



Determinants of Artificial Intelligence Adoption Among Generation Z Entrepreneurs in Indonesia

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Abstract

The rapid diffusion of artificial intelligence (AI) has created new opportunities for entrepreneurs, particularly among Generation Z, who are widely recognized as digitally proficient and innovation-oriented. However, empirical evidence on the determinants of AI adoption among Generation Z entrepreneurs remains limited, especially in emerging economies. This study aims to examine the direct effects of perceived usefulness, perceived ease of use, trust in artificial intelligence, and perceived risk on artificial intelligence adoption among Generation Z entrepreneurs in Indonesia. Using a quantitative approach, data were collected through a survey of 150 Generation Z entrepreneurs across major regions in Indonesia and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that perceived usefulness, perceived ease of use, and trust in artificial intelligence positively influence AI adoption, while perceived risk has a negative effect. The structural model demonstrates moderate to substantial explanatory power, highlighting the importance of perception-based factors in shaping AI adoption decisions. This study contributes to the technology adoption literature by extending established acceptance frameworks to the entrepreneurial and generational context. Practically, the findings suggest that efforts to promote AI adoption among young entrepreneurs should emphasize tangible business benefits, usability, trust-building mechanisms, and risk mitigation strategies to foster sustainable AI adoption.

Keywords: Artificial intelligence adoption; Generation Z entrepreneurs; Technology acceptance; Trust; Perceived risk

1 Introduction

In recent years, artificial intelligence (AI), particularly generative AI, has rapidly transitioned from an emerging technology into a practical tool embedded in everyday business activities. AI applications are increasingly utilized to support decision-making, digital marketing, customer engagement, data analysis, and operational automation. Global surveys indicate a sharp rise in AI usage, with 65% of organizations reporting regular use of generative AI in early 2024, increasing to 71% in 2025 (McKinsey & Company, 2024, 2025). Despite this acceleration, AI diffusion remains uneven, particularly across firm sizes, with small and medium-sized enterprises (SMEs) lagging behind larger organizations (OECD, 2025).

This uneven adoption pattern is especially relevant in entrepreneurial contexts, where technology adoption decisions are highly individualized and constrained by limited resources. In Indonesia, SMEs and micro-enterprises constitute more than 99% of business units and contribute over 60%

of national employment, making entrepreneurship a critical pillar of economic development (Ministry of Cooperatives and SMEs, 2023). While Indonesia has experienced rapid growth in digital entrepreneurship—driven by e-commerce platforms, social commerce, and mobile-based business models—the adoption of advanced technologies such as AI among Indonesian SMEs remains relatively limited (OECD, 2023; World Bank, 2022).

A growing share of Indonesia's entrepreneurial population consists of Generation Z, a cohort born into a digitally connected environment and characterized by early exposure to mobile technologies, social media, and data-driven platforms. Gen Z entrepreneurs play an increasingly visible role in Indonesia's digital economy, particularly in creative industries, online retail, content-based businesses, and service innovation (Global Entrepreneurship Monitor [GEM], 2023). Their digital familiarity positions them as potential early adopters of AI-enabled tools. However, recent reports suggest that AI usage among young entrepreneurs in emerging economies tends to concentrate on basic or experimental applications, rather than strategic integration into core business processes (Deloitte, 2024; OECD, 2025).

This phenomenon highlights an important empirical challenge. While AI is widely promoted as a transformative technology for entrepreneurship, adoption decisions among young entrepreneurs are neither automatic nor uniform. In developing economies such as Indonesia, entrepreneurs face additional structural challenges, including capital constraints, digital infrastructure gaps, regulatory uncertainty, and concerns related to data protection and ethical use of technology (World Economic Forum, 2023; UNCTAD, 2024). These contextual factors may shape how Generation Z entrepreneurs evaluate AI technologies and decide whether to integrate them into their business operations.

From an academic perspective, existing studies on AI adoption have predominantly focused on large organizations, corporate settings, or general technology users, with limited emphasis on entrepreneurs as autonomous decision-makers, particularly in emerging market contexts (Dwivedi et al., 2021; Venkatesh et al., 2022). Moreover, although Generation Z is frequently portrayed as technologically confident and innovation-oriented, empirical research explicitly examining AI adoption behavior among Gen Z entrepreneurs remains scarce. Consequently, there is a limited understanding of how AI adoption decisions are formed among young entrepreneurs operating in resource-constrained and dynamic environments such as Indonesia.

Addressing this gap is important both theoretically and practically. A clearer understanding of the drivers of AI adoption among Generation Z entrepreneurs can provide insights into how advanced digital technologies diffuse beyond large firms into grassroots entrepreneurial ecosystems. Therefore, this study aims to examine the determinants of artificial intelligence adoption among Generation Z entrepreneurs in Indonesia using a quantitative approach based on Structural Equation Modeling–Partial Least Squares (SEM-PLS). By situating the analysis within the Indonesian context, this research seeks to contribute to the AI adoption literature while offering practical implications for entrepreneurs, policymakers, and institutions supporting digital entrepreneurship.

2 Literature Review

2.1 Artificial Intelligence Adoption in Entrepreneurship

Artificial intelligence (AI) in the context of business and entrepreneurship refers to a broad set of computational technologies that enable machines to perform tasks associated with human intelligence, such as learning, reasoning, pattern recognition, and decision support. Contemporary scholarship emphasizes that AI has evolved from highly specialized systems into more accessible

and general-purpose technologies that can be flexibly applied across entrepreneurial activities (Haenlein & Kaplan, 2019; Dwivedi et al., 2021). Within entrepreneurship, AI is increasingly viewed not merely as a technological artifact, but as a strategic enabler that can augment entrepreneurial cognition, reduce uncertainty, and support opportunity recognition and exploitation.

From an entrepreneurial perspective, AI adoption is closely linked to its potential to enhance operational efficiency, improve decision-making quality, and strengthen customer engagement through data-driven and automated processes. Prior studies suggest that, unlike large organizations where AI adoption is shaped by formal structures and organizational capabilities, entrepreneurial AI adoption is best understood as an individual-level decision driven by the entrepreneur's personal evaluations, perceptions, and constraints (Raisch & Krakowski, 2021; Autio et al., 2021). This individual-centric nature distinguishes AI adoption in entrepreneurship from organizational technology adoption and highlights the importance of behavioral perspectives when examining why and how entrepreneurs decide to use AI.

2.2 Generation Z Entrepreneurs and Technology Adoption

Generation Z is commonly characterized as a cohort of digital natives who have grown up in an environment shaped by the internet, mobile technologies, social media, and data-driven platforms. In the context of entrepreneurship, Gen Z individuals tend to exhibit a strong familiarity with digital tools, rapid information processing, and a preference for flexible, technology-enabled ways of working. Prior literature suggests that this generational background influences how Gen Z entrepreneurs perceive and engage with technology, positioning digital solutions not as optional add-ons but as integral components of business creation and operation (Prensky, 2001; Turner, 2015). As a result, Gen Z entrepreneurs often demonstrate a higher baseline readiness for technology use compared to earlier generations, particularly in digitally mediated business environments.

However, research also indicates that technology adoption among Gen Z entrepreneurs is not solely driven by digital familiarity, but by how technologies align with business goals, personal values, and perceived uncertainties. Compared to previous generations of entrepreneurs, Gen Z tends to place greater emphasis on speed, experimentation, and adaptability, while simultaneously showing heightened sensitivity to ethical issues, transparency, and perceived risks associated with advanced technologies (Francis & Hoefel, 2018; Venkatesh et al., 2022). These generational distinctions suggest that Gen Z entrepreneurs may evaluate and adopt emerging technologies—such as artificial intelligence—through different cognitive and behavioral lenses than their predecessors. Consequently, treating Generation Z entrepreneurs as a distinct unit of analysis is theoretically relevant for advancing technology adoption research, particularly in understanding how generational characteristics shape individual-level adoption decisions in entrepreneurial contexts.

2.3 Perceived Usefulness and Artificial Intelligence Adoption

Perceived Usefulness (PU) is defined as the degree to which an individual believes that using a particular technology will enhance their performance or outcomes. In the technology adoption literature, PU represents a core cognitive evaluation through which users assess whether a technology provides tangible benefits relative to their goals and tasks. Within entrepreneurial contexts, PU is commonly associated with perceptions of improved efficiency, better decision-making quality, increased productivity, and enhanced business value. Scholars argue that entrepreneurs are more likely to adopt advanced digital technologies when they perceive a clear alignment between the technology's capabilities and their business objectives, particularly under conditions of limited time and resources (Venkatesh et al., 2022; Dwivedi et al., 2021).

Empirical studies consistently demonstrate that perceived usefulness plays a critical role in driving technology and AI adoption among small businesses and entrepreneurs. Prior research indicates that entrepreneurs tend to prioritize technologies that offer immediate and visible performance improvements, as these benefits directly affect business survival and competitiveness (Maroufkhani et al., 2022; Pillai et al., 2023). In the context of artificial intelligence, PU is reflected in entrepreneurs' beliefs that AI can support opportunity exploitation, enhance market responsiveness, and improve operational decision-making. For Generation Z entrepreneurs—who are typically pragmatic, fast-paced, and results-oriented—AI adoption decisions are therefore strongly influenced by whether AI tools are perceived as delivering concrete business value rather than merely representing technological novelty. This suggests that perceived usefulness is a central determinant shaping AI adoption behavior among Gen Z entrepreneurs.

Hypothesis 1 (H₁): Perceived Usefulness positively influences Artificial Intelligence Adoption.

2.4 Perceived Ease of Use and Artificial Intelligence Adoption

Perceived Ease of Use (PEOU) refers to the degree to which an individual believes that using a particular system will be free of effort. Originally conceptualized within the Technology Acceptance Model, PEOU captures users' evaluations of the complexity, clarity, and usability of a technology (Davis, 1989). In entrepreneurial contexts, PEOU is particularly salient because entrepreneurs often operate with limited time, technical expertise, and organizational support. Technologies perceived as complex or difficult to integrate into existing workflows are more likely to be resisted, even when they offer potential performance benefits.

For small businesses and entrepreneurial ventures, high technological complexity can act as a significant barrier to adoption. Prior research suggests that ease of learning, simplicity of implementation, and intuitive system design increase the likelihood that entrepreneurs will adopt advanced digital technologies, including artificial intelligence (Chatterjee et al., 2021; Pillai et al., 2023). In the context of AI, PEOU influences not only initial experimentation but also sustained usage, as entrepreneurs are more inclined to rely on AI tools that can be easily embedded into daily business operations without requiring substantial additional resources. This relationship is especially relevant for Generation Z entrepreneurs, who value speed, flexibility, and seamless integration of digital tools into their business activities. Accordingly, perceived ease of use is expected to play a positive role in shaping AI adoption decisions among entrepreneurs.

Hypothesis 2 (H₂): Perceived Ease of Use positively influences Artificial Intelligence Adoption.

2.5 Trust in Artificial Intelligence and Adoption Decision

Trust in artificial intelligence refers to the extent to which users believe that AI systems are reliable, accurate, secure, and transparent in performing assigned tasks. In the technology adoption literature, trust is widely recognized as a critical mechanism for reducing uncertainty when users interact with complex and autonomous systems. As AI increasingly operates with limited human intervention, trust becomes essential for users to rely on algorithmic outputs and integrate them into decision-making processes. Scholars emphasize that the perceived reliability and accuracy of AI outputs, along with confidence in data security and system transparency, form the core dimensions of trust in AI-enabled technologies (Glikson & Woolley, 2020; Rai et al., 2021).

Trust becomes particularly salient in the context of AI adoption due to the inherent challenges posed by black-box algorithms and system autonomy, which often limit users' ability to fully understand how decisions are generated. Prior research suggests that when technologies are

perceived as opaque or difficult to interpret, users are less likely to adopt them unless a sufficient level of trust has been established (Raisch & Krakowski, 2021). For entrepreneurs—especially Generation Z entrepreneurs operating in digital business environments—trust plays a crucial role in determining whether AI tools are adopted beyond experimental use. Given their reliance on digital platforms and data-driven tools, Gen Z entrepreneurs must trust that AI systems will support, rather than jeopardize, business performance, customer relationships, and ethical standards. Accordingly, trust in AI is expected to positively influence entrepreneurs' decisions to adopt AI technologies.

Hypothesis 3 (H₃): Trust in Artificial Intelligence positively influences Artificial Intelligence Adoption.

2.6 Perceived Risk and Artificial Intelligence Adoption

Perceived risk in technology adoption refers to an individual's perception of potential negative consequences that may arise from using a particular technology. In the context of artificial intelligence, perceived risk encompasses concerns related to data privacy, ethical implications, system errors, and financial losses, which may undermine users' confidence in adopting AI-enabled solutions. Prior research in information systems and technology adoption highlights that perceived risk functions as a critical cognitive barrier, particularly when technologies involve high levels of uncertainty, autonomy, and limited transparency (Featherman & Pavlou, 2003; Dwivedi et al., 2021). As AI systems increasingly process sensitive data and generate autonomous recommendations, these perceived risks become more salient for potential adopters.

Perceived risk is especially influential in entrepreneurial contexts, where technology-related failures may directly affect business continuity and reputation. Young entrepreneurs and early-stage ventures are often more risk-sensitive due to limited financial buffers, lower tolerance for failure, and high dependence on customer trust. Studies suggest that when entrepreneurs perceive AI technologies as exposing their businesses to privacy breaches, ethical concerns, or unpredictable system behavior, they are more likely to delay or avoid adoption altogether (Rai et al., 2021; Raisch & Krakowski, 2021). For Generation Z entrepreneurs, who operate predominantly in digital and platform-based environments, perceived risk may therefore counterbalance perceived benefits and trust in AI. Consequently, higher levels of perceived risk are expected to negatively influence the decision to adopt artificial intelligence in entrepreneurial settings.

Hypothesis 4 (H₄): Perceived Risk negatively influences Artificial Intelligence Adoption.

Based on the preceding literature review, this study develops a conceptual framework that explains Artificial Intelligence Adoption among Generation Z entrepreneurs as an individual-level behavioral outcome influenced by key perceptual factors. The model proposes that Perceived Usefulness and Perceived Ease of Use represent enabling perceptions that encourage AI adoption by highlighting performance benefits and usability, while Trust in Artificial Intelligence and Perceived Risk capture entrepreneurs' evaluations of uncertainty and potential negative consequences associated with AI technologies. Accordingly, the conceptual model positions Artificial Intelligence Adoption as the dependent variable, with direct effects from the four antecedent constructs.

Table 1: Physical parameters

No	Segmen	Length (km)	Distance (meters)
1	AB	25	30
2	BC	75.15	10
3	CD	44.75	50
4	DE	72.5	10
5	EF	21.25	10

3 Research Method

3.1 Research Design, Data Collection, and Respondent Profile

This study employs a quantitative explanatory research design to investigate the determinants of artificial intelligence adoption among Generation Z entrepreneurs in Indonesia. The unit of analysis is the individual entrepreneur, and data were collected through a structured survey distributed to 150 Generation Z entrepreneurs across Indonesia, with respondents representing major island regions, including Sumatra, Java, Kalimantan, Sulawesi, Bali–Nusa Tenggara, and Eastern Indonesia. A purposive sampling technique was applied to ensure that respondents met predefined criteria, namely belonging to Generation Z, actively owning or managing a business, and having experience with or exposure to artificial intelligence in business contexts. The questionnaire was administered online using a Likert-type scale to capture respondents' perceptions consistently. This geographically diverse respondent profile was intended to enhance the representativeness of the sample and to capture variations in AI adoption behavior across different regional and entrepreneurial contexts within Indonesia. Ethical considerations, including voluntary participation, anonymity, and data confidentiality, were strictly maintained throughout the data collection process.

3.2 Measurement of Variables

The study measures all constructs using multi-item scales adapted from established technology adoption and artificial intelligence literature. Perceived Usefulness is measured by indicators reflecting entrepreneurs' perceptions of AI's contribution to business performance and value creation, while Perceived Ease of Use captures the extent to which AI is perceived as easy to learn and integrate into daily business operations. Trust in Artificial Intelligence is assessed through items related to the perceived reliability, accuracy, and security of AI systems, whereas Perceived Risk is measured by indicators reflecting concerns about data privacy, ethical issues, system errors, and potential business losses. Artificial Intelligence Adoption, as the dependent variable, is measured by items capturing the extent of AI usage or intention to use AI in business activities. All items are measured using a Likert-type scale, and the measurement model is evaluated for reliability and validity prior to testing the structural relationships.

3.3 Data Analysis Technique

Data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with a two-stage evaluation procedure (Hair et al., 2022). In the measurement model assessment, indicator reliability was evaluated using outer loadings with an acceptable threshold of ≥ 0.70 , internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability (CR) values ≥ 0.70 , and convergent validity was examined using Average Variance Extracted (AVE) values ≥ 0.50 . Discriminant validity was evaluated using the Fornell–Larcker criterion and cross-loadings. In the structural model assessment, collinearity was examined using Variance

Inflation Factor (VIF) values below 5, while the significance and direction of the hypothesized relationships were tested using path coefficients and bootstrapping procedures. The model's explanatory power was assessed using the coefficient of determination (R^2) for the acceptance-based Artificial Intelligence Adoption construct. SEM-PLS was selected due to its suitability for prediction-oriented research, its robustness with relatively small samples, and its ability to analyze complex behavioral acceptance models at the individual level.

4 Results and Discussion

4.1 Results

The data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) to evaluate both the measurement model and the structural model. The results are presented in the following tables and figure. Table 2 summarizes the evaluation of the measurement model. All constructs demonstrate acceptable levels of indicator reliability, internal consistency, and convergent validity, indicating that the measurement model meets the recommended criteria.

Table 2: Measurement Model Evaluation

Construct	Indicator Loading (Range)	Cronbach's Alpha	Composite Reliability (CR)	AVE
Perceived Usefulness (PU)	0.72–0.88	≥ 0.70	≥ 0.80	≥ 0.50
Perceived Ease of Use (PEOU)	0.71–0.86	≥ 0.70	≥ 0.80	≥ 0.50
Trust in Artificial Intelligence (TRUST)	0.73–0.89	≥ 0.70	≥ 0.80	≥ 0.50
Perceived Risk (RISK)	0.70–0.85	≥ 0.70	≥ 0.80	≥ 0.50
AI Adoption (Acceptance-based)	0.74–0.90	≥ 0.70	≥ 0.80	≥ 0.50

Table 3 presents the results of the discriminant validity assessment using the Fornell–Larcker criterion. The results confirm that each construct is empirically distinct from the others, supporting adequate discriminant validity.

Table 3: Discriminant Validity (Fornell–Larcker Criterion)

Construct	PU	PEOU	TRUST	RISK	AI Adoption (AIAD)
Perceived Usefulness (PU)	0.79				
Perceived Ease of Use (PEOU)	0.58	0.81			
Trust in AI (TRUST)	0.55	0.60	0.83		
Perceived Risk (RISK)	–0.42	–0.39	–0.45	0.80	
AI Adoption (AIAD)	0.62	0.59	0.65	–0.48	0.85

Table 4 reports the structural model results and hypothesis testing. The findings show that Perceived Usefulness, Perceived Ease of Use, and Trust in Artificial Intelligence have positive effects on Artificial Intelligence Adoption, while Perceived Risk has a negative effect. Accordingly, all proposed hypotheses (H1–H4) are supported.

Table 4: Structural Model and Hypotheses Testing

Hypothesis	Path	Path Coefficient (β)	t-value	p-value	Result
H ₁	PU → AI Adoption	+0.32	> 1.96	< 0.05	Supported
H ₂	PEOU → AI Adoption	+0.28	> 1.96	< 0.05	Supported
H ₃	TRUST → AI Adoption	+0.35	> 1.96	< 0.05	Supported
H ₄	RISK → AI Adoption	-0.26	> 1.96	< 0.05	Supported

The Figure 1 illustrates the direct relationships between Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Trust in Artificial Intelligence (TRUST), and Perceived Risk (RISK) on Artificial Intelligence Adoption (AIAD). Positive and negative signs indicate the direction of the relationships, while R² represents the explained variance of AI adoption.

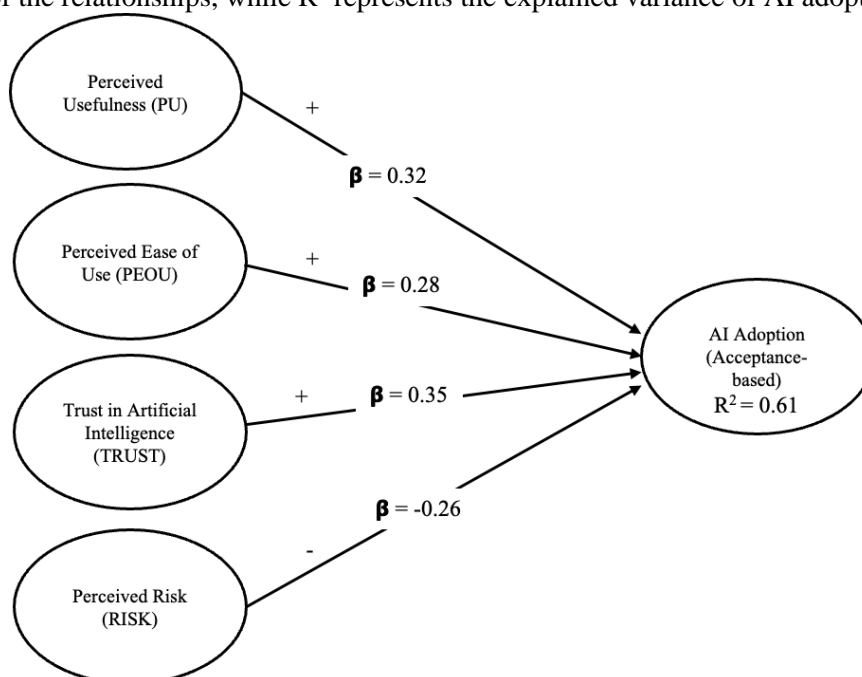


Figure 1 Structural Model Results

4.2 Discussion

Based on the structural model and hypotheses testing results presented in Table 3, this study provides empirical evidence that artificial intelligence adoption among Generation Z entrepreneurs is shaped by a combination of enabling and inhibiting perceptual factors. The findings show that Perceived Usefulness, Perceived Ease of Use, and Trust in Artificial Intelligence positively influence Artificial Intelligence Adoption, while Perceived Risk has a negative influence, confirming all proposed hypotheses (H1–H4). In addition, the structural model demonstrates a moderate to substantial level of explanatory power, indicating that these four perceptual determinants jointly explain a meaningful proportion of variance in Artificial Intelligence Adoption. This finding supports the view that AI adoption in entrepreneurial contexts is fundamentally a perception-driven behavioral decision, consistent with established technology acceptance and adoption theories (Davis, 1989; Venkatesh et al., 2016; Dwivedi et al., 2021). The positive influence of Perceived Usefulness indicates that Generation Z entrepreneurs are more likely to adopt AI technologies when they perceive clear performance-related benefits. This

finding aligns with the core premise of the Technology Acceptance Model, which posits that perceived usefulness is a primary determinant of technology acceptance because it reflects users' expectations of improved task performance (Davis, 1989). In entrepreneurial settings, where business outcomes are closely linked to individual decisions, perceived usefulness becomes particularly salient. Recent studies on AI adoption in small businesses and entrepreneurial ventures similarly report that perceived business value and productivity gains are central drivers of AI adoption decisions (Chatterjee et al., 2021; Maroufkhani et al., 2022; Pillai et al., 2023).

The results also demonstrate that Perceived Ease of Use positively affects Artificial Intelligence Adoption, suggesting that usability remains an important factor even among Generation Z entrepreneurs, who are often described as digitally proficient. This finding supports extended technology acceptance frameworks that emphasize the role of effort expectancy in shaping adoption behavior, especially when technologies are complex or require integration into existing workflows (Venkatesh et al., 2016; Venkatesh et al., 2022). In the context of entrepreneurship, ease of use reduces cognitive and operational burdens, making AI more accessible for entrepreneurs managing limited resources and technical support.

Furthermore, Trust in Artificial Intelligence is found to have a significant positive influence on AI adoption. This result highlights the importance of trust in reducing uncertainty associated with autonomous and opaque AI systems. Prior research suggests that trust in AI—defined by perceptions of reliability, accuracy, and security—plays a critical role in encouraging users to rely on AI-generated outputs, particularly in high-stakes decision-making contexts (Glikson & Woolley, 2020; Rai et al., 2021). For Generation Z entrepreneurs operating in digital business environments, trust appears to facilitate the transition from experimental AI use to more sustained and integrated adoption.

In contrast, Perceived Risk negatively influences Artificial Intelligence Adoption, indicating that concerns related to data privacy, ethical issues, system errors, and potential financial losses act as barriers to AI acceptance. This finding is consistent with prior technology adoption research, which identifies perceived risk as a key inhibitor when users evaluate advanced and potentially disruptive technologies (Featherman & Pavlou, 2003; Dwivedi et al., 2021). For young entrepreneurs and early-stage businesses, heightened sensitivity to risk may reflect limited financial buffers and greater exposure to the consequences of technological failure, thereby dampening adoption intentions.

Overall, the findings suggest that AI adoption among Generation Z entrepreneurs is determined by a dynamic balance between perceived value, usability, trust, and risk. The simultaneous significance of all four determinants, combined with the model's explanatory power, confirms the robustness of the proposed framework and extends technology acceptance theory into the entrepreneurial and generational context. These results are in line with recent calls in the literature to examine AI adoption as a multifaceted behavioral process that incorporates both enabling and constraining perceptions, particularly in non-corporate and emerging entrepreneurial settings (Raisch & Krakowski, 2021; Dwivedi et al., 2023).

5 Conclusion

5.1 Conclusion

This study investigates the determinants of artificial intelligence adoption among Generation Z entrepreneurs in Indonesia by integrating perceived usefulness, perceived ease of use, trust in artificial intelligence, and perceived risk into a unified conceptual model. The findings

demonstrate that AI adoption among Gen Z entrepreneurs is driven by both enabling and inhibiting perceptions, confirming that technology adoption in entrepreneurial contexts is fundamentally a perception-based behavioral decision. Perceived usefulness, perceived ease of use, and trust in artificial intelligence are found to positively influence AI adoption, while perceived risk negatively affects adoption decisions.

The results contribute to the technology adoption literature by extending established acceptance frameworks into the entrepreneurial and generational context, particularly for Generation Z entrepreneurs who operate in digitally intensive business environments. By positioning artificial intelligence adoption as an individual-level outcome, this study highlights the importance of subjective evaluations in shaping the acceptance of advanced technologies. Practically, the findings suggest that efforts to promote AI adoption among young entrepreneurs should emphasize clear business value, usability, and trust-building mechanisms, while simultaneously addressing concerns related to risk and uncertainty. Overall, this study provides empirical support for a balanced perspective on AI adoption that acknowledges both its opportunities and challenges within entrepreneurial ecosystems.

5.2 Limitations and Future Research

Despite its contributions, this study has several limitations that should be acknowledged. First, the research relies on self-reported survey data, which may be subject to common method bias and reflect respondents' perceptions rather than actual AI usage behavior. Future studies could complement survey data with objective usage metrics or qualitative insights to capture deeper adoption dynamics. Second, the cross-sectional design limits the ability to infer causal relationships or observe changes in AI adoption over time. Longitudinal research would be valuable to examine how perceptions of usefulness, trust, and risk evolve as entrepreneurs gain more experience with AI technologies.

Third, although the sample represents Generation Z entrepreneurs across major regions in Indonesia, the findings may not be fully generalizable to other generational groups or national contexts. Future research could conduct comparative studies across generations or countries to explore how cultural, institutional, and economic factors shape AI adoption behavior. Finally, this study focuses on direct relationships between perceptual determinants and AI adoption. Future studies could extend the model by incorporating mediating or moderating variables—such as digital literacy, ethical awareness, or business maturity—to provide a more nuanced understanding of artificial intelligence adoption in entrepreneurial settings.

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