

The Internalization of Islamic Values in Student Technopreneurship Competencies in the 4.0 Industrial Era: Evidence from Kuningan University, Indonesia

Gentur Priguna Suwanto¹, Abdus Salam², Abdul Karim³, Muhammad Fachdi Ramadhan⁴

^{1,2}Universitas Islam Bunga Bangsa Cirebon, Cirebon, Indonesia

³Universitas Muhammadiyah Cirebon, Cirebon, Indonesia

⁴McDermott Asia Pacific Sdn Bhd, Kuala Lumpur Malaysia



DOI: <https://doi.org/10.46245/ijorer.v6i5.918>

Sections Info

Article history:

Submitted: June 04, 2025

Final Revised: July 16, 2025

Accepted: July 18, 2025

Published: September 30, 2025

Keywords:

Technopreneurship; Students;
Islamic Values



ABSTRACT

Objective: The Industry 4.0 era brings challenges and opportunities in education and entrepreneurship, particularly in technopreneurship, which combines technological innovation and entrepreneurship. However, the integration of Islamic values such as honesty, responsibility, and sustainability into technopreneurship remains limited, both in research and curriculum. This study aims to develop a learning approach that integrates technology, entrepreneurship, and Islamic values to shape ethical technopreneurs who contribute to sustainable development. **Method:** This study employed a qualitative approach. Participants were selected using purposive sampling. Data were collected through in-depth interviews, participatory observation, and document analysis, and analyzed using thematic analysis to identify key patterns. **Results:** The study reveals that Islamic values such as honesty, responsibility, and sustainability play a significant role in supporting ethical and spirituality-based technopreneurship. Their integration into the technopreneurship curriculum helps students develop both technical and moral competencies, supported by academic environments and external communities. **Novelty:** This study offers a distinctive framework that formally embeds Islamic values into technopreneurship education, positioning them as essential competencies rather than complementary ethics. In contrast to prior research that treats spirituality as external motivation, this model integrates values like amanah and maslahah within structured academic, mentorship, and community systems. It highlights the transformative potential of value-based innovation, despite persisting institutional challenges.

INTRODUCTION

Industry 4.0 has transformed various aspects of life, particularly in education and entrepreneurship. Rapid advancements in digital technology have introduced both opportunities and challenges across professional and business sectors. As a response, technopreneurship which technological innovation and entrepreneurial practice, has emerged as a crucial competency (Permana et al. 2020). However, many technopreneurship initiatives lack a strong ethical foundation, often neglecting moral responsibilities, leading to negative societal and environmental consequences (Putra et al., 2024).

Islamic values offer a comprehensive ethical framework to guide technopreneurship towards socially responsible and sustainable innovation. Principles such as honesty, accountability, and sustainability serve as ethical anchors for ventures that aim to be both profitable and morally sound (Samsul & Lalu, 2021). Students, as future agents of change, have great potential to become ethical technopreneurs by integrating technical skills with spiritual and moral values grounded in Islamic teachings (Robani et al., 2022).

Technopreneurship refers to the creation and management of technology-based ventures that aim to produce innovations and address social issues (Rukmana et al., 2021). Its key characteristics include technological adaptability, risk-taking, and an innovation-oriented mindset (Polindi, 2019). In the context of Industry 4.0, technopreneurship drives economic transformation through technologies such as the Internet of Things (IoT), artificial intelligence (AI), and big data (Dada, 2021). The necessary competencies encompass not only innovation and technological mastery but also entrepreneurial skills, such as risk management and strategic decision-making (Kahpi et al., 2024; Bhardwaj, 2021).

Technopreneurship development is shaped by an innovation ecosystem involving government support, academic-industry collaboration, and funding access. Christy & Mingchang (2021) show that policies such as business incubators and tax incentives significantly bolster technopreneurship growth. However, constraints such as limited technology access and low digital literacy, particularly among small and medium-sized enterprises (SMEs) remain major challenges. The World Economic Forum (2021) reports that only 30% of SMEs in developing countries can adopt advanced technologies because of resource limitations.

To address these gaps, multi-stakeholder collaboration is essential. Synergy among government, academia, and industry, commonly conceptualized in the Triple Helix model, plays a vital role in supporting innovation ecosystems (Hailu, 2024). When effectively integrated, technopreneurship can be a key driver of inclusive economic growth and improved community welfare.

From a philosophical standpoint, technopreneurship is rooted in the idea of using innovation to enhance human life. In this context, ethics are a necessary pillar. Islamic philosophy promotes a balanced worldview between material and spiritual benefits, offering a moral direction for sustainable innovation. While theories like those of Xue et al. (2022) emphasize innovation as an economic engine, recent studies have highlighted that ethical integration, especially from religious perspectives, is often lacking (Analiansyah et al., 2024).

Theoretically, technopreneurship involves product innovation and the ability to assess risk and identify opportunities (Wibowo & Sulartopo, 2022). Abdullah et al. (2024) expand this by highlighting the importance of Islamic moral values in shaping innovations that advance social justice and sustainability. However, a significant research gap remains between conventional profit-driven models and more integrative approaches that internalize Islamic ethics. Despite the growing interest in ethical entrepreneurship, few studies have systematically explored the incorporation of Islamic values into technopreneurship education.

Although the literature has recognized the moral relevance of Islamic principles in entrepreneurship, many treat these values as peripheral rather than integral to the learning process. This study addresses this gap by proposing a systematic framework for embedding Islamic values into technopreneurship education. The proposed framework includes curriculum development, ethical mentoring, and community-based learning, focusing on values such as honesty, justice, and sustainability. This approach aims to shift Islamic ethics from being supplementary to becoming the central component of entrepreneurial education.

Indonesia's regulatory framework, such as Law No. 12 of 2012 on Higher Education, supports entrepreneurship development but lacks explicit guidance on

integrating Islamic ethics into technopreneurship (Harizan & Mustafa, 2020). Most policies focus on technical capabilities without sufficient emphasis on character development for ethical entrepreneurship.

Islamic theology provides the essential moral foundations for entrepreneurial activities (Kader, 2021). Concepts such as *maslahah*, *amanah*, and *adil* guide responsible innovation (Analiansyah et al. 2024). The Qur'an encourages human beings to improve the earth (QS. Hud: 61), emphasizing that innovation should benefit both society and the environment.

Globally, technopreneurship has become a driving force in sectors such as finance, education, and health. However, cases such as data privacy violations and environmental degradation reflect the consequences of unethical practice. In Indonesia, the lack of ethical integration remains a barrier to producing globally competitive and sustainable technopreneurship.

In higher education, the research locus of Islamic ethical integration in technopreneurship learning remains limited. Curricula tend to emphasize technical skills, whereas moral and spiritual dimensions are often marginalized. This gap between theory and real-world application underscores the urgency of adopting holistic, value-based educational models.

Previous research, such as that by Apriani et al. (2021), mostly discusses technical development without deeply examining the ethical dimensions. This has led to a fragmented implementation in academic settings. There is a pressing need for a learning model that systematically combines entrepreneurship, technology, and Islamic ethics. Such a model can strengthen student competencies while contributing to the sustainable development goals (Islam & Khan, 2024).

Higher education institutions play a vital role in nurturing not only technical expertise but also ethical character (Basri & Dwiningrum, 2020). By designing learning models that integrate Islamic values, institutions can produce technopreneurs who are innovative and ethically grounded. This study thus seeks to answer the following key research question: 1) How can Islamic values be internalized to support the development of students' technopreneurship competencies? 2) What are the enabling and constraining factors of this process?, 3) How do Islamic values influence technopreneurship success?

This study proposes a comprehensive solution for cultivating ethical technopreneurs using a value-based learning approach. By bridging the gap between technological innovation and Islamic ethics, this study contributes to the development of globally competitive yet socially responsible technopreneurs.

RESEARCH METHOD

Research Design

This study adopts a qualitative approach with a case study design to explore the internalization of Islamic values in the development of technopreneurship competencies in students. This design enables an in-depth understanding of how students interpret, adapt, and apply these values in real technopreneurial contexts. Case studies are particularly suitable for investigating complex, socially embedded processes in a bounded system, here, the Faculty of Computer Science at Kuningan University. The selected context allowed the researcher to observe the phenomenon in its natural setting, providing rich and meaningful insights into student experiences.

This design is particularly appropriate for addressing the study's research questions, which examine not only what students do but also how and why they engage with Islamic values in technopreneurial practice. Unlike quantitative approaches, qualitative inquiry facilitates a nuanced understanding of the internalization process by capturing both individual perspectives and contextual dynamics.

Research Participants

The research involved five students selected through purposive sampling. The selection criteria included active involvement in technology-based technopreneurship projects and participation in university or community programs that focused on Islamic value internalization. These students were deemed suitable for providing nuanced context-rich insights based on their lived experiences. To ensure ethical compliance, all participants were informed about the study's aims, methods, and potential benefits and provided written informed consent prior to participation.

Although the sample size is relatively small, it aligns with the depth-oriented nature of qualitative case studies, where the goal is to understand meaning-making processes rather than achieve statistical generalization. Variation in participants' entrepreneurial experiences and value orientations was also considered to capture diverse expressions of Islamic value integration.

Data Collection Techniques

Data were collected using three complementary methods to allow for methodological triangulation

1. In-depth Interviews

Semi-structured interviews were conducted to explore students' understanding of and application of Islamic values in technopreneurship. The key themes included ethical decision-making, spiritual motivation, the influence of Islamic teachings on innovation, and the challenges of aligning religious values with market demands. Example questions:

- "How do Islamic values influence the way you make business decisions?"
- "Can you describe a situation where Islamic principles shaped your technopreneurial actions?"

2. Participatory Observation

The researcher observed several student-led technopreneurship events such as workshops, mentoring sessions, and product showcases over a two-month period. The observations focused on the students' ethical interactions, decision-making processes, and visible application of Islamic principles during real-time business activities.

3. Document Analysis

Relevant documents were analyzed to contextualize the findings, including student business project reports, technopreneurship training modules, pitch decks, and Islam-based entrepreneurship program materials provided by the university. This helped assess how Islamic ethics were formally integrated into the institutional learning tools.

Data Analysis Techniques

Thematic analysis was employed to examine the qualitative data, following these key steps

1. Data Coding

Data from interviews, observations, and documents were coded to identify recurring concepts, actions, and meanings related to Islamic values and entrepreneurship behavior.

2. Theme Grouping

Similar codes were grouped into broader themes representing the internalization of Islamic values. These themes helped reveal patterns and variations in how the students internalized and practiced ethical principles.

3. Result Interpretation

Thematic interpretations were conducted to link Islamic values with specific technopreneurial competencies, providing insights into the influence of religious ethics on innovation, leadership, and sustainability.

Data Trustworthiness

To ensure the validity and trustworthiness of the findings, several strategies were implemented

- Credibility was achieved through methodological triangulation and member checks. For member checking, the participants were invited to review their individual interview transcripts and the preliminary thematic summaries derived from their responses. Feedback was incorporated to refine the theme interpretations and ensure that the participants' perspectives were accurately represented.
- Transferability was supported by providing thick descriptions of the research context, including institutional culture, student backgrounds, and program characteristics, allowing readers to assess the relevance of the findings to other contexts.
- Dependability was ensured through consistent documentation of the research process, including detailed field notes, a step-by-step coding log, and an audit trail recording decisions made during data collection and analysis. This systematic documentation allows for transparency and potential replications.
- Confirmability was enhanced by triangulating the data sources and consulting external experts in technopreneurship and Islamic studies. Additionally, the researcher maintained a reflective journal throughout the research process to bracket personal biases and enhance analytical objectivity.

RESULTS AND DISCUSSION

Results

Table 1. Profile of Student Respondents

Name	Major	Semester
Muhammad Taufiquroman	Visual Communication Design	6
Ina Khaerunisa	Information Systems	5
Dera Sartika	Information Systems	5
Dede Rizki	Information Technology	6
Aziz Febriansah	Information Technology	5

Based on the thematic analysis of interview transcripts, observations, and document reviews, three main themes emerged in relation to the integration of Islamic values into student technopreneurship competencies:

1. Ethical Awareness as a Core Value

Students emphasized the importance of honesty and integrity in running technopreneurial ventures. For instance, Taufiquroman (VCD, Semester 6) stated that he consistently applied the value of *amanah* (trustworthiness) when dealing with client orders, prioritizing clear communication and transparency in pricing

2. Responsibility and Discipline in Practice

Responsibility (*mas'uliyah*) was a common theme. Dede Rizki, for example, noted that regular participation in campus religious activities helped him cultivate discipline and accountability in managing project deadlines.

3. Sustainability and Social Contribution

Several students expressed a desire to contribute to their broader community. Ina Khaerunisa shared her efforts to develop a digital product that not only meets market demands but also solves social problems, aligning her goals with the Islamic principle of *rahmatan lil 'alamin* (mercy to all creation).

The technopreneurship competencies of students at the Faculty of Computer Science, Kuningan University, demonstrate their ability to integrate technology with entrepreneurship based on Islamic principles. These competencies include an understanding of cutting-edge technology, business innovation, and internalizing Islamic ethics and spirituality. For example, a student from the Visual Communication Design program, such as Muhammad Taufiquroman, excels at creating digital marketing strategies that align with Islamic principles. His ability to integrate visual branding principles with Islamic values is a strength of his technopreneurship.

Students from the Information Systems program, such as Ina Khaerunisa and Dera Sartika, focus more on developing applications and systems based on technology that supports business activities in line with Islamic ethics. Both demonstrate skills in developing software solutions for market needs, such as sharia-compliant business management applications. They also leverage technology to create efficiency and accountability in business management while maintaining the values of honesty and trust.

Meanwhile, students from the Information Technology program, such as Dede Rizki and Aziz Febriansah, demonstrate competencies in more technical aspects of technology development, such as cloud-based digital platforms integrating halal payment services and e-commerce platforms based on Islamic ethics. With their strong technical abilities, they can create products that are not only innovative but also meet the needs of the Muslim community, which is increasingly aware of Sharia values.

The research also revealed that students' ability to internalize Islamic values is a key differentiating factor in the development of their technopreneurship competencies. Values such as justice, honesty, and sustainability help students design businesses that are not only financially profitable but also socially beneficial to the community. The combination of technical skills, business innovation, and internalization of Islamic values gives the students at Kuningan University great potential in Sharia-based technopreneurship.

Discussion

The findings of this study indicate that student technopreneurs do more than apply technical competencies; they also actively internalize Islamic values during their entrepreneurial journeys. This internalization appears in their decision-making, branding strategies, and ethical practices.

For instance, Muhammad Taufiquroman exemplified how spiritual consciousness intertwines with innovation. His business practices reflect the concept of spiritual entrepreneurship, where *barakah* (blessings) and *amanah* (trust) shape business outcomes and contribute to the entrepreneur's personal development (Kamil, 2020). His actions resonate with Ramadani et al. (2015), who found that Muslim entrepreneurs often leverage their faith identity to build social legitimacy and trust in the marketplace.

Likewise, Khaerunisa highlights the significance of interdisciplinary collaboration in solving Islamic finance challenges. Her approach aligns with Al- Khalili's (2018) concept of "Islamic technoethics," which posits that technology must be ethically guided rather than value-neutral. Her use of information systems to serve religious and social needs illustrates a broader trend among Gen Z Muslim technopreneurs who actively merge religious values with digital innovations.

Collectively, these individual cases illustrate a consistent pattern: the internalization of Islamic values fosters not only ethical awareness but also long-term resilience and sustainable behavior in technopreneurship. This finding advances the prior literature that has typically treated Islamic values as external motivators by demonstrating how such values are deeply internalized and strategically operationalized within real entrepreneurial ecosystems.

Relevance of Islamic Values in Supporting Ethics- and Spirituality-Based Technopreneurship

Islamic values such as honesty, responsibility, and sustainability play a critical role in supporting technopreneurship rooted in ethics and spirituality. This relevance becomes even more apparent considering that modern technological development often faces moral dilemmas ranging from privacy concerns to data misuse and ecological damage.

Among these values, honesty stands out as a central ethical foundation for the profession. Lubis (2024) highlights that honesty underpins all business interactions and functions as a moral compass for technological decision-making. Hoque, (2020) reinforces this by asserting that honest practices help ensure that innovations are not only profitable but also fair and socially responsible.

Beyond guiding ethics, Islamic values also contribute to the development of core entrepreneurial competencies. They offer a moral framework that supports and stimulates innovation. Research by Lubis (2024), Herijanto (2022), and Qalbia & Saputra (2024) demonstrates that implementing values such as responsibility fosters customer trust and promotes business sustainability, which are two essential pillars in the technology-based entrepreneurial environment.

Furthermore, spiritual responsibility provides technopreneurs with the internal motivation to remain committed to their mission such as reducing environmental harm or creating inclusive opportunities beyond merely achieving financial goals.

One of the key principles of Islam-based technopreneurship is *maslahah*, or the pursuit of the common good. This principle encourages entrepreneurs to align their

innovative efforts with long-term social benefits. For instance, Astrachan et al. (2020) and Lusianti et al. (2024) found that businesses built on Islamic values are generally more responsive to societal needs because they are motivated by the intention to create a sustainable impact. In the context of technopreneurship, this means that technological products or services are not only competitive but also oriented toward solving social or environmental problems.

Pustovrh et al. (2020) emphasized that a robust innovation ecosystem depends on collaboration among multiple stakeholders, including universities, communities, and the private sector. This study finds that integrating Islamic values into technopreneurship cannot rely solely on individual initiative it also demands institutional support.

For example, Islamic business incubators are instrumental in facilitating justice and sustainability among student entrepreneurs. Such institutional mechanisms help technopreneurs thrive in modern business settings while adhering to strong ethical principles.

The application of Islamic values in technopreneurship has wide implications for education and policy. Anggadwita et al. (2021) emphasize that education plays a key role as the main medium for internalizing Islamic values in the younger generation, especially in the context of economics and entrepreneurship. Universities and educational institutions can play a strategic role by integrating Islamic principles into technopreneurship curricula. Moreover, government policies supporting Islamic value-based technopreneurship can encourage technological innovation that aligns with social needs and strengthens global competitiveness. Thus, Islamic values serve as a catalyst for creating technopreneurship that is not only innovative but also ethical and beneficial to society.

The Process of Internalizing Islamic Values in Technopreneurship at Higher Education Institutions

The interviews with five students show that the process of internalizing Islamic values in their technopreneurship activities takes place through various complementary elements. Each student has a unique experience of understanding and applying Islamic values to their technology-based entrepreneurial activities. The internalization of values such as honesty, justice, and sustainability is key to successfully integrating technology with Islamic principles.

Muhammad Taufiquroman, a 6th-semester student from the Visual Communication Design department, explained that the internalization of Islamic values begins with understanding the basic principles of Islam. He applies these values to his product designs using both ethical and aesthetic approaches. "For me, the process of internalizing Islamic values starts with understanding the basic principles of Islam, such as honesty and responsibility. In design, I always think about how my visual messages are not only attractive but also comply with Islamic values. I get a lot of inspiration from the Islamic studies I follow on campus," said Muhammad Taufiquroman.

Ina Khaerunisa, a 5th-semester student from the Information Systems department, stated that mentoring from professors and interactions with peers play a significant role in the internalization process of Islamic values. This helped her ensure that the features of the applications she develops reflect transparency in accordance with Islamic ethics.

"The guidance from professors and interaction with friends really helped me understand how Islamic values can be applied in application development. I learned to ensure that my application's features, such as financial management, reflect transparency according to Islamic ethics," explained Ina Khaerunisa.

Dera Sartika, a 5th-semester student from the Information Systems department, mentioned that her experience in campus organizations gave her the opportunity to practice Islamic values in group projects. *"I learned Islamic values more through my organizational experience on campus. For example, I applied the values of justice and cooperation to the application development project we worked on together. This process made me realize that Islamic values should always be the basis of every decision,"* said Dera Sartika.

Dede Rizki, a 6th-semester student from the Information Technology department, emphasized the importance of a mentor's role in the internalization of Islamic values. Discussions with mentors helped him see how technology could be used for larger purposes. *"The internalization of Islamic values occurs gradually. In technology development, I often discuss with my mentor who provides me with an Islamic perspective. This helps me understand how technology can be utilized for broader purposes, such as helping the Muslim community,"* said Dede Rizki.

Aziz Febriansah, a 5th-semester student from the Information Technology department, explained that his family environment and campus community greatly influenced his process of internalizing Islamic values. *"For me, the process of internalization is heavily influenced by my family environment and the campus community. I often discuss with friends how values like sustainability and integrity can be applied in technology development,"* said Aziz Febriansah.

Based on the explanations above, this internalization process does not only involve influences from individuals or close groups but is also supported by a conducive campus ecosystem. According to Zikri & Syafii (2023), faculty guidance and group discussions are key factors in the internalization of Islamic values, while Nugraheni et al. (2024) highlight organizational experiences as a means of raising awareness of values such as justice and responsibility. Lestari & Nurhadi (2020) also emphasized that the influence of family and community provides a strong foundation for students to internalize Islamic values in entrepreneurship. Suregar et al. (2024) identified values such as honesty and transparency as major pillars in the development of sharia-based applications. Marshall et al. (2021) added that experienced mentors are extremely helpful in providing ethical guidance for students.

In conclusion, the internalization of Islamic values in students' technopreneurship involves a complex, multidimensional process. Academic guidance, organizational experiences, community, and family influence the shaping of Islamic technopreneurship competencies. This allows students to create technology-based solutions that are both innovative and aligned with Islamic values. Based on the explanations above, the process of internalizing Islamic values in technopreneurship is presented as follows.

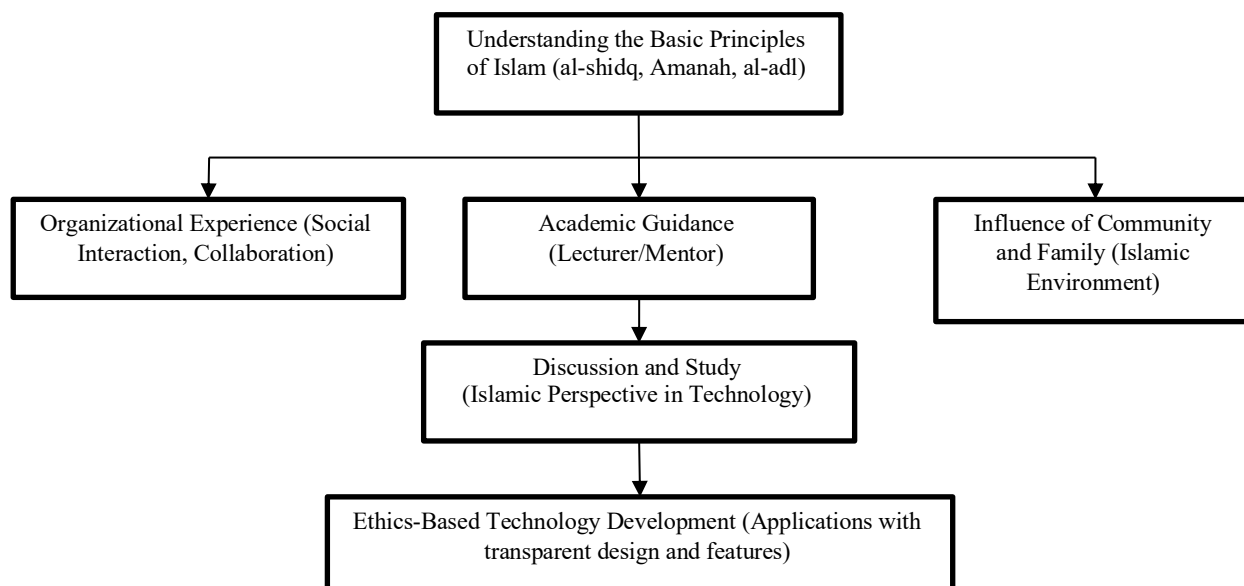


Figure 1. Diagram of the Process of Internalizing Islamic Values in Technopreneurship in Higher Education

Supporting and Hindering Factors in the Implementation of Islamic Values in Technopreneurship Competencies

Muhammad Taufiquroman highlights an internal factor, which is his spiritual motivation, in developing technology-based businesses. *"I feel that religious values give me the drive to continue innovating while maintaining the principles of justice and benefit. For example, in every business decision, I always consider whether my product will provide long-term benefits."* Muhammad Taufiquroman also added that personal commitment to continuous learning is essential in facing the dynamics of technopreneurship.

Meanwhile, Khaerunisa focused on an external factor, the support of the academic environment. She stated, *"Facilities like technology labs and Islamic business incubator programs on campus have greatly helped me understand the application of Islamic values in entrepreneurship."* In addition, she appreciates the involvement of lecturers who play a mentoring role in providing guidance, especially in aligning technological aspects with Islamic ethics.

On the other hand, Dera Sartika emphasizes the institutional policy barriers that sometimes hinder students' flexibility in running businesses while studying. *"Strict academic policies often limit my time to focus on business development. However, the support of friends and the technopreneur community on campus keeps me motivated,"* said Dera Sartika. She also emphasized the importance of collaboration with external parties, such as the Islamic business community, to help overcome these barriers to sukuk issuance.

Based on the interview results, internal factors such as spiritual motivation and personal commitment serve as strong foundations for students at Universitas Kuningan to develop Islam-based technopreneurship. The spiritual motivation mentioned by Muhammad Taufiquroman reflects the principle of taqwa, which aligns with the views of Mayanti & Dewi (2021), where worldly success must always be linked with moral balance and social responsibility. Personal commitment to learning is also in line with research by Alkhoori et al. (2021), who emphasized that continuous learning is a key element in the success of technopreneurs in the digital age.

The academic environment support described by Khaerunisa underscores the importance of a strong innovation ecosystem. Awasthy et al. (2020) emphasize that successful innovation requires collaboration between universities, industries, and communities. Campus facilities such as technology labs and Islamic business incubator programs are one form of implementation of this theory. The presence of academic mentors also strengthens the students' learning process by aligning Islamic values with modern market needs. However, the barriers mentioned by Dera Sartika highlight a gap between institutional policies and the needs of technopreneurial students. This indicates the need for academic policy flexibility, as suggested by Langørgen et al. (2020), to provide students with the opportunity to develop practical competencies without sacrificing academic obligations. In addition, collaboration with external communities, as mentioned by Dera Sartika, reinforces the findings of Kurt et al. (2020), where external support is key to overcoming challenges in internalizing Islamic values in business practices.

Meanwhile, Rizki mentions that the role of mentors and the campus community is a key supporting factor in internalizing Islamic values in technopreneurship. *"Through mentoring, I gained deeper insights into how technology can be used to empower the Muslim community. The campus community also provides a productive discussion space to share ideas and experiences,"* he explained. Additionally, Rizki noted that challenges in developing technopreneurship competencies often arise from limited access to certain technological resources. *"Some facilities are still insufficient, especially if we want to develop advanced technology products that align with Islamic ethics,"* he added.

Aziz Febriansah, on the other hand, emphasized the importance of a family environment that supports Islamic values as a foundation in technopreneurship development. *"I was raised in a family that always emphasized the importance of honesty and sustainability. This helped me focus on developing technology that is not only innovative but also has a positive impact on society."* However, he also noted that the academic environment's focus on commercial targets can be a hindrance. He stated, "Sometimes, Islamic values are sidelined when the pressure to produce products that sell quickly becomes the main priority,"

The identified supporting factors, such as mentorship, campus communities, and family influence, highlight the importance of a collaborative approach to building technopreneurship competencies based on Islamic values. However, obstacles such as limited technological facilities and commercial pressure require strategic solutions that integrate ethical and innovative interests. In this context, mentors can play a role as intermediaries between commercial goals and Islamic values (Alrubaishi et al., 2021). A family environment that supports honesty and sustainability has proven to be an important foundation for internalizing Islamic values (Rohmatulloh et al., 2023). Moreover, a campus community that prioritizes discussions and collaborations provides students with space to explore the application of Islamic values in technology. However, challenges such as commercial pressure must be managed by creating a business model that strikes a balance between profit and long-term benefits (Oskam et al., 2021).

Overall, the interview results indicate that the success of Islam-based technopreneurship depends on a synergy between internal and external factors. Spiritual motivation and personal commitment are the main foundations, while support from the academic environment and community helps to overcome obstacles. With the

optimization of institutional policies, the potential for technopreneurship at Universitas Kuningan can develop more significantly, creating students who are not only innovative but also ethical and socially contributing. Based on the explanation above, the supporting and hindering factors in the implementation of Islamic values in technopreneurship competencies can be summarized as follows:

Table 2. Summary of Supporting and Inhibiting Factors in the Internalization of Islamic Values in Technopreneurship Competence

Category	Factor	Description
Supporter	Spiritual Motivation	Encourages students to continue innovating while maintaining fairness and benefit.
	Personal Commitment	A critical component for sustaining Islamic-value-based technopreneurship.
	Academic Environment	Provides technological and ethical support to implement Islamic principles.
	Academic Mentor	Facilitates alignment between technology and Islamic ethics.
	Campus Community	Stimulates new ideas and value integration in peer environments.
	Family Environment	Cultivates foundational moral character in entrepreneurial attitudes.
	External Support	Assists in overcoming structural and economic barriers in business practice.
	Institutional Policy	Limits students' flexibility in focusing on business ventures.
	Limited Facilities	Hinders students from developing high-quality technological solutions.
	Commercial Pressure	Threatens the consistency of Islamic values under market-driven demands.

The integration of Islamic values into student technopreneurship is supported by various internal and external factors. For example, spiritual motivation encourages students to innovate with sincerity and a sense of moral responsibility, aligning with the findings of Kamil (2020) who emphasized the role of niyyah (intentions) in ethical business practices. Similarly, personal commitment emerges as a key driver of sustained consistency, especially under competitive pressure echoing the concept of value-driven entrepreneurship.

From an institutional perspective, the academic environment and mentorship play vital roles. Students reported that access to ethically aware mentors and supportive infrastructure helped them apply Islamic ethics in practice. This is consistent with Bandura's (1986) social learning theory, which despite being a foundational framework over three decades old remains highly relevant for explaining how environmental and observational learning shapes behavior in contemporary educational contexts. Moreover, family and community settings reinforce early moral development, shaping entrepreneurial behavior in line with Islamic values.

Conversely, institutional policies that limit academic flexibility were frequently mentioned as barriers, constraining students' time and resources to engage

meaningfully in entrepreneurial efforts. This challenge is also highlighted by Ghani & Hussin (2019), who argue that rigid academic structures hinder entrepreneurial growth in Islamic education contexts. Additionally, commercial pressure was seen as a temptation that risks compromising Islamic principles in favor of market trends—a concern echoed by Ramadani et al. (2015) in their study of Muslim youth entrepreneurship. This synthesis illustrates that while the internalization of Islamic values in technopreneurship is possible, it requires a multi-level support system personal, institutional, and societal.

The Impact of the Internalization of Islamic Values on the Competencies and Success of Student Technopreneurs

The internalization of Islamic values significantly shapes both the technical and moral competencies of student technopreneurs. For instance, Muhammad Taufiquroman shared that he applies *amanah* (trustworthiness) and *sidq* (honesty) in client interactions, ensuring transparent communication and ethical product delivery to clients. This ethical foundation, according to him, enhances his technical competence, particularly in aligning design innovation with user needs without compromising religious principles.

Ina Khaerunisa emphasized that her business innovation was motivated by a desire to solve real-world problems in the Muslim community using digital solutions. She stated, “I always ask myself if this product helps people and reflects my faith,” showing that Islamic values guide her entrepreneurial creativity toward socially responsible outcomes.

Students also described the role of Islamic teachings in shaping their strong work ethic. Dera Sartika noted that values like *juhud* (striving) and *istiqamah* (steadfastness) helped her stay disciplined during long development cycles. “Even when I wanted to give up,” she recalled, “I remembered that hard work is also worship.” This internal motivation supported her resilience in overcoming technical and market-related challenges.

In terms of mental and emotional strength, Aziz Febriansah described how his understanding of *tawakkul* (reliance on God) gave him calmness during moments of business failure. He shared, “I had a failed launch last semester, but I accepted it with patience, then evaluated the mistakes and tried again.” This aligns with the findings of Yousef et al. (2024), emphasizing the role of spirituality in entrepreneurial consistency.

Islamic principles also influence students’ long-term vision. Dede Rizki stated that his business was not only aimed at profit but also at creating ethical impact: “I want to build something that lasts and benefits others, even after I’m no longer here.” His attitude reflects a future-oriented mindset rooted in the Islamic values of legacy (*tsarwah*) and social benefit (*maslahah*). These narratives illustrate that Islamic values do more than inspire; they translate into measurable behavioral traits creativity, responsibility, adaptability, and sustainability that support students’ success as technopreneurs.

Tabel 3. Summary of the Impact of Islamic Values on Student Technopreneurs' Competencies and Success

Aspect	Empirical Impact (Based on Student Narratives)
Technical Competence	Improved innovation and problem-solving guided by Islamic ethics (Taufiquroman).
Moral Competence	Deepened integrity and honesty in business decisions (Ina, Aziz).
Work Ethic	Strengthened discipline and perseverance through internalized values (Dera).
Business Innovation	Created solutions relevant to Islamic social needs (Ina).
Business Continuity	Developed sustainable practices motivated by moral responsibility (Dede).
Adaptation to the Market	Showed flexibility in facing uncertainty with confidence (Aziz).
Mental & Emotional Strength	Resilience in failure through faith-based optimism and reflection (Aziz).
Long-Term Vision	Focused entrepreneurial goals aligned with moral and social objectives (Dede).
Social Contribution	Intentional efforts to deliver community value beyond profit (Ina, Dede).

CONCLUSION

Based on the research findings, the internalization of Islamic values such as honesty, responsibility, and sustainability plays a crucial role in strengthening students' technopreneurship competencies in the era of digital transformation. These values serve as an ethical framework and a practical foundation that empowers students to develop technology-based innovations that are both socially responsible and spiritually grounded.

This study implies that embedding Islamic values within technopreneurship education enhances not only technical skills but also moral awareness, which is essential for addressing contemporary ethical challenges in entrepreneurship. The academic environment, mentoring support, and exposure to Sharia-based entrepreneurship initiatives have proven effective in shaping a generation of ethical and competitive technopreneurs.

However, this study also has certain limitations. Rigid academic policies and limited infrastructure remain barriers to optimal student participation in business activities. These limitations are due to institutional priorities that often emphasize academic output over experiential learning. This study attempted to manage these limitations by selecting participants actively engaged in both academics and entrepreneurship; however, their experiences may not fully capture the broader student population. Thus, flexibility in institutional support and expanded access to entrepreneurial resources are necessary for future program development in this area.

Future research could explore quantitative assessments of how specific Islamic values impact business decision-making and long-term entrepreneurial success. Additionally, cross-cultural comparative studies are recommended to examine how the

internalization of religious values in technopreneurship differs across diverse educational and social contexts.

The internalization of Islamic values offers a transformative pathway for technopreneurship education in Indonesia. It not only enhances students' innovation capacity but also nurtures character, creating technopreneurs who are not only competent but also ethical and socially impactful in facing the demands of the Industry 4.0 era.

REFERENCES

- Abdullah, S. I. N. W., Deli, M. M., Suryawati, R. F., & Nangkula, U. (2024). Technosociopreneurship as a productivity-increasing strategy based on community potential. *Journal of Infrastructure, Policy and Development*, 8(1), 45–62. <https://doi.org/10.1234/jipd.v8i1.567>
- Alkhoori, A. A., Al-Shami, S. A., & Sedik, S. (2021). The relationship between leadership factors and successful technopreneur through the mediator role of digital enabler. *Webology*, 18(Special Issue on Information Retrieval and Web Search), 344–356. <https://doi.org/10.14704/web/v18si/IRWS/344-356>
- Alrubaishi, D., McAdam, M., & Harrison, R. (2021). Culture, convention, and continuity: Islam and family firm ethical behavior. *Business Ethics, the Environment & Responsibility*, 30(2), 202–215. <https://doi.org/10.1002/beer.2207>
- Amalia, B. (2024). Peran kepemimpinan Islam dalam mendorong etika organisasi: Studi tentang penerapan nilai-nilai Islam dalam bisnis modern. *Benchmarking*, 8(2), 64–71. <https://doi.org/10.1108/benchmarking-082024-0012>
- Analiansyah, A., Furqani, H., Mulia, R., Yulindawati, Y., Afriani, S., & Juliansyah, R. (2024). Techno-sociopreneurship in practice by strengthening mosque-based Islamic philanthropy management: A case in Thailand. In *Technopreneurship in Small Businesses for Sustainability* (pp. 213–231). IGI Global. <https://doi.org/10.4018/978-1-7998-9990-2.ch012>
- Anggadwita, G., Dana, L. P., Ramadani, V., & Ramadan, R. Y. (2021). Empowering Islamic boarding schools by applying the humane entrepreneurship approach: The case of Indonesia. *International Journal of Entrepreneurial Behavior & Research*, 27(6), 1580–1604. <https://doi.org/10.1108/IJEBr-08-2020-0501>
- Apriani, D., Williams, A., Rahardja, U., Khoirunisa, A., & Avionita, S. (2021). The use of science technology in Islamic practices and rules in the past, now and the future. *International Journal of Cyber and IT Service Management*, 1(1), 48–64.
- Arocena, R., & Sutz, J. (2021). Universities and social innovation for global sustainable development as seen from the south. *Technological Forecasting and Social Change*, 162, 120399. <https://doi.org/10.1016/j.techfore.2020.120399>
- Astrachan, J. H., Binz Astrachan, C., Campopiano, G., & Bau, M. (2020). Values, spirituality and religion: Family business and the roots of sustainable ethical behavior. *Journal of Business Ethics*, 163(4), 637–645. <https://doi.org/10.1007/s10551-018-4027-z>
- Atkinson-Toal, A. (2024). Student value of a transdisciplinary approach to curriculum development. *Journal of Marketing Education*. Advance online publication. <https://doi.org/10.1177/02734753241288182>

- Awa, A., Pramestidewi, C. A., & Aziz, A. J. (2024). Comprehensive exploration of ecopreneurship principles for sustainable business practices. In *E3S Web of Conferences*, 593, 06002. EDP Sciences.
<https://doi.org/10.1051/e3sconf/202459306002>
- Awasthy, R., Flint, S., Sankarnarayana, R., & Jones, R. L. (2020). A framework to improve university-industry collaboration. *Journal of Industry-University Collaboration*, 2(1), 49–62. <https://doi.org/10.1108/JIUC-08-2019-0005>
- Badriah, S., Zakiyah, Q. Y., & Supiana, S. (2023). Al islam and kemuhammadiyah (AIK) curriculum policy study. *Educenter: Jurnal Ilmiah Pendidikan*, 2(3), 291–298.
- Basri, B., & Dwiningrum, N. R. (2020). Peran ormawa dalam membentuk nilai-nilai karakter di dunia industri (studi organisasi mahasiswa di Politeknik Negeri Balikpapan). *Al-Adabiya: Jurnal Kebudayaan dan Keagamaan*, 15(1), 139–158.
- Bhardwaj, B. R. (2021). Adoption, diffusion and consumer behavior in technopreneurship. *International Journal of Emerging Markets*, 16(2), 179–220. <https://doi.org/10.1108/IJOEM-03-2020-0224>
- Choi, L. K., Iftitah, N., & Angela, P. (2024). Developing technopreneur skills to face future challenges. *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, 5(2), 127–135.
- Christy, N. N. A., & Mingchang, W. (2021). A study on the implementation approaches of university incubation centres to reinforce entrepreneurship: The example of Singapore. *International Journal of Contemporary Management*, 57(3), 39–49.
- Dada, A. (2021). Digital entrepreneurial behaviour of millennials in the fourth industrial revolution in Southwest Nigeria. *African Journal of Science Policy and Innovation Management*, 2(1–2), 41–60.
- Hailu, A. T. (2024). The role of university-industry linkages in promoting technology transfer: Implementation of triple helix model relations. *Journal of Innovation and Entrepreneurship*, 13(1), 25. <https://doi.org/10.1186/s13731-024-0025-7>
- Harizan, S. H. M., & Mustafa, M. S. (2020). Islamic entrepreneurship: Analysis of research trend. *Islamiyyat*, 42(2), 71–84.
- Hasan, M. S. R., & Rozaq, A. (2023). Service learning in building an attitude of religious moderation in pesantren. *Tafkir: Interdisciplinary Journal of Islamic Education*, 4(4), 559–576. <https://doi.org/10.24042/taf.v4i4.18910>
- Herijanto, H. (2022). Al amanah in Al-Qur'an vs. trust: A comparative study. *International Journal of Ethics and Systems*, 38(4), 549–575. <https://doi.org/10.1108/IJOES-08-2021-0147>
- Hoque, N. (2020). Employees' performance management: Features and framework from Islamic perspective. *IIUC Business Review*, 9(1), 47–76.
- Islam, Q., & Khan, S. M. F. A. (2024). Sustainability-infused learning environments: Investigating the role of digital technology and motivation for sustainability in achieving quality education. *International Journal of Learning, Teaching and Educational Research*, 23(1), 519–548.
- Ismaila, M. Y., Ahmed, Y. A., Olamilekan, A. S., & Abdulganiyu, O. A. (2021). Islamic corporate social responsibility and patronage of non-interest cooperative societies in North-central, Nigeria. *Journal of Islamic Business and Management*, 11(1), 105–125. <https://doi.org/10.26501/jibm/2021.1101-006>

- Kader, H. (2021). Human well-being, morality and the economy: An Islamic perspective. *Islamic Economic Studies*, 28(2), 102–123. <https://doi.org/10.24411/ies.2021.02802>
- Kahpi, H. S., Wulandari, S. S., Atichasari, A. S., & Marfu, A. (2024). Analysis of the relationship between innovative leadership and market orientation on the sustainability of technopreneurship: The mediating role of external regulatory compliance: An empirical evidence in Indonesia. *Environment, Development and Sustainability*, 1–42. <https://doi.org/10.1007/s10668-024-01379-2>
- Kalkavan, H., Dinçer, H., & Yüksel, S. (2021). Analysis of Islamic moral principles for sustainable economic development in developing society. *International Journal of Islamic and Middle Eastern Finance and Management*, 14(5), 982–999. <https://doi.org/10.1108/IJIMEFM-10-2020-0345>
- Kurt, Y., Sinkovics, N., Sinkovics, R. R., & Yamin, M. (2020). The role of spirituality in Islamic business networks: The case of internationalizing Turkish SMEs. *Journal of World Business*, 55(1), 101034. <https://doi.org/10.1016/j.jwb.2019.101034>
- Langørgen, E., Kermit, P., & Magnus, E. (2020). Gatekeeping in professional higher education in Norway: Ambivalence among academic staff and placement supervisors towards students with disabilities. *International Journal of Inclusive Education*, 24(6), 616–634. <https://doi.org/10.1080/13603116.2019.1590109>
- Lestari, I., & Nurhadi. (2020). The influence of family and community in internalizing Islamic values into student entrepreneurship. *Journal of Islamic Education and Entrepreneurship*, 5(2), 123–135.
- Lubis, R. (2024). The application of Islamic principles in developing entrepreneurial spirit among Politeknik Media Kreatif students. In *Proceedings of the International Seminar and Conference on Islamic Studies (ISCIS)*, 3, 85–95. <https://doi.org/10.5678/iscis.2024.3.009>
- Lusianti, D., Widodo, W., & Mulyana, M. (2024). Mas'uliyah society brand resonance: Enhancing sustainable marketing performance of the national health insurance program. *Qubahan Academic Journal*, 4(3), 619–637.
- Majid, M. S. A., Agustina, M., Hafasnuddin, H., & Yahya, Y. (2024). Technopreneurship in SMEs in Indonesia: Issues, trends, and future direction. In *Technopreneurship in Small Businesses for Sustainability*, 192–212. IGI Global. <https://doi.org/10.4018/978-1-7998-9990-2.ch011>
- Malawat, H., & Singh, G. (2024). Rethinking entrepreneurial pedagogy: Holistic approach from pragmatism, constructivism and social-constructivism. *MSW Management Journal*, 34(2), 205–225.
- Mariyono, D. (2024). Multicultural values: Meeting point of two forces in developing Islamic education. *Quality Education for All*, 1(1), 46–69.
- Marshall, M., Dobbs-Oates, J., Kunberger, T., & Greene, J. (2021). The peer mentor experience: Benefits and challenges in undergraduate programs. *Mentoring & Tutoring: Partnership in Learning*, 29(1), 89–109. <https://doi.org/10.1080/13611267.2021.1876121>
- Mayanti, Y., & Dewi, R. P. K. (2021). Tanggung jawab sosial perusahaan dalam bisnis Islam. *Journal of Applied Islamic Economics and Finance*, 1(3), 651–660.
- Meria, L., Hidayat, S., Santiago, N. D., Saukani, S., & Khotimah, S. H. (2024). Blending work values, engagement, and satisfaction to drive OCB in technopreneurial startups. *Aptisi Transactions on Technopreneurship (ATT)*, 6(3), 324–338.

- Muthmainnah, M., Al Yakin, A., Massyat, M., Lulaj, E., & Bayram, G. E. (2022). Developing students' life skills through edupreneurship in the digital era. In *The New Digital Era: Digitalisation, Emerging Risks and Opportunities* (pp. 169-190). Emerald Publishing Limited. <https://doi.org/10.1108/9781802626257-011>
- Norman-Major, K. (2023). Balancing the four Es; or can we achieve equity for social equity in public administration? In *Social Equity in the Public Administration Classroom* (pp. 27-46). Routledge.
- Nugraheni, P., Alhabshi, S. M., & Rosman, R. (2024). A framework to improve the implementation of business ethics in Islamic business organisations. *PETITA*, 9, 185-198.
- Oskam, I., Bossink, B., & de Man, A. P. (2021). Valuing value in innovation ecosystems: How cross-sector actors overcome tensions in collaborative sustainable business model development. *Business & Society*, 60(5), 1059-1091. <https://doi.org/10.1177/0007650319825741>
- Permana, A. Y., Srihartati, R. D., Akbardin, J., Setiawan, A., Jatnika, D., & Rustandi, W. (2020). Technopreneur training model in building entrepreneurship. *Journal of Architectural Research and Education*, 2(2), 190-197.
- Polindi, M. (2019). Pengaruh karakter entrepreneur terhadap minat berwirausaha (studi empiris pada santri di Pondok Pesantren Al-Ittifaq Ciwidey Bandung). *Al-Intaj: Jurnal Ekonomi dan Perbankan Syariah*, 5(1), 63-82.
- Pustovrh, A., Rangus, K., & Drnovšek, M. (2020). The role of open innovation in developing an entrepreneurial support ecosystem. *Technological Forecasting and Social Change*, 152, 119892. <https://doi.org/10.1016/j.techfore.2019.119892>
- Putra, A. A. G. A. M., Dewi, D. P. N., Lestari, N. P. Y., & Dewi, D. A. E. R. (2024). Strategi manajemen keuangan berbasis Catur Purusa Arta pada startup binaan Primakara University. *Jawa Dwipa*, 5(1), 41-55.
- Qalbia, F., & Saputra, M. R. (2024). Transformasi digital dan kewirausahaan syariah di era modernitas: Peluang dan tantangan dalam ekonomi syariah di Indonesia. *Jurnal Manajemen dan Bisnis Ekonomi*, 2(2), 389-406.
- Rasid, A. M. M., Bakri, M. H., Razak, M. I. M., Ismail, A. F. M. F., & Nizam, N. Z. (2023). Overview of acceptance Islamic payment gateway system in Malaysia: A conceptual framework. *International Journal of Professional Business Review*, 8(5), 20-32. <https://doi.org/10.26668/businessreview/2023.v8i5.1755>
- Robani, A., Ahamat, A., Hassan, S. N. S., Latief, H., & Pratiwi, A. (2022). Islamic solidarity economy: The case study of social entrepreneurship in Pesantren, Indonesia. *Middle East Journal of Management*, 9(6), 665-681.
- Rohmatulloh, R., Hasanah, A., Sahlani, L., & Zuhri, M. T. (2023). Energy-saving triangle: Internalizing Islamic ethical values on energy saving in integrative learning. *Religions*, 14(10), 1284. <https://doi.org/10.3390/rel14101284>
- Rukmana, A. Y., Harto, B., & Gunawan, H. (2021). Analisis urgensi kewirausahaan berbasis teknologi (technopreneurship) dan peranan Society 5.0 dalam perspektif ilmu pendidikan kewirausahaan. *JSMA: Jurnal Sains Manajemen dan Akuntansi*, 13(1), 8-23.
- Samsul, H., & Lalu, S. (2021). The effect of entrepreneurial mental attitudes and technopreneurship on the performance of village-owned enterprises in Lombok Island. *Russian Journal of Agricultural and Socio-Economic Sciences*, 116(8), 36-46.

- Shidqiyah, S., Nisa, R., & Munawir, M. (2024). Improving the quality of Islamic education through an integrated curriculum. *Indonesian Journal of Education (INJOE)*, 4(3), 872–885.
- Sholihin, M., Sari, R. C., Yuniarti, N., & Ilyana, S. (2020). A new way of teaching business ethics: The evaluation of virtual reality-based learning media. *The International Journal of Management Education*, 18(3), 100428. <https://doi.org/10.1016/j.ijme.2020.100428>
- Soomro, B. A., & Shah, N. (2021). Technopreneurship intention among nonbusiness students: A quantitative assessment. *World Journal of Entrepreneurship, Management and Sustainable Development*, 17(3), 502–514. <https://doi.org/10.1108/WJEMSD-03-2020-0025>
- Sukma, F. D., & Ismail, I. (2023). Evolusi relevansi etika bisnis dan corporate social responsibility (CSR). *Jurnal Lentera Bisnis*, 12(3), 935–949.
- Suregar, A. A. P., Maruapey, M. H., & Subagdja, R. O. (2024). Implementation of public service policy through online media and drive thru at the Bogor City Population and Civil Registration Office. *Journal La Bisecoman*, 5(3), 253–269.
- Tan, W. K., & Umemoto, M. (2021). International industrial internship: A case study from a Japanese engineering university perspective. *Education Sciences*, 11(4), 156. <https://doi.org/10.3390/educsci11040156>
- Taufiq, T., Siraj, S., & Nasrah, S. (2022). Development of an Acehnese value-based education implementation model at SMK Negeri 7. *International Journal of Engineering, Science and Information Technology*, 2(1), 139–143.
- Wibowo, A., & Sulartopo, S. (2022). Technopreneurship development in Indonesia: Digital business development. SSRN. <https://doi.org/10.2139/ssrn.4069987>
- World Economic Forum. (2021). Pandemic drives need for technology adoption among SMEs but barriers remain. <https://www.weforum.org/press/2021/12/pandemic-drives-need-for-technology-among-smes-but-barriers-remain/>
- Xue, Y., Tang, C., Wu, H., Liu, J., & Hao, Y. (2022). The emerging driving force of energy consumption in China: Does digital economy development matter? *Energy Policy*, 165, 112997. <https://doi.org/10.1016/j.enpol.2022.112997>
- Yousef, W., Al Murshidi, G., Asrori, A., Hadi, M. F., Huda, M., & Lovat, T. (2024). The development of Islamic education curriculum from the Quranic perspective. *Ar-Fachruddin: Journal of Islamic Education*, 1(2), 93–123.
- Zikri, A., & Syafii, A. G. (2023). Internalizing religious moderation values into the Islamic education at university. *Journal of Namibian Studies: History Politics Culture*, 34, 1122–1138.

***Gentur Priguna Suwanto (Corresponding Author)**

Universitas Islam Nusa Bangsa Cirebon, Indonesia
Jl. Widarasari III-Tuparev Cirebon, West Java, 45153, Indonesia
Email: genturpriguna15@gmail.com

Abdus Salam

Universitas Islam Nusa Bangsa Cirebon, Indonesia
Jl. Widarasari III-Tuparev Cirebon, West Java, 45153, Indonesia
Email: abdussalamdz@gmail.com



Abdul Karim

Universitas Muhammaidyah Cirebon, Indonesia
Jl. Tuparev No.70 Tuparev Cirebon, West Java, 45153, Indonesia
Email: abdul.karim@umc.ac.id

Muhammad Fachdi Ramadhan

McDermott Asia Pacific Sdn Bhd Kuala Lumpur, Malaysia
Email: mframadhan1988@gmail.com
