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Comparison of prosocial skills and environmental awareness in preschool period

Okul öncesi dönemde prososyal beceriler ve çevresel farkındalığın karşılaştırılması

Ceylan Arman[1], Ela Ulaşkın[1], Samet Ata[1]

[1]Ağrı İbrahim Çeçen Üniversitesi, Eğitim Fakültesi, Temel Eğitim Bölümü, Okul Öncesi Eğitimi, Ağrı, Türkiye.

ABSTRACT

***Aim*:** This study explores the interrelation between prosocial skills and environmental awareness among preschool children. With the growing importance of sustainable behaviors, understanding these relationships early in child development can inform educational strategies that foster environmental stewardship from a young age.

Methods: Employing a relational and survey methodology, the study collected data from preschool children in Ağrı Province during the 2023-2024 academic year. The Environmental Scale and the Child Prosociality Scale-Teacher Form were used to measure environmental attitudes and prosocial behaviors.

***Results*:** The analysis revealed no significant differences in environmental attitudes and prosocial behaviors across gender or socioeconomic status. However, age was a significant factor, with older children demonstrating greater prosocial behaviors. A modest but significant positive correlation between prosocial skills and environmental awareness was identified, suggesting that these areas are interlinked.

Conclusion: The findings underscore the potential of prosocial behaviors to influence environmental attitudes among preschoolers. The results advocate for the integration of prosocial skills training into early environmental education curricula to enhance effective learning and adoption of sustainable practices. Future research could further delineate how these relationships evolve with age and over more diverse demographic settings.

Keywords*:* environmental awareness; preschool education; prosocial skills; psychology; sustainable behaviors

ÖZET

Amaç: Bu çalışma, okul öncesi çocuklar arasında prososyal beceriler ve çevre bilinci arasındaki karşılıklı ilişkiyi araştırmaktadır. Sürdürülebilir davranışların artan önemiyle birlikte, bu ilişkilerin çocuk gelişiminin erken dönemlerinde anlaşılması, küçük yaşlardan itibaren çevre yönetimini teşvik eden eğitim stratejilerine bilgi sağlayabilir.

Yöntem: İlişkisel ve anket yönteminin kullanıldığı bu çalışmada, 2023-2024 eğitim-öğretim yılında Ağrı ilindeki okul öncesi çocuklardan veri toplanmıştır. Çevresel tutumları ve prososyal davranışları ölçmek için Çevre Ölçeği ve Çocuk Prososyallik Ölçeği-Öğretmen Formu kullanılmıştır.

Bulgular: Analizler, çevresel tutumlar ve prososyal davranışlarda cinsiyet veya sosyoekonomik durum arasında anlamlı bir farklılık olmadığını ortaya koymuştur. Bununla birlikte, yaş önemli bir faktördür ve daha büyük çocuklar daha fazla prososyal davranış sergilemektedir. Prososyal beceriler ile çevresel farkındalık arasında düşük ancak anlamlı bir pozitif korelasyon tespit edilmiş, bu da bu alanların birbiriyle bağlantılı olduğunu düşündürmüştür.

Sonuçlar: Bulgular, prososyal davranışların okul öncesi çocuklar arasında çevresel tutumları etkileme potansiyelinin altını çizmektedir. Sonuçlar, etkili öğrenmeyi ve sürdürülebilir uygulamaların benimsenmesini artırmak için prososyal beceri eğitiminin erken çevre eğitimi müfredatına entegre edilmesini savunmaktadır. Gelecekteki araştırmalar, bu ilişkilerin yaşla ve daha çeşitli demografik ortamlarda nasıl geliştiğini daha fazla tanımlayabilir.

Anahtar kelimeler*:* çevre bilinci; okul öncesi eğitim; prososyal beceriler; psikoloji; sürdürülebilir davranışlar

Introduction

Despite growing interest in environmental education and prosocial development, few studies have empirically examined how these domains intersect in early childhood. In particular, the role of prosocial behavior in shaping environmental awareness remains underexplored among preschool-aged children. This study addresses this critical gap by investigating the relationship between prosocial tendencies and environmental awareness in early childhood—a developmental stage where lifelong values begin to take root. By integrating two key domains—environmental consciousness and prosociality—this research offers an original contribution to the literature and provides valuable insights for designing comprehensive early childhood education programs that foster both social and ecological responsibility.

The environment is commonly defined as the living spaces where organisms are connected to and influenced by vital bonds (Atasoy, 2006). Another definition emphasizes the cultural, social, biological, economic, and physical surroundings where humans and all living things interact throughout their lives (Environment, T.C., 2018). Over time, human beings have increasingly viewed nature as a consumable resource, resulting in irreversible destruction of ecosystems (Yener, 2021). Any intervention in the environment tends to affect all living beings similarly. While human impact on nature was minimal prior to the Industrial Revolution, technological advancements, unplanned urbanization, and population growth have since escalated environmental degradation (Güler, 2010). These developments necessitate both individual and collective action to mitigate harm.

Population growth and unsustainable production-consumption cycles have led to ecosystem disruption and environmental problems. Such problems should be addressed on global, national, and local scales (Doğan & Keleş, 2020; Farmer et al., 2007;

Sorumlu Yazar / Corresponding Author: Samet Ata, Ağrı İbrahim Çeçen Üniversitesi, Eğitim Fakültesi, Temel Eğitim Bölümü, Okul Öncesi Eğitimi, Ağrı, Türkiye
E-posta: atasamett@gmail.com
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United Nations Educational Scientific and Cultural Organization [UNESCO], 1980). Since these issues are rooted in human behavior, all individuals must act with environmental awareness and responsibility (Irmak Kazazoğlu, 2020; Yalçınkaya, 2012). Fostering environmental awareness is an effective strategy for resolving ecological crises and preserving cultural, natural, and historical values (Irmak Kazazoğlu, 2020; Ujang & Zakariya, 2015). In this context, identifying the environmental awareness levels of preschool children offers a unique contribution to the literature.

One of society's most important responsibilities is to cultivate children's interest in, commitment to, and protection of the environment for a sustainable future (Güler, 2010). Environmental education plays a vital role in shaping values, behaviors, and sustainable lifestyles (Davis, 1998). As the environmental crisis is a human-made issue affecting all people, societal-wide participation in solutions is essential. Education is the most effective and accessible tool for instilling environmental awareness. This has led to the emergence of "environmental education" as a dedicated field. According to Özdemir (2016), this field developed to reduce human pressure on nature and became part of formal education in the 1970s.

Environmental education aims to equip individuals with the knowledge, skills, and sense of responsibility necessary for solving ecological problems (Şahin, 2021). It encourages students to engage in behaviors that contribute to environmental protection. Education systems increasingly aim to foster individuals who are both environmentally knowledgeable and sensitive (Irmak Kazazoğlu, 2020; Uzun & Sağlam, 2006). Since human activity drives environmental degradation, it is expected that humans themselves must be the solution (Özdemir, 2007). Environmental education seeks to develop positive attitudes and behaviors that prevent ecological harm. To be effective, it must begin early and employ diverse techniques to ensure lasting learning and behavioral change in children (Buldur, 2018).

Environmental awareness is the recognition of the damage caused by human actions to ecosystems and the self-awareness of that damage (Yener, 2022). Environmental place perception includes individuals' beliefs, feelings, and attitudes developed through interaction with their surroundings. This perception is influenced by factors such as education, gender, age, and engagement with the environment (Irmak Kazazoğlu, 2020; Ujang & Zakariya, 2015). Environmental awareness encompasses the understanding of human-environment relationships, the capacity for environmentally responsible action, and the recognition of one's place within the environment (Pata, 2008). A child's environmental awareness is shaped significantly by family attitudes and environmental conditions. Children raised in environments marked by ecological degradation or low awareness may develop limited concern for nature (Irmak Kazazoğlu, 2020).

It is crucial to assess the level of environmental awareness in children, as well as their orientation and interest in ecological issues (Gökçeli et al., 2021). Environmental education programs are key to instilling these values (Serttaş, 2020). Understanding which values to integrate into such programs will guide future educational designs. Therefore, this study contributes uniquely by investigating effective educational components.

Developing a sense of responsibility, ethics, and environmental consciousness should begin in early childhood (Gökçeli et al., 2021). Early education benefits individuals and society in multiple domains—economic, cognitive, environmental, and health-related. At this developmental stage, children can begin to conceptualize solutions to environmental problems and form the foundation of lifelong awareness (Jeong, 2004; Marin & Yıldırım, 2004; Grodzinska-Jurczak et al., 2006; Walsh-Daneshmandi & MacLachlan, 2006; Robertson, 2008; Davis, 2009; Gülay & Önder, 2011).

In this context, prosocial behavior may significantly impact the development of environmental awareness in preschool children. Prosocial values strengthen social bonds and promote positive relationships within communities (Bağcı, 2015). These behaviors, such as helping and cooperation, foster desirable traits like kindness and social responsibility (Özer, 2016). Therefore, it is reasonable to hypothesize that prosociality could support the development of environmental awareness.

Rosenhan (1987) credited Auguste Comte with introducing the term "prosocial behavior" to mean interest shown to others. Eisenberg and Mussen (1989) defined it as voluntary helping behavior. Prosocial actions, in contrast to antisocial ones, include helping, cooperation, sacrifice, and support (Uzmen & Mağden, 2002; Carlo et al., 2003; Yıldız et al., 2012). Thus, examining the influence of prosocial tendencies—especially the act of helping—on environmental awareness adds another original dimension to this study.

Environmental sustainability involves efficiently using resources and ensuring their availability for future generations. Environmentally responsible behavior, often termed "green behavior," reflects a proactive stance toward preserving natural resources (Yiğit, 2022). In both private and educational settings, green behaviors are considered voluntary actions aimed at environmental protection (Norton et al., 2015). Blok et al. (2015) categorized such behaviors into demographic, intrinsic, and extrinsic factors, where intrinsic motivators include environmental awareness, values, and intentions. Green behavior aligns with prosocial action, benefiting both the environment and broader society (Norton et al., 2017; Kim et al., 2014).

While theoretical connections between environmental awareness and prosocial behavior have been established, there is a notable absence of empirical studies exploring these variables together in young children. This gap highlights the originality and necessity of the present research.

This study aims to investigate the extent to which preschool children's environmental awareness is influenced by their prosocial behavior. Identifying this relationship can inform the development of environmental education programs that integrate prosocial skills.

Research Problem

1. Is there a relationship between environmental awareness and prosociality levels of preschool children?

Sub-Problems

1. What are the levels of environmental awareness among preschool children?
2. What are the levels of prosociality among preschool children?

3. Do preschool children's environmental awareness and prosociality levels vary based on gender, parental education level, and socioeconomic status?
4. What is the relationship between preschool children's environmental awareness and their prosocial skills?
5. To what extent do preschool children's environmental awareness and prosociality levels predict their prosocial skills?

Method

Research design

In this study, which aims to reveal the existence of the relationship between preschool children's environmental awareness and their prosocial skills, correlational and survey methods were used among quantitative research methods. Relationships between events can be quantified using quantitative research methods. This quantification process defines the descriptive survey method. Descriptive studies involve the process of evaluating relevant events and situations without any intervention (Büyüköztürk et al., 2016).

In addition to the descriptive survey method, the correlational model will also be used in this study. The studies examined in the relational model can also be defined as correlational studies with the inclusion of two or more variables (Neuman, 2006). The dependent variable of the study was determined as environmental awareness and the predictor variable as prosocial skills.

Sample of the study

The population of the study consists of preschool children. The study population consisted of preschool children who continued their education in the 2023-2024 academic year in independent kindergartens and kindergarten classes affiliated to the Ministry of National Education in the central district of Ağrı Province, who gave the necessary permission for the study, whose parents and themselves voluntarily participated in the study, and who did not have any psychiatric or developmental diagnosis.

Based on the criteria determined within the scope of the study, it was calculated to reach 287 children with a 5% margin of error, 95% confidence interval and medium effect size using the G*Power sampling calculation tool. However, 315 students participated in total due to missing data. The study was completed with the data of 282 students as a result of removing the extreme values from the participating students. Some demographic information about the students is given in Table 1.

Table 1. Participant demographic characteristics

Variable	Participant	F	%
Gender	Female	151	53.5
	Male	131	46.5
Age	4 Ages	74	26.2
	5 Ages	156	55.3
	6 Ages	52	18.5
Mother Education Level	Illiterate	32	11.4
	Primary School Graduate	120	42.6
	Secondary School Graduate	50	17.7
	High School Graduate	41	14.5
	University Graduate	39	13.8
Socio-economic Level	Low	48	17.0
	Moderate	128	45.4
	High	106	37.6
	Total	282	100.0

The data of 282 preschool children were used in the study. 53.5% of the students were girls. The majority of the participants were 5 years old with 55.3%. 42.6% of the students' mothers were primary school graduates and 45.4% of the children had a medium economic level.

Data collection tools

In this study, demographic information form, Environmental Scale and Child Prosociality Scale-Teacher Form were used.

Environmental Scale (CATES - PV): The Environmental Scale developed by Musser and Diamond (1999) and adapted into Turkish by Gülay (2011) will be used to reveal children's environmental awareness. In the 15-question scale, children will be asked to point to the correct picture in the questionnaire and then asked how much they like it (more or less) and their answers will be rated between 1 and 4 points. The internal reliability coefficient of the scale was found to be .72 and it consists of a unidimensional structure.

Child Prosociality Scale-Teacher Form: The scale, developed by Bower (2012) and adapted into Turkish by Bağcı (2015), aims to measure the observed and perceived prosocial behaviors of children as assessed by their teachers. A high score on the scale indicates that the child's prosociality skills are high. The reliability coefficient for the Teacher Form (22 items), which consists of a single dimension, was found to be .96.

Data collection and ethical considirations

After the ethics committee permissions required for the conduct of the study were obtained from Ağrı İbrahim Çeçen University, the necessary permissions were obtained from the Ağrı Provincial Directorate of National Education, and the schools randomly

determined by the researcher were informed about the study and administrative approval was obtained. Informative explanations about the purpose and content of the study were included in the voluntary participation form sent to the parents. The environmental scale was collected by directly asking children. The prosociality scale was completed by teachers by evaluating the students in their classes. The necessary permissions for the use of the scales in this study were obtained from the scale owners via e-mail.

Data analysis

Before examining the relationships between children's prosociality levels and environmental attitudes, the normality distribution of the data was examined. Accordingly, standardized z scores and box plots were examined and data showing outliers were excluded from the total data set. Table 2 shows the central tendencies of the scores obtained from the scales.

Table 2. Central tendency statistics

Dependent	N	$\overline{X}$	S.d.	Min	Max	Skewness	Kurtosis
Environmental Attitude	282	48.26	4.57	36	60	-.090	-.403
Child Prosociality	282	78.63	15.09	34	110	-.188	-.325

It was determined that the values obtained in children's environmental attitude and prosociality were in the +-2 value range, that is, the data were normally distributed (George & Mallery, 2016). Therefore, Independent Samples t Test was used for two independent variables and One-Way ANOVA (Post-Hoc Bonferroni) was used for more than two variables. The direction and size of the relationship between the variables were also examined with Pearson Correlation analysis. Interpretations were made in line with the correlation coefficients stated by Cohen (1988) as “small relationship for r= .10 to .29, medium relationship for r= .30 to .49 and large relationship for r=.50 to 1.00”. Simple Linear Regression analysis was used to examine the effect of prosociality on environmental attitude.

Results

Children's environmental attitudes and prosociality behaviors according to their gender were examined by independent samples t-test and the results are given in Table 3.

Table 3. t-test results according to children's gender

Variables	Gender	N	$\overline{X}$	S.d	t (Sd= 280)	p
Environmental Attitude	Female	151	48.07	4.62	-.773	.440
	Male	131	48.49	4.52		
Child Prosociality	Female	151	79.10	15.75	.554	.580
	Male	131	78.10	14.35		

p<0.05

It was concluded that there was no statistically significant difference in the environmental attitudes and prosocial behaviors of children examined according to their gender (p>0.05). Accordingly, it can be said that gender is not an effective variable on children's environmental attitudes and prosociality.

Environmental attitudes and prosociality behaviors of children according to their ages were examined by ANOVA and the results are presented in Table 4.

Table 4. ANOVA results according to children's age

Variables	Age	N	$\overline{X}$	s.s	F (2-279)	p	Difference
Environmental Attitude	4 Ages[a]	74	47.93	4.61	.487	.615	-
	5 Ages[b]	156	48.26	4.65			
	6 Ages[c]	52	48.75	4.30			
Child Prosociality	4 Ages[a]	74	76.03	12.93	3.985	.020*	c>a η^2 = .03
	5 Ages[b]	156	78.24	14.83			
	6 Ages[c]	52	83.54	17.68			

*p<0.05

In the environmental attitudes and prosocial behaviors of children examined according to their ages, it was observed that there was no statistically significant difference in environmental attitudes (p>0.05), while there was a statistically significant difference in prosocial behaviors according to age. According to the Bonferroni test conducted to determine the difference, it was found that 6-year-old children exhibited statistically significantly higher prosocial behaviors than 4-year-old children. However effect size was small (η^2 = .03).

Children's environmental attitudes and prosociality behaviors were examined by ANOVA according to their mothers' education levels and the results are presented in Table 5.

Table 5. ANOVA results according to the education level of the mothers of the children

Variables	Mother Education	N	$\overline{X}$	S.d.	F (4-277)	p
Environmental Attitude	Illiterate	32	47.59	4.29	1.282	.277

	Primary School Graduate	120	47.82	4.55		
	Secondary School Graduate	50	48.50	4.63		
	High School Graduate	41	49.49	4.40		
	University Graduate	39	48.59	4.88		
	Illiterate	32	81.94	16.59		
	Primary School Graduate	120	78.55	14.93		
Child Prosociality	Secondary School Graduate	50	78.44	15.10	.730	.572
	High School Graduate	41	79.20	15.07		
	University Graduate	39	75.85	14.56		

p<0.05

It was concluded that there was no statistically significant difference in the environmental attitudes and prosocial behaviors of the children examined according to their mothers' education levels (p>0.05). Accordingly, it can be said that the mother's education level is not an effective variable on children's environmental attitudes and prosocial behaviors.

Environmental attitudes and prosocial behaviors of children according to their families' economic levels were examined by ANOVA and the results are presented in Table 6.

Table 6. ANOVA results according to the economic levels of children's families

Variable	**Economic Situation**	**N**	$\overline{X}$	**s.s**	**F (2-279)**	**p**
	Low[a]	48	47.58	4.85		
Environmental Attitude	Moderate[b]	128	48.30	4.48	.701	.497
	High[c]	106	48.52	4.56		
	Low[a]	48	77.67	15.72		
Child Prosociality	Moderate[b]	128	78.95	15.41	.126	.882
	High[c]	106	78.70	14.54		

*p<0.05

It was seen that there was no statistically significant difference (p>0.05) in the environmental attitudes and prosocial behaviors of children examined according to the economic level of their families. Accordingly, it can be said that the economic level variable is not a variable that affects children's environmental attitudes and prosociality levels.

The relationship between children's environmental attitudes and prosociality behaviors was examined by Pearson Correlation analysis and the results are presented in Table 7.

Table 7. The relationship between environmental attitudes and prosociality

Variables	**Pearson (r)**	**Child Prosociality**
	(r)	.231**
Environmental Attitude	p	.000
	N	282

***p<0.01 (2-way)*

When the relationship between children's environmental attitudes and their prosociality was examined, it was found that there was a statistically significant relationship (r=.231; p<0.01). Accordingly, it can be said that there is a small positive relationship between children's environmental attitudes and their prosocial behaviors.

Since there is a correlation between children's environmental attitudes and their prosocial behaviors, a simple linear regression analysis was conducted to determine the extent to which prosocial behaviors predict environmental attitudes and the results are presented in Table 8.

Table 8. Prediction level of children's environmental attitudes by prosocial behaviors

Variable	**B**	**Standard Error$_B$**	**β**	**T**	**p**	**Tolerance**	**VIF**
Constant	42.773	1.410		30.339	.000	1.000	1.000
Prosociality	.070	.018	.231	3.964	.000		
R= 0.231	R^2=.053						
$F_{(1,280)}$=15.714	p<.001						

As a result of simple linear regression analysis, it can be said that prosocial behaviors have an effect on children's environmental attitudes (R=.231, R2=.053, p<.01). In this direction, it is concluded that environmental attitude is predicted by prosocial behaviors by approximately 5%.

Discussion

This study explored the relationship between preschool children’s environmental attitudes and their prosocial behaviors, along with the influence of demographic variables such as age, gender, maternal education level, and family socioeconomic status. Findings indicated that gender, maternal education, and socioeconomic status did not significantly impact either environmental attitudes or prosociality. While prior literature often reports that girls show higher levels of prosocial behavior—potentially due to

socially constructed gender roles (e.g., Bouchard et al., 2015; Ata & Artan, 2021)—our results did not support this pattern. This may suggest that gendered socialization processes are not yet firmly internalized at this young age, or that such processes differ regionally and culturally.

In contrast, age was found to significantly influence prosocial behaviors, with 6-year-olds showing more prosociality than 4-year-olds. This aligns with developmental theories suggesting that children's empathy, moral reasoning, and understanding of social norms improve with age (Piaget; Vygotsky; Li et al., 2024). The finding highlights the importance of age-appropriate social-emotional education during early childhood. Neither maternal education nor economic status showed significant effects. This suggests that while these factors may shape the broader developmental context, they are not deterministic. Parenting style, quality of communication, and emotional climate within the home may exert more direct influence. Even in low-income households, children may develop strong prosocial and environmental attitudes if nurtured by sensitive, engaged caregivers.

A key contribution of this study lies in its empirical demonstration of a positive but modest relationship between prosocial behavior and environmental attitudes. The regression model, while statistically significant ($p < .001$), explained only 5% of the variance ($R^2 = .053$), indicating a limited predictive power. This modest effect size suggests that prosociality is one of many factors contributing to environmental awareness, alongside others such as parental modeling, educational content, and peer or media influences.

Nonetheless, identifying this link is important. Prosocial behaviors—helping, cooperation, and empathy—may serve as foundations for developing environmental responsibility. Educational programs that integrate social-emotional learning with environmental education could foster more holistic and sustainable attitudes in young children. Moreover, this study addresses a gap in the literature by examining how prosocial tendencies relate to environmental attitudes at the preschool level, an area rarely explored empirically. This represents an original contribution, emphasizing the relevance of early social behaviors in shaping ecological awareness.

Conclusion

This study reveals a positive association between preschool children's prosocial behaviors and their environmental attitudes. While age emerged as a significant factor influencing prosociality, gender, maternal education, and socioeconomic status did not produce statistically significant differences. The study underscores the complexity of environmental and prosocial development, shaped not by single variables but by dynamic interactions between individual, familial, and contextual factors.

Recommendations for Practice and Research:

- Early childhood education programs should combine prosocial skill development with environmental themes, encouraging empathy not only toward people but also toward nature.
- Regardless of education or income levels, caregivers should be supported in modeling both prosocial and eco-conscious behaviors in daily life.
- Future studies should explore additional predictors (e.g., parenting style, peer influence, media exposure) through longitudinal and cross-cultural designs to better understand how prosociality and environmental attitudes co-develop over time.
- National early childhood education policies can benefit from incorporating both social-emotional learning and environmental literacy as core components of preschool curricula.

Çıkar Çatışması

Yazarlar çıkar çatışması olmadığını beyan etmişlerdir.

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Hakem Değerlendirmesi

Dış bağımsız.

Yazar Katkıları

C.A.: Fikir, Veri Toplama ve İşleme, Yazma

C.U..: Tasarım, Analiz ve Yorumlama, Literatür Tarama, Yazma, Eleştirel İnceleme
S.A.: Gözetim, Veri Toplama ve İşleme, Eleştirel İnceleme.

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