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Students as Agents of Islamic Technopreneurship in the Digital Era: Evidence from Islamic Higher Education in Indonesia

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Abstract: The rapid development of digital technology has created new opportunities and challenges in higher education, particularly for Muslim students who are expected to integrate Islamic values with entrepreneurial practices. This study analyzes students as agents of Islamic technopreneurship in the digital era by examining the influence of digital literacy on Islamic entrepreneurship. The research employed a quantitative descriptive design with linear regression analysis, involving 48 first-year students from the Early Childhood Islamic Education (PIAUD) and Islamic Education Management (MPI) programs at STIT Nusantara Bekasi who participated in the 2025 orientation program themed "Independent and Visionary Students: Building Islamic Entrepreneurship Based on Halal, Sunnah, and Local Wisdom in the Digital Era. Data were collected through Likert-scale questionnaires and analyzed using descriptive statistics, normality tests, homogeneity tests, and linear regression. The results show that the classical assumptions of normality and homogeneity were met, supporting the validity of the regression model. Furthermore, the findings reveal that digital literacy significantly influences Islamic entrepreneurship, with a contribution of 20.1%. This indicates that students' digital competencies positively strengthen entrepreneurial values such as honesty, trustworthiness, and social benefit. The study concludes that students play an essential role as agents of Islamic technopreneurship, capable of integrating digital innovation with halal business principles and local wisdom. Practically, the results emphasize the importance for higher education institutions to enhance curriculum and training programs that merge digital skills with Islamic ethical values, thereby preparing competitive and visionary Muslim technopreneurs for the global marketplace.

Keywords: Islamic Technopreneurship, Digital Era, Islamic Entrepreneurship, Digital Literacy, Higher Education**.**

Introduction

The development of information and communication technology has transformed paradigms in education and entrepreneurship, including creating broader opportunities for students to engage in technopreneurship activities. The digital native generation demonstrates a strong tendency to utilize digital devices and platforms, thereby increasing their potential to develop technology-based ventures.[1]

From the perspective of Islamic education and economics, entrepreneurship is not merely oriented toward economic profit but must also be grounded in the values of honesty, trustworthiness (amanah), sustainability, and social benefit. The concept of Islamic technopreneurship integrates technological innovation with Sharia principles, aiming not only to generate economic value but also to contribute to sustainable national development. Islamic technopreneurship is expected not only to create economic value but also to absorb labor and support sustainable national economic development".[2]

Numerous studies indicate that technopreneurship education, self-efficacy, and environmental support have a significant influence on students' entrepreneurial intentions. Nevertheless, several challenges remain evident in practice, including low levels of digital literacy, limited access to capital, insufficient understanding of the integration of Islamic values into digital business practices, and suboptimal utilization of technology. This condition is consistent with findings on students' acceptance of digital marketing tools, which reveal positive attitudes that have not yet been followed by strategic and sustainable utilization.[3]

Based on these conditions, this study focuses on students of the PIAUD and MPI Study Programs at STIT Nusantara Bekasi who participated in the PKKMB program on September 27, 2025, to examine their readiness and roles as agents of Islamic technopreneurship. Specifically, this research aims to analyze the influence of digital literacy on students' Islamic technopreneurship and to test the hypothesis that digital literacy has a significant effect on their Islamic technopreneurship

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[1] Yaoming Liang, Digital Natives and Technopreneurship Development in Higher Education (Beijing: Academic Press, 2025), 45–47.

[2] Arip Perbawa, "Technopreneurship Islam dan Pembangunan Ekonomi Nasional Berkelanjutan," Jurnal Ekonomi dan Bisnis Islam 7, no. 2 (2013): 112–114.

[3] Arip Perbawa, "Students' Acceptance of Digital Marketing Tools: Implications for Islamic Technopreneurship Education," Journal of Islamic Economics and Business Research 12, no. 1 (2018): 89–92.

capabilities.

Literature Review

The development of information and communication technology has shaped a new landscape for entrepreneurial activities, ranging from production processes to marketing practices, thereby giving rise to the concept of technopreneurship—entrepreneurship that utilizes digital technology as the core of innovation and value creation. Consequently, educational approaches aimed at fostering technopreneurs have increasingly gained prominence in the entrepreneurship education literature. Recent studies emphasize that structured technopreneurship education can enhance the entrepreneurial mindset and digital capabilities of younger generations, making it a critical determinant of technology start-up success among Generation Z. Empirical evidence further demonstrates that educational programs integrating technological literacy, real-world business practices, and mentoring contribute positively to students' technopreneurial readiness.[4]

In the context of higher education, the term digital natives refers to a generation of students who were born and raised alongside digital technologies. This characteristic provides them with an initial advantage in the acceptance and utilization of digital platforms for economic activities, including online marketing and virtual collaboration.[5] However, being a digital native does not automatically guarantee comprehensive entrepreneurial competencies, particularly in managerial skills, financial planning, and an understanding of business ethics. Therefore, curricular interventions and practical mentoring remain necessary to ensure that students' technical potential can be transformed into sustainable technopreneurial capacity.

Studies on Islamic entrepreneurship indicate a broad consensus that entrepreneurship grounded in Islamic values—such as honesty, justice, sustainability, and the principles of maqāṣid al-sharīʿah—not only generates economic value but also strengthens the social legitimacy of products in Muslim markets. Systematic reviews of the literature

[4] Samaa Al Hashimi et al., "The Role of Nurturing Technopreneurship Education and Building University Students' Entrepreneurial Mindsets and Skill Sets in Fostering Digital Innovation and Augmenting the Tech Start-up Ecosystem in Bahrain," *International Journal of Learning, Teaching and Educational Research* 20, no. 6 (2021): 152–73, https://doi.org/10.26803/IJLTER.20.6.8.

[5] Marc Prensky, "Digital Natives, Digital Immigrants. From On the Horizon," *MCB University Press* 9, no. 5 (2001): 1–6.

highlight a growing trend toward integrating Sharia norms with modern business practices, giving rise to terms such as Islamic technopreneurship. At the same time, these reviews point to a lack of field-based studies that describe how students, particularly those from Islamic studies programs, translate these principles into digital business practices. This gap underscores the relevance of empirical research within the university context.[6]

Rom a market opportunity perspective, Indonesia's halal ecosystem offers substantial potential that can be leveraged by young technopreneurs. Market data and industry reports indicate significant growth in the trade value of halal products, accompanied by domestic policies that increasingly support halal certification. These developments create broad domestic and export market opportunities for halal-thayyib products rooted in local wisdom. Such conditions provide both economic and strategic legitimacy for student entrepreneurial initiatives that integrate Islamic values with digital innovation, provided that institutional support—such as training, access to capital, and business incubation—is available to ensure more equitable realization of these opportunities.[7]

Based on this review, the literature highlights two key implications for the present study: (1) the need for a contextualized technopreneurship education model that integrates digital, managerial, and Islamic ethical competencies to transform students' potential into active agents of Islamic technopreneurship; and (2) the scarcity of empirical evidence focusing on students from Islamic study programs (such as PIAUD and MPI) within Indonesian higher education institutions, particularly studies utilizing primary data from campus orientation programs or large-scale training activities. This gap forms the basis of the present empirical study, which aims to assess the readiness, motivation, and barriers faced by students at STIT Nusantara Bekasi as agents of Islamic technopreneurship in the digital era.

Research Methods

This study employs a descriptive quantitative approach with a regression analysis design to systematically describe the role of students

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[6] Khaulah Hilaluddin et al., "Islamic Entrepreneurship: A Systematic Literature Review," *Islamic Finance*, 2024, 1–8.

[7] Wahyudin Darmalaksana, "How Is the Halal Certification Policy Implemented? Perspective Analysis of Small and Medium Enterprises (SMEs) in Indonesia," *Journal of Islamic Accounting and Business Research*, 2023.

as agents of Islamic technopreneurship in the digital era. This approach was selected because it enables an objective examination of the variables under investigation, namely knowledge, attitudes, digital skills, entrepreneurial intentions, and students' perceptions of barriers and support in Islamic technopreneurship.[8]

The research population consisted of 62 first-year students from the Early Childhood Islamic Education (PIAUD) and Islamic Education Management (MPI) Study Programs at STIT Nusantara Bekasi who participated in the PKKMB program on September 27, 2025. The sample comprised 48 students, selected using purposive sampling, based on the consideration that PKKMB participants represent a relevant group for assessing Islamic technopreneurship readiness within the university environment.

The primary instrument was a five-point Likert-scale questionnaire covering variables related to Islamic business integrity and ethics, Islamic digital innovation, Sharia-based economic empowerment, Islamic leadership, digital literacy, technology utilization, the digital economy, and challenges in the digital era. Each aspect was operationalized through both positively and negatively worded statements, as required for measurement purposes. To enrich the data, open-ended questions were included to explore students' experiences and perceptions of Islamic technopreneurship.

The Likert-scale questionnaire consisted of positive statements (1 = strongly disagree to 5 = strongly agree) and negative statements (5 = strongly disagree to 1 = strongly agree), representing each research indicator to measure the dimensions of knowledge, attitudes, digital skills, entrepreneurial intentions, and perceptions of barriers and support.

Table 1. Questionnaire Instrument: Students as Agents of Islamic Technopreneurship

No	Measured Aspect	Indicators (Statements)	Item Direction
1	Islamic Business Integrity and Ethics	Halal and thayyib products; honesty and trustworthiness; transparency of product/service information; neglect of Sharia principles (N); concealment of important information (N)	3 (+), 2 (–)

8

2	Islamic Digital Innovation and Technology Utilization	Product development based on community needs; use of digital technology for Islamic services; data security and privacy; trend-following without benefit (N); neglect of Islamic values in innovation (N). Mengabaikan nilai Islam dalam inovasi (N).	3 (+), 2 (–)
3	Economic Empowerment and Social Justice	Creation of Sharia-compliant employment; empowerment of MSMEs through technology; fair pricing; prioritizing personal profit (N); creating socio-economic inequality (N).	3 (+), 2 (–)
4	Education and Da'wah in Islamic Technopreneurship	Dissemination of digital and Islamic financial literacy; organization of Islamic technopreneurship training; use of digital media for da'wah; neglect of educational roles (N); absence of educational evaluation (N).	3 (+), 2 (–)
5	Islamic Leadership and Collaboration	Fair and consultative leadership; role modeling in Islamic technopreneurship; cross-sector Islamic collaboration; reluctance to collaborate with Islamic institutions (N); lack of concern for halal networking (N).	3 (+), 2 (–)
6	Governance and Sharia Compliance	Implementation of Sharia compliance procedures; willingness to undergo Sharia audits; lack of social impact monitoring (N); rejection of transparency (N); perception that Sharia advisors are unnecessary (N).	2 (+), 3 (–)

Table 2. Questionnaire Instrument: Digitalization Era

No	Aspect	Indicators	Direction
1	Digital Access and	I can easily access the internet for my daily needs.	+

	Infrastructure	The digital devices I own adequately support my activities.	+
		I have difficulty obtaining a stable internet connection.	–
		The cost of accessing digital services feels burdensome for me.	–
2	Digital Literacy	I am able to use digital devices effectively for various purposes.	+
		I can distinguish between valid information and hoaxes in digital media.	+
		I often have difficulty understanding how to use digital applications.	–
		I do not care about the accuracy of information circulating on the internet.	–
3	Digital Technology Utilization	I use digital media to support my work or studies.	+
		Digital technology helps me become more productive and creative.	+
		I rarely use digital media for beneficial purposes.	–
		Digital technology does not have a positive impact on my activities.	–
4	Digital Economy	I frequently conduct shopping or payment transactions through digital applications.	+
		Digital technology helps me increase my income or business activities.	+
		I am not interested in using digital platforms for economic activities.	–
		I feel that digital businesses do not provide significant benefits.	–
5	Digital Social and	Digital media makes it easier for me to communicate with other people.	+

	Cultural Aspects	The digital era makes it easier for me to learn about cultures from different regions or countries.	+
		The presence of digital media makes me interact face-to-face less frequently with people around me.	–
		I feel that local cultural values are increasingly eroded due to the digital era.	–
6	Challenges and Risks of the Digital Era	I make efforts to maintain the security of my digital accounts to avoid cybercrime.	+
		I try to use digital media wisely to avoid negative impacts.	+
		I do not pay much attention to security when using digital applications.	–
		I often ignore the negative impacts of social media use.	–

Score Interpretation:

96–120 = High (Very good readiness and digital literacy)

71–95 = Moderate

46–70 = Low

≤ 45 = Very Low

The use of a Likert scale enabled the researchers to obtain more measurable data on students' attitudes and tendencies.[9] Open-ended questions were also included to enrich qualitative insights into students' experiences and perspectives on Islamic technopreneurship.

Prior to implementation, the questionnaire was pilot-tested on 20 respondents outside the research sample.

a. Validity testing was conducted using Pearson correlation, with the criterion that the calculated correlation coefficient exceeded the critical value (r-calculated > r-table). All items meeting this criterion

[9] Ankur Joshi et al., "Likert Scale: Explored and Explained," *British Journal of Applied Science & Technology* 7, no. 4 (2015): 396–403, https://doi.org/10.9734/bjast/2015/14975.

were deemed valid and retained.

b. Reliability testing employed Cronbach's Alpha coefficient, with all variables demonstrating α values greater than 0.70, indicating that the instrument was reliable for measuring the research variables.

The research procedures adhered to ethical principles in educational research. Before completing the questionnaire, all respondents were provided with an informed consent form explaining the research objectives, confidentiality of personal data, the right to refuse or withdraw participation, and assurance that the data would be used solely for academic purposes. Respondent identities were anonymized to ensure confidentiality and participant comfort..

Data collection was conducted immediately after the PKKMB sessions. Questionnaires were distributed to all participants and completed independently under the supervision of the researcher. In addition, participatory observation was carried out to assess students' engagement during the activities, particularly their responses to Islamic technopreneurship materials and supporting digital activities.

Quantitative data were analyzed using descriptive statistics, including measures of central tendency, dispersion, and frequency distribution, presented in tables and figures to illustrate students' profiles and response patterns. Qualitative data from open-ended questions were analyzed using thematic analysis by grouping responses into major themes such as motivation, barriers, and perceptions of Islamic values in technopreneurship.

Through this methodological design, the study provides a comprehensive overview of students' roles in Islamic technopreneurship while mapping the supporting factors and challenges that serve as a foundation for developing digital-based Islamic entrepreneurship programs in Islamic higher education institutions.

Results and Discussions

The data for this study were obtained from 48 first-year students of the PIAUD and MPI Study Programs at Sekolah Tinggi Ilmu Tarbiyah Nusantara Bekasi who participated in the PKKMB activity on September 27, 2025. This study aims to examine the extent to which students function as agents of Islamic technopreneurship in the digital era, with a particular focus on the relationship between the variables of Islamic Entrepreneurship and the Digital Era.

The results indicate that students possess significant potential to develop Islamic technopreneurship in the digital era. These findings are consistent with previous studies by Saputra et al. (2023) and Munawar and Uswatun (2025). However, the present study offers a more nuanced perspective by revealing variations in students' levels of digital literacy as well as capital constraints experienced by some participants.

A normality test was conducted to determine whether the data for the Islamic Entrepreneurship variable (X) and the Digital Era variable (Y) were normally distributed. Data normality is a crucial assumption in parametric analysis, as it determines the validity of subsequent statistical tests such as Pearson correlation and linear regression analysis.[10]

Table 3. Normality Test Results for Variable X and Variable Y

	Islamic Entrepreneurship	Digital Era
N	48	48
Mean	83.9	82.5
Median	83.5	83.0
Standard deviation	8.96	8.90
Minimum	61	60
Maximum	99	98
Shapiro-Wilk W	0.961	0.976
Shapiro-Wilk p	0.109	0.425

Tabel 4. Homogeneity of Variances Test (Levene's

	F	df	df2	p
Nilai	0.00298	1	94	0.957

[10] Asghar Ghasemi and Saleh Zahediasl, "Normality Tests for Statistical Analysis: A Guide for Non-Statisticians," *International Journal of Endocrinology and Metabolism* 10, no. 2 (2012): 486–89, https://doi.org/10.5812/ijem.3505.

Tabel 5. Model Fit Measures

	Overall Model Test					
Model	R	R^2	F	df1	df2	P
1	0.448	0.201	11.6	1	46	0.001

Catatan. Models estimated using sample size of N=48

Tabel 6: Model Coefficients – Enterpreneurship

Predictor	Estimate	SE	T	P	Stand. Estimate
Intercept	35.820	13.744	2.61	0.012	
Era digital	0.561	0.165	3.40	0.001	0.448

Based on the results of the Shapiro–Wilk normality test, the significance value for the Islamic Entrepreneurship variable was p = 0.109, while the Digital Era variable yielded p = 0.425. Both significance values exceed the alpha level of α = 0.05; therefore, according to the testing criteria, the null hypothesis (H_0) is accepted. Accordingly, it can be concluded that the data for both variables are normally distributed. These results indicate that students' score distributions for both variables are relatively symmetric and do not deviate significantly from a normal distribution.

Based on the results of Levene's test presented in Table 4, an F value of 0.00298 was obtained with df1 = 1 and df2 = 94, along with a significance value of p = 0.957. Since the significance value exceeds the error level of α = 0.05, the null hypothesis (H_0) is accepted, indicating that the data in this study exhibit homogeneous variances. Thus, the assumption of homogeneity of variance is satisfied, allowing parametric analysis to be conducted. These findings demonstrate that the data distributions for the two research variables—Islamic Entrepreneurship (X) and the Digital Era (Y)—do not show significant differences in variance. This condition supports the validity of subsequent correlation or regression analyses. This result is consistent with Field (2024), who emphasizes that homogeneity of variance is a fundamental requirement

for parametric analyses to yield reliable conclusions.[11]

The results of the normality and homogeneity tests confirm that the research data meet the basic assumptions of parametric analysis. Furthermore, the linear regression analysis reveals a significant effect of the Digital Era variable on the strengthening of students' Islamic Entrepreneurship values. This condition enables the researcher to proceed with parametric statistical analyses, such as Pearson correlation or regression analysis, as the assumptions of normality and homogeneity have been fulfilled. This finding is in line with Field (2024), who asserts that normality testing is essential for validating the use of parametric analytical techniques, particularly in studies with relatively small to medium sample sizes.[12]

A linear regression analysis was conducted to examine the extent to which the independent variable, Islamic Entrepreneurship (X), influences the dependent variable, the Digital Era (Y). The regression results indicate a correlation coefficient (R) of 0.448, suggesting a positive relationship with a moderate level of strength. Meanwhile, the coefficient of determination (R^2) of 0.201 indicates that Islamic Entrepreneurship explains approximately 20.1% of the variance in the Digital Era variable, while the remaining 79.9% is attributable to other factors not included in this research model.

The results of the linear regression analysis demonstrate a significant influence of the Digital Era variable on the strengthening of students' Islamic Entrepreneurship values, with a contribution of 20.1%. This finding reinforces the argument that developments in digital technology can serve as an important catalyst in fostering Islamic technopreneurship among university students.

The significance of the regression model was further tested using ANOVA, yielding an F value of 11.6 with df1 = 1 and df2 = 46, and a significance level of p = 0.001. Since the p-value is lower than the error threshold of $\alpha = 0.05$, it can be concluded that the regression model is statistically significant. This result indicates that Islamic Entrepreneurship has a significant effect on the Digital Era variable within the context of student technopreneurship.

These findings suggest that students who possess a stronger understanding and application of Islamic entrepreneurial values are

[11] Field, *Discovering Statistics Using IBM SPSS Statistics*.

[12] Andy Field, *Discovering Statistics Using IBM SPSS Statistics* (Sage publications limited, 2024).

better able to adapt to developments in digital technology. This result is consistent with the study by Munawar and Uswatun, which found that Islamic entrepreneurship education contributes positively to students' ability to utilize digital technology for business activities.[13] In addition, the study by Saputra et al. also confirms that the integration of Islamic values into technopreneurship can strengthen ethical orientation while enhancing students' business competitiveness in the digital era.[14]

The results of the simple linear regression analysis further indicate that the Digital Era variable (Y) has a significant effect on the Islamic Entrepreneurship variable (X). Based on the coefficient table, the regression equation is expressed as follows:

$$X=35{,}820+0{,}561Y$$

This equation indicates that the constant value of 35.820 represents the baseline score of Islamic Entrepreneurship when the Digital Era variable is equal to zero. Meanwhile, the regression coefficient of 0.561 implies that each one-unit increase in the Digital Era variable leads to an increase of 0.561 points in the Islamic Entrepreneurship score. The calculated t-value of 3.40 with a significance level of $p = 0.001$ (< 0.05) confirms that the Digital Era variable has a statistically significant effect on Islamic Entrepreneurship. Furthermore, the standardized estimate value of 0.448 indicates a positive effect with moderate strength. These results confirm that higher levels of digital technology utilization among students are associated with stronger internalization of Islamic entrepreneurial values.

Based on these findings, the subsequent discussion will elaborate further on the theoretical and practical implications of the study. This discussion is essential to ensure that the analytical model employed fully satisfies the underlying statistical assumptions, thereby allowing the interpretation of results to be scientifically accountable.

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[13] Slamet Munawar and Siti Uswatun Khasanah, "Entrepreneurship Education for Students in the Digital Era (Case Study at An-Nuriyah Islamic Boarding School, Bekasi, West Java)" 10, no. 2 (2025).

[14] Farhan Saputra, M. Ridho Mahaputra, and Amalina Maharani, "Pengaruh Jiwa Kewirausahaan Terhadap Motivasi Dan Minat Berwirausaha (Literature Review)," *Jurnal Kewirausahaan Dan Multi Talenta* 1, no. 1 (2023): 42–53, https://doi.org/10.38035/jkmt.v1i1.10.

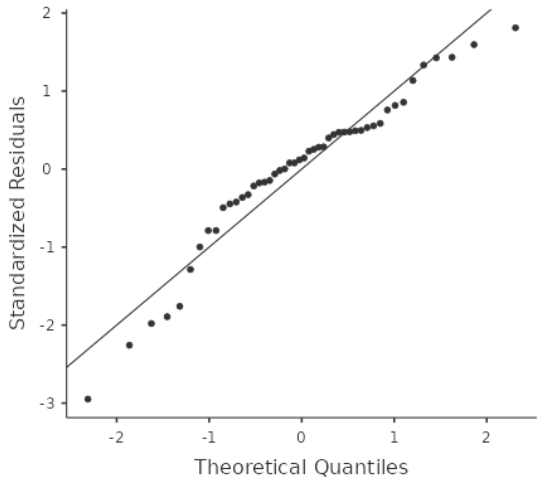

Figure 1. Normal P–P Plot of Regression Standardized Residuals

The normal P–P plot of the regression residuals above shows that the distribution of data points generally follows the diagonal line, although slight deviations are observed at the lower and upper tails. This pattern indicates that the residuals of the regression model tend to be normally distributed, thereby satisfying the normality assumption in regression analysis. According to Ghasemi and Zahediasl (2012), residuals that are closely aligned with the diagonal line suggest that the regression model has an approximately normal error distribution.[15] This visual evidence reinforces the results of the previous normality tests, which indicated that the research data are suitable for further analysis using parametric statistical techniques. Therefore, the regression model employed can be considered statistically valid for examining the relationship between the variables of Islamic Entrepreneurship and the Digital Era.

Variance homogeneity testing is one of the essential prerequisites in parametric analysis, as it ensures that the results of statistical testing can be interpreted validly. This test confirms that the regression model is built upon robust underlying assumptions, thereby strengthening the reliability of the subsequent inferential analysis.[16]

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[15] Ghasemi and Zahediasl, "Normality Tests for Statistical Analysis: A Guide for Non-Statisticians."

[16] Julie Pallant, *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS* (Routledge, 2020).

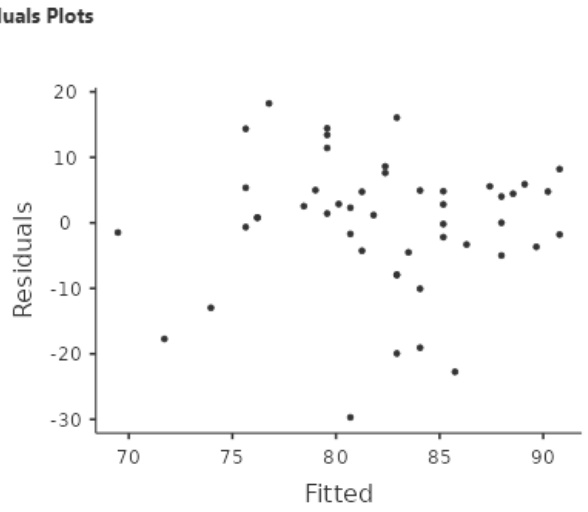

Figure 2. Scatterplot Residuals vs Fitted Values

The residual scatterplot above shows a relatively random distribution of residual points around the fitted values, without forming any specific pattern, either linear or curvilinear. This indicates that the assumption of homoscedasticity is satisfied, meaning that the variance of the residuals remains constant across all predicted values. This condition is essential to ensure the validity of the regression results, as heteroscedasticity may lead to inefficient estimates of the regression coefficients.[17] Although several extreme points or outliers with residual values relatively far from zero are observed, the overall distribution pattern remains irregular, suggesting that there is no serious violation of the homoscedasticity assumption. Therefore, the regression model employed in this study can be considered appropriate for examining the relationship between Islamic Entrepreneurship and the Digital Era variables.

Heteroscedasticity Findings (as a Limitation). The scatterplot of residuals against the Islamic Entrepreneurship variable indicates signs of heteroscedasticity. This issue constitutes a limitation of the study, as it may affect the stability of the regression coefficient variances. Future research is recommended to apply robust standard errors or data transformation techniques to address this issue.

n addition to examining residuals against predicted values, it is also important to analyze the relationship between residuals and the independent variable. The following figure presents the distribution of

[17] Damodar N Gujarati, "Basic Econometrics" (McGraw-Hill, 2009).

residuals against the Entrepreneurship variable to detect potential patterns that may indicate the presence of heteroscedasticity.

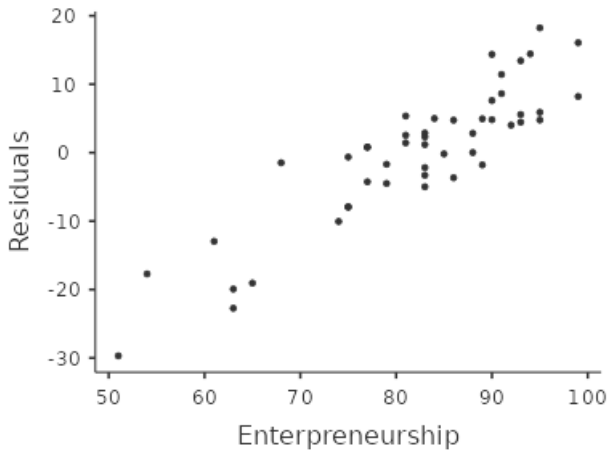

Figure 2. Scatterplot antara Variabel Entrepreneurship dengan Residual Regresi

The scatterplot between the Entrepreneurship variable and the residuals reveals a relatively clear pattern, in which the residual points tend to move systematically in a particular direction. This suggests a potential violation of the homoscedasticity assumption, as the residual variance does not spread randomly around the zero line but instead exhibits a discernible pattern. According to Gujarati (2009), non-random residual patterns may indicate heteroscedasticity, which, if left unaddressed, can lead to biased estimates of the regression coefficients in terms of variance, although the estimates may remain unbiased in terms of their mean values.[18] Therefore, although the regression model can still be utilized, caution is required in interpreting the results, particularly with regard to significance testing. Corrective measures such as data transformation or the use of robust standard errors may be considered to enhance the reliability of the analytical results.

This study is consistent with previous findings, yet it demonstrates that students' digital readiness is uneven. This condition highlights the need for integrating digital skills training grounded in Islamic values in order to enhance technopreneurship in a more comprehensive manner. Consequently, the discussion of the research findings leads to the formulation of a conceptual research model.

[18] Gujarati.

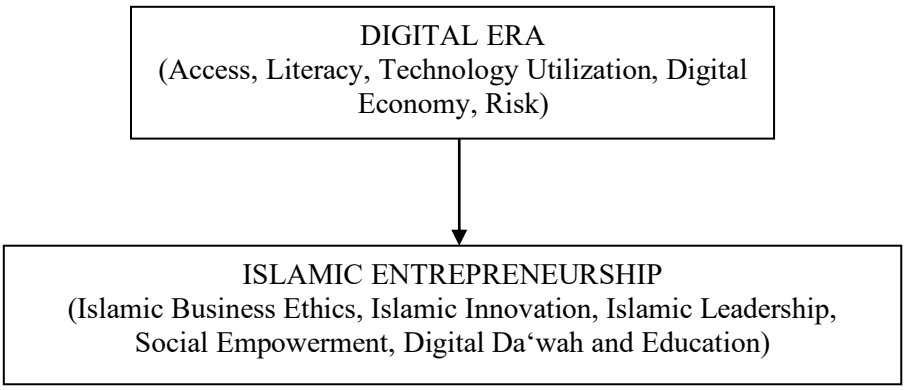

Figure 1. Conceptual Research Model Design

The results of this study indicate that the Digital Era variable has a significant influence on students' Islamic Entrepreneurship, with a contribution of 20.1%. This finding suggests that the higher the level of digital technology utilization among students, the stronger the internalization of Islamic entrepreneurial values. These results support the theoretical perspective that the digital era functions as an important catalyst in shaping a technopreneurship ecosystem, in which technological innovation and Islamic values mutually reinforce one another. Field (2024) emphasizes that the validity of regression analysis can only be achieved when the assumptions of normality and homogeneity are satisfied. The findings of this study demonstrate that both assumptions are adequately met, thereby providing a sound contextual basis for the conclusions drawn.[19]

Furthermore, these findings are consistent with the study by Saputra et al. (2023), which emphasizes that the integration of digital technology into Islamic entrepreneurship education enhances students' creativity, innovation, and competitiveness in facing global markets.[20] Similarly, Munawar and Uswatun (2025) found that students with strong digital literacy are better prepared to implement Islamic business principles, particularly in the context of halal product marketing and the management of enterprises grounded in Sharia values.[21] Accordingly, this study reinforces empirical evidence that digital literacy not only improves students' technical competencies but also strengthens their

[19] Field, *Discovering Statistics Using IBM SPSS Statistics*.

[20] Saputra, Mahaputra, and Maharani, "Pengaruh Jiwa Kewirausahaan Terhadap Motivasi Dan Minat Berwirausaha (Literature Review)."

[21] Munawar and Khasanah, "Entrepreneurship Education for Students in the Digital Era (Case Study at An-Nuriyah Islamic Boarding School, Bekasi, West Java)."

ethical orientation in conducting Islamic business practices. These findings are in line with Saputra et al. (2023), who assert that the integration of digital technology in Islamic entrepreneurship learning is capable of enhancing students' creativity, innovation, and competitiveness.[22]

The discussion also underscores that students' roles extend beyond merely being users of technology; they act as agents of change who are capable of integrating Islamic values, digital technology, and entrepreneurship into real-world practices. In this context, students of STIT Nusantara Bekasi have demonstrated substantial potential in developing halal–ṭayyib-based enterprises rooted in local wisdom, while simultaneously utilizing digital platforms for promotion, distribution, and product innovation. This reflects a dual contribution: on the one hand, strengthening Islamic identity in business practices, and on the other, enhancing competitiveness through the utilization of modern technology.

From a theoretical perspective, this study enriches the literature on Islamic technopreneurship by providing empirical evidence from the context of Islamic higher education institutions, particularly among students of the PIAUD and MPI programs. Practically, the findings suggest that student education and mentoring programs should be directed toward strengthening the integration of Islamic values with digital skills and entrepreneurial mindsets. This is consistent with the view of Ghasemi and Zahediasl (2012), who argue that the mastery of technical skills must be balanced with character formation and ethical development in order to produce sustainable technopreneurs.[23]

Therefore, the main contribution of this study lies in affirming the importance of students' roles as agents of Islamic technopreneurship in the digital era. Students are not only expected to be consumers of technology, but also innovators who are capable of creating Sharia-based business opportunities while upholding honesty, trustworthiness, and social benefit. Ultimately, these findings strengthen the argument that integrating Islamic values with digital technology is a key strategy for preparing a generation of Muslim technopreneurs who are visionary, independent, and competitive on the global stage.

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[22] Saputra, Mahaputra, and Maharani.

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Conclusion

This study confirms that the utilization of digital technology plays a crucial role in strengthening Islamic entrepreneurship values among students. The integration of digital literacy with Islamic entrepreneurial principles—such as trustworthiness (amanah), honesty, and social benefit—serves as an essential foundation for shaping ethical Muslim technopreneurs who are adaptive to contemporary developments. In this regard, the digital era functions not merely as a technological space, but also as a moral sphere that enables students to internalize Islamic values through innovation-based entrepreneurial practices.

From a theoretical perspective, the findings enrich the discourse on Islamic technopreneurship by clarifying the conceptual relationship between digital literacy and the reinforcement of Sharia-based business ethics within the context of Islamic higher education. Practically, the results imply the need to strengthen curricula that integrate Islamic values and technological competencies, as well as to provide systematic student mentoring so that students can act as agents of change who utilize digital platforms for the development of contextual and sustainable halal–ṭayyib enterprises.

Despite its contributions, this study has several limitations. First, indications of heteroscedasticity in the residual analysis may affect the efficiency of the model estimates. Second, the sample was limited to a single institution, which requires caution in generalizing the findings. Moreover, the variables examined did not include other external factors such as business ecosystem support, religious motivation, and social capital. Therefore, future research is recommended to:

1. Employ advanced analytical techniques, such as SEM-PLS or robust regression, to address potential violations of classical assumptions.
2. Incorporate mediating or moderating variables, including Islamic entrepreneurial motivation, halal business ecosystems, and institutional support.
3. Expand the research sample across various Islamic higher education institutions in different regions to enhance the generalizability of the findings.
4. Develop and empirically validate a digital-based Islamic technopreneurship model that can be applied to the planning of Islamic entrepreneurship curricula in higher education.

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