

Digital Literacy and Islamic Spiritual Values as Catalysts for Green Economic Behavior in the Digital Era

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ABSTRACT

This study examines the influence of digital literacy and Islamic spiritual principles on green economic behavior in the context of the digital age. This study identifies a gap in previous studies, which rarely combine technological proficiency and spiritual ethics in influencing sustainable economic behavior among the younger generation. A quantitative approach was used to collect data through questionnaires distributed to Generation Z participants in Palangka Raya City. This study examined three variables, namely digital literacy, Islamic spiritual values, and green economic behavior. Data analysis was conducted using Structural Equation Modeling (SEM) to examine the relationship between variables. The results indicate that digital literacy and Islamic spiritual values significantly and positively influence green economic behavior. Digital literacy increases awareness and encourages responsible decision-making regarding the environment, while Islamic spiritual values strengthen moral and ethical motivation towards sustainability. These findings emphasize the importance of combining digital competence and Islamic spirituality in promoting sustainable economic transformation. This study contributes to the development of green economics literature by providing empirical evidence of the relationship between digital and spiritual factors in shaping sustainable behavior.

Keywords: *Digital Literacy, Islamic Spiritual Values, Green Economic Behavior, Sustainability, Digital Era*

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INTRODUCTION

The rapid and dynamic development of technology in the digital age has made the ability to understand and utilize digital media an increasingly fundamental competency. The younger generation is required to have the adaptive capacity to navigate the complexities of the digital environment. In line with these dynamics, digital literacy has evolved into digital intelligence, which is a comprehensive ability that encompasses cognitive, technical, and ethical aspects of technology use. Digital intelligence emphasizes the role of universal moral values as the foundation for responsible and sustainable digital behavior (Waroh et al., 2025).

Over time, the concept of digital literacy has evolved beyond simply understanding how to operate digital devices or access online information. Digital literacy encompasses a broad set of competencies that enable individuals to effectively navigate, evaluate, and create information through digital technology. In today's economy, digital literacy goes beyond technical skills alone; it involves understanding broader digital implications, including ethical consumption and ecological impact. For example, a study highlights the importance of self-regulation and personal beliefs in encouraging green consumer behavior, suggesting that digital literacy can empower individuals with the tools needed to engage in conscious consumption practices (Lin and Hsu, 2013). Furthermore, the successful integration of digital platforms promoting ethical and environmentally friendly products affirms the role of technological adaptation in fostering pro-environmental behavior (Xie et al., 2024).

At the same time, Islamic spiritual values provide a solid ethical framework and encourage responsible environmental stewardship. The Qur'an provides important lessons about respect for nature, promoting moderation in consumption and resource efficiency as a form of worship (Zulaika et al., 2025). By integrating these spiritual values into digital literacy efforts, individuals can increase their environmental awareness and intention to behave in a more sustainable manner. The convergence of Islamic teachings with modern educational frameworks can create a strong foundation for shaping ethical and sustainable behavior in the younger generation, as demonstrated by recent research in the context of Islamic education (Muhyidin et al., 2025; Nurseha, 2025). Educational programs that incorporate Islamic values into digital literacy initiatives not only raise ecological awareness but also leverage technology to strengthen ethical decision-making among adolescents.

Furthermore, research shows that the synthesis of environmental knowledge and religious commitment can profoundly influence consumer behavior, particularly through the lens of ethical consumption (Siyavoshi et al., 2019). Practices that promote eco-literacy in Islamic educational institutions foster an understanding of the interconnection between spirituality and environmental stewardship, utilizing cognitive and emotional dimensions to encourage sustainable actions among students (Maulidizen et al., 2025). When students become familiar with these concepts through digital media, the potential for significant behavioral change toward environmentally friendly practices increases, reinforcing the important role of integrated education in the era of digital transformation.

The integration of digital literacy and Islamic spiritual values does not occur in a vacuum; various socioeconomic and cultural factors also play a major role in shaping consumer behavior. For example, findings from consumer market studies show that although individuals show a tendency toward sustainable practices, their purchasing decisions are often influenced by contextual variables such as social norms and peer influence (Jahari et al., 2022; White et al., 2019). Thus, when we consider Islamic teachings and digital literacy as catalysts for green economic behavior, it is important to explore how their influence intersects with broader social pressures, which can either accelerate or hinder the transition to green consumption.

In considering the various influences that drive consumers to engage in sustainable behavior, it becomes clear that an individual's environmental self-identity, along with personal beliefs and values, drives their engagement in green actions (Qasim et al., 2019). The combination of Islamic values and increasing digital literacy can foster an identity rooted in ecological concern, empowering individuals to see sustainability as an integral part of their personal and collective identities. The role of social cognitive theory in understanding this behavior further explains how positive reinforcement through digital engagement can increase consumers' motivation to adopt greener practices in line with their values and beliefs (Lin & Hsu, 2013; Zeng et al., 2023).

The development of digital technology has changed consumption patterns and economic behavior, making digital literacy and Islamic spiritual values two important factors that have the potential to encourage green economic behavior. However, studies that integrate the two into a single analytical framework are still limited, as previous studies have generally separated digital literacy from the ethical dimension of Islam, so that the synergistic contribution of the two to sustainable behavior has not been comprehensively explained.

In the context of a dynamic digital era, where technology significantly influences personal and social behavior, the interaction between digital literacy and Islamic spiritual values has the potential to be an important catalyst for environmentally friendly economic behavior. This research article aims to analyze how these two dimensions converge in shaping sustainable consumption practices, especially among Muslim communities.

This study uses a quantitative method with a structural equation modeling (SEM) approach to analyze the digital consumption experiences and behaviors of Generation Z in Palangka Raya City. The findings of this study are aimed at bridging the gap between digital literacy and Islamic spiritual values in catalyzing green economic behavior and explaining the relationship between the two in a more systematic manner.

Conceptually, the alignment of spiritual values with digital competence offers transformative opportunities in shaping sustainable economic behavior. The implications of this research are not only related to environmental issues, but also present a holistic approach that emphasizes sustainability, ethical consumption, and respect for the environment as part of economic practices relevant to contemporary challenges.

LITERATURE REVIEW

In the contemporary digital landscape, the relationship between digital literacy and Islamic spiritual values has become an increasingly relevant field of study, especially in understanding its implications for green economic behavior. Given that digital literacy is a key prerequisite for effective engagement in the modern economy, it is important to examine how this competency can be integrated with Islamic values to encourage sustainable consumption practices.

Digital literacy is understood as the ability to access, understand, and effectively utilize digital technology (Buchholz et al., 2020). Isdendi et al. (2023) emphasize that digital citizenship in Indonesia demands ethical behavior in the virtual world, indicating that digital literacy plays a role in shaping responsible user behavior. From a broader perspective, Nur & Abdullah (2022) assert that systematic literacy programs contribute to improving the quality of human capital, thereby strengthening more rational and sustainability-oriented consumption behavior.

The integration of Islamic ethical values in digital literacy training helps strengthen moral integrity in the digital space. Utomo et al. (2024) show that Islamic education now plays a role in addressing ethical challenges such as cyberbullying, thereby promoting synergy between spiritual development and digital competence. This approach is in line with the findings of Setiawan et al. (2025), which highlight the importance of integrating the values of honesty, trustworthiness, and responsibility into the digital literacy curriculum to improve ethical behavior in the online environment.

The use of technology by Muslim entrepreneurs, especially Generation Z, increasingly shows how digital media can be used to promote green products that are in line with Islamic values (Mayvita & Rifani, 2024). This is reinforced by Azzahra & Imsar (2025), who show that Islamic value-based marketing can increase environmental awareness while strengthening ethical business practices. On the educational side, Masum & Khuriyah (2025) emphasize the need for project-based curriculum reform to integrate digital competencies with ethical awareness training.

In the realm of digital da'wah, Azzahro (2025) outlines how the transformation of da'wah methods through digital platforms opens up space for broader ethical discussions, including environmental issues. Furthermore, Nur & Abdullah (2022) and Nurseha (2025) assert that integrating Islamic values into digital literacy can encourage social responsibility and environmental awareness, as well as shape students' character to face the complexities of today's digital challenges.

Overall, these findings indicate that strengthening digital literacy through the perspective of Islamic values has significant potential in shaping environmentally oriented economic behavior. This interdisciplinary approach not only supports sustainable economic development but also strengthens the ethical foundation for individuals to adapt to the ever-changing digital landscape.

METHOD

This study is a quantitative study with an associative approach, which is a study that aims to determine the influence and relationship between two or more variables (Sugiyono, 2021). This study is intended to analyze the relationship between the independent variables consisting of digital literacy (X1) and Islamic spiritual values (X2) with the dependent variable, namely the green economic behavior of Muslim Generation Z in Palangka Raya City (Y). The focus of this

study is to see the extent to which digital literacy and Islamic spiritual values contribute to shaping green economic behavior in the Generation Z group.

This study uses a quantitative approach with a questionnaire method and Structural Equation Modeling Partial Least Squares (SEM-PLS) analysis. SEM-PLS was chosen based on the characteristics of the research field related to digital literacy and spiritual values, where it is difficult to obtain normally distributed data for regression application with Best Linear Unbiased Estimate (BLUE). SEM-PLS was chosen for its ability to predict and explain latent variables in theory, as well as to analyze the influence of various variables on the research object simultaneously, with a minimum of one dependent variable and one independent variable.

This research method consists of three main stages. The first stage is the Identification Stage, which includes literature study, field study, problem identification, determination of research objectives, selection of problem-solving methods, and development of research instruments. The second stage is the Data Collection and Processing Stage. Data collection was carried out using two types of data, namely primary and secondary data. Primary data was obtained through a questionnaire involving 100 respondents, who were determined using non-probability techniques with purposive sampling methods. This technique was used to select samples based on certain criteria relevant to the research objectives, namely: (1) Muslim, (2) Generation Z (17-26 years old), (3) living in Palangka Raya City, and (4) actively using the internet for digital activities. This sample size is considered adequate for quantitative analysis using regression in SEM, because the sample size exceeds the recommended minimum, which is around 100 respondents, and meets the practical rule, which is 10 times the number of predictors in the regression model. Secondary data was obtained from companies, previous journals, and internet sources.

In the Data Processing Stage, the collected data will be analyzed through two instrument tests, namely validity and reliability tests. The validity test aims to ensure that the statements in the questionnaire are valid and consistent with the variables being measured, while the reliability test is used to measure data consistency using Cronbach's Alpha coefficient (Yusup et al., 2018). Furthermore, the data will be analyzed using SEM-PLS to evaluate the model of relationships between latent variables that cannot be observed directly. This model evaluation consists of two types, namely Measurement Model Evaluation (Outer Model) and Structural Model Evaluation (Inner Model). The measurement model evaluation aims to prove that the measurement model is valid and reliable, using three main indicators: Convergent Validity, Discriminant Validity, and Internal Consistency. Structural model evaluation aims to predict the relationship between latent variables using R-square, path coefficients, t-statistics, and other indicators such as Predictive Relevance (Q2) and F-square (Saputra, 2018).

The final stage is the Analysis and Conclusion Stage, where the results of data processing will be analyzed to determine the influence of digital literacy variables, Islamic spiritual values, and other factors on green economic behavior among Muslim Generation Z in Palangka Raya City.

FINDINGS AND DISCUSSION

Findings

There were 100 respondents in this study who voluntarily participated in filling out the questionnaire. All respondents were Muslim Generation Z aged 17-26 years residing in Palangka Raya City. Based on the data collected through the questionnaire, the characteristics of the respondents are shown in Table 1:

Table 1. Respondent Characteristics

Respondent Characteristics	Frekuensi	Percentage (%)
Gender	Male	60
	Female	40
Internet Usage	< 2 hours/day	8

2–4 hours/day	30	30%
4–6 hours/day	40	40%
> 6 hours/day	22	22%

Source: Processed data, 2025

Based on data from the questionnaire instrument and questionnaire instrument trial, the variables of Digital Literacy with 6 statement items, Islamic Spiritual Values with 6 statements, and Green Economic Behavior with 6 statements were declared valid and reliable because the rho value was $> r$ table and the Cronbach Alpha value was > 0.6 . Therefore, the questionnaire can be distributed to respondents who have been determined according to the specified characteristics. Based on the data obtained from the questionnaire recapitulation, a main SEM-PLS model with 18 statement items was then formed.

Next, a measurement model evaluation was conducted on the model shown in Figure 1. The PLS-Algorithm process was carried out to obtain Cronbach's Alpha, Composite Reliability, and AVE values. To obtain these values, several stages are required, such as looking at the outer loading to analyze Convergent Validity, as shown in Table 1. Statements with an outer loading value < 0.7 will be eliminated, and the results of the statements that have been eliminated can be seen in Table 2. Each latent variable DL, ISV, and GEB has a value above 0.7, so the model meets the Convergent Validity criteria. The next step is to evaluate Discriminant Validity by looking at the cross-loading value.

Table 2. Outer Loading Values

	Digital Literacy (DL)	Green Economic Behavior (GEB)	Islamic Spiritual Values (ISV)
DL1	0.866		
DL2	0.767		
DL3	0.856		
DL4	0.889		
DL5	0.788		
DL6	0.739		
ISV1			0.749
ISV2			0.820
ISV3			0.810
ISV4			0.764
ISV5			0.812
ISV6			0.768
GEB1		0.825	
GEB2		0.872	
GEB3		0.761	
GEB4		0.936	
GEB5		0.909	
GEB6		0.902	

Source: Processed data, 2025

Table 3. Construct Validity and Reliability

	Cronbach's Alpha	Composite Reliability	AVE
Digital Literacy (DL)	0.936	0.930	0.671
Islamic Spiritual Values (ISV)	0.902	0.893	0.620
Green Economic Behavior (GEB)	0.878	0.953	0.756

Source: Processed data, 2025

In assessing the reliability and validity of latent variables, constructs such as Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) are used to verify the quality of the research instrument. The accepted threshold values for reliability and validity are Cronbach's Alpha > 0.7 , Composite Reliability > 0.7 , and AVE > 0.5 . Cronbach's Alpha measures the internal consistency of items, with a value > 0.7 considered reliable. Research by Khazaei et al. (2021) and Yusoff (2011) shows that this value supports the consistency of the instrument. Composite Reliability, which considers factor loadings, is stronger than Cronbach's Alpha. Nia et al. (2023) reported scores above 0.7, indicating good consistency.

AVE measures convergent validity, with values > 0.5 indicating that a greater proportion of variance is explained by the latent construct than by measurement error. Research by Arthur et al. (2023) and Ghanbari (2024) shows AVE above 0.5, indicating strong convergent validity. The application of these standards is important to ensure accurate evaluation of latent variables in psychosocial and educational research, which enhances the credibility and applicability of findings (Arthur et al., 2023; Yusoff, 2011; Zhang et al., 2024). Accordingly, based on the values in Table 2, the main model has been validated. With Cronbach's alpha values for all latent variables > 0.7 , composite reliability values > 0.7 , and AVE > 0.5 .

The T-statistic is a very important tool in inferential statistics, especially for hypothesis testing in situations with small sample sizes or when the population variance is unknown. Its use is widespread in various fields, with differences depending on the methodology used and the assumptions underlying the test. One important thing to note is how assumptions such as variance homogeneity and normality can affect the results obtained from the T-test. In this case, methods such as bootstrapping, which rely on sampling with replacement, provide a reliable alternative for constructing confidence intervals and testing hypotheses, without the need to assume normality in the data distribution. The results of the T-statistic can be seen in the table below:

Table 4. T-statistics Results

Hypothesis		Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (IO/STDEVI)	P Values
(DL)	->	Y 0.185	0.202	0.078	2.384	0.017
(GEB)						
(ISV)	->	Y 0.356	0.370	0.086	4.159	0.000
(GEB)						

Source: Processed data, 2025

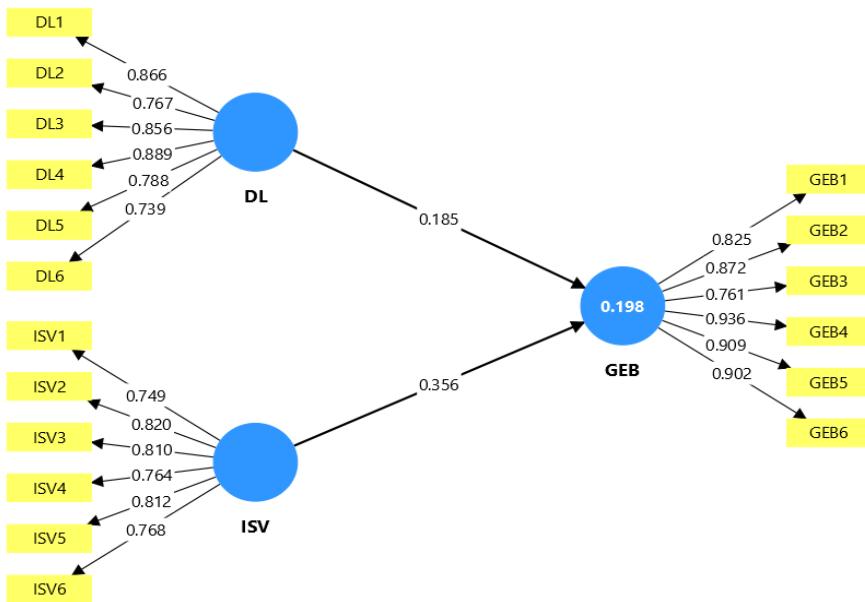


Figure 1. SEM -PLS Model

F-square (f^2) measures the strength of the relationship between independent and dependent variables in regression. Calculated as $f^2 = R^2 / (1 - R^2)$, the f^2 value indicates how much of the variability in the outcome is explained by the independent variables. F^2 is important for assessing the effectiveness of a model, with values > 0.35 indicating a large effect, 0.15 a moderate effect, and 0.02 a small effect. Overall, f^2 is an important tool for assessing the strength of predictive relationships in research. The results of the f-square value can be seen in the table below:

Table 5. F-square Value

No.	Connection	f^2	Description
1.	Digital literacy on green economic behavior	0.039	Small Effect
2.	Islamic spiritual values on green economic behavior	0.145	Moderate Effect

Source: Processed data, 2025

Based on Table 5, the f-square value for the variable Digital Literacy on Green Economic Behavior is 0.039, which indicates a small effect. Meanwhile, for the variable Islamic Spiritual Values on Green Economic Behavior, the f-square value of 0.145 indicates a moderate effect. Thus, it can be concluded that the Islamic Spiritual Values variable has a greater influence on green economic behavior than Digital Literacy, even though both variables show a significant effect in the context of this measurement.

Furthermore, hypothesis testing using the bootstrap method is an effective choice in PLS-SEM analysis, useful for verifying relationships between constructs by evaluating structural model outputs such as R-square, parameter coefficients, and t-statistics (Cheung et al., 2023). Significance values are measured through t-statistics and p-values obtained from the bootstrapping process, which allows repeated sampling to estimate statistical distributions. The use of SmartPLS facilitates the evaluation of these results and improves the interpretation of research findings.

The practical rules for hypothesis testing are t-statistics > 1.96 , p-value < 0.05 , and positive beta coefficients, which indicate that the hypothesis is accepted and the relationship between constructs is significant. The use of bootstrap ensures the accuracy of statistical results by overcoming the limitations of the normal distribution. This method is also important for

exploring the dynamics of the relationship between variables in the analyzed model. The results of the hypothesis are shown in Table 6:

Table 6. Recapitulation of Hypothesis Testing

	Connection	Values	Description
H1	Digital literacy has a positive impact on green economic behavior	Koef. Beta: 0.185 T-statistics: 2.384 P- Values: 0.017	Accepted
H2	Islamic spiritual values have a positive impact on green economic behavior	Koef. Beta: 0.356 T-statistics: 4.159 P- Values: 0.000	Accepted

Source: Processed data, 2025

Discussion

In the context of the digital age, the integration of digital literacy and Islamic spiritual values provides a unique framework for promoting green economic behavior, particularly in Muslim communities. Digital literacy, defined as the ability to access, analyze, and evaluate information in a digital context, plays a significant and positive role in shaping sustainable economic practices (Lutfi and Maftuhah, 2025). Empirical findings support this, where the path coefficient for digital literacy as an exogenous construct is $O = 0.185$, indicating a positive influence on green economic behavior. The T-statistic for this relationship is 2.384, greater than 1.96, and the p-value of 0.017 is less than 0.05, supporting the hypothesis that digital literacy has a positive and significant effect on green economic behavior. These findings are in line with the research by Nugroho & Iriani (2020), who argue that increased promotion of digital literacy and the use of digital platforms can significantly influence behavior, including environmentally friendly practices. As digital literacy increases, individuals are more likely to engage in sustainable economic behavior, such as choosing green products and adopting energy-efficient technologies.

Simultaneously, Islamic spiritual values provide a moral and ethical framework that can guide individuals toward more responsible consumption and conservation practices, as well as foster an ecosystem-focused mindset aligned with Islamic teachings on stewardship and sustainability (Azzahra & Imsar, 2025). In this study, the path coefficient for Islamic spiritual values is $O = 0.356$, with a t-statistic of 4.159, far exceeding the threshold of 1.96. This shows that Islamic spiritual values have a stronger and more significant influence on green economic behavior than other factors. According to Rumbiati & Heriyana (2020), lifestyle factors such as activities, interests, and opinions are closely related to Islamic teachings on environmental management. This supports the idea that when individuals align their behavior with spiritual and ethical values, they are more likely to adopt environmentally friendly practices, such as reducing waste, using renewable resources, and supporting environmentally friendly businesses.

Finally, digital literacy and Islamic spiritual values act as key catalysts in promoting green economic behavior in the digital era. This research confirms that increased digital competence not only empowers individuals to utilize technology effectively but also increases awareness of environmental issues and supports responsible and data-driven decision-making towards sustainability. Meanwhile, Islamic spiritual values provide a moral and ethical foundation that encourages moderation, responsibility as stewards of nature (khalifah), and balance (mizan) in economic practices, while fostering a deeper sense of responsibility towards the environment and society.

The integration of technological progress with ethical and spiritual dimensions offers a holistic path towards sustainable and inclusive economic transformation. This dual framework ensures that innovation and digitization are not only oriented towards efficiency or profit, but are also grounded in principles of justice, care, and long-term ecological preservation.

Ultimately, the synergy between digital literacy and Islamic spirituality forms a transformative model for building a green economy that is both technologically advanced and rooted in ethical values. By strengthening both dimensions, especially among Generation Z,

which is known to be adaptive to technology while having high ethical awareness, society can build sustainable behavior patterns both individually and collectively, which ultimately contributes significantly to the achievement of global sustainable development goals.

CONCLUSION

Research into the relationship between digital literacy and Islamic spiritual principles shows a positive and significant influence on green economy behavior, particularly in the context of a rapidly growing digital economy. Using a quantitative approach and analysis through Structural Equation Modeling (SEM), this study provides empirical evidence that technical competence in digital literacy can increase environmental awareness and encourage more responsible and data-driven decision-making related to sustainability.

In addition, Islamic spiritual values play an important role in shaping ethical awareness and moral responsibility. These values not only encourage environmentally friendly actions, but also serve as an inner compass that motivates individuals to align their economic behavior with the principles of balance (mizan), responsibility as stewards of nature (khalifah), and sustainability (istidamah). The integration of this moral dimension ensures that technological progress remains grounded in ethical and human values.

The results of this study confirm that the synergy between digital literacy and Islamic spirituality forms a strong foundation for the transformation towards a sustainable and inclusive green economy. This combination demonstrates the potential of Generation Z, which is naturally familiar with digital technology while being spiritually aware, to be a driving force in realizing green innovation and sustainable digital entrepreneurship.

Overall, this research makes a meaningful empirical and theoretical contribution to the green economy literature by offering a unique interdisciplinary perspective, linking the digital and spiritual dimensions in shaping sustainable behavior change. Moreover, the findings also open up opportunities for future research to explore how educational interventions, religious value-based digital campaigns, and public policies can amplify this dual influence in promoting sustainable development, particularly in Muslim-majority societies and the broader global context.

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