Bartin University Journal Faculty of Education
https://doi.org/10.14686/buefad.1744405

Research Article

Preschool Teachers' Competencies for Organizing Out-of-School Learning: A Multivariate Analysis

Okul Öncesi Öğretmenlerinin Okul Dışı Öğrenmeyi Yapılandırma Yeterlikleri: Çok Değişkenli Bir Analiz

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Citation: Tanık Önal, N., & Erkul Hatipoğlu, R. (2026). Preschool Teachers' Competencies for Organizing Out-of-School Learning: A Multivariate Analysis. *Bartın University Journal of Faculty of Education, 4*, 224-240. https://doi.org/10.14686/buefad.1744405

Article Information

Article History

Received:
17 July 2025
Accepted:
08 June 2026
Published:
09 August 2026

Keywords

Out-of-school learning,
organizing OOSL,
early childhood education,
teacher.

Abstract

Purpose: *The effective implementation of out-of-school learning (OOSL) activities requires that teachers possess the necessary competencies to plan, implement, and assess learning in such environments. The present study aims to examine preschool teachers' competency levels in organizing out-of-school learning and to investigate whether these competencies differ according to gender, professional seniority, and educational background.* ***Method:*** *The research was carried out in the spring term of the 2023–2024 academic year and involved 147 preschool teachers employed in a provincial city situated in Türkiye's Central Anatolia Region. Data collection tools included a demographic information form and the Organizing OOSL Scale. Alongside descriptive statistics, the dataset was analyzed through MANOVA and multiple regression techniques.* ***Findings:*** *Findings indicated that teachers generally demonstrated high competency levels in organizing OOSL activities. However, when examined across sub-dimensions, the lowest mean scores were observed in the "knowledge" dimension, especially in areas related to legal regulations and safety procedures. Additionally, the sub-dimensions of OOSL competencies were significantly influenced by the variables of gender and years of professional experience. The results of the regression analysis also revealed that gender and seniority were significant predictors of teachers' overall competency levels.* ***Conclusion:*** *In this regard, it is advised to broaden professional development programs aimed at strengthening teachers' understanding of legal frameworks concerning the organization of OOSL activities. Furthermore, implementing mentorship structures to assist novice teachers and incorporating practice-based undergraduate courses on OOSL into teacher training curricula are also recommended.*

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Makale Bilgisi

Makale Tarihçesi

Geliş Tarihi:
17.07.2025
Kabul Tarihi:
08.06.2026
Yayımlanma Tarihi:
09.08.2026

Anahtar Kelimeler

Okul dışı öğrenme,
ODÖ düzenleme,
erken çocukluk eğitimi,
öğretmen.

Öz

Amaç: *Okul dışı öğrenme (ODÖ) süreçlerinin etkili bir şekilde yürütülebilmesi, öğretmenlerin bu ortamlarda öğrenmeyi planlama, uygulama ve değerlendirme konularında yeterli bilgi ve beceriye sahip olmalarını gerektirir. Bu doğrultuda yürütülen bu çalışmanın amacı, okul öncesi öğretmenlerinin ODÖ ortamlarını düzenleme konusundaki yeterlik düzeylerini belirlemek ve bu yeterliklerin cinsiyet, mesleki deneyim ve eğitim düzeyi gibi değişkenlere göre anlamlı bir farklılık gösterip göstermediğini çok düzeyli istatistiksel yöntemler kullanarak analiz etmektir.* ***Yöntem:*** *Araştırma, 2023-2024 eğitim-öğretim yılı bahar döneminde İç Anadolu Bölgesi'nde görece küçük bir il merkezinde görev yapan 147 okul öncesi öğretmeni ile yürütülmüştür. Veriler, Kişisel Bilgi Formu ve ODÖ Düzenleme Ölçeği ile toplanmıştır. Verilerin analizinde betimsel istatistiklerin yanı sıra MANOVA ve çoklu regresyon analizleri kullanılmıştır.* ***Bulgular:*** *Bulgular, öğretmenlerin okul dışı öğrenmeyi düzenleme yeterliklerinin genel olarak yüksek olduğunu göstermiştir. Alt boyutlar bazında inceleme yapıldığında ise en düşük ortalamanın "bilme" alt boyutunda ve özellikle yasal düzenlemelere ve güvenlik prosedürlerine ilişkin bilgi düzeyinde olduğu görülmektedir. Ayrıca mesleki kıdem ve cinsiyet değişkenleri ODÖ yeterlik alt boyutları üzerinde istatistiksel olarak anlamlı bir fark oluşturmaktadır. Regresyon analizi sonucunda da yine cinsiyet ve kıdem değişkenlerinin yeterlik üzerinde anlamlı yordayıcılar olduğu belirlenmiştir.* ***Sonuç:*** *Bu bağlamda öğretmenlerin ÖDÖ düzenlemeye dair mevzuat bilgilerini geliştirmeye yönelik eğitimlerin artırılması, deneyimsiz öğretmenlere yönelik mentörlük sistemlerinin kurulması ve okul dışı öğrenme odaklı uygulamalı lisans derslerinin müfredata dâhil edilmesi gibi öneriler sunulmuştur.*

Introduction

Early childhood is a critical phase in which the fastest progress is made in the development of the individual and their learning capacities are at the highest level (UNESCO, 2021). The learning environments and pedagogical approaches that children are exposed to during this period directly affect their cognitive, social, socio-emotional and physical development. However, when children's learning is limited to the classroom environment, their opportunities to connect with real life are greatly restricted. At minimum, the outdoor areas of preschool institutions are recommended to be utilized as learning environments and these spaces should be arranged in a way that contributes to the development of children (Mercan, Bilir & Darıca, 2021). At this point, OOSL environments that enable the child to gain an experience-based and multidimensional learning experience integrated with life come to the fore (Braund & Reiss, 2019; Eshach, 2007). OOSL refers to the transformation of non-formal environmental resources such as museums, nature parks, zoos, botanical gardens, science centers, historical sites, marketplaces, and school gardens into learning environments. This learning style supports the curiosity and exploration tendencies of preschool children and makes learning more meaningful, permanent, and fun (Ärlemalm-Hagsér & Sundberg, 2016). It also encourages children to encounter real-world problems, observe in different contexts,

collaborate, and learn using their multiple senses. Beyond enhancing academic performance, such experiences also foster children's socio-emotional development, self-confidence, and problem-solving abilities (Maynard et al., 2013). Spending time in nature has been shown to improve mood (Harvey et al., 2020); improves concentration and attention (Kuo et al., 2019); supports creativity (Almers et al., 2021); and may help alleviate stress, manage anger, and minimize problematic behaviors among children (Chawla et al., 2014). The Institute for Outdoor Learning (IOL), on the other hand, states that OSL has four main benefits compared to classroom learning: global, social, interpersonal, and internal. According to IOL (2020), OOSL provides the internalization of knowledge with direct experience, increases learning motivation and active participation, and increases social skills and self-management. OOSL offers rich sensory experiences and physical freedom of movement. In OOSL settings, children are more ready, interested, and curious to learn. Consequently, OOSL can be regarded as a multifaceted learning environment that supports pedagogical goals while also fostering developmental, social, and cultural growth. This can be explained by the fact that OOSL is strongly grounded in contemporary learning theories. Kolb (1984), in his Theory, describes learning as a cyclical process involving four phases: concrete experience, reflective observation, abstract thinking, and active experimentation. This learning cycle overlaps with the direct experiences acquired in OOSL settings. In his Constructivist Theory, Piaget (1952) emphasizes that the child constructs knowledge through active interaction with his/her environment and individual experiences, which is possible with OOSL. Vygotsky's (1978) Sociocultural Theory emphasizes that learning emerges through engagement in social contexts and is mediated by cultural elements. In this context, OOSL supports children's cognitive development in a multifaceted way by encouraging both individual exploration and social learning. In particular, Vygotsky's concepts of "zone of proximal development" and "adult guidance" emphasize the importance of organizing OOSL processes with pedagogical guidance. On the other hand, Bronfenbrenner's (1979) Theory makes it possible to make sense of OOSL with the child's multi-layered experiences in the environmental context by considering the child's development in the context of micro (family, school) and meso (e.g. school-environment relationship) systems.

In several countries worldwide, OOSL has been embedded within early childhood education frameworks. A prominent example can be seen in Scandinavian contexts-particularly Finland, Norway, and Sweden-where models like forest schools and outdoor pedagogy promote extended engagement with nature-based learning throughout the week (Niklasson & Sandberg, 2010). In Canada and Australia, OOSL practices are based on systematic collaborations with museums and science centers (Navas Iannini & Pedretti, 2022). In these countries, OOSL pedagogy is one of the basic modules in teacher training programs, and teachers go through special certification processes before entering the professions. In Türkiye, the place of the OOSL approach in preschool education has not yet been systematized. In recent years, the Ministry of National Education (MoNE, 2024a) has made educational program arrangements supporting OOSL

and produced guide materials. In this context, in the Turkish Century Education Model Preschool Program (MoNE, 2024b), it was recommended to include at least one hour of outdoor activities every day, regardless of the weather conditions, and it was emphasized that children should be active in the natural environment. The addition of an outdoor learning center among learning centers and the creation of learning outcomes for OOSL contents are also among the changes made. However, the extent to which these regulations are reflected in teachers' practice is a question mark. In particular, structural problems such as the planning of OOSL activities, legal permission processes, safety concerns, equipment and transportation restrictions make it difficult for teachers to carry out these processes (Carrier, Tugurian & Thomson, 2013; Öztürk & Luff, 2023; Tanık Önal & Ezberci Çevik, 2022; Uğurlu & Sever, 2024). However, teachers have concerns about how to plan in these environments, how to manage risks, and how to choose content suitable for children's developmental characteristics (Ata Doğan & Boz, 2019; Öztürk & Özer, 2021). In fact, a similar situation applies in some countries on an international scale. Studies by Ebbeck, Yim, and Warrier (2019) in Singapore and by Tuuling, Õun, and Ugaste (2019) in Estonia reveal that, despite recognizing the significance of out-of-school experiences in early education, teachers do not sufficiently implement these activities in their instructional practices. Previous research indicates that OOSL practices require teachers to possess multidimensional competencies, including pedagogical knowledge, regulatory awareness, risk management skills, and the ability to establish school–family–community collaborations (Carrier et al., 2013; Tanık Önal & Ezberci Çevik, 2022). Given the complexity of these competencies, it becomes essential to systematically investigate teachers' capabilities in organizing OOSL environments.

A review of the relevant literature indicates a growing number of studies across various disciplines in recent years. However, research on OOSL tends to be concentrated primarily in the domains of science and social studies education (Çiçek & Saraç, 2017; Durukan et al., 2002; Gürsoy, 2018; Kubat, 2018), often focusing on educators' perspectives regarding the use of out-of-school settings such as museums and science centers (Şentürk & Özdemir, 2014; Yavuz, 2012). In contrast, studies examining teachers' competencies in organizing OOSL activities remain relatively scarce (Cirit Gül, Tağrikulu & Omca Çobanoğlu, 2023; Gül & Saz, 2023; Pekin & Bozdoğan, 2021). More importantly, existing studies have largely relied on descriptive analyses, limiting the ability to reveal the combined and predictive effects of multiple variables on OOSL competencies. Addressing this gap, the present study adopts a multivariate analytical approach by employing MANOVA and multiple regression techniques. This approach enables a more comprehensive examination of both the differentiating and predictive roles of demographic variables, thereby providing a deeper analytical perspective on how teachers' competencies are shaped. Accordingly, this study aims to assess preschool teachers' competencies in organizing OOSL and to investigate whether these competencies differ significantly according to variables such as gender, years of professional experience, and level of education. In addition, the study seeks to identify the extent to which these variables predict teachers' competency levels. In doing so, the

research offers both methodological and practical contributions to the literature and has the potential to inform teacher education policies and professional development practices in Türkiye. The research is guided by the following questions:

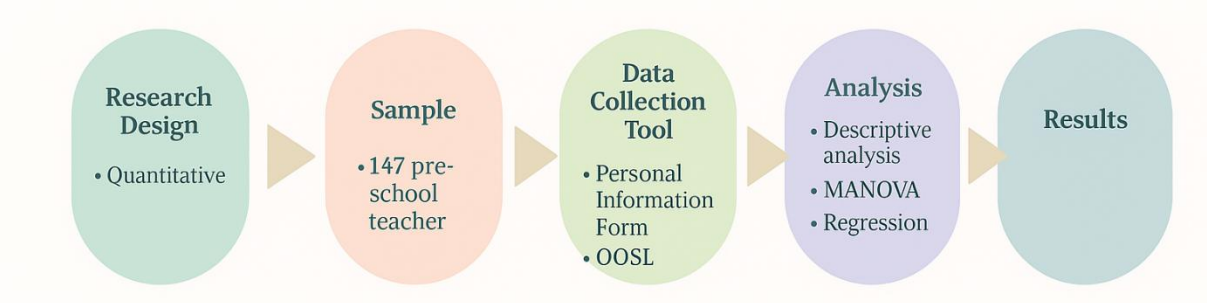
1. What is the level of competency of preschool teachers in organizing OOSL?
2. Do preschool teachers' competency levels in organizing OOSL activities show significant differences based on gender, years of professional experience, and educational background?
3. Do the variables of gender, seniority and educational status significantly predict teachers' OOSL competency levels?

Methodology

Research Design

In line with the aims and research questions stated in the study, this research examines preschool teachers' competencies in organizing OOSL and explores whether these competencies vary based on demographic factors such as gender, years of professional experience, and level of education. In addition, it analyzes whether these variables significantly predict teachers' competency levels. Within this framework, a multivariate analysis of variance (MANOVA) was conducted to examine whether the dependent variables-namely the sub-dimensions of competency (knowledge, planning, implementation, and evaluation) varied significantly according to the independent variables of gender, professional seniority, and educational background. Additionally, multiple linear regression analysis was employed to identify which demographic factors significantly predicted teachers' competency levels in organizing OOSL. The research does not examine a correlation-based relationship. Instead, it adopts an explanatory modeling approach that reveals differences and predictive variables. In this respect, the research is evaluated within the scope of cross-sectional predictive quantitative design (Creswell, 2014). The Flowchart of the Research Process is presented in Figure 1:

Figure 1: *Flowchart of the Research Process.*



Participants

In the spring term of the 2023–2024 academic year, data were collected from preschool teachers working in a central city located in the Central Anatolia Region of Türkiye. At the

time of data collection, the total number of preschool teachers in the area was 279. A convenience sampling technique was employed to ensure accessibility and efficiency, and the final sample consisted of 147 preschool teachers who voluntarily participated in the study (Creswell, 2014). The participants were employed in both independent kindergartens and preschool classrooms within primary schools in the city center. Their teaching experience in early childhood education varied in accordance with their reported professional seniority. Although all participants were actively working in preschool settings, no direct data were collected regarding the frequency or scope of their engagement with out-of-school learning practices. Therefore, teachers' interpretations of OOSL may vary depending on their individual experiences, institutional contexts, and access to resources. Descriptive information regarding the participants is presented in Table 1.

Table 1: *Demographic Characteristics of the Participants*

Variables	*Group*	*n*	*%*
Gender	Female	114	77.6
	Male	33	22.4
Professional Seniority	1-5 years	65	44.2
	5-10 years	33	22.4
	10-15 years	27	18.4
	15 – 20 years	22	15.0
Educational Status	Undergraduate	129	87.8
	Postgraduate	18	12.2
Total		147	100

According to Table 1, 77.6% of the participants were female and 22.4% were male. Teachers with 1-5 years of experience (44.2%) constitute the largest group in the distribution of professional seniority. However, 87.8% of the participants have undergraduate education and 12.2% have postgraduate education.

Data Collection

The data collection instrument used in this study comprises two sections. The first section includes a "Personal Information Form" designed to gather demographic details of the participants, such as gender, professional seniority, and educational background. The second section consists of the 5-point Likert-type OOSL Regulation Scale (OOSLRS), originally developed by Bolat and Köroğlu (2020). The scale encompasses four sub-dimensions: Knowing (7 items), Planning (7 items), Implementation (8 items), and Evaluation (7 items). Total scores on the scale range from a minimum of 29 to a maximum of 145. The original study reported a Cronbach's alpha reliability coefficient of 0.87 for the entire scale, with all sub-dimensions exceeding the 0.70 reliability threshold. Therefore, both the overall scale and its sub-dimensions can be considered reliable measurement tools. In the current study, the reliability of the OOSLRS was re-calculated, yielding a Cronbach's alpha of 0.98 for the entire scale, with all sub-dimensions also demonstrating reliability coefficients above 0.70.

Data Analysis

All statistical analyses were conducted using IBM SPSS Statistics version 29. The normality of the data was assessed using the Kolmogorov–Smirnov test together with skewness and kurtosis values. A summary of the results is presented in Table 2.

Table 2: *The results of the Normality Test*

Statistic	*df*	*Sig.*	*Skewness*	*Kurtosis*
0.070	147	0.075	- . 480	0.142

As shown in Table 2, the data met the assumption of normality. The Kolmogorov–Smirnov test was not statistically significant (p = .075), indicating no departure from normality. In addition, the skewness (−0.480) and kurtosis (0.142) values were within the acceptable range of −1.5 to +1.5 recommended by Tabachnick and Fidell (2013). Therefore, the data were considered normally distributed, and parametric statistical analyses were deemed appropriate. Furthermore, the assumptions of homogeneity of variance (Levene's test) and multivariate normality were also examined prior to conducting the analyses.

In the study, MANOVA and multiple regression were used together to explain both the differentiating effect of demographic variables on OOSL competencies and the variables by which these competencies can be predicted. These methods are considered effective tools for testing non-causal relationships between variables within the framework of the explanatory modeling approach (Pallant, 2020). First, multivariate analysis of variance (MANOVA) was performed to test whether the OOSL competencies differed in four sub-dimensions (Knowing, Planning, Implementation, Evaluation) according to gender, seniority and education level variables. Then, multiple linear regression analysis was applied to examine which demographic variables predicted these competency scores. Before the analysis, regression assumptions (normality, multicollinearity, linear relationship, homogeneity of variance) were tested and found to be met.

To interpret preschool teachers' participation levels in OOSL competencies, categorical response options were converted into continuous variables using the formula (number of options-1)/number of options. Based on this, responses were analyzed using predefined score intervals ranging from "Strongly Disagree" to "Strongly Agree."

Findings

Findings Regarding the Competency Levels of Preschool Teachers in Organizing OOSL

The first research question addressed the competency levels of preschool teachers in organizing OOSL. Descriptive statistics indicated that teachers generally reported high levels of competency, with an overall mean score of 3.90 on the OOSL Regulation Scale, corresponding to an "agree" level. This indicates that participants perceive themselves as relatively competent in organizing OOSL, although not at the highest level. Across sub-

dimensions, the highest mean score was observed in the "Evaluation" dimension ($\bar{X}$ = 4.11), followed by "Implementation" ($\bar{X}$ = 4.03), "Planning" ($\bar{X}$ = 3.93), and "Knowing" ($\bar{X}$ = 3.52). These scores were calculated based on the arithmetic mean of the items within each sub-dimension of the scale. These results suggest that teachers feel more confident in implementing and evaluating OOSL processes, whereas their knowledge base remains comparatively less developed. At the item level, the highest mean score was obtained for the statement *"I know the effect of OOSL environments on meaningful learning"* ($\bar{X}$ = 4.19), while the lowest mean score was found for *"I have knowledge about the necessary legal legislation on OOSL"* ($\bar{X}$ = 2.99). This contrast indicates that although teachers are aware of the pedagogical value of OOSL, they experience limitations in procedural and regulatory knowledge.

Findings Regarding the Examination of Preschool Teachers' Competency Levels in Organizing OOSL According to Gender, Professional Seniority and Educational Status Variables

The second research question examined whether preschool teachers' OOSL competency levels differ significantly according to gender, professional seniority, and educational status. To address this question, a multivariate analysis of variance (MANOVA) was conducted using four dependent variables: Knowing, Planning, Implementation, and Evaluation. The assumptions of MANOVA, including multivariate normality (assessed through skewness and kurtosis values) and homogeneity of covariance matrices (Box's M test), were examined and found to be met. The results of the multivariate analysis are presented in Table 3.

Table 3: *Findings from Two-Way MANOVA*

Variable	*Wilks' Λ*	*F*	*Degree of Freedom (df)*	*p*	*Effect Size (η^2)*
Gender	0.898	3.93	4.139	0.0047	0.026
Seniority	0.865	1.73	12.368	0.0585	0.012
Educational Level	0.932	1.24	8.278	0.2771	0.009

As shown in Table 3, the multivariate test using Wilks' Λ revealed a statistically significant effect of gender on the combined OOSL competency sub-dimensions [Wilks' Λ = 0.898, F(4, 139) = 3.93, p = 0.0047, η^2 = 0.026]. However, the effect size was small, indicating that gender accounts for a limited proportion of variance in OOSL competencies. For professional seniority, the multivariate test did not reach conventional levels of statistical significance [Wilks' Λ = 0.865, F(12, 368) = 1.73, p = 0.0585, η^2 = 0.012], although the p-value was close to the significance threshold. The small effect size also suggests a limited practical impact. Therefore, the effect of seniority should be interpreted with caution. Similarly, no statistically significant multivariate effect was found for educational status [Wilks' Λ = 0.932, F(8, 278) = 1.24, p = 0.2771, η^2 = 0.009], indicating that teachers' level of formal education was not associated with meaningful differences in OOSL competencies. Following the multivariate analysis, univariate ANOVA tests were conducted to examine differences across individual sub-dimensions. The results are presented in Table 4.

Table 4: *ANOVA results of Sub-Dimensions by Variables*

Sub-dimension	*Gender F*	*Gender p*	*Seniority F*	*Seniority p*	*Education F*	*Education p*
Knowing	11.46	0.0009	4.89	0.0029	1.63	0.200
Planning	17.99	0.0	3.94	0.0098	0.46	0.6325
Application	10.46	0.0015	5.20	0.0019	0.50	0.6102
Evaluation	7.38	0.0074	4.15	0.0075	0.22	0.8005

As presented in Table 4, statistically significant differences were observed across all sub-dimensions with respect to gender ($p < 0.01$). Similarly, professional seniority was associated with statistically significant differences across all sub-dimensions at the univariate level ($p < 0.01$). In contrast, no statistically significant differences were found across any sub-dimension in terms of educational status ($p > 0.05$). Taken together, these findings indicate that gender is associated with differences in self-reported OOSL competencies, although the magnitude of this effect is small. The results regarding professional seniority suggest that while differences emerge at the univariate level, the overall multivariate effect is limited and should be interpreted cautiously. Educational status, on the other hand, does not appear to be a significant factor in explaining variation in teachers' OOSL competencies.

Findings Regarding the Power of Variables to Predict Teachers' OOSL Competency Levels

The third research question examined whether gender, professional seniority, and educational status significantly predict teachers' OOSL competency levels. To address this question, multiple linear regression analysis was conducted. Categorical variables were dummy coded prior to analysis. Prior to the analysis, the assumptions of multiple linear regression were tested. Scatterplot examinations confirmed a linear relationship between the independent variables and the dependent variable (OOSL competency score). Variance Inflation Factor (VIF) values ranged between 1.00 and 1.02, indicating no multicollinearity issues ($VIF < 10$). The normality of residuals was supported by the Shapiro–Wilk test ($p > 0.05$), and homoscedasticity was verified through residual plots. Therefore, all assumptions were considered to be met. The results of the regression analysis are presented in Table 5.

Table 5: *Regression Results Predicting Teachers' OOSLRS Competency*

Variable	*B*	*β (Standard)*	*t*	*p*	*VIF*
Constant	3.3037	—	14.8953	< .001	-
Gender	0.5119	0.20	3.6853	< .001	1.00
Seniority	0.1828	0.15	3.7117	< .001	1.02
Educational Status	-0.0262	-0.08	-0.1491	0.882	1.02
Model Summary					
R^2		*Adjusted* R^2	*F*		*p*
0.207		0.190	12.41		< .001

According to Table 5, the regression model was statistically significant [$F(3, 143) = 12.41$, $p < 0.001$] and explained approximately 20.7% of the variance in teachers' OOSL competency scores ($R^2 = 0.207$, Adjusted $R^2 = 0.190$), indicating a moderate level of

explanatory power. Based on the regression coefficients, gender ($\beta = 0.20$, $p < 0.001$) and professional seniority ($\beta = 0.15$, $p < 0.001$) were found to be significant predictors of OOSL competency. In contrast, educational status was not a significant predictor ($\beta = -0.08$, $p = 0.882$). All VIF values were between 1.00 and 1.02, confirming that there were no multicollinearity issues in the model. Overall, these findings suggest that gender and professional experience are associated with variations in teachers' OOSL competencies, whereas formal educational level does not appear to be a significant contributing factor.

Discussion

In this study, the competencies of preschool teachers in planning, implementing, and evaluating OOSL activities were examined through multivariate analyses. The findings revealed that teachers' overall OOSL competency levels were relatively high. In particular, the high scores obtained in the "Implementation" and "Evaluation" sub-dimensions indicate that teachers perceive themselves as capable of effectively managing OOSL processes. One possible explanation for this finding lies in the nature of early childhood education, which inherently emphasizes experiential and concrete learning processes. Since OOSL environments are largely based on hands-on, activity-oriented experiences, teachers may feel more confident in implementation and evaluation processes compared to more abstract domains such as knowledge and planning. In this sense, the alignment between the experiential nature of early childhood pedagogy and the structure of OOSL may facilitate teachers' perceived competency (Kolb, 1984). This result is also supported by international studies. For example, Waite et al. (2022) reported that early childhood teachers demonstrate high levels of pedagogical competency in outdoor education contexts, while Barrable et al. (2021) found that nature-based learning environments enhance both teachers' motivation and children's participation. Similarly, the findings of the present study are consistent with previous research (Ustabulut, 2021), although some studies have reported moderate levels of teacher competency in this area (Bozpolat & Alem, 2022). However, it should be noted that these interpretations are based on self-reported data. The absence of detailed contextual information regarding teachers' actual practices and experiences in OOSL settings may limit the depth of interpretation. Therefore, the findings should be approached with caution.

In the study, lower scores were found in the "Knowing" and "Planning" dimensions of OOSL compared to other sub-dimensions. This finding indicates that teachers need support in areas such as theoretical knowledge about OOSL, legislation, environmental resource mapping, and making a parental cooperation plan. The possible reason for this may be the lack of structured, field-based content for OOSL in pre-service teacher training programs. The literature reveals that the disconnect between theoretical content and practice in the field creates a gap in teacher competencies (Zeichner, 2010). In fact, this problem is not unique to Türkiye. Agostini et al. (2022) in their study in Italy, revealed that preschool teachers need field experts and material support in their OOSL planning processes. These findings show that the theoretical infrastructure of OOSL competencies should be systematically strengthened even on an international scale. Similarly, in the

study conducted by Bozpolat and Alem (2022) using the same measurement tool, it was determined that secondary school teachers had a moderate level of agreement in other sub-dimensions and a strong level of agreement in the application sub-dimension.

Another important result of the study shows that female teachers' OOSL proficiency levels are higher than male teachers. This difference is observed not only in Türkiye but also in international examples where women assume pedagogical leadership in early childhood education. The possible cause may be the impact of gender roles on pedagogical approaches. The child-centered and socio-emotional development-supportive tendencies of female teachers may enable them to produce stronger pedagogical actions in relational, nature-interactive learning environments such as OOSL. This result is in line with the findings of similar studies in the literature (Öner, 2015; Wishart & Rouse, 2019). However, in some studies, it is also observed that gender does not make a significant difference in teachers' OOSLR competencies (Bozpolat & Alem, 2022; Cirit Gül et al., 2023; Usta et al., 2024). This difference may be due to the change in the sample or the effects of many variables on teachers' OOSLR competencies in addition to gender.

The study revealed that more experienced teachers demonstrated higher levels of competency in OOSL than those with lower levels of seniority. The reason for this finding may be associated with the development of skills such as pedagogical flexibility, crisis management, and anticipation of children's needs with experience. Supporting this, Kolb's (1984) experiential learning cycle and Schön's (2017) reflective practice theory point out that the situations teachers encounter in the field improve the quality of practice over time. In particular, the implementation process is of particular importance for a context-oriented and directly experience-based learning area such as OOSL. The results of the studies in the literature coincide with the results of the current research (Bentsen et al., 2021; Öztürk & Özer, 2022; Ürey & Kaymakçı, 2020; Wishart & Rouse, 2019). In the study of Bentsen et al., they stated that senior teachers' skills to solve crises and manage the process in the out-of-school education environment were more developed. Wishart and Rouse (2019) reported that experienced teachers found more creative solutions and made effective decisions in both the planning and implementation stages of OOSL.

In the study, no significant difference was found between teachers' OOSL competencies in terms of educational status, that is, having a bachelor's or postgraduate degree. The possible reason for this situation is that there is no direct relationship between academic knowledge and practical experience in the field. This finding also shows that OOSL competencies are mostly based on experiential and contextual learning and do not develop only with theoretical knowledge. This result is consistent with previous studies in the literature (Kida, 2019; Usta et al., 2024; Yıldız, 2022). In these studies, it was stated that it was not possible for teachers to be successful in OOSL activities only with theoretical knowledge and that their OOSL competencies improved when the application area was provided. In their study conducted in Canada, they emphasized that theoretical knowledge should be integrated with field practice in order

for teachers to be successful in OOSL activities. Similarly, in their research in Australia, they stated that the effect of postgraduate education was reflected in OOSL competencies only when the field of application was provided. However, there are also studies in the literature revealing that teachers' OOSLR competencies differ significantly according to their education level (Bozpolat & Alem, 2022; Ürey & Kaymakçı, 2020). These results were also supported by the regression model. In the study, it was concluded that while professional seniority and gender stood out as significant predictors of OOSL competencies, education level did not have a significant effect. These results suggest that teachers' OOSL competencies do not only depend on individual knowledge and skills, but also on a broader basis such as professional environment, experience sharing, and self-efficacy.

Conclusion and Recommendations

As a result, it was observed that preschool teachers' OOSL proficiency levels were relatively high in general. Based on the sub-dimensions, the highest average was seen in the "Evaluation" dimension, and the lowest average in the "Knowing" dimension. These results indicate that teachers are more competent in implementing and evaluating OOSL activities. However, regulatory knowledge suggests that they have more limited knowledge in areas such as the way environmental resources are used for educational purposes. Gender and professional seniority make a significant difference on OOSL competencies. Female teachers reported slightly higher OOSL competency scores, especially in the "Planning" and "Evaluation" sub-dimensions. It was determined that as the seniority level increased, the scores increased in all competency sub-dimensions. Education level (undergraduate/graduate) does not make a significant difference on OOSL competencies. According to the predictive power of the variables, the model is significant. The regression model indicated that gender was the strongest predictor of teachers' OOSL competency levels, while professional seniority also made a significant contribution. Educational status did not significantly predict OOSL competencies.

Based on the findings of the study, several practical recommendations can be proposed. The results revealed that teachers demonstrated relatively lower mean scores in the "knowing" sub-dimension, indicating limited knowledge regarding procedural aspects of organizing OOSL. In addition, teachers' competencies significantly differed according to variables such as professional seniority and gender. In this regard, it is recommended to organize in-service training programs with structured and practice-oriented content to address teachers' knowledge gaps related to OOSL. These programs may particularly prioritize teachers with lower levels of professional experience. Furthermore, mentoring practices can be established to enable experienced teachers to share their knowledge and practical expertise with novice teachers. Finally, providing structural support that enables teachers to allocate more time for planning processes may contribute to more effective implementation of OOSL activities. However, as this study is based solely on quantitative data, further research incorporating qualitative evidence is needed to better understand the contextual factors influencing these processes. The

findings also suggest that the development of teachers' OOSL competencies requires not only individual training but also collaborative and context-sensitive professional development environments. Accordingly, revising both pre-service and in-service teacher education policies in line with these needs may serve as a long-term strategy. Finally, reducing bureaucratic workload and allocating more time for planning processes may support teachers in implementing OOSL activities more effectively. Although the current study provides statistically robust findings through multivariate analyses, the inclusion of qualitative insights could further enrich the interpretation of teachers' competencies by revealing underlying reasons, contextual factors, and experiential dimensions.

Limitations

As with all scientific investigations, this study has certain limitations that should be acknowledged. First, the research sample was confined to 147 preschool teachers working in a relatively small city center in the Central Anatolia Region of Türkiye. Although the sample aimed to represent the accessible population within this context, the findings may not be generalizable to all preschool teachers across different regions of Türkiye. Regional differences in cultural context, access to in-service training, and availability of OOSL opportunities may influence teachers' competencies. Second, the study relied solely on a self-report scale as the data collection instrument. While this approach enables the identification of general patterns and relationships, it may introduce subjectivity, as responses can be influenced by social desirability and personal perceptions. The absence of observational or qualitative data limits the ability to capture teachers' actual practices and in-depth experiences in OOSL settings. Third, the study focused on a limited set of demographic variables, namely gender, professional seniority, and educational status. Other potentially influential factors, such as school type, institutional support, prior training experiences, and teachers' conceptualizations of OOSL, were not included in the analysis. In addition, no detailed contextual data were collected regarding the frequency or nature of teachers' engagement with OOSL practices. Based on these limitations, future research should incorporate mixed-methods designs that integrate qualitative data sources such as interviews and observations, include a wider range of contextual and institutional variables, and involve more diverse samples to provide a more comprehensive understanding of teachers' competencies in organizing OOSL.

Ethical Approval

This research was conducted with the approval of the Ethics Committee of Nigde Omer Halisdemir University (Protocol No. E-86837521-050.99-660448).All procedures were carried out in accordance with established ethical research standards. Participation in the study was entirely voluntary, and participants were fully informed about the purpose, process, and confidentiality of the research. Informed consent was obtained through an online form prior to data collection. The data were gathered anonymously via Google Forms between March and April 2024. The initial section of the form included a detailed consent statement outlining the study's objectives, ethical considerations, participant

rights, and confidentiality assurances. Only individuals who voluntarily agreed by approving this form were included in the study. Throughout the research process, particular attention was given to upholding key ethical principles such as autonomy, beneficence, and confidentiality. All collected data were anonymized and used exclusively for academic purposes.

Author Contributions

Nagihan Tanık Önal: Conceptualization, Theoretical Background, Methodology, Data Analysis, Data Visualization, Writing, Review and Editing.

Raziye Erkul Hatipoğlu: Conceptualization, Theoretical Background, Methodology, Data Collection, Writing, Review and Editing.

Conflict of Interest

The authors declare no conflict of interest.

Plagiarism Checks

The manuscript was checked using iThenticate plagiarism detection software prior to submission. The authors confirmed that all sources were appropriately cited and that the manuscript complies with the journal's originality requirements.

Artificial Intelligence Usage Statement

During the preparation of this work, the authors used AI tools to improve the language and grammar of the manuscript. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Acknowledgment

A preliminary version of this study was presented as an oral presentation entitled "Preschool Teachers' Competencies in Organizing Out-of-School Learning" at the ASES X International Social Sciences Congress, held from May 2 to May 4, 2025.

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