PRESCHOOL TEACHERS' PERCEPTIONS OF GENDER ROLES ACROSS FOUR CLASSROOM DOMAINS: THE ROLE OF JOB POSITION AND PROGRAM SCHEDULE IN NORTH MACEDONIA

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Abstract

North Macedonia is a sociocultural context in which formal gender equity policies coexist with firmly established traditional norms. This study examined preschool teachers' perceptions of gender roles in the classroom. A quantitative, cross-sectional survey design was employed with a sample of 155 female teachers, comprising 88 Preschool Educators and 67 Childcare Givers. Participants completed the 42-item Preschool Teachers' Perception of Gender Roles in the Classroom Scale (PTPGCS; Yıldız & Erkan, 2024). The instrument comprised four subscales: General Gender Discourse (S1), Gender Role Characteristics (S2), Gender-Specific Behavioral Responses (S3), and Gender in Tales and Stories (S4). Six items were reverse-coded prior to analysis in accordance with the original scale structure. Following verification of the normality assumptions, independent-samples t-tests and multiple regression analyses were run. Preschool teachers scored highest on S1 ($M = 3.39$, $SD = 0.76$), above the scale midpoint, while S2 ($M = 2.81$), S3 ($M = 2.78$), and S4 ($M = 2.68$) fell below the midpoint. Job position significantly predicted S2 and S3 scores. Child presence schedule significantly predicted S2 and S3 scores wile employment status was non-significant across all subscales. These findings contribute empirical evidence from a post-socialist Southeastern European context. They also carry implications for early childhood teacher education and gender-equity policy in North Macedonia.

Keywords: gender roles, preschool teachers, early childhood education, PTPGCS, North Macedonia, gender perceptions

Introduction

Early childhood represents a critical period in the development of children in which they begin to make gender norms and roles their own. They form cognitive frameworks that shape their self-concepts (Martin & Ruble, 2010), aspirations and behavioral repertoires (Ruble et al., 2006). During the preschool years, typically between ages three and five, children rapidly develop awareness of gender categories (Bian, Leslie, & Cimpian, 2017). In addition, they consolidate increasingly rigid, sex-typed preferences through interactions with peers and parents (Leaper & Farkas, 2015) as well as media and educators (Witt, 1997). Several theoretical frameworks illuminate this process (Bem, 1981; Bussey & Bandura, 1999; Eagly & Wood, 2012). Bem's (1981) gender schema theory posits that children act as active scanners of their social environment. In a selective way, they encode information consistent with culturally available gender schemas. On the other hand, social cognitive theory holds that children observe gendered behavior in adults, receive differential reinforcement, and gradually internalize gender norms as part of their identity development (Bussey & Bandura, 1999). Emphasizing that gender stereotypes originate in societal divisions of labor, social role theory claims that they are subsequently generalized into expectations about personality and some kind of appropriate behavior (Eagly & Wood, 2012).

The academic and developmental consequences of teacher-mediated gender stereotyping are well documented. According to Wolter et al. (2015), preschool teachers who hold traditional gender role attitudes negatively influence boys' reading motivation. These effects persist into first-grade literacy outcomes. Through a natural experiment assigning students to teachers, Alan et al. (2018) showed that girls exposed longer to traditionally oriented teachers scored significantly lower on objective assessments of mathematics and verbal ability. Berekashvili's

(2012) study findings showed that gender-biased perceptions in teacher–student interaction shaped differential academic engagement, while Duffy et al. (2001) documented systematic gender-based differences in classroom interactions across subjects.

Preschool teachers as children's primary institutional role models, shape the normative landscape of early childhood through their daily interactions and choice of instructional materials (Yıldız & Erkan, 2024). This influence stands out most in how they run everyday classroom activities and how they discipline boys versus girls (Wingrave, 2018). Research demonstrates that teachers' gender beliefs, whether consciously held or embedded in tacit routine, are communicated to children through subtle yet systematic behaviors: praising boys for physical strength and girls for neatness, steering children toward gender-conforming play, and applying different standards of discipline and academic expectation depending on a child's gender (Cahill & Adams, 1997; Rogošić et al., 2020; Meland & Kaltvedt, 2019). Preschool teachers often uphold gender stereotypes through their interactions with children and their encouragement of gendered childhood play, even in settings that formally commit to equality principles (Nugroho et al., 2022). A systematic review of early childhood gender research by King et al. (2021) concludes that children's absorption of gendered expectations from educator cues begins well before formal schooling. By the time children enter primary school, many have already adopted comprehensive beliefs about what activities and traits belong to each gender (Frawley, 2005). These early views extend directly to what roles are considered "appropriate" for them as well (Duffy et al., 2001).

At the global policy level, gender equality in education is enshrined in the Sustainable Development Goals (SDG 4 and SDG 5), and international organizations have consistently called for teacher education reform that addresses gender bias at its roots (UNESCO, 2017; OECD, 2022; UN Women & UN DESA, 2023). Interventions that combine explicit training with gender-equality-oriented materials have demonstrated positive results in reducing stereotypical thinking among both teachers and children (Karabay et al., 2019; Chen & Rao, 2011). Nevertheless, implementation at the classroom level remains uneven, particularly in transitional and post-socialist contexts where legal mandates for gender equality coexist with deeply rooted traditional norms (Silova & Magno, 2004). North Macedonia exemplifies this tension. While the country has achieved gender parity in school enrollment (UNESCO Institute for Statistics [UIS], 2023), broader assessments indicate that conservative gender norms persist, particularly in rural and minority communities (USAID, 2019). Within this sociocultural context, preschool teachers are simultaneously products of a traditionally oriented cultural environment and agents of an institutional system mandated to promote equity. As Silman et al. (2019) observed in a comparative study of Turkish and Northern Cypriot preschool teachers, even educators who espouse progressive values may reproduce traditional distinctions in daily practice, a pattern likely amplified in settings where gender-equity training is limited.

While these dynamics are clearly salient, no published empirical study has examined preschool teachers' gender role perceptions in North Macedonia. The international literature on this topic is heavily concentrated in Western and Northern European contexts, with limited representation from Southeastern Europe and post-socialist Balkan societies (Gogoi et al., 2025; Preece & Bullingham, 2020). Studies that do exist in adjacent cultural settings suggest that gender stereotypes remain resilient even where formal equality is emphasized, with teachers expressing egalitarian values while simultaneously reproducing gendered distinctions through classroom practice (Warin & Adriany, 2017; Rogošić et al., 2020). Logue and Harvey (2009) and Lynch (2015) documented that preschool teachers consistently steer boys toward construction and outdoor play and girls toward domestic and dramatic play centers, even when teachers report egalitarian intentions. Zafra and García-Retamero (2011) showed that gender-

role attitude malleability varies with sociocultural context, reinforcing the importance of regional empirical evidence.

The present study surveyed preschool teachers in North Macedonia to examine their perceptions of gender roles in the classroom using the four-subscale PTPGCS instrument. Four research questions guided the inquiry: (1) What are the prevailing patterns of preschool teachers' gender perceptions across the four subscales of the PTPGCS (General Gender Discourse, Gender Role Characteristics, Gender-Specific Behavioural Responses, and Gender in Tales and Stories)? (2) To what extent do gender perceptions differ by job position (Preschool Educator vs. Childcare Giver)? (3) How does child presence schedule (all-day vs. half-day) relate to teachers' gender perceptions? (4) Does employment status (permanent vs. temporary) predict variation in gender perceptions? By addressing these questions through systematic quantitative analysis, the study aims to contribute empirical evidence from a historically underrepresented regional context and to provide a basis for evidence-informed teacher education and gender-equity policy in North Macedonia.

Methodology

Research Design

This study employed a quantitative, cross-sectional survey design to examine preschool teachers' perceptions of gender roles in early childhood classrooms. Cross-sectional surveys are well-suited for describing the distribution of attitudes in a defined population at a single point in time and for identifying associations between professional characteristics and outcome variables (Creswell & Creswell, 2018). This design aligns with prior quantitative research on teachers' gender perceptions that has established reliable demographic and professional predictors through survey-based methods (Cahill & Adams, 1997; Tatar & Emmanuel, 2001; Yıldız & Erkan, 2024). Normality assumptions were satisfied, supporting the use of parametric procedures for the composite Likert-scale scores given the sample size obtained.

Participants and Sampling

Participants were 155 female in-service preschool teachers from North Macedonia, recruited through institutional channels during the 2025–2026 academic year. The sample comprised 88 Preschool Educators (56.8%) and 67 Childcare Givers (43.2%), reflecting the two primary professional designations within preschool sector in the country. Regarding child presence schedule, 143 teachers (92.3%) worked in all-day programs and 12 (7.7%) in half-day programs. With respect to employment status, 140 teachers (90.3%) held permanent positions and 15 (9.7%) held temporary contracts. All participants were female, consistent with the highly feminized nature of the early childhood education workforce documented internationally (Tatar & Emmanuel, 2001; Nugroho et al., 2022). The exclusive female composition of the sample ensures homogeneity with respect to teacher gender effects, though it precludes gender-based comparisons between male and female educators.

Research Instrument

Gender role perceptions were measured using the Preschool Teachers' Perception of Gender Roles in the Classroom Scale (PTPGCS), originally developed in Turkish by Yıldız and Erkan (2024) through a rigorous process that included item generation, expert review, and exploratory and confirmatory factor analyses with a sample of 493 Turkish preschool teachers. The scale

was adapted into Albanian and Macedonian for this study using a forward-translation procedure reviewed by bilingual education experts.

The Albanian and Macedonian - PTPGCS comprises 42 items distributed across four subscales that correspond to the original Turkish factor structure: (1) General Gender Discourse (S1; 17 items), measuring stereotypical beliefs about behavioral and personality differences between boys and girls in the classroom; (2) Gender Role Characteristics (S2; 12 items), assessing tendencies to assign gender-specific activities, toys, and occupational roles during classroom tasks; (3) Gender-Specific Behavioural Responses (S3; 7 items), capturing differential disciplinary orientations toward boys and girls exhibiting gender-atypical behavior; and (4) Gender in Tales and Stories (S4; 6 items), examining attitudes toward gender portrayals in storybooks and fairy tales used in classroom settings. Responses were recorded on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores indicating greater endorsement of traditional gender role perceptions. Six items were reverse-coded prior to scoring (items 24, 30, 31, 37, 41, and 42), consistent with the original instrument specifications (Yıldız & Erkan, 2024). Internal consistency reliability in the present sample was excellent for the overall 42-item scale ($\alpha = .949$), as well as for S1 ($\alpha = .935$) and S2 ($\alpha = .905$); it was acceptable for S3 ($\alpha = .739$), and approaching acceptable for S4 ($\alpha = .682$). The reliability of S4 is noted as a limitation and its findings are interpreted with appropriate caution.

Data Collection and Analysis

Data were collected electronically via a Google Forms questionnaire distributed to participants through institutional channels during the 2025–2026 academic year. Participation was voluntary, and digital informed consent was obtained on the first page of the online form before participants could access the survey items. Complete anonymity was maintained as no identifying personal information was collected. Once collection was complete, the responses were exported from Google Forms and imported into IBM SPSS Statistics (Version 25.0) for data screening and analysis.

Subscale scores were computed as the mean of their constituent items after reverse-coding. Descriptive statistics (means, standard deviations, standard errors, and 95% confidence intervals) were computed for each subscale. Inter-subscale differences were examined with a one-way ANOVA followed by pairwise paired-samples t-tests. Bivariate Pearson correlations were computed to examine inter-subscale relationships. Group differences by job position, child presence schedule, and employment status were assessed using independent-samples t-tests, with Cohen's d as the effect size index (small = 0.20, medium = 0.50, large = 0.80). Standard multiple regression analyses were conducted to examine the simultaneous predictive contributions of the three professional characteristics on each subscale and on the total scale score, reporting unstandardized (B) and standardized (β) coefficients with 95% confidence intervals.

Results

Descriptive Statistics and Inter-Subscale Differences

Table 1 presents the descriptive statistics for the four PTPGCS subscales and the total scale. The General Gender Discourse subscale (S1) yielded the highest mean ($M = 3.39$, $SD = 0.76$), the only subscale positioned above the scale midpoint of 3.00, indicating moderate-to-high endorsement of stereotypical beliefs about behavioral and personality differences between boys and girls. The Gender Role Characteristics subscale (S2; $M = 2.81$, $SD = 0.85$) and the Gender-Specific Behavioral Responses subscale (S3; $M = 2.78$, $SD = 0.75$) were

closely comparable and both fell below the midpoint, suggesting more moderate traditional endorsement in the domains of role assignment and behavioral responses. The Gender in Tales and Stories subscale (S4) registered the lowest mean ($M = 2.68$, $SD = 0.74$), indicating relatively greater resistance to traditional gender portrayals in narrative materials. The total scale mean was $M = 3.02$ ($SD = 0.66$), positioning teachers marginally above the midpoint overall.

Inter-subscale correlations revealed a coherent positive association structure: S1–S2 ($r = .653$), S1–S3 ($r = .597$), S1–S4 ($r = .377$), S2–S3 ($r = .723$), S2–S4 ($r = .557$), and S3–S4 ($r = .599$). The strongest association was between S2 and S3, suggesting that teachers who endorsed gender-typed role assignments were also more likely to apply gender-differentiated behavioral responses. S1 showed a weaker link with S4 ($r = .377$) relative to the remaining pairs, indicating that general gender discourse beliefs and attitudes toward gender in stories represent somewhat more distinct constructs within this sample.

A one-way ANOVA examining differences among the four subscale means was statistically significant, $F(3, 152) = 26.96$, $p < .001$. Pairwise paired-samples t-tests confirmed that S1 was significantly higher than S2 ($p < .001$), S3 ($p < .001$), and S4 ($p < .001$). S2 did not differ significantly from S3 ($t = 0.670$, $p = .504$), while S2 was significantly higher than S4 ($t = 2.268$, $p = .025$), and S3 showed a marginal trend toward being higher than S4 ($t = 1.971$, $p = .051$).

Table 1. Descriptive Statistics for PTPGCS Subscales (N = 155)

Subscale	k	M	SD	SE	95% CI	α
S1 – General Gender Discourse	17	3.39	0.76	0.06	[3.27, 3.51]	.935
S2 – Gender Role Characteristics	12	2.81	0.85	0.07	[2.68, 2.95]	.905
S3 – Gender-Specific Behavioral Responses	7	2.78	0.75	0.06	[2.66, 2.90]	.739
S4 – Gender in Tales and Stories	6	2.68	0.74	0.06	[2.56, 2.79]	.682
Total Scale	42	3.02	0.66	0.05	[2.92, 3.13]	.949

Note. k = number of items. M = mean. SD = standard deviation. SE = standard error. CI = confidence interval. α = Cronbach's alpha. Scale midpoint = 3.00. S1 = General Gender Discourse; S2 = Gender Role Characteristics; S3 = Gender-Specific Behavioral Responses; S4 = Gender in Tales and Stories. Six items (24, 30, 31, 37, 41, 42) were reverse-coded before scoring.

Group Differences by Job Position

Table 2 presents independent-samples t-test comparisons between Preschool Educators ($n = 88$) and Childcare Givers ($n = 67$). Childcare Givers scored significantly higher than Preschool Educators on the Gender Role Characteristics subscale, $t(153) = -2.21$, $p = .029$, $d = -0.36$, and on the Gender-Specific Behavioural Responses subscale, $t(153) = -2.02$, $p = .045$, $d = -0.33$, with small-to-medium effect sizes. The total scale difference was also significant, $t(153) = -2.38$, $p = .019$, $d = -0.39$. The difference on the General Gender Discourse subscale approached but did not reach conventional significance, $t(153) = -1.94$, $p = .054$, $d = -0.32$. No significant difference emerged for the Gender in Tales and Stories subscale ($p = .099$). These results indicate that Childcare Givers endorsed more traditional gender role perceptions than Preschool Educators, particularly in the domains of role assignment, activity organization, and behavioral responses.

Table 2. Group Differences in PTPGCS Subscale Scores by Job Position

Subscale	Preschool Educator (n = 88) M (SD)	Childcare Giver (n = 67) M (SD)	t(153)	p	Cohen's d
S1	3.29 (0.81)	3.53 (0.68)	−1.94	.054	−0.32
S2	2.68 (0.89)	2.99 (0.78)	−2.21	.029*	−0.36
S3	2.68 (0.73)	2.92 (0.75)	−2.02	.045*	−0.33
S4	2.59 (0.70)	2.79 (0.78)	−1.66	.099	−0.27
Total	2.92 (0.69)	3.17 (0.60)	−2.38	.019*	−0.39

Note. * $p < .05$. Independent-samples t-tests. Cohen's d = unstandardized mean difference divided by the pooled standard deviation. Negative d values indicate that Childcare Givers scored higher.

Group Differences by Child Presence Schedule

Table 3 presents comparisons between all-day (n = 143) and half-day (n = 12) program teachers. Teachers in half-day programs scored significantly higher on the Gender Role Characteristics subscale, $t(153) = -2.20$, $p = .030$, $d = -0.74$, and on the Gender-Specific Behavioral Responses subscale, $t(153) = -2.60$, $p = .010$, $d = -0.82$, reflecting large effect sizes. No significant differences were found for General Gender Discourse ($p = .553$), Gender in Tales and Stories ($p = .115$), or the total scale ($p = .070$). Given the small size of the half-day group (n = 12), these results should be interpreted cautiously; nonetheless, the large effect magnitudes suggest that child presence schedule is a contextually meaningful variable in relation to teachers' gender role assignment and disciplinary perceptions.

Table 3. Group Differences in PTPGCS Subscale Scores by Child Presence Schedule

Subscale	All-Day (n = 143) M (SD)	Half-Day (n = 12) M (SD)	t(153)	p	Cohen's d
S1	3.38 (0.77)	3.52 (0.64)	−0.60	.553	−0.19
S2	2.77 (0.86)	3.33 (0.62)	−2.20	.030*	−0.74
S3	2.74 (0.74)	3.31 (0.65)	−2.60	.010*	−0.82
S4	2.65 (0.72)	3.00 (0.92)	−1.59	.115	−0.43
Total	3.00 (0.67)	3.36 (0.50)	−1.82	.070	−0.61

Note. * $p < .05$. Independent-samples t-tests. Cohen's d = unstandardized mean difference divided by the pooled standard deviation. Negative d values indicate that half-day program teachers scored higher.

Multiple Regression Analysis

Table 4 presents the results of multiple regression analyses predicting each subscale from the three professional characteristics. The models for S2 and S3 were statistically significant: Gender Role Characteristics, $R^2 = .071$, $F(3, 151) = 5.28$, $p = .002$; Gender-Specific Behavioral Responses, $R^2 = .079$, $F(3, 151) = 6.08$, $p < .001$. The models for General Gender Discourse ($R^2 = .031$, $p = .118$) and Gender in Tales and Stories ($R^2 = .047$, $p = .087$) did not reach overall significance, though job position was a significant individual predictor of S1 ($B = 0.258$, $\beta = .168$, $p = .033$).

Job position was a significant positive predictor of S1, S2, and S3 scores (all ps < .05), confirming that Childcare Givers (coded 2) held stronger traditional gender perceptions across these domains after accounting for the other predictors. Child presence schedule was a significant positive predictor of S2 (B = 0.622, β = .196, p = .007) and S3 (B = 0.627, β = .226, p = .003), indicating that half-day program teachers held more traditional perceptions in role assignment and behavioral response domains. Employment status was not a significant predictor in any model (all ps > .31). For the total scale, the regression was significant overall, $R^2 = .065$, F(3, 151) = 4.73, p = .004, with job position (β = .211, p = .007) and child presence schedule (β = .168, p = .020) as significant predictors.

Table 4. Multiple Regression Results Predicting PTPGCS Subscale Scores from Professional Characteristics (N = 155)

Predictor	**S1 B [β] [95% CI]**	**S2 B [β] [95% CI]**	**S3 B [β] [95% CI]**	**S4 B [β] [95% CI]**
Intercept	2.981*** [0.261, 3.701]	1.808*** [0.868, 2.748]	1.839*** [1.101, 2.577]	1.696*** [0.829, 2.563]
Job Position	0.258* [.168] [0.020, 0.495]	0.347* [.202] [0.080, 0.613]	0.287* [.191] [0.053, 0.521]	0.205 [.138] [−0.034, 0.443]
Child Presence	0.186 [.065] [−0.238, 0.609]	0.622** [.196] [0.167, 1.076]	0.627** [.226] [0.213, 1.041]	0.395 [.143] [−0.139, 0.928]
Employment Status	−0.143 [−.056] [−0.431, 0.145]	−0.146 [−.051] [−0.643, 0.350]	−0.131 [−.052] [−0.483, 0.221]	0.239 [.096] [−0.222, 0.700]
R^2	.031	.071	.079	.047
F	F(3,151) = 1.988 p = .118	F(3,151) = 5.281 p = .002**	F(3,151) = 6.083 p < .001***	F(3,151) = 2.234 p = .087

Note. B = unstandardized coefficient; β = standardized coefficient (in brackets); HC3 robust standard errors; 95% confidence intervals in brackets. Job Position: 1 = Preschool Educator, 2 = Childcare Giver. Child Presence: 1 = All-Day, 2 = Half-Day. Employment Status: 1 = Permanent, 2 = Temporary. * p < .05. ** p < .01. *** p < .001.

Discussion

The present study provides the first systematic empirical examination of preschool teachers' gender role perceptions in North Macedonia, using the four-subscale PTPGCS instrument (Yıldız & Erkan, 2024). The findings reveal a domain-differentiated profile of gender perception that warrants substantive discussion across four dimensions.

The most pronounced finding concerns the elevation of the General Gender Discourse subscale (S1) above the scale midpoint, standing distinctly higher than the three remaining subscales. This pattern indicates that preschool teachers in North Macedonia most readily endorse stereotypical perceptions about behavioral and personality differences between boys and girls, such as associating girls with neatness, compliance, and emotional sensitivity, and boys with noisiness, physical activity, and aggression. This domain-specific profile closely mirrors evidence from the original PTPGCS standardization study with Turkish preschool teachers (Yıldız & Erkan, 2024) and replicates findings from comparative studies in Turkey and Northern Cyprus, where teachers consistently characterized boys and girls in terms of behavioral dichotomies even while expressing intent to treat children equally (Silman et al., 2019). That general behavioral gender discourse is the domain most susceptible to stereotypical endorsement is theoretically consistent with gender schema theory (Bem, 1981): behavioral

attributes are among the earliest and most culturally saturated content of gender schemas, making them particularly resistant to critical revision without explicit professional development. As Cahill and Adams (1997) noted in their foundational study, even teachers holding nontraditional attitudes about adult gender roles did not consistently apply those views to children's behavioral expectations. Rogošić et al. (2020) similarly found that Croatian preschool teachers who professed egalitarian commitments retained stereotypical evaluations of children's social behavior.

The comparable means observed for S2 (Gender Role Characteristics) and S3 (Gender-Specific Behavioural Responses), both below the midpoint and statistically indistinguishable from each other, suggest that teachers in this sample maintained relatively more moderate traditional endorsement when it came to assigning roles, activities, and disciplinary responses. This is consistent with the literature indicating that explicit role assignment practices (who carries chairs, who plays with blocks) are more socially visible and thus more subject to normative pressure to appear equitable than tacit behavioral perceptions (Lynch, 2015; Logue & Harvey, 2009). Nevertheless, neither domain reaches clearly egalitarian levels, and both yielded significant group differences by job position and child presence schedule, confirming that professional context matters in shaping these more applied dimensions of gender perception. The strong correlation between S2 and S3 ($r = .723$) further suggests that teachers' tendencies to assign gendered roles are tightly coupled with their inclinations to respond differentially to gender-atypical behavior, a finding consistent with Erdena and Wolfgang's (2004) argument that disciplinary patterns and activity organization reflect a shared underlying gender-stereotyped orientation.

The finding that Childcare Givers endorsed more traditional gender perceptions than Preschool Educators across S2, S3, and the total scale is consistent with the hypothesis that professional educational preparation moderates gender role attitudes. Childcare Givers in North Macedonia typically hold lower formal qualifications than Preschool Educators, who complete university-level teacher education programs. Higher-level professional education has been associated with more egalitarian gender attitudes across multiple international studies (Tatar & Emmanuel, 2001; Almutawa, 2005; Preece & Bullingham, 2020), likely because tertiary programs provide greater exposure to equity-oriented theoretical frameworks, critical self-reflection, and structured professional discourse. The near-significant difference on S1 ($p = .054$, $d = -0.32$) further suggests that general gender discourse beliefs are also influenced by professional qualification level, though this effect requires replication with larger samples to confirm. The absence of a significant job position effect on S4 (Gender in Tales and Stories) is noteworthy: Childcare Givers and Preschool Educators did not differ in their attitudes toward gender portrayals in storybooks, suggesting that this domain may be shaped by factors other than professional training, such as cultural familiarity with traditional fairy tales (Yıldız & Erkan, 2024) or community-level narrative norms (Silova & Magno, 2004).

The significantly higher traditional perceptions on S2 and S3 among half-day compared to all-day program teachers, with large effect sizes ($d = -0.74$ and $d = -0.82$, respectively), is one of the most substantively important findings of this study, albeit one that requires cautious interpretation given the small half-day subsample ($n = 12$). Half-day preschool programs may serve communities embedded in more traditionally oriented cultural contexts, where conservative gender norms are more pervasive and institutional support for gender-transformative practice is limited (USAID, 2019; Silova & Magno, 2004). The compressed schedule of half-day programs may also offer fewer opportunities for sustained professional collaboration and self-reflective pedagogical practice, which are the mechanisms through which gender-equity awareness is typically deepened (Wingrave, 2018; Chen & Rao, 2011). The consistent non-significance of child presence schedule effects on S1 and S4 is also informative: general gender discourse beliefs and attitudes toward gender in stories appear

more uniformly distributed across program types, while the applied domains of role assignment and behavioral response are more sensitive to institutional context. Future research with larger half-day samples should examine whether these effect sizes are sustained.

Employment status was consistently non-significant across all models, confirming that the security or precariousness of a professional contract does not independently predict gender role perceptions among preschool teachers in this sample. This finding is theoretically coherent: employment status is an administrative characteristic that does not directly determine pedagogical socialization, cultural background, or professional training, the proximate determinants of gender attitude formation (Eagly & Wood, 2012; Zafra & García-Retamero, 2011). The practical implication is that gender-equity professional development interventions do not need to be stratified by contract type.

The internal consistency findings are notable for two reasons. First, after applying the correct reverse-coding specified in the original instrument (items 24, 30, 31, 37, 41, and 42), the alpha for S3 improved substantially from the uncorrected value to $\alpha = .739$, now within acceptable range. This underscores the importance of adhering to the instrument's original scoring specifications when adapting scales across languages. Second, S4 retained a somewhat lower reliability ($\alpha = .682$), suggesting that attitudes toward gender representation in tales and stories may be more heterogeneous in the North Macedonian sample than in the original Turkish standardization context (where $\alpha = .74$). Cultural variation in narrative traditions and the specific fairy tales familiar to participants could account for this variability and warrants further investigation in future validation work.

Conclusion

This study provides the first empirical evidence on preschool teachers' gender role perceptions in North Macedonia, addressing a significant gap in the Southeastern European early childhood education literature. Using the four-subscale PTPGCS instrument after correct reverse-coding, results revealed a clear domain hierarchy: General Gender Discourse perceptions were strongest, while Gender Role Characteristics, Gender-Specific Behavioural Responses, and Gender in Tales and Stories perceptions were more moderate and consistently below the scale midpoint. Significant differences by job position (Preschool Educators vs. Childcare Givers) and child presence schedule (all-day vs. half-day programs) emerged for the role assignment and behavioral response domains, while employment status showed no predictive value.

These findings carry direct implications for teacher education and professional development policy in North Macedonia. The consistent Preschool Educator–Childcare Giver differential across S2, S3, and the total scale strongly suggests that gender-equity content should be systematically integrated into the pre-service and in-service training of Childcare Givers, whose lower formal qualifications appear to leave gender attitudes less mediated by professional frameworks. The large effects associated with half-day program participation indicate that targeted professional development for these institutional contexts is particularly warranted. At the systemic level, these findings are consistent with calls from UNESCO (2017), the OECD (2022), and UNICEF (Nugroho et al., 2022) for gender-transformative curricula in initial teacher education and sustained in-service support, moving beyond one-off workshops toward structured reflective practice (Karabay et al., 2019; Chen & Rao, 2011).

Several limitations merit acknowledgment. The exclusive female composition of the sample precludes gender-comparative analyses and limits generalizability to male early childhood educators. The unequal group sizes for child presence schedule and employment status reduce statistical power for subgroup comparisons. The moderate alpha for S4 constrains interpretation in the narrative domain. Future research should employ larger and more balanced samples, include ethnically diverse rural and urban populations, and incorporate observational

measures to examine the persistent gap between declared attitudes and enacted classroom practice documented in the international literature (Warin & Adriany, 2017; Rogošić et al., 2020). Longitudinal designs tracking the effects of professional development interventions on gender attitude change over time would also substantially advance the evidence base for this underrepresented regional context.

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