenama faktorskih opterećenja, varijancama pogreške i kovarijancama. Standardizirana faktorska opterećenja kreću se između 0,422 i 0,820, kao što je prikazano na Slici 2.

Slika 2.

### **Invarijantnost mjerenja**

U ispitivanju invarijantnosti mjerenja prema spolu, indeksi podudarnosti dobiveni za konfiguracijsku, metričku, skalarnu i strogu invarijantnost prikazani su u Tablici 7.

Table 7

Kada se ispita Tablica 7, indeksi podudarnosti dobiveni za konfiguracijsku invarijantnost nalaze se unutar prihvatljivoga raspona ( $\chi^2 / df = 2,14$ , RMSEA = 0,047, CFI = 0,930, TLI = 0,918, SRMR = 0,040). Prema dobivenim rezultatima, mjerni model je potvrđen za muške i ženske učitelje.

U sljedećoj fazi testirana je metrička invarijantnost. Kada se analiziraju dobiveni rezultati za ovu fazu, vidi se da su indeksi podudarnosti unutar prihvatljivoga raspona, slično prethodnom koraku ( $\chi^2 / df = 2,11$ , RMSEA = 0,047, CFI = 0,929, TLI = 0,920, SRMR = 0,046). Osim indeksa podudarnosti, vrijednost razlike chi-kvadrata dobivena za usporedbu konfiguracijskoga i metričkoga modela nije statistički značajna ( $p > 0,05$ );  $\Delta CFI$  vrijednost je unutar  $\pm 0,01$ , a  $\Delta RMSEA$  vrijednost je unutar  $\pm 0,015$ . U ovoj fazi može se zaključiti da je metrička invarijantnost prihvaćena. Nakon prihvaćanja metričke invarijantnosti, u sljedećem koraku testirana je skalarna invarijantnost. Kada se analiziraju dobiveni rezultati za ovu fazu, vidi se da su indeksi podudarnosti unutar prihvatljivoga raspona, slično prethodnom koraku ( $\chi^2 / df = 2,21$ , RMSEA = 0,049, CFI = 0,920, TLI = 0,913, SRMR = 0,048). Međutim, dobivena vrijednost razlike chi-kvadrata je statistički značajna ( $p < 0,05$ );  $\Delta CFI$  vrijednost je unutar  $\pm 0,01$ , a  $\Delta RMSEA$  vrijednost je unutar  $\pm 0,015$ . Iako je chi-kvadrat test najčešće korištena metoda za usporedbu baznoga i restriktivnoga modela u koracima ispitivanja invarijantnosti mjerenja, zbog osjetljivosti chi-kvadrat testa na veličinu uzorka preporučuje se korištenje  $\Delta CFI$  i  $\Delta RMSEA$  (Chen, 2007; Cheung i Rensvold, 2002). Prema ovom rezultatu, skalarna invarijantnost je također prihvaćena. U posljednjoj fazi testirana je stroga invarijantnost. Indeksi dobrote podudarnosti nalaze se unutar prihvatljivoga raspona ( $\chi^2 / df = 2,23$ , RMSEA = 0,049, CFI = 0,915, TLI = 0,911, SRMR = 0,049). Iako je dobivena vrijednost razlike chi-kvadrata statistički značajna ( $p < 0,05$ ),  $\Delta CFI$  i  $\Delta RMSEA$  vrijednosti su unutar prihvatljivih granica ( $\Delta CFI = 0,005$ ;  $\Delta RMSEA = 0,009$ ). Stoga je stroga invarijantnost prihvaćena. Kao rezultat, invarijantnost mjerenja osigurana je do razine stroge invarijantnosti u modelu u kojem je uključen spol.

Kao rezultat istraživanja razvijena je ljestvica sa 6 faktora i 24 stavke, koja se sastoji od „otvorenoga stava prema učenju”, „otvorenosti prema različitostima”, „isključujućega stava”, „slobodnoga/bezrezervnoga učioničkog okružja”, „jezične barijere u materinskom jeziku” i „anksioznosti povezane s kompetencijama”. Podfaktor „otvoren stav prema učenju” sastoji se od 5 stavki. Podfaktor „otvorenost prema različitostima” sastoji se od 4 stavke. Podfaktor „isključujući stav” sastoji se od 4 stavke. Podfaktor „slobodno/bezrezervno učioničko okružje” sastoji se od 2 stavke. Podfaktor „jezična barijera u materinskom jeziku” sastoji se od 3 stavke i podfaktor „anksioznost povezana s kompetencijama” sastoji se od 6 stavki. Na ljestvici 11 stavki sadrži pozitivne, a 13 stavki negativne tvrdnje. Minimalan rezultat koji se može postići na ljestvici je 24, a maksimalan rezultat je 144. Visok rezultat na ljestvici ukazuje na visoki stav prema inkluzivnom obrazovanju.

## Diskusija

U 21. stoljeću obrazovne politike i prakse usvojile su individualno usmjereno gledište kako bi osigurale inkluzivno obrazovanje za sve učenike, uključujući one s invaliditetom i marginalizirane skupine. Iako inkluzivno obrazovanje naglašava pravo sve djece na obrazovanje pod sličnim uvjetima, njegovu provedbu utječu različiti čimbenici. Jedan od ključnih čimbenika su stavovi učitelja jer negativni stavovi mogu otežati primjenu inkluzivnih praksi.

Prilagodba ljestvice složen je proces zbog kulturnih razlika. Test s jakim psihometrijskim svojstvima možda neće zadržati ista svojstva kada se prilagodi ili će biti potrebno promijeniti previše stavki, što čini razvoj novoga, kulturi specifičnoga mjernog instrumenta poželjnijim od studije prilagodbe (Akbaş i Korkmaz, 2007). Unatoč brojnim studijama prilagodbe ljestvica o stavovima učitelja prema inkluzivnom obrazovanju, ove ljestvice često ograničavaju svoj fokus na učenike s posebnim obrazovnim potrebama. Potrebna je kulturološki osjetljiva, lokalna ljestvica kako bi se ispitali stavovi prema širem, na moralnoj jednakosti utemeljenom shvaćanju inkluzivnoga obrazovanja. Ovo istraživanje razlikuje se od studija poput MATIES, SACIE-R i TAIS time što uzima u obzir stavove učitelja prema inkluzivnim praksama ne samo za učenike s posebnim obrazovnim potrebama, već i za druge ugrožene učenike koji su isključeni iz različitih razloga, kao što su fizički, kulturni ili socioekonomski čimbenici.

Ova studija izravno je odgovorila na potrebu za sveobuhvatnim i kulturološki osjetljivim instrumentom za mjerenje stavova učitelja prema inkluzivnom obrazovanju razvijanjem i validacijom Skale stavova učitelja prema inkluzivnom obrazovanju (TASI).

TASI, sa svojih šest faktora (otvorenost prema učenju, prihvaćanje različitosti, isključujući stavovi, učioničko okružje, jezične barijere i zabrinutost zbog kompetencija) i 24 stavke, nudi složenu procjenu stavova učitelja, nadilazeći tradicionalni fokus na posebne obrazovne potrebe i obuhvaćajući šire shvaćanje inkluzije. Konkretno, ovo istraživanje imalo je sljedeće ciljeve: (1) razviti sveobuhvatan mjerni instrument za stavove učitelja prema inkluzivnom obrazovanju, (2) procijeniti psihometrijska svojstva TASI-ja, i (3) ispitati faktorsku strukturu ljestvice. Rezultati psihometrijskih analiza, detaljno prikazani

u prethodnim dijelovima, pokazuju da TASI posjeduje snažna psihometrijska svojstva, uključujući jake dokaze valjanosti i pouzdanosti. Potvrдна faktorska analiza potvrdila je hipotetiranu šestofaktorsku strukturu, što ukazuje na to da TASI učinkovito odražava višedimenzionalnu prirodu stavova učitelja prema inkluzivnom obrazovanju.

Ova studija ima nekoliko ograničenja. Prvo, metoda prikupljanja podataka putem interneta zbog pandemije COVID-19 mogla je isključiti određene skupine učitelja, što bi moglo ograničiti generalizaciju nalaza. Drugo, kriterijska valjanost studije nije procijenjena te su potrebna daljnja istraživanja kako bi se utvrdila konstruktna valjanost ljestvice. Treće, iako su u uzorku studije sudjelovali učitelji iz različitih pokrajina i disciplina, daljnja validacija na većim i raznolikijim uzorcima nužna je za poboljšanje pouzdanosti i primjenjivosti rezultata. Na kraju, oslanjanje na samoprijavljene stavove moglo je dovesti do pristranosti odgovora, a kulturne nijanse mogle su utjecati na interpretacije stavki ljestvice od strane sudionika. Rješavanje ovih ograničenja u budućim istraživanjima omogućilo bi sveobuhvatnije razumijevanje stavova učitelja prema inkluzivnom obrazovanju.

## **Zaključak**

Ova studija uspješno je razvila i validirala TASI, novi instrument koji rješava ograničenja postojećih mjernih instrumenata pružajući sveobuhvatniju i kulturološki osjetljivu procjenu stavova učitelja prema inkluzivnom obrazovanju. TASI doprinosi ovom području pružajući istraživačima i praktičarima vrijedan alat za mjerenje stavova učitelja, identificiranje područja za stručni razvoj te procjenu utjecaja inkluzivnih obrazovnih inicijativa. Iako postoje određena ograničenja, ova studija predstavlja značajan korak u razumijevanju i poticanju pozitivnih stavova učitelja, čime se u konačnici potiče razvoj inkluzivnijih okruženja za učenje za sve učenike.

## **Napomena**

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