Digital Entrepreneurship and Business Innovation: Strategies for Indonesian SMEs in the Era of Industry 4.0

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Abstract

The rapid advancement of Industry 4.0 has significantly transformed the entrepreneurial landscape, particularly for small and medium-sized enterprises (SMEs) in Indonesia. Digital entrepreneurship has emerged as a critical driver of business innovation, enabling SMEs to enhance operational efficiency, expand market reach, and develop competitive advantages. This study explores the role of digital entrepreneurship in fostering business innovation, focusing on strategies that Indonesian SMEs adopt to navigate the digital economy. By utilizing a qualitative research approach, this paper examines case studies of SMEs that have successfully integrated digital technologies, such as e-commerce platforms, cloud computing, artificial intelligence, and blockchain, into their business models. The findings reveal that digital transformation enhances SMEs' adaptability, productivity, and customer engagement. Key success factors include digital literacy, strategic use of online marketplaces, and the adoption of automation tools to streamline operations. However, SMEs also face significant challenges, including digital infrastructure limitations, cybersecurity risks, financial constraints, and resistance to technological change. The study highlights the importance of government policies, financial incentives, and digital training programs in supporting SMEs' digital transition. This paper argues that a comprehensive and collaborative approach—where businesses, policymakers, and technology providers work together—is essential for maximizing the potential of digital entrepreneurship in Indonesia. By embracing digital transformation, SMEs can drive innovation, strengthen economic resilience, and contribute to sustainable economic growth in the digital era.
Keywords: digital entrepreneurship, business innovation, SMEs, industry 4.0, digital transformation

1. Introduction

The rapid advancement of Industry 4.0 has fundamentally reshaped the global business landscape, introducing new technological innovations that are transforming how businesses operate, compete, and create value (Dangkeng et al., 2023; Ramli, 2019). Digital entrepreneurship has emerged as a key driver of economic growth, particularly for small and medium-sized enterprises (SMEs), which play a vital role in national economies, including Indonesia. SMEs account for more than 99% of businesses in Indonesia, contributing significantly to employment, GDP, and economic stability. As digital technologies become increasingly accessible, they offer SMEs an opportunity to enhance their efficiency, expand their market reach, and develop innovative business models that improve their competitiveness in the global marketplace (Nurfaisah et al., 2023; Ramli, Marsuni, et al., 2023). However, despite these opportunities, many SMEs face significant challenges in adopting digital entrepreneurship, including technological limitations, financial constraints, and regulatory barriers. Understanding how SMEs can effectively integrate digital technologies while overcoming these challenges is essential for ensuring their long-term sustainability in the digital economy.

Digital entrepreneurship refers to the integration of advanced digital technologies—such as artificial intelligence (AI), big data analytics, cloud computing, blockchain, and the Internet of Things (IoT)—into business processes to improve productivity, optimize operations, and create new value propositions. Unlike traditional business models that rely on physical transactions and conventional marketing strategies, digital entrepreneurship enables SMEs to leverage online platforms, automation

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tools, and data-driven decision-making to enhance their efficiency and customer engagement (Gaskell, 2015; Yu et al., 2017; Yusriadi et al., 2022). With the widespread penetration of internet and mobile technology in Indonesia, digital platforms such as e-commerce, fintech, social media marketing, and business automation software have become essential tools for SMEs aiming to remain competitive in the modern business landscape. These technologies enable businesses to access broader consumer markets, streamline supply chains, and reduce operational costs, making digital entrepreneurship a crucial strategy for SME sustainability (Dani & Ramli, 2024; Orfanidou, 2024).

However, while the adoption of digital entrepreneurship presents numerous advantages, many Indonesian SMEs face structural and operational barriers that hinder their ability to fully embrace digital transformation. One major challenge is inadequate digital literacy among SME owners and employees, which limits their ability to effectively utilize digital tools. Many traditional businesses lack the necessary knowledge and technical skills to integrate Industry 4.0 technologies into their operations. Additionally, limited access to financial resources prevents SMEs from investing in necessary digital infrastructure, software solutions, and cybersecurity measures. In rural and underserved areas, insufficient digital infrastructure, such as unstable internet connections and a lack of digital payment solutions, further restricts digital adoption. Moreover, resistance to technological change among SME owners, particularly those accustomed to conventional business practices, slows down the pace of digital transformation.

Recognizing the crucial role of digital entrepreneurship in enhancing economic resilience, the Indonesian government has introduced various initiatives aimed at supporting SMEs in their digital transition (Fausiah et al., 2023; Gregory et al., 2019). Programs such as Making Indonesia 4.0, digital training workshops, financial incentives, and regulatory reforms have been designed to equip SMEs with the necessary knowledge, infrastructure, and funding to adopt digital technologies. Government-led digitalization campaigns, in collaboration with private sector players, have encouraged SMEs to utilize e-commerce platforms, integrate digital payment systems, and optimize business automation tools. However, despite these initiatives, there remain gaps in implementation, accessibility, and effectiveness, raising critical questions about the extent to which SMEs are successfully integrating digital transformation into their business models.

This paper seeks to explore the role of digital entrepreneurship in fostering business innovation among Indonesian SMEs in the era of Industry 4.0. Specifically, this study aims to examine successful case studies of SMEs that have leveraged digital technologies to enhance their competitiveness, highlighting key strategies that have enabled them to thrive in the digital economy. Furthermore, the paper investigates the challenges hindering digital adoption and the effectiveness of existing policy interventions in facilitating the transition towards digital entrepreneurship. By analyzing these dynamics, the study provides practical insights into how SMEs can develop sustainable business models in the digital era. The research also aims to contribute to the broader discourse on digital entrepreneurship and economic transformation, offering recommendations for SMEs, policymakers, and industry stakeholders to strengthen Indonesia's digital entrepreneurial ecosystem.

With digital transformation increasingly shaping the future of business, understanding the evolving relationship between technology, entrepreneurship, and innovation is critical for sustaining SME growth in Indonesia. By embracing technological advancements, business model innovation, and policy support, SMEs can unlock new economic opportunities and enhance their resilience in a rapidly changing global market. This study underscores the importance of collaborative efforts among businesses, government agencies, and technology providers to ensure that digital entrepreneurship serves as a catalyst for economic inclusion, job creation, and long-term sustainable development in Indonesia.

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2. Method

This study employs a qualitative research approach to explore how digital entrepreneurship fosters business innovation among Indonesian SMEs in the era of Industry 4.0. Given the complexity of digital transformation, a qualitative methodology is well-suited to capturing the experiences, perceptions, and strategic adaptations of SMEs as they navigate both the challenges and opportunities of digital entrepreneurship. This research adopts a multiple case study approach, allowing for an in-depth examination of SMEs across various industries, including retail, manufacturing, agriculture, and creative sectors. By focusing on multiple cases, the study aims to identify common strategies, sector-specific challenges, and emerging trends in digital adoption among Indonesian SMEs.

Research Design

The study utilizes a multiple case study design, which provides a rich, contextual understanding of how different SMEs implement digital entrepreneurship. Case study selection follows a purposive sampling strategy, ensuring that participants have direct experience with digital transformation initiatives. The cases are drawn from SMEs that have successfully adopted digital technologies as well as those struggling with the transition, allowing for a comparative analysis of varying levels of digital entrepreneurship adoption. This approach ensures that findings capture a broad spectrum of digital strategies, from early-stage digital adoption to advanced technology integration. The study also incorporates a longitudinal perspective, where possible, to assess how SMEs have adapted over time to changing technological and market conditions.

Data Collection Methods

The study employs semi-structured interviews, document analysis, and field observations as primary data collection techniques. Semi-structured interviews serve as the core method, providing direct insights from SME owners, managers, employees, policymakers, and digital transformation consultants. These interviews explore key themes such as motivations for digital adoption, perceived benefits and risks, financial and technological challenges, and the effectiveness of policy interventions. The interview format allows for flexibility, enabling participants to elaborate on their experiences while maintaining a structured focus on the research questions.

Document analysis is conducted to complement interview findings by examining relevant secondary sources such as government reports, policy documents, industry white papers, and SME digitalization initiatives. Reports from Indonesia's Ministry of Cooperatives and SMEs, KADIN, and international organizations such as the World Bank and Asian Development Bank provide essential background information on the regulatory and financial landscape for SMEs in the digital economy. These sources help contextualize interview data and provide a macro-level perspective on Indonesia's digital entrepreneurship ecosystem. Field observations provide additional validation by assessing how SMEs implement digital technologies in their daily operations. Observations focus on the use of e-commerce platforms, digital marketing strategies, automation tools, and business intelligence software. This method enables the study to capture practical, real-world applications of digital entrepreneurship and identify potential discrepancies between stated digital strategies and actual business practices.

Data Analysis

The study applies thematic analysis to identify and interpret key patterns across the collected data. Thematic analysis is particularly useful for qualitative research as it enables the categorization of insights into distinct but interconnected themes. The process begins with data familiarization, where interview transcripts, policy documents, and field notes are reviewed to identify emerging concepts. Coding is then applied to group responses based on commonalities, highlighting recurring themes such as strategic digitalization, financial constraints, technology adoption barriers, and policy impacts.

The research framework is structured around three key dimensions: entrepreneurial strategies, digital adaptation, and institutional support. The entrepreneurial strategies dimension examines how SMEs approach digital transformation, whether through proactive investments in technology or gradual adoption driven by market demand. The digital adaptation dimension focuses on the specific digital tools and platforms SMEs use, assessing their impact on business efficiency, customer engagement, and market competitiveness. The institutional support dimension evaluates the effectiveness of government

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initiatives, financial assistance programs, and private sector collaborations in facilitating SME digitalization. To enhance the credibility of findings, triangulation is applied by cross-referencing interview responses with document analysis and field observations. This approach ensures a comprehensive and multi-perspective understanding of digital entrepreneurship challenges and opportunities in Indonesia.

Ethical Considerations

The study adheres to ethical research guidelines, ensuring that all participants provide informed consent before participating in interviews or observations. Confidentiality and anonymity are strictly maintained to protect sensitive business information. Data are used solely for academic purposes, and all findings are reported in an aggregated form to prevent the identification of individual businesses or participants. Ethical approval is sought from relevant institutional review boards where applicable, ensuring compliance with ethical standards in qualitative research. By adopting a qualitative methodology that integrates multiple case studies, thematic analysis, and a structured multidimensional framework, this study aims to provide a comprehensive understanding of how digital entrepreneurship influences SME business models in Indonesia. The insights generated will inform policy recommendations, business strategies, and digital capacity-building initiatives to support the sustainable growth of SMEs in the digital economy.

3. Results

The findings of this study highlight the significant role of digital entrepreneurship in fostering business innovation among Indonesian SMEs in the era of Industry 4.0. The analysis of case studies and stakeholder interviews reveals how SMEs navigate the complexities of digital transformation by adopting various strategies, overcoming challenges, and leveraging institutional support. The results are categorized into three key dimensions: entrepreneurial strategies, digital adaptation, and institutional support.

Entrepreneurial Strategies: Navigating Digital Transformation for Business Growth

The study finds that SMEs adopt different strategic approaches when integrating digital technologies into their business models. Some businesses take a proactive approach, actively investing in digital solutions such as cloud computing, AI-powered customer management systems, and automated inventory tracking to optimize operations (Mariana & Ramli, 2022; Tamsah et al., 2022). These SMEs tend to be led by digitally literate entrepreneurs who recognize the long-term benefits of technology in enhancing competitiveness. For example, businesses in the e-commerce and creative industries have successfully leveraged data analytics to predict consumer trends and personalize customer interactions. Their ability to innovate rapidly and experiment with emerging technologies has allowed them to expand market reach and increase profitability.

Conversely, other SMEs follow a reactive approach, integrating digital tools only when necessary, often due to external pressures such as market competition or regulatory requirements. These businesses typically adopt minimal digital solutions, such as social media marketing and basic e-commerce platforms, without fully digitizing internal processes. The study identifies that traditional SMEs in sectors such as manufacturing and agriculture exhibit this pattern, as they often perceive digital adoption as costly and technically challenging. While these businesses acknowledge the potential benefits of digitalization, their reluctance to invest in advanced technologies limits their growth potential and ability to compete in the evolving digital economy.

The research also finds that entrepreneurial mindset plays a crucial role in determining the success of digital transformation. SMEs that embrace innovation, continuous learning, and strategic risk-taking are more likely to develop sustainable digital business models. Entrepreneurs who actively seek partnerships with technology providers, attend digital literacy workshops, and participate in startup incubator programs exhibit higher levels of resilience and adaptability in the digital landscape.

Digital Adaptation: Implementation of Industry 4.0 Technologies in SMEs

SMEs across different sectors demonstrate varying levels of digital adaptation, influenced by industry-specific demands, financial capacity, and workforce readiness (Rafi et al., 2019; Wijaya et al., 2023).

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The study reveals that digital adaptation typically occurs in three stages: basic, intermediate, and advanced digitalization.

SMEs in the basic digitalization stage primarily use digital tools for marketing and communication purposes. Businesses in this category rely on social media platforms, such as Instagram and WhatsApp Business, to engage with customers and promote their products. While these tools enhance customer outreach, they do not significantly improve operational efficiency or scalability. Many micro-enterprises in rural areas fall into this category due to limited internet access and digital literacy.

In the intermediate digitalization stage, SMEs integrate e-commerce platforms, digital payment systems, and basic business automation software. The study finds that SMEs in retail and food industries have successfully adopted online marketplaces such as Shopee, Tokopedia, and Bukalapak to expand their consumer base. Additionally, the implementation of fintech solutions for cashless transactions has improved financial management and reduced dependency on traditional banking services. Businesses in this category begin to explore cloud-based enterprise resource planning (ERP) systems and digital supply chain management tools to streamline operations.

SMEs in the advanced digitalization stage leverage AI, big data analytics, and IoT to optimize business processes and gain a competitive edge. The study finds that businesses in the manufacturing and logistics sectors have implemented smart sensors and predictive maintenance systems to enhance production efficiency. Advanced agricultural SMEs utilize IoT-based precision farming tools to monitor soil conditions and optimize crop yields. Additionally, AI-driven customer relationship management (CRM) systems help businesses personalize marketing strategies and improve customer retention. While only a small percentage of SMEs operate at this stage, these businesses demonstrate higher growth potential and scalability in the digital economy.

Despite the benefits of digital transformation, several challenges hinder digital adaptation among SMEs. The study identifies limited digital skills, cybersecurity concerns, and financial constraints as key obstacles. Many SME owners and employees lack the necessary technical expertise to fully utilize digital tools, leading to underutilization of available technologies. Cybersecurity risks, including data breaches and digital fraud, also pose significant concerns for SMEs that lack proper security protocols. Additionally, financial barriers prevent many SMEs from investing in advanced digital solutions, particularly in industries with thin profit margins.

Institutional Support: The Role of Government Policies and Private Sector Initiatives

The findings indicate that institutional support plays a crucial role in shaping the success of SME digitalization efforts. Government programs and private sector initiatives have provided various forms of assistance, including training programs, financial incentives, and regulatory reforms (Sudirman, Epin, et al., 2023; Yusni & Sudirman, 2023).

The Indonesian government has introduced several initiatives to support SME digital transformation, such as Making Indonesia 4.0, which promotes the adoption of Industry 4.0 technologies in key economic sectors. Programs such as Go Digital 2023 and SME digitalization grants have helped small businesses access online marketplaces and adopt digital payment solutions. Additionally, collaborations with e-commerce platforms, such as the SME Go Online initiative, have facilitated digital literacy training for entrepreneurs. However, the study finds that while these programs provide initial support, many SMEs struggle with long-term digital adoption due to limited follow-up assistance and complex administrative processes for accessing financial aid.

Private sector initiatives, particularly from technology firms and financial institutions, have played a pivotal role in accelerating SME digitalization. Fintech companies have expanded financial inclusion by offering alternative lending solutions tailored to SMEs with limited credit history. Digital payment providers, such as GoPay and OVO, have made it easier for small businesses to transition to cashless transactions. Additionally, corporate-sponsored incubator programs and digital business acceleration workshops have helped SMEs develop competitive digital strategies. Despite these efforts, challenges remain in ensuring equal access to digital support programs, particularly for SMEs in rural and underserved regions.

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The study also highlights regulatory challenges that hinder digital entrepreneurship growth. Many SMEs face bureaucratic obstacles in formalizing their businesses and complying with digital taxation policies. Unclear guidelines on data protection and cybersecurity regulations create uncertainty for SME owners, discouraging them from expanding their digital operations. Strengthening regulatory frameworks to balance innovation with security will be essential in fostering a sustainable and inclusive digital entrepreneurship ecosystem.

4. Discussion

The findings of this study highlight the transformative role of digital entrepreneurship in enhancing business innovation among Indonesian SMEs. As the economy shifts toward Industry 4.0, digital entrepreneurship is no longer an option but a necessity for SMEs to remain competitive in both local and global markets. This discussion examines the study's results within the broader theoretical and practical context of entrepreneurial strategies, digital adaptation, and institutional support, emphasizing how these dimensions interact to shape the future of digital SMEs in Indonesia.

Entrepreneurial Strategies: The Role of Proactive and Reactive Digital Adoption

The study reveals that SMEs in Indonesia adopt two primary approaches to digital transformation: proactive adoption, where businesses actively invest in digital tools to drive innovation, and reactive adoption, where digitalization occurs due to external pressures such as competition or regulatory requirements. These findings align (Ramli, Mattalatta, et al., 2024; Sudirman, Pertiwi, et al., 2023) theory of innovation, which suggests that entrepreneurs play a key role in creative destruction—introducing new business models that disrupt traditional markets. SMEs that take a proactive stance towards digital transformation often outperform their competitors, as they continuously explore emerging technologies such as artificial intelligence, blockchain, and IoT-based automation to enhance efficiency and customer engagement.

However, SMEs that adopt digital tools reactively tend to struggle with scalability, as they focus only on short-term solutions without a long-term digital strategy. This confirms findings from Rogers' Diffusion of Innovation (Awaluddin A et al., 2019; I Djais & Nurfaisah, 2020; Mustafa et al., 2020; Ramli, Dangkeng, et al., 2023; Sudirman et al., 2021), which suggests that early adopters of technology are more likely to experience sustainable competitive advantages than late adopters who integrate digital tools only when necessary. To foster a culture of proactive digital entrepreneurship, it is essential to promote digital literacy and risk-taking among SME owners, ensuring that they see digitalization as an investment rather than a temporary solution to market pressures.

Digital Adaptation: The Unequal Pace of Technological Integration Across Sectors

The study identifies three stages of digital adaptation among SMEs—basic, intermediate, and advanced digitalization—with significant variation across industries. SMEs in retail and creative industries have progressed further in digital adoption due to their reliance on e-commerce platforms, digital payment systems, and social media marketing (Pertiwi et al., 2022; Rifqiansyah et al., 2024; Yunus et al., 2020). In contrast, traditional sectors such as agriculture and manufacturing lag behind, primarily due to the high cost of digital technology and limited technical expertise among SME owners and employees. These findings resonate with Technology Acceptance Models (TAM), which suggest that perceived usefulness and ease of use are key determinants of digital adoption. SMEs in sectors where digital tools provide immediate and tangible benefits are more likely to integrate new technologies than those where digitalization requires significant restructuring of traditional business practices.

A major challenge identified in this study is that many SMEs lack a clear roadmap for digital transformation. Even businesses in the intermediate stage of digital adaptation, which have embraced e-commerce and automation, often struggle with data analytics, AI-driven decision-making, and cybersecurity concerns (Nurfaisah et al., 2021; Rifqiansyah, 2022; Sudirman et al., 2024). This suggests that while Indonesian SMEs are making progress in digital entrepreneurship, their digital transformation is incomplete and fragmented. Without a comprehensive digital strategy, businesses risk stagnating at an intermediate level of technological integration, unable to fully capitalize on the benefits of digitalization.

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Institutional Support: The Gap Between Policy Intentions and Practical Implementation

The study underscores the crucial role of institutional support in shaping digital entrepreneurship outcomes. Government-led initiatives such as Making Indonesia 4.0 and Go Digital 2023 have made efforts to equip SMEs with the necessary resources to transition into the digital economy. However, the study finds gaps between policy intentions and practical implementation, particularly in terms of fund accessibility, training effectiveness, and regulatory clarity. This aligns with findings from institutional theory, which suggests that policy effectiveness is contingent on how well formal regulations align with informal business practices and local realities (Ilyas et al., 2021; Ramli & Sarda, 2021; Rifqiansyah et al., 2023).

A common challenge cited by SMEs is bureaucratic complexity when applying for government grants, tax incentives, and digitalization programs. Many SME owners perceive these processes as time-consuming and administratively burdensome, discouraging them from seeking institutional support. This reflects broader research on policy inertia in emerging economies, where well-designed digitalization programs fail due to inefficient administrative mechanisms and lack of localized support networks. To bridge this gap, policymakers must simplify regulatory frameworks and ensure that digitalization support programs are accessible, transparent, and adaptable to the needs of SMEs across diverse sectors.

The private sector plays an increasingly important role in accelerating SME digital transformation through fintech solutions, corporate-sponsored incubators, and digital training partnerships (Gunasekaran et al., 2009; Ramli, Dangkeng, et al., 2024). Large technology firms such as Google, Facebook, and Shopee have launched digital literacy initiatives specifically targeted at Indonesian SMEs, enabling businesses to improve online marketing, financial management, and cybersecurity awareness. However, the study finds that not all SMEs have equal access to these programs, particularly those in rural and underserved regions. This digital divide exacerbates existing inequalities, reinforcing the need for public-private collaborations to ensure that digital training and financial support are equitably distributed.

Challenges and Barriers to Digital Entrepreneurship

Despite the potential of digital entrepreneurship, this study identifies several persistent barriers that hinder SME digitalization. The most significant challenges include financial constraints, limited digital literacy, cybersecurity risks, and resistance to change. Many SME owners remain hesitant to invest in digital technologies due to concerns over cost, return on investment, and technical complexity. This confirms research on SME risk aversion (Umar et al., 2019; Zacharias et al., 2021), which suggests that small businesses are more likely to avoid high-risk digital investments due to uncertainty about long-term benefits. Cybersecurity concerns have emerged as a growing issue, particularly for SMEs operating in e-commerce and digital payment sectors. Businesses report increasing incidents of data breaches, fraud, and hacking, yet many lack the technical knowledge to implement robust security measures. This suggests that digital transformation must be accompanied by stronger digital security policies and training initiatives to enhance cybersecurity awareness among SME owners.

Implications for Policy and Practice

The findings of this study offer several key recommendations for policymakers, business owners, and industry stakeholders to support SME digital transformation. First, enhancing digital literacy programs is essential to empowering SME owners with the skills to effectively integrate and maximize digital tools. Government agencies, educational institutions, and private sector actors should collaborate to develop localized, sector-specific training modules that address the unique digitalization needs of different industries. Second, financial incentives and funding mechanisms must be expanded to ensure that SMEs—particularly those in rural and underrepresented regions—have access to capital for digital investments. Microfinance programs, low-interest digital transformation loans, and SME-focused venture capital initiatives could help bridge the financial gap. Third, regulatory frameworks should be simplified to encourage SME participation in government-led digitalization programs. Bureaucratic inefficiencies must be addressed to ensure that funding, tax incentives, and training initiatives are easily accessible to all businesses, regardless of their size or location.

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5. Conclusion

This This study has explored the role of digital entrepreneurship in fostering business innovation among Indonesian SMEs in the era of Industry 4.0. The findings demonstrate that while digital transformation presents significant opportunities for SMEs to enhance competitiveness, the success of digital entrepreneurship is largely influenced by three key dimensions: entrepreneurial strategies, digital adaptation, and institutional support. The interplay of these factors determines how SMEs integrate digital tools into their operations, scale their businesses, and sustain long-term growth in the digital economy. The study reveals that entrepreneurial mindset and strategic decision-making play a crucial role in determining digital transformation outcomes. SMEs that adopt a proactive approach to digital entrepreneurship by investing in emerging technologies, automation, and data-driven decision-making tend to outperform those that take a reactive approach, integrating digital tools only when necessary. However, many SMEs continue to face barriers related to financial constraints, digital literacy, and technological uncertainty, limiting their ability to leverage digital entrepreneurship for long-term sustainability.

The research also highlights sectoral disparities in digital adaptation, with industries such as retail, e-commerce, and creative sectors demonstrating higher levels of digital integration compared to agriculture, manufacturing, and traditional industries. SMEs in the basic and intermediate stages of digital adaptation often struggle with fragmented digital strategies, cybersecurity risks, and workforce skill gaps, preventing them from fully capitalizing on Industry 4.0 technologies such as AI, IoT, and big data analytics. Without a clear digital transformation roadmap, many businesses risk stagnating in partial digitalization, unable to achieve scalability, operational efficiency, and global market expansion. The study underscores the importance of institutional support, particularly in facilitating SME access to financial resources, digital training, and regulatory frameworks. While government-led initiatives such as Making Indonesia 4.0 and Go Digital 2023 have provided initial support for SME digitalization, gaps in implementation, accessibility, and policy coherence remain major challenges. Many SMEs encounter bureaucratic hurdles, funding limitations, and unclear regulatory policies, preventing them from fully utilizing available digital support programs. Private sector collaborations with fintech companies, e-commerce platforms, and corporate incubators have played an instrumental role in advancing digital entrepreneurship, but not all SMEs have equal access to these initiatives, particularly those in rural and underserved regions.

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