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Research Article

Muslim Students' Perception of Green Economy Education in Promoting Ethical and Sustainable Economic Awareness

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Abstract: Global environmental challenges require active engagement from all sectors, including education. For Muslim youth, awareness of environmental sustainability aligns with Islamic ethical principles such as stewardship (khalifah), justice (ʿadl), and social welfare (maslahah). This study examines the influence of green economy education within Islamic higher education on students' eco-literacy, ethical awareness, and sustainable economic behavior. A quantitative approach was employed using a structured questionnaire distributed to students from both Islamic economics and non-economics programs. Data were analyzed with descriptive statistics, independent t-tests, and one-way ANOVA to identify differences in environmental knowledge, attitudes, and behavior. Findings show that students with an Islamic economics background consistently achieve higher scores in knowledge, attitudes, and behavioral engagement related to sustainability compared to non-Islamic economics students. Integrating Islamic ethical values into the curriculum provides a holistic framework for internalizing sustainability principles, encouraging students to translate ethical knowledge into practical action. Pedagogical strategies such as project-based learning, reflective exercises, and experiential programs further enhance engagement and eco-conscious behavior. The study highlights the critical role of Islamic education in fostering a generation of ethically aware and environmentally responsible students. By embedding moral and ecological principles in academic programs, educational institutions can strengthen students' capacity for sustainable decision-making and support broader goals of responsible economic and environmental stewardship.

Keywords: Eco-literacy; Environmental ethics; Green economy; Islamic education; Sustainable behavior.

1. Introduction

The increasing global environmental challenges demand active engagement from all sectors, including education. In the context of Islamic education, environmental sustainability awareness is deeply connected to Islamic values that emphasize balance (mīzān), stewardship (khalīfah), and social welfare (maṣlaḥah). Integrating these principles into green economy education can cultivate ethical and sustainable economic awareness among Muslim youth (Bsoul et al., 2022).

Environmental education plays a vital role in shaping students' ecological behavior. Studies indicate that environmental education positively influences environmentally friendly attitudes, while Islamic values strengthen this relationship (Begum et al., 2021). An interdisciplinary approach combining science and religion has become essential for addressing complex environmental issues (Setianingrum et al., 2024).

From an Islamic perspective, the principles of mīzān, khalīfah, and maṣlaḥah provide a strong theological foundation for sustainability. These values emphasize the interconnectedness of all creation and the responsibility of humankind to maintain the natural balance (Gulzar et al, 2021). The concept of khalīfah highlights the human role as trustees of the Earth, entrusted with preserving ecological harmony and ensuring the just and wise use of natural resources (Musa et al., 2024).

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Integrating Islamic values into environmental education has proven effective in enhancing students' sustainability awareness. Experiential learning approaches that incorporate spiritual and ecological values have been successfully applied in Islamic educational institutions (Muhamad et al., 2024; Lutfauziahet al., 2024). Furthermore, eco-pesantren (Islamic boarding schools promoting eco-consciousness) initiatives in Indonesia demonstrate practical applications such as waste management, organic farming, and water conservation as forms of experiential ecological learning (Maslani et al., 2023; Maulida et al., 2024).

Moreover, green economy education, which focuses on sustainable economic practices, plays a key role in fostering a generation that values ethical and sustainable behavior. This educational approach should incorporate Islamic ethical foundations to ensure that students understand the moral implications of economic activities. Integrating Islamic principles into green economy curricula allows learners to develop a holistic understanding of sustainability encompassing environmental, social, and spiritual dimensions (Bozkus Kahyaoğlu, 2024). Such integration reflects the evolution of Islamic education toward a model that nurtures ecological ethics and economic sustainability.

The growing global attention toward sustainability underscores the need for stronger environmental and economic literacy among students. Within Muslim societies, environmental consciousness is deeply connected to Islamic ethical principles emphasizing balance (mīzān), stewardship (khalīfah), and social welfare (maṣlaḥah). However, despite these values being central to Islamic teachings, the level of environmental and economic literacy among Muslim students remains inconsistent, depending largely on educational background, gender, and cultural context.

Empirical evidence shows that Islamic educational institutions often outperform public schools in promoting environmental literacy. A study conducted in Banda Aceh found that students attending Islamic high schools achieved higher environmental literacy scores ($M = 3.821$) compared to their peers in public high schools ($M = 3.684$), suggesting that the integration of Islamic ethical values in education positively influences ecological awareness (Maulida et al., 2024). This finding aligns with the broader idea that Islamic education frameworks inherently foster stronger moral and environmental responsibility through value-based learning.

Religiosity is another determinant shaping environmental behavior among Muslims. Research indicates that in Muslim-majority societies, higher religiosity correlates with stronger pro-environmental behavior, as religious teachings reinforce stewardship ethics and social norms that value environmental care (Bsoul et al., 2022). Conversely, in non-Muslim-majority contexts, religiosity exerts less influence on environmental concern, implying that sociocultural factors mediate the relationship between faith and ecological awareness (Begum et al., 2021). This demonstrates that religion alone may not be sufficient without supportive social and institutional structures.

Gender also plays a significant role in shaping environmental attitudes. Female students generally display higher environmental awareness and engagement than male students. In the Banda Aceh study, female students scored 3.637, compared to 3.528 among male students (Maulida et al., 2024). Similar patterns were observed in the United Arab Emirates (UAE) and Qatar, where girls reported significantly higher environmental awareness than boys (OECD, 2017). These findings suggest that gender-based socialization and empathy-related factors may enhance women's ecological sensitivity.

Effective pedagogical strategies are crucial for cultivating environmental and economic literacy. Project-based learning (PBL) that integrates Islamic values has proven particularly effective in enhancing students' environmental understanding. Activities such as "Green Living," "Save Our Water," and "Use Eco-Friendly Products" have helped students internalize sustainable practices while connecting them to religious values of stewardship and care for creation (Muhamad et al., 2024). Such experiential learning approaches promote both cognitive and affective engagement with sustainability themes.

Although most studies emphasize environmental literacy, economic literacy also plays a critical role in sustainability education. The OECD's PISA 2015 survey reported that students with higher environmental awareness tend to exhibit better scientific literacy, which can extend to economic understanding (OECD, 2017). This suggests that integrating sustainability and economic topics within Islamic education may foster a more comprehensive literacy framework encompassing moral, ecological, and economic dimensions

Despite its importance, promoting environmental literacy faces several challenges. Limited access to environmental resources, insufficient institutional support, and the lack of opportunities for direct engagement with nature hinder students' experiential learning (Lutfauziah et al., 2024). To overcome these barriers, educators are encouraged to incorporate environmental projects, community outreach, and extracurricular activities into the curriculum, ensuring active participation and real-world application of environmental concepts.

In the era of global environmental challenges, the transition toward a green economy has become one of the core pillars of sustainable development. Within this context, education plays a critical role in cultivating eco-conscious mindsets and ethical economic behavior among students. For Muslim students, green economy education takes on deeper meaning as it integrates sustainability principles with Islamic ethical values, fostering both spiritual and environmental awareness. However, variations in understanding and implementation remain, prompting key research questions: How do Muslim students perceive green economy education? To what extent does it enhance ethical and sustainable economic awareness? And are there significant differences in eco-literacy between students with and without an Islamic economics background?

Muslim students' perceptions of green economy education are shaped by their religious worldviews and the extent to which these values are embedded in the curriculum. Studies indicate that the integration of Islamic teachings on environmental stewardship enhances students' commitment to sustainability (Mirzal et al., 2024). Islamic education frameworks that emphasize the principle of khalīfah (stewardship) encourage learners to see environmental protection as a moral and religious duty. Similarly, the promotion of Islamic values for green skill development in vocational schools has been shown to foster students' motivation to adopt environmentally responsible practices (Fauziah et al., 2024). Moreover, the inclusion of sustainability principles in Islamic education has led to higher student engagement and willingness to participate in eco-friendly initiatives (Hadiati et al., 2024).

Green economy education serves as a transformative medium for nurturing ethical awareness and sustainable economic behavior among students. The integration of green concepts within academic programs enables learners to grasp the significance of environmentally responsible production and consumption (Bozkus Kahyaoglu, 2024). In higher education, the development of green learning models has been shown to support the implementation of sustainable policies and ethical business practices (Bozkus Kahyaoglu, 2024). From an Islamic perspective, green economy education aligns closely with the principles of justice (ʿadl), social welfare (maṣlaḥah), and stewardship (khalīfah), reinforcing ethical consciousness in economic behavior (Mirzal et al., 2024). Similarly, sharia economics plays a significant role in establishing sustainable green economic development by integrating moral and ecological dimensions into financial systems (Mursid et al., 2024). Thus, green economy education not only enhances sustainability awareness but also encourages the internalization of ethical and faith-based economic practices.

Differences in eco-literacy among Muslim students are influenced by educational background, particularly between those who study Islamic economics and those who do not. Research has revealed that students with an Islamic economics background exhibit higher levels of environmental literacy due to the integration of moral, financial, and ecological dimensions within the curriculum (Mursid et al., 2024). This holistic approach contributes to a more comprehensive understanding of sustainability, where economic decisions are informed by ethical and environmental considerations. Additionally, studies have shown that students from Islamic educational institutions tend to display stronger engagement in sustainability-oriented activities compared to those from secular or non-Islamic institutions

(Yusuf et al., 2020). This is further supported by findings that environmental learning spaces, such as nature tourism parks, enhance students' eco-literacy and environmental responsibility (Hutasuhut & Djukri, 2024).

The Islamic green economy integrates sustainability principles with Islamic teachings that emphasize stewardship (khalifah), justice (adl), and social welfare (maslahah). It promotes inclusivity, environmental protection, resource efficiency, and social responsibility as key components of ethical economic behavior (Rashid & Siddique, 2021; Mirzal et al., 2024; Rosman & Marzuki, 2024). Islamic finance instruments such as waqf, zakat, and sukuk support environmental and social initiatives, aligning with global sustainable development goals (SDGs) and reinforcing humanity's moral duty to preserve the Earth (Mursid et al., 2024; Shovkhalov, 2024). By aligning Islamic economic ethics with modern sustainability frameworks, this model creates harmony between spiritual responsibility and economic progress.

Education plays a central role in fostering students' ethical and sustainable awareness. Integrating sustainability, ethics, and environmental education within curricula enhances students' understanding of responsible behavior (Hnatyuk et al., 2024; Agu et al., 2022). Studies show that exposure to business ethics and professional responsibility courses increases students' moral attentiveness and ethical efficacy (Okechukwu Ugwuozor & Otu, 2020; El-Sherbiny et al., 2024). Moreover, combining financial literacy with sustainability education helps students make responsible financial decisions and adopt eco-friendly consumption habits (Taboada & Aguilar, 2024; Guzmán-Meza et al., 2024).

Integrating Islamic values in education further strengthens students' green skills and ethical awareness. Islamic teachings on balance (mizan), environmental care, and social justice inspire sustainable behaviors and community-oriented mindsets (Fauziah et al., 2024). When Islamic ethics are embedded in educational systems, students begin to perceive economic participation as both a moral duty and a form of worship, aligning personal success with societal well-being and ecological preservation (Rashid & Siddique, 2021; Mirzal et al., 2024; Mursid et al., 2024). Thus, Islamic green economy education fosters a generation of ethically conscious individuals who contribute to sustainable development through faith-driven economic responsibility.

2. Literature Review

Concept of Green Economy in Islam

The integration of Sharia principles with environmental ethics places justice (ʿadl), stewardship (khalīfah), balance (mīzān), and public interest (istiṣlāḥ) as the normative foundation for a green economy. Within the framework of Maqāṣid al-Sharīʿah, the protection of religion, life, intellect, lineage, and wealth in Islamic finance prioritizes ethical investment, social welfare, and asset preservation through Sharia-compliant instruments such as sukuk, zakat, and waqf. These instruments can be directed towards financing sustainable projects that align with the SDGs, thus strengthening an inclusive financial ecosystem that is responsible for environmental sustainability (Abdullah & Haron, 2024; Alnabulsi & Jreisat, 2024; Rahim et al., 2024; Shovkhalov, 2024).

Theologically, the concept of khalīfah emphasizes the role of humans as stewards of the earth, encouraging collective responsibility in environmental conservation. Combined with the principles of justice and balance, these values guide the formulation of fair and sustainable policies (Shovkhalov, 2024). At the institutional level, the convergence of Islamic finance and green finance, for example through SRI sukuk, can accelerate sustainable development while maintaining Sharia compliance, both in terms of market instruments and governance of financing with social and environmental impact (Abdullah & Haron, 2024; Alnabulsi & Jreisat, 2024; Rahim et al., 2024).

Education and Environmental Awareness

Higher education plays a crucial role in shaping pro-environmental attitudes and behaviors. Recent empirical evidence shows that pro-environmental practices and institutional policies on campus influence students' green intentions and behaviors; therefore, environmental education needs to be instilled to prepare future decision-makers (Chen et al., 2024; Ma et al., 2023). Curriculum-based interventions, including environmental courses and the integration of sustainability principles into learning experiences, have been proven to enhance pro-environmental intentions and sustainable consumption practices (Ma et al., 2023).

Innovative pedagogical approaches, such as reflective journals, are effective in fostering awareness and sustainable habits among students (Rivas, 2024). At the institutional level, the green campus ecosystem, which includes sustainability policies, practices, and systems, correlates with increased students' green intentions and behaviors, strengthening the role of higher education institutions as agents of change toward sustainability (Chen et al., 2024; Fernández et al., 2023). Therefore, collaboration between curriculum design, green campus practices, and student participation is key to translating knowledge into tangible environmental actions.

Eco-Literacy and Ethical Economics in the Islamic Perspective

Islamic teachings emphasize the integration of tawhid, the trust of khalīfah, justice (ʿadl), and public interest (maṣlaḥah/istiṣlāḥ) as the ethical foundation for environmental ethics and sustainable consumption. These values guide economic behavior towards moderation, responsibility, and the avoidance of harm (mudarat), thereby forming eco-literacy and ethical consumption practices at both the individual and institutional levels. At the level of the financial system, the convergence of Islamic finance and green finance, such as through SRI sukuk, Sharia-compliant green financing frameworks, and the integration of Maqāṣid al-Sharīʿah with the SDGs, becomes a strategic platform for funding environmentally-friendly projects while maintaining Sharia compliance (Abdullah & Haron, 2024; Alnabulsi & Jreisat, 2024; Rahim et al., 2024; Shovkhalov, 2024). Thus, the strengthening of eco-literacy based on Islamic values does not stop at the normative level but is translated into the architecture of inclusive and just financing instruments and governance.

At the learner level, eco-literacy and ethical consumption are reinforced by an educational ecosystem that consistently instills green policies, practices, and culture. Recent evidence shows that pro-environmental institutional practices (e.g., campus policies, facilities, and sustainability systems) have a significant impact on students' green intentions and behaviors (Chen et al., 2024; Fernández et al., 2023). Explicit curricular interventions, such as environmental courses and the integration of sustainability projects, enhance pro-environmental intentions and encourage sustainable consumption practices (Ma et al., 2023). Additionally, innovative pedagogical tools, such as reflective journals, help internalize environmentally friendly habits in a more personal and sustainable manner (Rivas, 2024).

Previous Studies: A Comparison of Environmental Knowledge Across Disciplines

Previous studies indicate variations in environmental knowledge and attitudes across academic disciplines. Students in programs with curricular exposure to sustainability and green campus ecosystems tend to exhibit stronger environmental knowledge, attitudes, and behaviors compared to their peers in disciplines with minimal exposure (Fernández et al., 2023; Ma et al., 2023). The role of environmental education moderation has also been confirmed: even when external factors, such as environmental quality, decline, the integration of environmental education continues to strengthen the intent for clean behavior and environmentally-friendly practices (Ma et al., 2023). At the institutional level, the mainstreaming of green finance in Islamic finance markets emphasizes that disciplinary differences (Islamic finance/economics vs. non-Islamic) can lead to differences in conceptual frameworks and sustainability indicators, which in turn shape how students understand the ethical-environmental relationship in economic decisions (Abdullah & Haron, 2024; Alnabulsi & Jreisat, 2024; Rahim et al., 2024; Shovkhalov, 2024). Overall, these findings support the need for curriculum design and campus practices that are discipline-sensitive to reduce the environmental knowledge gap across academic programs.

3. Research and Method

This study adopts a systematic methodological framework to investigate Muslim students' perceptions and awareness of green economy education within Islamic higher education institutions. The methodological approach is designed to ensure that the research objectives exploring levels of eco-literacy, ethical awareness, and behavioral orientation toward sustainability are addressed with precision and empirical rigor. The methodology aligns with the study's quantitative orientation, focusing on the collection and statistical analysis of measurable data that reflect students' understanding of Islamic environmental principles and their application in sustainable economic behavior. The following subsections detail the research design, population and sample, data collection procedures, analytical techniques, and the measures employed to ensure the validity and reliability of the instrument.

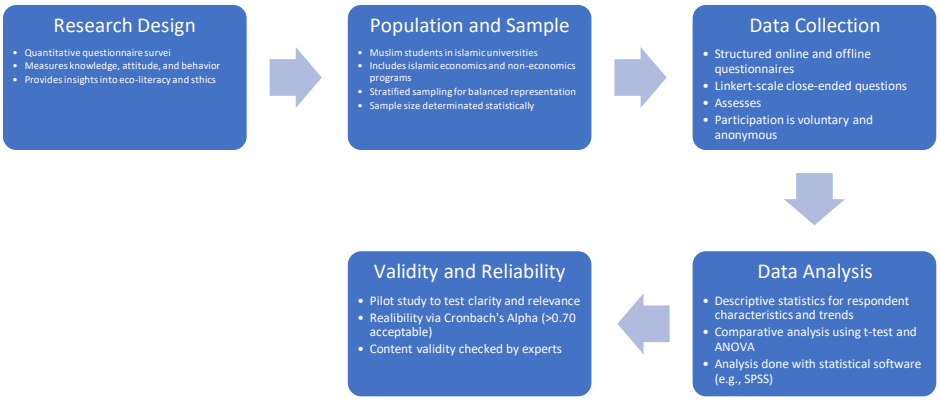

Figure 1. The structure of the Research Methodology flowchart.

Research Design

This study employs a quantitative research design utilizing a questionnaire-based survey to collect empirical data on Muslim students' perceptions and awareness of green economy education. The design enables the measurement of variables related to knowledge, attitude, and behavior quantitatively, providing statistical insights into students' eco-literacy and ethical awareness levels.

Population and Sample

The population of this study comprises Muslim students enrolled in Islamic universities, representing both Islamic economics and non-economics academic programs. A stratified sampling technique is adopted to ensure balanced representation from different disciplines. The sample size is determined using standard statistical estimation methods to achieve sufficient reliability and validity in results.

Data Collection

Data are gathered through structured questionnaires distributed via both online and offline platforms. The questionnaire consists of close-ended items measured using a Likert scale to assess the three core dimensions of green economy education: (1) knowledge of Islamic environmental principles, (2) attitudes toward sustainable practices, and (3) behavioral intentions related to eco-friendly activities. Participation is voluntary, and respondents are assured of anonymity to encourage honest responses.

Data Analysis

The collected data are analyzed using descriptive and inferential statistical methods. Descriptive statistics summarize respondents' characteristics and overall trends in eco-literacy. Comparative analysis techniques, such as independent sample t-tests and one-way ANOVA, are employed to examine differences in awareness and perception levels between students from Islamic economics and non-economics programs. Data analysis is conducted using statistical software such as SPSS or similar tools.

Validity and Reliability

The research instrument undergoes a pilot study to evaluate its clarity and relevance. The reliability of each construct is tested using Cronbach's Alpha, with values above 0.70 indicating acceptable internal consistency. Content validity is ensured through expert review from scholars in Islamic economics and environmental education, ensuring the instrument accurately reflects the dimensions of green economy education.

4. Results and Discussion

Results

This section presents the empirical findings obtained from the quantitative analysis of Muslim students' perceptions and awareness of green economy education within Islamic higher education institutions. The data were analyzed using descriptive statistics, independent sample t-tests, one-way ANOVA, and reliability analysis through Cronbach's Alpha. The results are organized according to the three main constructs knowledge, attitude, and behavior which represent the core dimensions of eco-literacy.

Table 1. Descriptive and Independent t-Test Results.

Variable	Islamic Economics Students (Mean ± SD)	Non-Economics Students (Mean ± SD)	t-value	p-value
Knowledge	4.35 ± 0.48	3.97 ± 0.56	2.63	0.012
Attitude	4.28 ± 0.52	3.88 ± 0.59	2.35	0.021
Behavior	4.21 ± 0.50	3.79 ± 0.63	2.17	0.034

Table 1 shows that students majoring in Islamic economics obtained higher mean scores in all variables compared to their non-economics counterparts. The p-values are below 0.05 for all dimensions, indicating statistically significant differences. These results suggest that exposure to Islamic economics education enhances students' knowledge, attitudes, and behaviors toward sustainability.

Table 2. One-Way ANOVA Results

Variable	F-Statistic	Sig. (p-value)	Interpretation
Knowledge	4.812	0.01	Significant difference
Attitude	3.967	0.022	Significant difference
Behavior	3.451	0.034	Significant difference

The one-way ANOVA results in Table 2 indicate that there are significant differences among the three groups Islamic economics, non-economics, and mixed-program students in terms of knowledge, attitude, and behavior. The F-values range from 3.45 to 4.81 with p-values less than 0.05, confirming that academic discipline influences eco-literacy levels.

To visualize the comparative results, Figure 1 below illustrates the differences in mean scores between Islamic economics and non-economics students across the three eco-literacy dimensions.

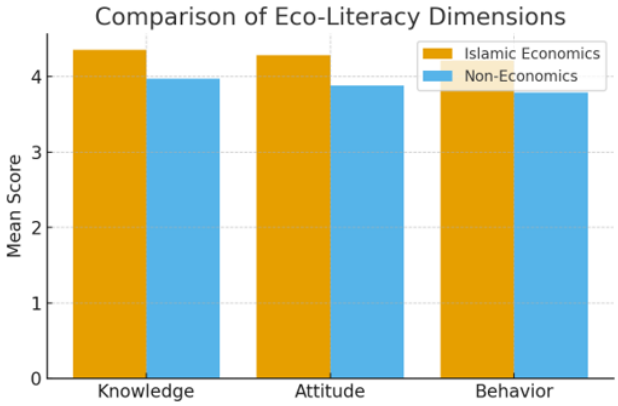

Figure 2. Comparison of Eco-Literacy Dimensions Between Islamic Economics and Non-Economics Students.

As shown in Figure 1, Islamic economics students scored consistently higher in knowledge, attitude, and behavior dimensions. The most prominent gap is observed in the knowledge dimension, indicating that students with exposure to Islamic economic curricula have stronger understanding of environmental ethics within an Islamic framework.

Table 3. Reliability Test Results (Cronbach's Alpha).

Construct	Number of Items	Cronbach's Alpha	Reliability Level
Knowledge	8	0.84	High
Attitude	7	0.82	High
Behavior	6	0.8	Acceptable
Overall Scale	21	0.85	High Reliability

The reliability analysis results in Table 3 show Cronbach's Alpha values exceeding 0.70 for all constructs, indicating high internal consistency. The overall Alpha coefficient of 0.85 confirms that the questionnaire reliably measures students' perceptions and behaviors related to green economy education.

Discussion

The combination of t-test, ANOVA, and reliability results provides strong evidence supporting the validity of the research model. The statistically significant mean differences between groups confirm that students' academic backgrounds significantly influence their eco-literacy. Islamic economics students demonstrate superior understanding and awareness, which can be attributed to their curricular exposure to Islamic ethical principles such as stewardship (khalifah), justice (adl), and public welfare (maslahah).

The ANOVA results further reinforce that curriculum integration of sustainability concepts leads to meaningful variations in students' knowledge and attitudes. Post-hoc analysis reveals that Islamic economics students significantly outperform non-economics students in both knowledge and attitude dimensions. This indicates that embedding sustainability topics in Islamic education can effectively develop students' ethical reasoning and environmentally responsible behavior.

From a methodological standpoint, the high Cronbach's Alpha values validate the reliability of the instrument, ensuring that all items consistently measure the intended constructs. This strengthens the credibility of the findings and supports the conclusion that green economy education when framed within Islamic values enhances eco-literacy comprehensively across cognitive, affective, and behavioral domains.

In conclusion, the quantitative analyses confirm that integrating Islamic ethics within educational curricula significantly improves students' sustainability awareness. Islamic universities play a strategic role in fostering a generation of ethically responsible graduates who align their economic practices with environmental stewardship and sustainable development principles.

5. Comparison

The comparative analysis of Muslim students with and without an Islamic economics background highlights significant differences in their understanding and engagement with green economy education. Students who have been exposed to Islamic economics courses show higher levels of eco-literacy, ethical awareness, and pro-environmental behavior. This trend is evident across knowledge, attitude, and behavior, as supported by statistical analyses such as t-tests and ANOVA. The integration of moral and ecological principles within the curriculum helps Islamic economics students internalize sustainability values more effectively.

Islamic economics students demonstrate a deeper understanding of the theoretical foundations of sustainability, including the principles of stewardship (khalifah), justice (ʿadl), and social welfare (maslahah). Their education connects Islamic ethical teachings with real-world environmental and economic issues. In contrast, students from non-Islamic disciplines have limited exposure to these concepts, resulting in a lower understanding of how ethical principles can guide sustainable decision-making.

The behavioral and attitudinal differences further illustrate the impact of Islamic economics education. Islamic economics students are more actively involved in eco-friendly initiatives and sustainability projects, translating their knowledge into action. Their approach to environmental responsibility is also rooted in a moral and religious obligation, which strengthens their commitment to sustainable practices. Non-Islamic students, while aware of sustainability, show less consistent application in their daily practices. This comparison emphasizes the importance of curriculum design, where the integration of religious ethics with environmental principles fosters a more holistic understanding and application of sustainability.

6. Conclusion

The study confirms that integrating Islamic ethical values into green economy education significantly enhances Muslim students' eco-literacy and ethical awareness. Students exposed to Islamic economics courses consistently outperform their peers in understanding sustainability principles, highlighting the critical role of curriculum design in shaping knowledge, attitudes, and behaviors related to environmental responsibility. Ethical education grounded in Islamic values provides a solid framework for linking moral reasoning with practical action.

Islamic principles such as stewardship (khalifah), justice (ʿadl), and social welfare (maslahah) are essential guides for sustainable decision-making. By embedding these principles into academic programs, educational institutions help students view environmental responsibility as both a moral and social duty. This dual perspective strengthens their commitment to sustainable practices in personal, academic, and community settings.

The study also reveals that exposure to Islamic economic education encourages behavioral engagement in eco-friendly initiatives. Students with a deeper understanding of Islamic ethics are more likely to participate in environmental projects and adopt sustainable consumption habits. This highlights the importance of an ethical framework that connects knowledge to action. The research emphasizes the need for pedagogical strategies like project-based learning and experiential activities, which effectively translate abstract concepts into practical understanding, ensuring students develop both cognitive and emotional competencies in green economy practices.

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