



Association of Understanding the Concept of Khalifah Fil Ard on Ecological Responsibility of Primary School Students

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Abstract

This study investigated the relationship between students' ecological responsibility and their comprehension of the concept of khalifah fil ard at MI Darun Najah Gandatapa, Banyumas Regency, Indonesia. The study used a correlational design and a quantitative methodology. Twenty-five Grade V students, selected through total sampling, served as participants. A questionnaire measuring students' comprehension of the concepts of khalifah fil ard and ecological responsibility was used to gather data. Expert judgment and item-total correlation analysis were used to validate the instrument, which showed high reliability (Cronbach's Alpha = 0.954). IBM SPSS Statistics Version 27 was used to analyze the data using descriptive statistics, linearity and normality tests, and simple linear regression. The findings showed a significant correlation between students' ecological responsibility and their comprehension of the concept of khalifah fil ard ($\beta = 0.997$, $t = 45.140$, $p < 0.05$). A significant amount of the variance in ecological responsibility was statistically linked to students' comprehension of the concept of khalifah fil ard, according to the coefficient of determination, which displayed an R^2 value of 0.993. These results imply that students tend to exhibit greater ecological responsibility when they have a greater awareness of their role as Allah's stewards on earth. The study backs up Islamic environmental ethics' theoretical stance, which places a strong emphasis on human responsibility for environmental stewardship. However, because the study only included a small sample from one madrasah, the results should be interpreted with caution. It is advised that larger and more varied sample sizes be used in future research to better investigate the variables linked to students' ecological responsibility.

Keywords: Ecological Responsibility, Environment, Islamic Education, Khalifah Fil Ard, Madrasah Ibtidaiyah

Abstract

Penelitian ini mengkaji hubungan antara tanggung jawab ekologis siswa dan pemahaman mereka mengenai konsep khalifah fil ard di MI Darun Najah Gandatapa, Kabupaten Banyumas, Indonesia. Penelitian ini menggunakan desain korelasional dan metodologi kuantitatif. Sebanyak 25 siswa Kelas V yang dipilih melalui teknik total sampling menjadi partisipan dalam penelitian ini. Data dikumpulkan menggunakan kuesioner yang mengukur pemahaman siswa tentang konsep khalifah fil ard dan tanggung jawab ekologis. Validasi instrumen dilakukan melalui penilaian ahli dan analisis korelasi item-total, yang menunjukkan tingkat reliabilitas tinggi (Cronbach's Alpha = 0,954). Analisis data dilakukan menggunakan IBM SPSS Statistics Versi 27 dengan metode statistik deskriptif, uji linearitas dan normalitas, serta regresi linear sederhana. Hasil penelitian menunjukkan adanya korelasi yang signifikan antara tanggung jawab ekologis siswa dan pemahaman mereka mengenai konsep khalifah fil

ard ($\beta = 0,997$; $t = 45,140$; $p < 0,05$). Berdasarkan koefisien determinasi yang menunjukkan nilai R^2 sebesar 0,993, sebagian besar varians dalam tanggung jawab ekologis secara statistik berkaitan dengan pemahaman siswa mengenai konsep khalifah fil ard. Hasil ini mengindikasikan bahwa siswa cenderung menunjukkan tanggung jawab ekologis yang lebih tinggi ketika mereka memiliki kesadaran yang lebih besar akan peran mereka sebagai pengemban amanah Allah di bumi. Penelitian ini mendukung landasan teoretis etika lingkungan Islam yang sangat menekankan tanggung jawab manusia dalam pengelolaan lingkungan. Namun, mengingat penelitian ini hanya melibatkan sampel kecil dari satu madrasah, hasilnya perlu ditafsirkan secara hati-hati. Disarankan agar penelitian selanjutnya menggunakan ukuran sampel yang lebih besar dan lebih beragam untuk mengkaji lebih mendalam variabel-variabel yang berkaitan dengan tanggung jawab ekologis siswa.

Kata kunci: Tanggung Jawab Ekologis, Lingkungan, Pendidikan Islam, Khalifah Fil Ard, Madrasah Ibtidaiyah



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Introduction

Previous research has extensively examined ecological awareness and environmental education from both educational and religious viewpoints. The significance of incorporating Islamic principles into environmental education to promote students' environmental consciousness and stewardship has been emphasized by research on Islamic ecotheology (Rahman et al., 2025). Similarly, research on religion-based environmental education has demonstrated that moral principles and religious convictions can support pro-environmental attitudes and actions by offering moral direction for how people should interact with the natural world (Marliana, 2025). Environmental awareness, environmental ethics, ecological literacy, and environmental responsibility have all been studied as significant indicators of environmentally responsible behavior. However, the specific role of students' comprehension of the Islamic concept of *khalifah fil ard* as a factor associated with ecological responsibility has received little attention, and these studies typically concentrate on environmental knowledge, attitudes, or educational programs. The idea of khalifah represents our duty to protect God's creation (Shihab, 2011).

Beyond widely used constructs in environmental education research, the idea of *khalifah fil ard* provides a unique viewpoint. The idea of *khalifah fil ard* incorporates cognitive, moral, and spiritual aspects within a religious framework, whereas environmental awareness stresses knowledge and concern about environmental issues,

environmental ethics concentrates on moral principles governing human interactions with nature, and ecological literacy emphasizes ecological knowledge and competencies. It is the responsibility of humans to preserve harmony between nature and humanity (Nasr, 2003). It highlights that Allah has given humans the duty to safeguard, control, and maintain the environment. As a result, *khalifah fil ard* is not just an environmental value but also a concept of religiously based stewardship that can influence environmental responsibility through both spiritual and ethical accountability. Ethical guidelines controlling the use of natural resources are linked to environmental stewardship (Fajar, 2021).

Even though Islamic environmental ethics and ecotheological education have been covered in earlier research, there is still a dearth of empirical quantitative data examining the relationship between students' comprehension of the concept of *khalifah fil ard* and ecological responsibility, especially at the Madrasah Ibtidaiyah level. Islamic educational methods are increasingly incorporating eco-theological principles (Gazali et al., 2025). Through curriculum integration, green Islamic education aims to foster ecological consciousness (Yudi, 2025). Islamic environmental conservation as a religious duty (Khalid, 2019). Sustainable environmental management techniques are intimately linked to ecological responsibility (Supriatna, 2021). Instead of assessing how students' comprehension of Islamic stewardship values is linked to their ecological responsibility, the majority of previous research has concentrated on conceptual discussions, curriculum development, teacher roles, or environmental education practices. Thus, there is a research gap concerning the empirical investigation of the connection between elementary-level students in Islamic educational settings' comprehension of the concept of *khalifah fil ard* and ecological responsibility.

The attempt to empirically investigate *khalifah fil ard* as a unique religious stewardship construct within environmental education research is what makes this study novel, not just the research setting. This study adds to the body of knowledge on Islamic environmental education, ecotheology, and character education by using a quantitative approach to examine the relationship between students' comprehension of the concept of *khalifah fil ard* and ecological responsibility. Additionally, by showing how a religiously grounded concept may be linked to environmentally responsible behavior among Madrasah Ibtidaiyah students, the study expands on current discussions on environmental awareness and environmental ethics.

Because the madrasah has adopted environment-based Islamic Religious Education (PAI) learning, which incorporates Islamic values of environmental stewardship into the educational process, the study was carried out at MI Darun Najah Gandatapa. Students are exposed to Islamic teachings on hygiene, environmental preservation, and human responsibility as *khalifah fil ard* through PAI instruction. Because of these educational methods, the madrasah is a suitable place to study how students' comprehension of the idea of *khalifah fil ard* relates to their ecological responsibility.

Thus, the purpose of this study is to investigate the relationship between MI Darun Najah Gandatapa students' ecological responsibility and their comprehension of the concept of *khalifah fil ard*. It is anticipated that the results will support the growth of environmentally conscious Islamic education and offer factual proof of how Islamic stewardship principles encourage ecological responsibility in elementary school pupils.

Research Method

In order to investigate the connection between students' comprehension of the idea of *khalifah fil ard* and their ecological responsibility, this study used a quantitative approach with a correlational design (Creswell & Creswell, 2018). Because it allows for the objective measurement of variables and the statistical analysis of correlations between them, the quantitative approach was chosen (Mukhid, 2021). The study was carried out using a positivist paradigm, which sees social phenomena as quantifiable and amenable to empirical analysis. To ascertain the relationship between students' comprehension of the idea of *khalifah fil ard* and their ecological responsibility, data were gathered using structured research instruments and statistically analyzed.

This study used an associative correlational design. Examining whether there was a statistically significant relationship between the independent and dependent variables was the aim of this design. Students' comprehension of the idea of *khalifah fil ard* was the independent variable (X), and ecological responsibility was the dependent variable (Y). Therefore, rather than establishing a causal relationship, the study concentrated on determining the direction and strength of the association between the two variables.

The study was carried out in the odd semester of the 2025–2026 school year at MI Darun Najah Gandatapa, Banyumas Regency, Central Java. The madrasah was chosen

because it incorporates Islamic principles into education, such as lessons on *khalifah fil ard* and environmental stewardship. All Grade V students enrolled at MI Darun Najah Gandatapa during the 2025–2026 school year made up the study's population. Using a total sampling technique, all 25 Grade V students were included as research participants. Students in grade V were chosen as study participants because they had been taught about Islamic principles, environmental responsibility, and the idea of *khalifah fil ard*. As a result, the sample was representative of all of the madrasah's Grade V students. Twelve female and thirteen male students between the ages of ten and twelve made up the 25 respondents. The comparatively small sample size may limit the findings' applicability to larger educational contexts, even though the sample represented the entire target population within the school.

A questionnaire intended to gauge students' comprehension of the idea of *khalifah fil ard* and their ecological responsibility was used to gather data. The instrument was created using operational indicators and pertinent theoretical frameworks from ecological responsibility theory, *khalifah* theory, and Islamic environmental ethics. The 23-item questionnaire included 10 questions that assessed students' comprehension of the idea of *khalifah fil ard* and 13 questions that assessed ecological responsibility. A five-point Likert scale, with 1 representing "strongly disagree" and 5 representing "strongly agree", was used to evaluate each item.

Three dimensions were used to construct the variable of understanding the concept of *khalifah fil ard*: awareness of humans as Allah's vicegerents on earth, responsibility for environmental preservation, and prudent use of natural resources. The ecological responsibility variable, on the other hand, included aspects of upholding cleanliness, disposing of waste properly, protecting the environment, and being concerned about environmental sustainability in day-to-day living. Examples of questionnaire items were "I always dispose of waste in the proper place" for the ecological responsibility variable and "Humans have a responsibility to protect the environment because they are Allah's vicegerents on earth" for the *khalifah fil ard* variable.

Table 1 Operationalization of Research Variables

Variable	Dimension	Indicator	Number of Items	Theoretical Source
Understanding of <i>Khalifah fil Ard</i> (X)	Human awareness as Allah's vicegerent	Understanding human duties as khalifah on earth	3	Islamic environmental ethics and khalifah theory
	Environmental responsibility	Awareness of protecting and preserving the environment	3	Islamic environmental ethics and khalifah theory
	Wise use of natural resources	Understanding the importance of using resources responsibly	4	Islamic environmental ethics and khalifah theory
Ecological Responsibility (Y)	Maintaining cleanliness	Keeping classrooms and school environments clean	3	Ecological responsibility theory
	Proper waste disposal	Disposing of waste according to environmental rules	3	Ecological responsibility theory
	Environmental protection	Participating in environmental preservation activities	4	Ecological responsibility theory
	Environmental concern	Demonstrating care for the surrounding environment	3	Ecological responsibility theory

Two experts in Islamic education and educational research evaluated the instrument's content validity through expert judgment prior to data collection. The experts assessed each item's appropriateness, clarity, and relevance for elementary school pupils. IBM SPSS Statistics Version 27's Pearson Product-Moment item-total correlation analysis was then used to test empirical validity. When correlation coefficients exceeded the critical r-table value and significance values were less than 0.05, the questionnaire items were deemed valid. Cronbach's Alpha coefficient was used for reliability testing; a value of 0.70 or higher denotes acceptable internal consistency (Hair et al., 2019). A Cronbach's Alpha coefficient of 0.954 was obtained from the reliability analysis, indicating outstanding internal consistency and reliability.

The odd semester of the 2025–2026 school year was used for data collection. The researcher and classroom teacher oversaw the direct administration of the questionnaires to students during school hours. Before filling out the questionnaire,

students were given instructions on how to answer the questions and the goal of the study. Participants were urged to provide truthful responses based on their real attitudes and experiences. The questionnaire took about 20 to 30 minutes to complete, and before being used in the data analysis process, each completed questionnaire was verified for accuracy.

The study was conducted with ethical considerations in mind. The head of MI Darun Najah Gandatapa gave permission to carry out the study. Teachers in the classroom and the parents or guardians of the participating students also gave their consent. Respondents were told that their answers would only be used for research, and participation was completely voluntary. Participants' privacy and anonymity were protected at every stage of the study.

Descriptive and inferential statistical techniques were used in data analysis. The features of the data, such as means, percentages, and variable tendencies, were summed up using descriptive statistics. The relationship between students' comprehension of the idea of *khalifah fil ard* and ecological responsibility was investigated using inferential statistics.

Prerequisite analyses were carried out before hypothesis testing. Because there were fewer than 50 responders in the sample, a normality test was conducted using the Shapiro-Wilk test. When the significance value was greater than 0.05, the data were deemed to be normally distributed. Additionally, a linearity test was performed using SPSS's Test for Linearity procedure. When the Deviation from Linearity significance value was greater than 0.05, the relationship between the variables was deemed linear..

Because there was only one independent variable and one dependent variable in the study, simple linear regression analysis was used for hypothesis testing after the prerequisite assumptions had been investigated. The t-test was used to determine the significance of the relationship between students' comprehension of the idea of *khalifah fil ard* and ecological responsibility at a significance level of 0.05. Additionally, the percentage of variance in ecological responsibility that was statistically linked to students' comprehension of the concept of *khalifah fil ard* was ascertained using the coefficient of determination (R^2). IBM SPSS Statistics Version 27 was used for all statistical analyses, including validity testing, reliability testing, normality testing, linearity testing, coefficient of determination analysis, and regression analysis (Ghozali, 2018). The results of the quantitative research were more credible, dependable,

transparent, and repeatable thanks to the use of SPSS, which also made accurate data processing easier.

It was anticipated that these research methods would yield objective, valid, and trustworthy results about the relationship between Madrasah Ibtidaiyah students' comprehension of the concept of *khalifah fil ard* and their ecological responsibility.

Results and Discussion

Results

All of the questionnaire items satisfied the predetermined validity criteria, according to the validity test results. Every statement was found to be valid for assessing students' comprehension of the concepts of *khalifah fil ard* and ecological responsibility, as each item had a significance value less than 0.05 and a correlation coefficient greater than the critical value. Additionally, the reliability test yielded an excellent level of internal consistency with a Cronbach's Alpha coefficient of 0.954. As a result, the tool was deemed extremely dependable and appropriate for gathering study data.

Prerequisite analyses were carried out to make sure the data satisfied the assumptions needed for regression analysis before hypothesis testing. The results of the normality test showed that while the ecological responsibility variable was not normally distributed (Sig. = 0.009 < 0.05), the understanding of the concept of *khalifah fil ard* variable was (Sig. = 0.065 > 0.05). However, since the linearity assumption was met, regression analysis was kept. The linearity test confirmed this, showing a linear relationship between the independent and dependent variables with a Deviation from Linearity significance value of 0.214 (> 0.05).

An R Square value of 0.993 was obtained from the coefficient of determination analysis. This finding suggests that students' comprehension of the concept of *khalifah fil ard* was statistically linked to 99.3% of the variance in their ecological responsibility, with the remaining 0.7% possibly being related to other factors not covered in this study.

The F-test was used to analyze the regression model as a whole. The model was statistically significant in describing the relationship between students' comprehension of the concept of *khalifah fil ard* and ecological responsibility, according to the results, which showed a F value of 2037.642 with a significance value of 0.000 (< 0.05).

Regression coefficient analysis was done to look more closely at the relationship between the variables. The results are presented in Table 2.

Table 2 Coefficients of the Regression Analysis

Model	B	Std. Error	Beta	t	Sig.
Constant	0.215	0.162	-	1.324	0.191
Understanding of the Concept of <i>Khalifah fil Ard</i>	1.006	0.022	0.997	45.140	0.000

Dependent Variable: Ecological Responsibility

The regression coefficient for comprehending the idea of *khalifah fil ard* was positive and statistically significant ($\beta = 0.997$, $t = 45.140$, $p < 0.05$), as shown in Table 2. The positive coefficient shows that students tended to exhibit higher levels of ecological responsibility when they understood the concept of *khalifah fil ard*. Furthermore, the unstandardized coefficient ($B = 1.006$) indicates that better comprehension of the concept of *khalifah fil ard* was linked to higher ecological responsibility scores.

When combined, the findings of the regression coefficient analysis, F-test, and coefficient of determination analysis show a statistically significant correlation between students' ecological responsibility and their comprehension of the concept of *khalifah fil ard*. Thus, the empirical data supports the research hypothesis that students' comprehension of the concept of *khalifah fil ard* is significantly associated with ecological responsibility among Grade V students of MI Darun Najah Gandatapa.

Discussion

The results of this study show a significant correlation between students' ecological responsibility and their comprehension of the concept of *khalifah fil ard*. Regression analysis showed that the two variables had a statistically significant positive association ($\beta = 0.997$, $p < 0.05$). Furthermore, a significant amount of the variance in ecological responsibility was statistically linked to students' comprehension of the idea of *khalifah fil ard*, according to the coefficient of determination ($R^2 = 0.993$). These results imply that students who comprehend the concept better typically exhibit higher levels of ecological responsibility.

Both psychological and educational processes can account for the relationship found in this study. In terms of psychology, comprehending the idea of *khalifah fil ard* may promote moral consciousness by motivating students to see environmental preservation as a moral duty. Students who comprehend that humans are Allah's stewards of the planet are more likely to view environmental preservation as a religious duty as well as a social obligation (Al-Qaradhawi, 2002). Students' attitudes toward the environment may be influenced by this moral awareness, making them value environmental sustainability, cleanliness, and conservation. Ecological behaviors like

appropriate waste disposal, water conservation, and involvement in environmental activities may eventually reflect these attitudes.

From an educational standpoint, the idea of *khalifah fil ard* provides a foundation for character development based on values. Students are exposed to lessons that stress environmental responsibility as a component of their devotion to Allah through Islamic Religious Education. Students are able to apply religious principles to their daily lives because these values are reinforced through habituation practices in the educational setting. Students have the chance to put the values they learn into practice through activities like keeping the classroom tidy, properly disposing of waste, conserving water, and taking part in environmental programs. As a result, ecological responsibility grows via repeated behavioral practice, internalization of religious principles, and cognitive comprehension.

The results corroborate the *khalifah fil ard* theory, which highlights that it is the duty of humans to preserve environmental equilibrium and stop environmental deterioration. Islamic environmental ethics hold that people should be responsible stewards who protect the environment and make prudent use of natural resources (Nasr, 1996). The educational aspect of ecological stewardship has also been highlighted in modern interpretations of Nasr's environmental philosophy (Akhsanudin, 2024). The findings imply that students are more likely to exhibit environmentally conscious attitudes and behaviors if they have a deeper comprehension of this idea. Therefore, the study offers empirical evidence to support the theoretical premise that religious values are linked to environmental responsibility.

Additionally, the results align with earlier research on ecotheology in Islamic education. According to Rahman et al. (2025), students' environmental ethics are based on the idea of *khalifah fil ard*. In a similar vein, Rudiana (2025) contended that religious obligation and devotion to Allah are intimately related to environmental conservation in Islam. By offering quantitative proof that students' comprehension of *khalifah fil ard* is strongly correlated with ecological responsibility, the current study supports these conclusions. Spiritual awareness based on tawhid and environmental ethics can also lead to ecological responsibility. As a result, the findings provide empirical evidence from the context of Madrasah Ibtidaiyah education in addition to supporting earlier theoretical claims.

Additionally, the findings are consistent with research on environmental responsibility, which highlights that moral principles and individual beliefs have an impact on environmental behavior in addition to knowledge. The current findings imply that religious values may offer an additional motivational basis for environmentally responsible behavior, even though environmental education frequently concentrates on raising students' awareness of environmental issues. This result bolsters the claim that integrating environmental knowledge with ethical and spiritual aspects can enhance environmental education.

The results also corroborate character education theories, which contend that moral behavior is cultivated in educational environments through value internalization, habituation, and reinforcement (Handayani et al., 2024). According to character education experts, values take on significance when they are consistently applied and incorporated into students' everyday lives. Islamic principles seem to serve as a significant source of inspiration for ecologically conscious behavior in the context of this study. As a result, the study adds to the increasing amount of research indicating that character education with a religious foundation may help students develop an ecological consciousness.

However, the study's context should be taken into consideration when interpreting these results. The findings cannot be applied to all Islamic educational institutions or student populations because the study was limited to 25 Grade V students and was carried out in a single Madrasah Ibtidaiyah. Furthermore, a very high degree of correlation between the variables is indicated by the coefficient of determination ($R^2 = 0.993$). Despite the fact that this result shows a statistically significant relationship within the study sample, it should be interpreted cautiously due to the small sample size and the potential that the analysis did not account for other factors influencing ecological responsibility. Future research is therefore advised to include larger and more varied samples from various educational contexts and to look at other factors that might be connected to students' ecological responsibility.

Overall, the results indicate that, in the context of MI Darun Najah Gandatapa, students' comprehension of the idea of *khalifah fil ard* is strongly correlated with ecological responsibility. The study emphasizes how Islamic values can support environmental education and character development, especially when it comes to

encouraging environmentally conscious attitudes and actions in elementary school pupils.

Conclusion

According to the study's findings, students' comprehension of the idea of *khalifah fil ard* was strongly correlated with their ecological responsibility in the setting of MI Darun Najah Gandatapa. The two variables had a positive and statistically significant relationship, according to the regression analysis ($\beta = 0.997$, $t = 45.140$, $p < 0.05$). Additionally, 99.3% of the variance in students' ecological responsibility was statistically linked to their comprehension of the concept of *khalifah fil ard*, according to the coefficient of determination ($R^2 = 0.993$).

These results imply that students who show a greater comprehension of the idea of *khalifah fil ard* also typically show a greater degree of ecological responsibility. Therefore, the empirical data collected in this study supports the research hypothesis that understanding the concept of *khalifah fil ard* is significantly associated with ecological responsibility.

The results, however, should be interpreted in light of the fact that only 25 Grade V students from a single Madrasah Ibtidaiyah participated in the study. Therefore, without additional empirical research, the findings cannot be applied to all Islamic educational institutions.

To increase the findings' generalizability, it is advised that future studies use larger and more varied samples from various educational contexts. Future research may also look at other aspects of ecological responsibility, like school culture, environmental education initiatives, parental participation, and religious customs. To provide a more thorough understanding of how students develop ecological responsibility, studies that compare madrasahs and public schools as well as longitudinal and mixed-methods approaches are advised.

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