

## PROMOTING ISLAMIC VALUE FOR GREEN SKILL DEVELOPMENT IN ISLAMIC VOCATIONAL HIGH SCHOOL

**R. Siti Pupu Fauziah<sup>1</sup>, Agustina Multi Purnomo<sup>2</sup>, Uus Firdaus<sup>3</sup>, Asep Bayu Dani Nanyanto<sup>4</sup>, Martin Roestamy<sup>5</sup>, Radif Khotamir Rusli<sup>1</sup>, Afmi Apriliani<sup>2</sup>, Zahra Khusnul Lathifah<sup>1</sup>**

<sup>1</sup>Faculty of Islamic Religion and Teacher Education, Universitas Djuanda, Bogor, Indonesia

<sup>2</sup>Faculty of Social and Politic Science, Universitas Djuanda, Bogor, Indonesia

<sup>3</sup>Faculty of Computer Science Universitas Djuanda, Bogor, Indonesia

<sup>4</sup>Chemical Department, Universitas Pendidikan Indonesia, Bandung, Indonesia

<sup>5</sup>Postgraduate School of Law, Universitas Djuanda, Bogor, Indonesia

\*Corresponding Email: [siti.pupu.fauziah@unida.ac.id](mailto:siti.pupu.fauziah@unida.ac.id)

Received: June, 2023. Accepted: June, 2024. Published: June, 2024

### ABSTRACT

Air pollution is a critical issue in Indonesia in 2023, prompting the need to enhance green skills within Vocational High Schools to support a sustainable green economy. The purpose of this study is to investigate the influence of Islamic values on the development of green skills among students. Utilizing quantitative methods, data were collected through online questionnaires distributed to 562 twelfth-grade students at the Islamic Foundation Vocational School in Bogor Regency. The results revealed that Islamic values, particularly beliefs and attitudes towards the environment, significantly impacted the acquisition of green skills. Further analysis identified that Islamic values as a source of inspiration and serenity, along with teachings on tree planting and zero-waste practices, had a partially significant effect. The study concludes that incorporating Islamic religious education into the vocational school curriculum is crucial. These findings offer valuable insights for educators, policymakers, and practitioners, providing a basis for integrating Islamic values into vocational education to enhance green skill development among students.

Keywords: Environmental Sustainability, Green Skill Development, Islamic Value, Vocational High Schools

### INTRODUCTION

In 2023, Indonesia faces a severe air pollution crisis, with Jakarta's Air Quality Index reaching 141 and PM2.5 levels exceeding the WHO's recommended threshold by 10.4 times (Iqair, 2023). This crisis underscores the need to curb carbon emissions, which are linked to increased cancer risks and fatalities due to air pollution (Jacobson, 2008). The unchecked economic development contributing to rising carbon emissions necessitates a shift towards green jobs and green skills to foster a sustainable green economy (Dong et al., 2022; Jiang et al., 2020; Ramli et al., 2019; Rustico, 2010; Wang, 2023). Vocational education plays a crucial role in developing these green skills, addressing the escalating concern for environmental sustainability (Handayani et al., 2020a; Pavlova, 2018; Vona et al., 2018; Wang, 2023). Thus, cultivating green skills among vocational school students is imperative for promoting sustainable practices in Indonesia.

According to Indonesian education regulations, vocational education must be implemented in both general and Islamic vocational high schools (Ministry of State Secretariat, 2003; Ministry of Education, Culture, Research and Technology, 2022a; 2022b). While research on green skills has mainly focused on general vocational schools (Fitriyanto & Personal, 2021; Handayani et al., 2020a; Handayani et al., 2023), Islamic education plays a crucial role in Islamic vocational high schools by emphasizing religious subjects (Latief et al., 2021). Islamic values significantly shape behavior and enhance the overall educational quality in these schools

(Abdullah, 2019), boosting students' environmental awareness and reinforcing moral principles and ethical conduct (Agus & Ali, 2022; Mulyana et al., 2023). Despite this, limited research explores the role of Islamic values in developing green skills within Islamic vocational high schools. These values, derived from the Al Quran and Hadith, are integral to the curriculum, with graduates held accountable to God (Tafti et al., 2012; Ministry of Education, Culture, Research and Technology, 2022a; 2022b).

Islam establishes a balance between individual interests, societal well-being, and environmental preservation, emphasizing the integration of environmental concerns into daily life (Choiriyah et al., 2022). In environmental research, Islamic values play a dual role. Firstly, they directly promote environmental stewardship, as guided by the Quran and Hadith, encompassing responsibilities like planting, avoiding the destruction of natural resources, animal conservation, adopting zero-waste practices, and acting selflessly (Shaikh, 2018). Secondly, these values influence personal beliefs and development, with green behavior measured through beliefs, worship adherence, sharing beliefs, and the impact of beliefs on decision-making (Hasnah Hassan, 2014).

Previous research categorizes green skills into two groups: professional and personal. Professional skills include technical and managerial competencies (Vona et al., 2018). Technical skills are related to the development, use, and environmental impact of technology, crucial for industries like manufacturing, transport, mining, chemicals, green architecture, and telecommuting (Gao et al., 2022; Rustico, 2010; Thomas et al., 2010). Managerial skills involve organizing, overseeing, and supervising work practices (Vona et al., 2018). Personal skills complement professional skills, encompassing knowledge, values, attitudes, personal green awareness, abilities, and green behavior (Yufeng, 2014; Cabral & Dhar, 2019; Wang, 2023). These personal skills contribute to a green personality and align with the educational goal of integrating knowledge, attitudes, and behavior rooted in Islamic values (Ministry of Education, Culture, Research, and Technology, 2022b).

The cultivation of green skills in vocational schools involves both technical and managerial competencies necessary for the professional landscape. These skills also include personal abilities, ensuring a comprehensive curriculum across all subjects (Diep & Hartmann, 2016). Green skills emphasize green technology (Gao et al., 2022; Ramli et al., 2020; Vona et al., 2018), green management (Vona et al., 2018), and objectives geared towards a green economy (Lethoko, 2014; Vona et al., 2018; Wang, 2023). Unlike conventional subjects, green skills focus on green awareness, values, knowledge, attitude, and behavior (Cabral & Dhar, 2019; Wang, 2023; Yufeng, 2014), with learning approaches centered around sustainability, environmental protection, energy conservation (Diep & Hartmann, 2016; Mochizuki & Fadeeva, 2010; Ramli et al., 2020), environmental sustainability (Vona et al., 2018; Ramli et al., 2022), and low-carbon transformation (Wang, 2023).

Despite the emphasis on green skills in vocational education, there is a gap in research on integrating Islamic values into green skills development within Islamic vocational high schools. Most studies have focused on general vocational schools, neglecting the unique context of Islamic vocational schools in Indonesia. This study investigated the influence of Islamic values on green skills development, offering insights into their interplay in Islamic vocational education. This research contributes to the discourse on sustainable practices within Islamic vocational high schools, presenting a novel perspective on the intersection of Islamic values and green skills. By examining the impact of Islamic values on green skills, this study aims to enhance vocational education grounded in these values, fostering meaningful growth in green skills.

## METHOD

This study employed a quantitative approach with green skills as the independent variable and Islamic values as the dependent variable. The Islamic values variable was divided into two dimensions, labeled X1 and X2, representing belief (Hasnah Hassan, 2014) and confidence manifested through behavior related to environmental management (Shaikh, 2018). Green skills were categorized into professional and personal green skills. The questionnaire used a Likert scale ranging from 1 to 5, with a neutral midpoint allowing respondents to select options that best reflected their opinions (Alabi & Jelili, 2022; Chyung et al., 2017). Detailed information about variables, dimensions, indicators, and sources is presented in Tables 1 and 2.

Table 1. Variable X Islamic values related to belief in religion and building personality

Dimension	Indicators	Source
Value about belief	<ol style="list-style-type: none"> <li>1. Religious belief is fundamental.</li> <li>2. Religious belief is a source of inspiration.</li> <li>3. Religious belief is the source of meaning.</li> <li>4. Religious belief is the source of purpose in life.</li> <li>5. Religious belief is a source of serenity.</li> <li>6. Religious beliefs are an essential part.</li> <li>7. The relationship with God is significant.</li> <li>8. The environment of people who have faith is most prominent.</li> <li>9. Religious beliefs greatly influence decisions making.</li> </ol>	Hasnah Hassan (2014).
Value about behavior towards the environment	<ol style="list-style-type: none"> <li>1. Islam teaches us to play a role in planting and caring for plants.</li> <li>2. Islam teaches not to destroy rivers, forests, and seas.</li> <li>3. Islam teaches us to maintain animal sustainability.</li> <li>4. Islam teaches us to apply zero-waste behavior (does not produce waste).</li> <li>5. Islam teaches us to be selfless.</li> <li>6. Islam teaches us not to take actions that disturb the surrounding environment that are useful for society.</li> </ol>	Shaikh (2018).

Table 1 outlines Variable X, which includes Islamic values related to belief in religion and personality development. The dimensions cover values associated with belief and behavior towards the environment, with indicators sourced from Hassan (2014) and Shaikh (2018). This overview provides a foundation for understanding the multifaceted aspects of Islamic values in the study. Table 2 details Variable Y, focusing on Green Skills, divided into Technical Skills (Y1), Managerial Skills (Y2), and Personal Skills (Y3). Indicators within each dimension, along with their sources, emphasize the essential skills and knowledge for environmentally conscious practices. This categorization prepares for a detailed analysis of the relationships between Islamic values and green skills.

Table 2. Variable Y Green skills

Dimension	Indicators	Source
Y1: Technical skills	<ol style="list-style-type: none"> <li>1. I have the technical skills to get a job according to the major.</li> <li>2. I have the skills to develop environmentally friendly technology.</li> <li>3. I have the skills to use environmentally friendly technology.</li> <li>4. I have the skills to reduce the negative impact of technology on the environment.</li> </ol>	Gao et al. (2022), Rustico (2010).
Y2: Managerial skills	<ol style="list-style-type: none"> <li>1. I have managerial skills to get a job according to the major.</li> <li>2. I have the skills to organize the management of an environmentally friendly organization or company.</li> <li>3. I have the skills to manage an environmentally friendly organization or company.</li> <li>4. I have skills for monitoring the management of organizations or companies that are environmentally friendly.</li> </ol>	Vona et al. (2018).

Dimension	Indicators	Source
Y3: Personal skills	Green knowledge 1. I know about efforts to preserve the natural environment. 2. I know about efforts to minimize the impact of technology on environmental damage. 3. I know about the negative impact of technology on the environment. 4. I know about how to save energy with the use of technology 5. I know about how to make technology that saves energy. 6. I know how to reduce carbon emissions by using technology. 7. I know how to reduce carbon emissions by creating new technology.	Cabral & Dhar, (2019), Diep & Hartmann (2016), Mochizuki & Fadeeva (2010), Ramli, Rasul, & Affandi (2020) Vona et al. (2018) Wang (2023), Yufeng (2014)
	Green awareness 1. I realized that I needed to preserve the natural environment. 2. I realize that technology can damage the environment. 3. I aware that development can have a negative impact on the environment. 4. I realized that the use of technology must save energy. 5. I realized that the technology created by me had to save energy. 6. I recognized that the use of technology must reduce carbon emissions. 7. I realizing that what I make must be made by me must reduce carbon emissions.	
	Green value 1. The natural environment is an essential part of life. 2. Supporting sustainable development is my duty. 3. Preserving the environment is my obligation. 4. Saving energy has become a necessary skill in my future workplace. 5. Reducing carbon emissions is my obligation.	
	Green attitude 1. I have the attitude that the natural environment is precious. 2. Sustainable development is significant. 3. I have the attitude that environmental preservation is vital. 4. Saving energy is very important. 5. Technological innovation should be able to save energy. 6. Technological innovation should be able to reduce carbon emissions.	
	Green behaviour 1. I make efforts to protect the environment in my daily life. 2. I made an effort to save energy in everyday life. 3. I make efforts to make technological innovations that save energy. make efforts to make technological innovations that reduce carbon emissions.	

Tables 1 and 2 provide a comprehensive overview of the study's key variables, detailing the dimensions, indicators, and sources for Variable X (Islamic values) and Variable Y (Green Skills). Table 1 highlights the dimensions of belief and behavior towards the environment, drawing on studies by Hassan (2014) and Shaikh (2018) to offer a nuanced understanding of Islamic values related to religion and personality development. Table 2 introduces Green Skills, divided into Technical Skills (Y1), Managerial Skills (Y2), and Personal Skills (Y3), with indicators supported by sources such as Gao et al. (2022), Rustico (2010), Vona et al. (2018), Cabral & Dhar (2019), Diep & Hartmann (2016), Mochizuki & Fadeeva (2010), Ramli et al. (2020), Wang (2023), and Yufeng (2014). These tables establish the groundwork for exploring the intricate relationships between Islamic values and green skills in the subsequent analysis.

The study participants consisted of 562 class XII students from four Islamic vocational high schools in Bogor Regency, selected to represent the West, East, and Central areas. This sample size meets the minimum requirement for a 5% confidence level, considering the total population of 135,886 vocational school students in the regency (BPS-Statistics of Bogor Municipality, 2023; Adam, 2020). Online questionnaires were used to expedite data collection and minimize input errors (Alessi & Martin, 2010). To prevent sample bias, the questionnaires were completed in class, ensuring participation only from students. The validity and reliability of the questionnaire were rigorously assessed following established methodologies (Ball, 2019).

The validity test, conducted with sixty students, used KMO, Bartlett's Test, and Anti-image Matrices. The results, presented in Table 3, showed all individual points had matrix component values exceeding 0.5, confirming their validity.

Table 3. Component Matrix Validity Test

Matrix aspect	Component 1
Belief (X1)	0,812
Behaviour towards the Environment (X2)	0,849
Technical Skills (Y1)	0,896
Managerial Skills (Y2)	0,908
Personal Skills (Y3)	0,851

Source: the results of the tabulation data

Based on the table, Principal Component Analysis was used for extraction, and all extracted components exceeded the threshold of 0.5, confirming the validity of all aspects. The reliability test for Variable X used Cronbach's Alpha, yielding values of 0.683 for Variable X, and 0.653, 0.613, and 0.681 for sub-variables X1, X2, and Y, respectively. Since all values were greater than 0.60, the variables were deemed reliable (Taber, 2018; Bujang, Omar, & Baharum, 2018).

## RESULTS AND DISCUSSION

This study delves into the intricate relationship between Islamic values and the development of green skills among students in Islamic vocational high schools. Driven by the urgent need to address contemporary environmental challenges, it explores the intersection of religious principles and vocational education within the framework of Islamic values. Conducted in Bogor Regency, the research examines the complex process of acquiring green skills, emphasizing how Islamic values shape students' attitudes, behaviors, and knowledge regarding environmental sustainability. Establishing the context and purpose of this investigation is essential for understanding the nuanced connections between Islamic values and the cultivation of green skills in Islamic vocational schools.

### The Influence of Islamic Value of Belief on Green Skills

We conducted multiple linear regression analysis to measure the influence of the Islamic value of belief variable on green skills. First, a simultaneous test was carried out to test the existence of X which had an effect on Y. The results of the simultaneous test (Anova test) showed a significance value of 0.000. Because the significance value is less than  $\alpha$  0.05, H1 is accepted. Table 4 shows that the overall value of the nine Islamic value of belief indicators simultaneously influences green skills.

Table 4. The Influence of Islamic Value of Belief on Green Skills

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	42,606	1	42,606	105,390	.000 <sup>b</sup>
1 Residual	226,390	560	0,404		
Total	268,996	561			

Source: the SPSS computation results

The findings of simultaneous tests in table 4 indicate that the Islamic value of belief (X1) variable has an indicator that affects green talents (Y). In order to determine whether indications of variable X1 affect Y, a partial test (t test) is used.

The partial test findings for the impact of nine Islamic value-belief markers on green skills are displayed in table 5. Only two indicators—X1.1 (religious belief is a source of inspiration) and X1.5 (religious belief is a source of serenity)—have significance values less than 0.05. This indicates that, at  $\alpha$  0.05, only these two indicators significantly affect green skills.

Table 5. The Influence of Nine Indicators Islamic Value of Belief to Green Skills

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1,936	0,241		8,039	0,000
X1.1	-0,111	0,076	-0,094	-1,470	0,142
X1.2	0,174	0,062	0,179	2,806	0,005
X1.3	0,025	0,082	0,023	0,308	0,759
X1.4	0,054	0,085	0,051	0,636	0,525
X1.5	0,149	0,083	0,137	1,784	0,075
X1.6	0,104	0,108	0,092	0,969	0,333
X1.7	-0,093	0,088	-0,078	-1,059	0,290
X1.8	0,084	0,059	0,083	1,406	0,160
X1.9	0,100	0,069	0,102	1,443	0,150

Source: the SPSS computation results

A test was carried out on the influence of Islamic value of belief on the three groups of green skills that referring to the grouping of green skills. Table 6 shows the test results showing that Islamic value of belief has a significant effect on technical, managerial and personal skills. This is indicated by a significance value of 0.000 at  $\alpha$  0.05.

Table 6. The Influence of Islamic Value of Belief to Three Green Skill's Groups

No. & Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1. XI to Y1	1,693	0,261		6,499	0,000
	0,522	0,054	0,378	9,656	0,000
2. XI to Y2	1,263	0,258		4,897	0,000
	0,605	0,054	0,431	11,302	0,000
3. XI to Y3	1,975	0,222		8,910	0,000
	0,473	0,046	0,398	10,266	0,000

Source: the SPSS computation results

### The Influence of Islamic Values about Behavior towards the Environment to Green Skills

In order to determine the impact of the Islamic value variable about behavior toward the environment on green abilities, we evaluated hypothesis 2 simultaneously using an Anova test. Green skill is significantly impacted by Islamic ideals toward environmental behavior, as indicated by the Anova test's significance value of 0.000 or  $\alpha$  0.05. H2 is approved. This shows that the overall value of six indicators simultaneously influences green skills.

Table 7. The Influence of Islamic Value about Behaviour towards the Environment to Green Skills

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	72,235	1	72,235	205,589	.000 <sup>b</sup>
1 Residual	196,761	560	0,351		
Total	268,996	561			

Source: the SPSS computation results

The results of the Anova test indicated that there were one or all indicator variables of Islamic value about behavior towards the environment that influence green skills. Then a partial test (T test) is carried out. Table 8 shows the influence of six Islamic value indicators about behavior towards the environment on green skills. Significance values below 0.05 only exist in indicators X2.1 (Islam teaches us to play a role in planting and caring for plants) and X2.4 (Islam teaches us to apply zero-waste behavior (does not produce waste)). This means that only these two indicators have a significant effect on green skills at  $\alpha$  0.05.

Table 8. The Influence of Six Indicators Islamic value about Behavior towards the Environment to Green Skills

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	1,751	0,169		10,342	0,000
X2.1	0,160	0,047	0,191	3,408	0,001
X2.2	0,024	0,047	0,028	0,507	0,612
X2.3	0,092	0,056	0,096	1,646	0,100
X2.4	0,223	0,043	0,275	5,173	0,000
X2.5	0,028	0,028	0,044	0,999	0,318
X2.6	0,025	0,037	0,032	0,683	0,495

Source: the SPSS computation results

Next, the three groups of green skill participants examined how Islamic ideals about behavior influence the environment. The test results in Table 9 indicate that technical, managerial, and personal skills are significantly impacted by Islamic ideals about environmental behavior. This is indicated by a significance value of 0.000 at  $\alpha$  0.05.

Table 9. The Influence of Islamic Value about Behavior towards the Environment to Three Green Skill's Groups

No. & Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1. X2 to Y1	2,074	0,208		9,995	0,000
	0,465	0,045	0,400	10,315	0,000
2. X2 to Y2	1,695	0,204		8,289	0,000
	0,541	0,044	0,458	12,180	0,000
3. X2 to Y3	1,878	0,166		11,291	0,000
	0,518	0,036	0,518	14,338	0,000

Source: the SPSS computation results

The multiple linear regression analysis demonstrated a significant influence of the Islamic value of belief on green skills. The ANOVA test indicated a significance value of 0.000, confirming that the Islamic value of belief significantly affects green skills. This was further supported by the partial test results, which showed that two indicators—religious belief as a source of inspiration and serenity—had significance values below 0.05, highlighting their specific impact on green skills. Additionally, the analysis revealed that the Islamic value of belief significantly affects technical, managerial, and personal skills, as evidenced by the significance value of 0.000 for each group.

Similarly, the impact of Islamic values regarding behavior towards the environment was evaluated, with the ANOVA test showing a significance value of 0.000. This indicates that Islamic values about environmental behavior significantly influence green skills. Partial tests revealed that two indicators—Islamic teachings on planting and caring for plants and zero-waste behavior—had significance values below 0.05, affirming their particular influence on green skills. The analysis further confirmed that Islamic values related to environmental behavior significantly affect technical, managerial, and personal skills, with all tests showing a significance value of 0.000.

The findings underscore the significant role of Islamic values in shaping green skills among students in Islamic vocational high schools. The notable influence of belief and environmental behavior on green skills aligns with prior research, supporting the idea that religious education can enhance environmental consciousness and sustainability practices. This research provides empirical evidence that integrating Islamic values into vocational education can effectively cultivate essential green skills, highlighting the importance of religious principles in promoting environmentally conscious behaviors.

These results suggest practical implications for educators and policymakers, emphasizing the need to incorporate Islamic values into the curriculum to foster green skills development. By leveraging religious teachings, vocational schools can better prepare students to contribute to a sustainable green economy. Future research could further explore the nuanced relationships between different dimensions of Islamic values and various green skills, potentially expanding the scope to include other regions and educational contexts.

The hypothesis test results underscored the significant influence of both the Islamic value of belief and the Islamic value related to environmental behavior on the development of green skills. These findings affirm the multifaceted impact of Islamic values, extending beyond national educational fortification and influencing educational quality in Islamic-based high



schools, as previously asserted by Latief et al. (2021) and Abdullah (2019). The current study aligns with prior research by Agus & Ali (2022), providing additional empirical support that Islamic values contribute to vocational students' heightened environmental concerns, moral principles, ethical conduct, and pronounced environmental consciousness, as highlighted by Mulyana et al. (2023).

The pivotal role of Islamic values in fostering green skills underscores the significance of integrating Islamic education into the curriculum of vocational high schools. Unlike general vocational high schools, which typically incorporate Islamic values solely within the subject of IRE (Ministry of Education, Culture, Research and Technology, 2022b), the samples for this research were drawn from Islamic vocational high schools established by Islamic foundations, ensuring a more comprehensive infusion of Islamic religious learning across various subjects. Specifically examining Islamic values associated with belief in religion and building personality, as outlined by Hasnah Hassan (2014), the study reveals a positive correlation between strengthening religious beliefs and the advancement of green skills. This connection is further substantiated by two indicator variables—Islamic value as inspiration and serenity—which significantly influence the development of green skills. The findings accentuate the applicability of religious beliefs in shaping various facets of life, including fostering heightened environmental awareness, as elucidated by Choiriyah et al. (2022).

The learning of Islamic values of belief requires support from Islamic values about behavior towards the environment. The Quran and Hadith teach responsible behavior towards the environment (Shaikh, 2018). Islamic values about environmental behavior, especially caring for plants and zero-waste behavior, have a significant effect on green skills. Research findings show that Islamic values influence green skills in the form of technical, managerial, and personal skills. Although Islamic values do not directly build technical and managerial skills, they influence these areas by promoting behaviors and attitudes that support the development and implementation of green practices (Gao et al., 2022; Rustico, 2010; Vona et al., 2018). Personal green skills are related to green awareness, knowledge, attitude, and behavior (Cabral & Dhar, 2019; Wang, 2023; Yufeng, 2014). This is linked to learning achievements in IRE, which encompass knowledge, attitudes, and behavior based on Islamic values (Ministry of Education, Culture, Research, and Technology, 2022b).

While the present study offers valuable insights into the relationship between Islamic values and green skills development among students in Islamic vocational high schools, certain limitations should be acknowledged. Firstly, the study's scope is confined to a specific geographic location. Generalizing the findings to a broader context may be limited due to regional variations in educational systems, cultural factors, and environmental concerns. Additionally, the research relies on self-reported data obtained through questionnaires, introducing the potential for response bias and the subjective interpretation of participants. The use of a cross-sectional design may restrict the ability to establish causality, as it captures a snapshot in time rather than the dynamics of long-term relationships. Furthermore, the study primarily focuses on quantitative methods, neglecting the richness of qualitative insights that could provide a more nuanced understanding of the intricate connections between Islamic values and green skills.

## CONCLUSION

The hypothesis test results indicate a significant impact of Islamic beliefs and behaviors towards the environment on the development of green skills among vocational high school students. Examination across three distinct green skills groups highlights the critical role of instruction in Islamic values in fostering these skills. Specific indicators, particularly Islamic values related to belief and environmental behavior, significantly contribute to green skill development. The

influence of Islamic values promoting inspiration, serenity, and environmental stewardship, including practices such as planting and zero-waste behavior, is especially pronounced. These findings underscore the importance of religious education in shaping green skill development among Islamic vocational high school students. The research provides valuable insights for enhancing educational programs centered on Islamic values to strengthen the cultivation of green skills. While this study focuses on students from a single regency in Indonesia, future research should expand its scope to offer a more comprehensive understanding of how Islamic values influence green skill formation among vocational high school students in diverse settings.

## BIBLIOGRAPHY

- Abdullah, M. (2019). School Culture to Serve Performance of Madrasah in Indonesia. *QIJS: Qudus International Journal of Islamic Studies*, 7(1), 71-100. <https://doi.org/10.21043/qijis.v7i1.4809>
- Adam, A. M. (2020). Sample size determination in survey research. *Journal of Scientific Research & Reports*, 26(5), 90-97. <https://doi.org/10.9734/jsrr/2020/v26i530263>
- Agus, E., & Ali, K. (2022). Environmental Education for High School and Vocational School of Muhammadiyah City of Medan Based on Islam. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(1), 930-937. <https://doi.org/10.33258/birci.v1i3.55>
- Alabi, A. T., & Jelili, M. O. (2022). Clarifying likert scale misconceptions for improved application in urban studies. *Quality & Quantity*, 57, 1337-1350.
- Alessi, E., & Martin, J. (2010). Conducting an internet-based survey: benefits, pitfalls, and lessons learned. *Social Work Research*, 34(2), 122-128. <https://doi.org/10.1093/swr/34.2.122>
- Ball, H. L. (2019). Conducting online surveys. *Journal of human lactation*, 35(3), 413-417. <https://doi.org/10.1177/0890334419848734>
- BPS-Statistics of Bogor Municipality. (2023). Kabupaten Bogor dalam Angka. Bogor: BPS-Statistics. Retrieved from the original web <https://bogorkota.bps.go.id/publication/2023/12/08/06ae3090cf8c5a99949fc4a5/analisis-hasil-survei-kebutuhan-data-bps-kota-bogor-2023.html>
- Bujang, M. A., Omar, E. D., & Baharum, N. A. (2018). A review on sample size determination for Cronbach's alpha test: a simple guide for researchers. *The Malaysian Journal of Medical Sciences: MJMS*, 25(6), 85. <https://doi.org/10.21315/mjms2018.25.6.9>
- Cabral, C., & Dhar, R. L. (2019). Green Competencies: Construct Development and Measurement Validation. *Journal of Cleaner Production*, 235, 887-900. <https://doi.org/10.1016/j.jclepro.2019.07.014>
- Choiriyah, C., Noviani, D., & Mardeli, M. (2022). The Existence of The Islamic Economy In Building The World of Education. *Islamic Banking: Jurnal Pemikiran dan Pengembangan Perbankan Syariah*, 8(1), 147-162. <https://doi.org/10.36908/isbank.v8i1.484>
- Chyung, S. Y., Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence-based survey design: The use of a midpoint on the Likert scale. *Performance Improvement*, 56(10), 15-23. <https://doi.org/10.1002/pfi.21727>
- Diep, P.C. & Hartmann, M. (2016). Green Skills in Vocational Teacher Education – a model of pedagogical competence for a world of sustainable development. In: TVET@Asia, issue 6, 1-19. Retrieved from the website: [https://www.tvet-online.asia/issue6/diep\\_hartmann\\_tv6.pdf](https://www.tvet-online.asia/issue6/diep_hartmann_tv6.pdf)
- Dong, Z., Xia, C., Fang, K., & Zhang, W. (2022). Effect of the Carbon Emissions Trading Policy on the Co-benefits of Carbon Emissions Reduction and Air Pollution Control. *Energy Policy*, 165, 112998. <https://doi.org/10.1016/j.enpol.2022.112998>

- Fitriyanto, M. N., & Pribadi, A. (2021). Green Skills in Vocational Learning through the Project Citizen Model. *Journal of Physics: Conference Series*, 1833(1), 012048. <https://doi.org/10.1088/1742-6596/1833/1/012048>
- Gao, P., Wang, Y., Zou, Y., Su, X., Che, X., & Yang, X. (2022). Green Technology Innovation and Carbon Emissions Nexus in China: Does Industrial Structure Upgrading Matter? *Frontiers in Psychology*, 13, 951172. <https://doi.org/10.3389/fpsyg.2022.951172>
- Handayani, M. N., Ali, M., & Mukhidin, D. W. (2020b). Industry Perceptions on the Need of Green Skills in Agribusiness Vocational Graduates. *Journal of Technical Education and Training*, 12(2), 24-33. <https://doi.org/10.30880/jtet.2020.12.02.003>
- Handayani, M. N., Ali, M., Wahyudin, D., & Mukhidin, M. (2020a). Green Skills Understanding of Agricultural Vocational School Teachers around West Java Indonesia. *Indonesian Journal of Science and Technology*, 5(1), 21-30. <https://doi.org/10.17509/ijost.v5i1.22897>
- Handayani, M. N., Ramadhan, M. O., Maharani, S., Cakrawati, D., & Mukhidin, M. (2023). E-Module Development of Sustainable Coffee Processing to Improve Vocational Students' Green Skills. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 9(1), 66-79. <https://doi.org/10.33394/jk.v9i1.7194>
- Hasnah Hassan, S. (2014). The Role of Islamic Values on Green Purchase Intention. *Journal of Islamic Marketing*, 5(3), 379-395. <https://doi.org/10.1108/jima-11-2013-0080>
- Iqair (2023). *Live Most Polluted Major City Ranking*. Retrieved August 18<sup>th</sup> 3.34 pm from <https://www.iqair.com/world-air-quality-ranking>.
- Jacobson, M. Z. (2008). On the Causal Link between Carbon Dioxide and Air Pollution Mortality. *Geophysical Research Letters*, 35(3). <https://doi.org/10.1029/2007GL031101>
- Jiang, P., Khishgee, S., Alimujiang, A., & Dong, H. (2020). Cost-effective Approaches for Reducing Carbon and Air Pollution Emissions in the Power Industry in China. *Journal of environmental management*, 264, 110452. <https://doi.org/10.1016/j.jenvman.2020.110452>
- Latief, S., Sari, Y. A., Yusuf, M., Armila, A., & Hidayat, R. E. (2021). The Development of Islamic Education and Strengthening of National Education System of Indonesia. *International Journal on Advanced Science, Education, and Religion*, 4(2), 86-99. <https://doi.org/10.33648/ijoaser.v4i2.105>
- Lethoko, M. (2014). Green Economy job projections vs green skills: Is there a link between present skills base and the projected numbers in South Africa? *International Journal of African Renaissance Studies-Multi-, Inter-and Transdisciplinarity*, 9(2), 113-132. <https://doi.org/10.1080/18186874.2014.987959>
- Ministry of Education, Culture, Research and Technology. (2022a). Ministry decree number 262/M/2022. Retrieved September 30<sup>th</sup> 11.43 AM from [https://jdih.kemdikbud.go.id/detail\\_peraturan?main=3156](https://jdih.kemdikbud.go.id/detail_peraturan?main=3156).
- Ministry of Education, Culture, Research and Technology. (2022b). Decree of the Head of Educational Standards, Curricula, and Assessments Number 008/H/KR/2022 of 2022. Retrieved August 10<sup>th</sup> 10.00 PM from [https://kurikulum.kemdikbud.go.id/wp-content/unduh/CP\\_2022.pdf](https://kurikulum.kemdikbud.go.id/wp-content/unduh/CP_2022.pdf).
- Ministry of State Secretariat (2003). Law number 20 of 2003. Retrived August 10<sup>th</sup> 11.15 PM from <https://jdih.setkab.go.id/PUUdoc/7308/UU0202003.htm>.
- Mochizuki, Y., & Fadeeva, Z. (2010). Competences for sustainable development and sustainability: Significance and challenges for ESD. *International Journal of Sustainability in Higher Education*, 11(4), 391-403. <https://doi.org/10.1108/14676371011077603>
- Mulyana, R., Hilmi, F., Busro, B., & Jaenudin, M. (2023). Nurturing Faith and Character: A Values-Based Approach to Islamic Religious Education in Vocational High Schools. *AL-ISHLAH: Jurnal Pendidikan*, 15(2), 1154-1165. <https://doi.org/10.35445/alishlah.v15i2.3739>

- Pavlova, M. (2018). Fostering Inclusive, Sustainable Economic Growth and “Green” Skills Development in Learning Cities through Partnerships. *International Review of Education*, 64, 339-354. <https://doi.org/10.1007/s11159-018-9718-x>
- Ramli, S., Rasul, M. S., & Affandi, H. M. (2019). The importance of green skills from the perspective of TVET lecturers and teacher trainees. *International Journal of Innovation, Creativity and Change*, 7(6), 186-199. Retrieved from [https://www.ijicc.net/images/vol7iss6/7612\\_Ramli\\_2019\\_E\\_R.pdf](https://www.ijicc.net/images/vol7iss6/7612_Ramli_2019_E_R.pdf)
- Ramli, S., Rasul, M. S., & Affandi, M. H. (2020). Identifying Technology Competency of Green Skills in the Fourth Revolution Industries amongst Teacher Trainee. *Universal Journal of Educational Research*, 8(11), 33-42. <https://doi.org/10.13189/ujer.2020.082105>
- Ramli, S., Rasul, M. S., Affandi, H. M., Rauf, R. A. A., & Pranita, D. (2022). Analysing Teaching Strategy, Reflection And Networking Indicators Towards Learning for Sustainable Development (LSD) of Green Skills. *Journal of technical education and training*, 14(1), 63-74. <https://doi.org/10.30880/jtet.2022.14.01.006>
- Rustico, L. (2010). Employment Prospects in the Green Economy: Myth and Reality. *International Journal of Comparative Labour Law and Industrial Relations*, 26(4). <https://doi.org/10.54648/ijcl2010023>
- Shaikh, S. A. (2018). Exploring the Significance of Islamic Environmental Ethics for Fostering Sustainable Environment. *Journal of Islamic Banking & Finance*, 35(1), 55-67. <https://doi.org/10.13140/RG.2.2.19362.12480>
- Stanef-Puică, M. R., Badea, L., Șerban-Oprescu, G. L., Șerban-Oprescu, A. T., Frâncu, L. G., & Crețu, A. (2022). Green Jobs—A literature review. *International Journal of Environmental Research and Public Health*, 19(13), 7998. <https://doi.org/10.3390/ijerph19137998>
- Taber, K. S. (2018). The use of Cronbach’s alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273–1296. Retrieved from <https://link.springer.com/article/10.1007/s11165-016-9602-2>
- Tafti, S. F., Hosseini, S. F., & Emami, S. A. (2012). Assessment the Corporate Social Responsibility According to Islamic Values (Case Study: Sarmayeh Bank). *Procedia-Social and Behavioral Sciences*, 58, 1139-1148. <https://doi.org/10.1016/j.sbspro.2012.09.1095>
- Thomas, I., Sandri, O., & Hegarty, K. (2010). Green Jobs in Australia: A Status Report. *Sustainability*, 2(12), 3792-3811. <https://doi.org/10.3390/su2123792>
- Vona, F., Marin, G., Consoli, D., & Popp, D. (2018). Environmental Regulation and Green Skills: An Empirical Exploration. *Journal of the Association of Environmental and Resource Economists*, 5(4), 713-753. Retrieved from <https://sciencespo.hal.science/hal-03471569/file/2018-10-vona-environmental-regulation-and-green-skills.pdf>
- Wang, W. (2023). Analysis of the Related Concepts of Green Skills Development from the Perspective of Vocational Education Modernization. *International Journal of Education and Humanities*, 9(2), 48-52.
- Yufeng, Liu. (2014). Higher Vocational Colleges should Pay Attention to and Develop "Green Skills." *Chinese Higher Education*, 1, 35-37.