

## ECO-DRIVEN INNOVATION AMONG GEN Z ENTREPRENEURS: THE ROLE OF SELF-EFFICACY, SOCIAL MEDIA, AND SUSTAINABILITY INTENTIONS

Yudhistira Pradhipta Aryoko<sup>1\*</sup>, Sulistyandari<sup>2</sup>, Cut Muazinah<sup>3</sup>

<sup>1</sup>Faculty of Economics and Business, Universitas Muhammadiyah Purwokerto, Indonesia

<sup>2</sup>Faculty of Economic and Business, Universitas Jenderal Soedirman, Indonesia

<sup>3</sup>College of Management, National Yunlin University of Science and Technology, Taiwan

\*Email corresponding author: [yudistirapradhipta@ump.ac.id](mailto:yudistirapradhipta@ump.ac.id)

---

### Abstract

This study investigates the antecedents of Sustainable Entrepreneurial Intentions (SEI) and their impact on Sustainable Business Performance (SBP) among Generation Z (Gen Z) entrepreneurs in Indonesia. Drawing from Social Cognitive Theory, Value-Belief-Norm Theory, and Self-Determination Theory, the research integrates Environmental Awareness (EA), Innovative Mindset (IM), and Social Media Influence (SMI) as predictors of SEI, and examines the moderating role of Entrepreneurial Self-Efficacy (ESE) in the SEI–SBP relationship. A survey of 203 Gen Z entrepreneurs was analyzed using Structural Equation Modeling (SEM) via SmartPLS 3.

Findings reveal that EA, IM, and SMI significantly enhance SEI, which in turn improves SBP. However, ESE negatively moderates the SEI–SBP link, suggesting that high self-efficacy may reduce reliance on intentional planning. The study offers practical insights for educators and policymakers to foster eco-entrepreneurship through sustainability education, innovation training, and digital engagement. Future research should explore cross-cultural differences and longitudinal dynamics, especially concerning the paradoxical role of ESE in entrepreneurial outcomes.

**Keywords:** Sustainable Entrepreneurship, Environmental Awareness, Social Media, Entrepreneurial Self-Efficacy, Business Performance

---

### INTRODUCTION

Addressing the escalating challenges of climate change, environmental degradation, and resource depletion has become a global imperative. In response, entrepreneurship is increasingly recognized as a key mechanism for driving sustainable development. Among the emerging entrepreneurial cohorts, Generation Z (individuals born between 1997 and 2012) has demonstrated a distinctive commitment to environmental and social values. Findings from the Deloitte Global Millennial & Gen Z Survey (2021) reveal that 60% of Gen Z entrepreneurs actively consider environmental impact in their decision-making, a figure notably higher than that of the Millennial generation (Gen Y), where only 45% express the same concern. Often referred to as the “climate generation” (Bărbulescu et al., 2021; Danarahmanto et al., 2020), Gen Z is reshaping the entrepreneurial ecosystem by placing sustainability at the core of innovation and enterprise (Töytäri et al., 2018; Susiati, 2024).

This generational shift is also visible in Indonesia, where environmental degradation—particularly deforestation and the accumulation of plastic waste—has spurred a new wave of youth-led innovation. Many Gen Z entrepreneurs are integrating modern technological tools with local cultural values to promote both ecological restoration and social resilience (Herlinawati & Machmud, 2020; Manafe et al., 2023). These efforts are often rooted in indigenous wisdom and community-based collaboration, underscoring the argument that local context and cultural identity significantly shape entrepreneurial behavior in emerging economies (Lee & Kim, 2019; Wang & Chen, 2021).

Gen Z's native fluency with digital technologies further amplifies their potential to influence sustainability. Through platforms such as Instagram, TikTok, and YouTube, these young entrepreneurs are able to reach wide audiences, advocate for sustainable practices, and build purpose-driven brands. This has led to the emergence of eco-conscious ventures in industries ranging from fashion to packaging, where sustainability is not only a value but also a business proposition (Danarahmanto et al., 2020; Tjahjadi, 2024). Despite these advancements, significant challenges remain. Gen Z entrepreneurs in Indonesia frequently encounter obstacles such as limited access to capital, regulatory bottlenecks, and a lack of structural support (Purwoko, 2023; Subanidja et al., 2021). As such, broader interventions—such as capacity-building programs, inclusive mentorship, and education tailored to green innovation—are essential to unlock their full potential (Ajiva et al., 2024; Brooks et al., 2018).

To better understand the factors shaping Gen Z's entrepreneurial journey, this study focuses on four key constructs: Environmental Awareness (EA), Innovative Mindset (IM), Social Media Influence (SMI), and Entrepreneurial Self-Efficacy (ESE). Environmental awareness reflects both cognitive recognition of environmental issues and a moral drive to address them (Peng et al., 2021; Yasir et al., 2023). An innovative mindset describes the capacity to generate and apply novel solutions, particularly in the sustainability domain (Zemlyak et al., 2022; Yodchai et al., 2021). Social media influence captures how digital platforms shape sustainability values and entrepreneurial aspirations (Hamdi et al., 2022; Park et al., 2017), while entrepreneurial self-efficacy pertains to an individual's confidence in executing entrepreneurial tasks effectively (Gielnik et al., 2020; Ciuchta & Finch, 2019).

This study draws on three well-established theoretical frameworks. Social Cognitive Theory (SCT) emphasizes learning through observation and the role of self-belief in behavior formation (Bandura, 1986). The Value-Belief-Norm (VBN) Theory highlights how environmental values and beliefs foster pro-environmental behavior (Stern et al., 1999). Self-Determination Theory (SDT) adds a motivational dimension, explaining how intrinsic and extrinsic drivers influence goal pursuit (Ryan & Deci, 2000). Despite the relevance of these theories, prior research often examines these factors in isolation. Few studies have integrated these perspectives to explore the interdependencies between psychological, environmental, and digital influences in sustainable entrepreneurship—particularly in emerging market contexts like Indonesia.

Based on these gaps, this research aims to address the following questions:

1. How do environmental awareness, innovative mindset, and social media influence affect sustainable entrepreneurial intentions?
2. How do sustainable entrepreneurial intentions mediate the relationship between these antecedents and sustainable business performance?
3. How does entrepreneurial self-efficacy moderate the relationship between sustainable entrepreneurial intentions and business performance?

By investigating these questions, the study aims to make both theoretical and practical contributions. Theoretically, it integrates multi-dimensional constructs into a comprehensive model of sustainable entrepreneurship. Practically, it offers actionable insights for educators, policymakers, and entrepreneurial ecosystem actors seeking to support Gen Z's role in Indonesia's transition toward a sustainable economic future.

## LITERATURE REVIEW AND HYPOTHESIS FORMULATION

### Sustainable Business Performance (SBP)

Sustainable Business Performance (SBP) refers to the extent to which a business achieves its objectives across environmental, social, and economic dimensions. It reflects the alignment between business operations and sustainability goals. The Triple Bottom Line (TBL) Framework—popularized by Elkington (1997)—emphasizes the need to balance economic viability, social responsibility, and environmental stewardship. SBP in this study is thus conceptualized through three dimensions:

economic (profitability and efficiency), social (stakeholder and community impact), and environmental (resource use and ecological footprint).

Entrepreneurial self-efficacy (ESE) also plays a key role in influencing SBP, as proposed by Social Cognitive Theory (SCT). Bandura (1986) argues that individuals with strong self-efficacy are more likely to set challenging goals and persist in the face of difficulties, which ultimately improves performance outcomes. Empirical studies support this notion; Gielnik et al. (2020) find that high ESE enables entrepreneurs to navigate complex sustainability challenges more effectively, leading to stronger business outcomes. Similarly, Yodchai et al. (2021) identify a direct link between sustainable intentions and firm-level sustainability performance, particularly when innovation practices are integrated.

In this research, SBP is measured using the three-dimensional lens of the TBL (Elkington, 1997): [1] Economic Performance (cost efficiency and profitability); [2] Social Performance (community engagement and stakeholder value); [3] Environmental Performance (ecological impact and green practices).

### **Environmental Awareness (EA)**

Environmental Awareness (EA) reflects an individual's recognition of ecological problems and their willingness to address them through proactive behavior. It includes both cognitive understanding and affective commitment to sustainability goals. EA is increasingly acknowledged as a critical driver of sustainable entrepreneurial behavior, particularly among younger generations (Melnyk & Podorozhnyi, 2023; Godinho Filho et al., 2024).

The Value-Belief-Norm (VBN) Theory provides a theoretical foundation for understanding EA, positing that individuals who hold strong pro-environmental values and beliefs are more likely to adopt sustainable norms and behaviors (Stern et al., 1999). For instance, entrepreneurs with high environmental awareness are often more motivated to identify ecological problems and transform them into market opportunities (Peng et al., 2021).

Social learning also plays a role. As per Social Cognitive Theory (Bandura, 1986), social environments—particularly digital ones—shape behavioral patterns. Social media, in this context, becomes a powerful channel for modeling environmentally responsible behavior (Confetto et al., 2023). This study adopts the Sustainability Consciousness Scale (Gericke et al., 2019) to measure EA, consisting of: [1] Sustainability Knowledge; [2] Environmental Responsibility; [3] Awareness of Business Impact.

Given this body of literature, it is reasonable to expect that individuals with higher environmental awareness will be more inclined to engage in sustainability-driven entrepreneurial behavior.

***H1: Environmental awareness (EA) positively affects sustainable entrepreneurial intentions (SEI).***

### **Innovative Mindset (IM)**

An Innovative Mindset (IM) reflects a forward-thinking orientation characterized by creativity, problem-solving, experimentation, and openness to change. Entrepreneurs with high IM are more likely to explore novel solutions and take calculated risks in responding to environmental and market challenges (Stauffer, 2015). Drawing from the Theory of Innovation Adoption (Rogers, 2003), individuals with high innovativeness tend to adopt new ideas and technologies earlier, which includes sustainable practices. Self-Determination Theory (Ryan & Deci, 2000) further explains IM by linking it to intrinsic motivation—an internal drive to create meaningful impact through innovation.

Empirical findings reinforce this connection. Zemlyak et al. (2022) show that IM significantly enhances the creation of eco-innovative products and business models. Yodchai et al. (2021) also note that IM positively influences entrepreneurial intentions, especially in sectors like clean energy and sustainable tourism. Aryoko et al. (2024) extend this to Gen Z, showing that digital exposure and global trend awareness amplify their innovation capacity.

To measure IM, this study adapts the Creative Self-Efficacy Scale (Tierney & Farmer, 2002) to the sustainability context, with dimensions as follows: [1] Green Idea Generation – ability to develop original sustainability concepts; [2] Green Idea Promotion – confidence in advocating for eco-innovation; [3] Green Idea Implementation – execution of sustainability solutions.

Building on these findings, it can be posited that an innovative mindset enhances an individual's likelihood of pursuing entrepreneurial ventures aligned with sustainability objectives.

***H2: Innovative mindset (IM) positively affects sustainable entrepreneurial intentions (SEI).***

### **Social Media Influence (SMI)**

Social Media Influence (SMI) refers to the perceived ability of digital platforms to shape attitudes, values, and behaviors through content exposure, peer interaction, and online trends. In the context of sustainable entrepreneurship, social media serves as a vehicle for awareness-building, inspiration, and behavioral modeling.

According to Social Cognitive Theory, individuals learn and internalize behaviors through observation and social reinforcement (Bandura, 1986). For Gen Z, social media platforms are not just tools for communication but environments where sustainability narratives are formed and spread (Hamdi et al., 2022; Confetto et al., 2023). Exposure to sustainability-focused content and influencers on platforms like Instagram and TikTok has been shown to foster pro-environmental attitudes and entrepreneurial motivation (Park et al., 2017; Verdugo & Villarroel, 2021).

This study uses the SMI Scale (Hamdi et al., 2022), adapted for sustainability-driven entrepreneurship. Dimensions include: [1] Informational Influence – access to sustainability knowledge and discourse; [2] Normative Influence – perceived social expectations to adopt sustainable practices, [3] Behavioral Influence – active use of social media for entrepreneurial initiatives.

In the light of the pervasive influence of social media on value formation and behavioral modeling among Gen Z, it is plausible to hypothesize a positive link between social media influence and sustainable entrepreneurial intentions.

***H3: Social media influence (SMI) positively affects sustainable entrepreneurial intentions (SEI).***

### **Sustainable Entrepreneurial Intentions (SEI)**

Sustainable Entrepreneurial Intentions (SEI) represent an individual's commitment to creating ventures that generate economic value while addressing social and environmental needs (Agu et al., 2021). SEI is influenced by a combination of intrinsic values, external social cues, and perceived feasibility.

The Theory of Planned Behavior (Ajzen, 1991) explains intentions as a function of attitude, subjective norms, and perceived behavioral control. This framework is widely applied to entrepreneurship studies. Self-Determination Theory (SDT) complements this by emphasizing the motivational dynamics behind intention formation—particularly the balance between autonomy, competence, and social connectedness (Ryan & Deci, 2000).

Research shows a strong link between SEI and venture success. Gielnik et al. (2020) find that entrepreneurs with high SEI are more likely to act on their intentions when supported by environmental values and high ESE. Similarly, Yasir et al. (2023) note that social media exposure reinforces SEI, particularly among digitally literate youth.

The SEI Scale (Yasir et al., 2023) is used, with three dimensions: [1] Commitment to Sustainability; [2] Planning for Sustainability; [3] Motivation for Sustainability. Prior studies have consistently shown that sustainability-oriented intentions can serve as strong predictors of performance outcomes in green entrepreneurship. This relationship is expected to hold in the present study.

***H4: Sustainable entrepreneurial intentions (SEI) positively affect sustainable business performance (SBP).***

While environmental awareness influences entrepreneurs' sense of responsibility and motivation, it is often through the formation of clear entrepreneurial intentions that these values are operationalized into performance outcomes. Therefore, SEI is posited to mediate the effect of environmental awareness on business performance.

***H5: SEI mediates the effect of environmental awareness (EA) on sustainable business performance (SBP).***

An innovative mindset contributes to the generation of sustainability-driven ideas; however, its impact on business performance is most likely to be realized when these ideas are coupled with strong entrepreneurial intent. Thus, SEI is expected to serve as the pathway through which innovative mindset enhances performance.

***H6: SEI mediates the effect of innovative mindset (IM) on sustainable business performance (SBP).***

Although social media can influence entrepreneurial awareness and behavior, its effect on sustainable business outcomes is believed to operate indirectly—by shaping intentions first. In this way, SEI is proposed to mediate the relationship between social media influence and sustainable business performance.

***H7: SEI mediates the effect of social media influence (SMI) on sustainable business performance (SBP).***

### **Entrepreneurial Self-Efficacy (ESE)**

Entrepreneurial Self-Efficacy (ESE) refers to an individual's belief in their capacity to initiate and manage entrepreneurial activities successfully, particularly in uncertain or resource-constrained settings (Sahid et al., 2024). ESE is a central construct in Social Cognitive Theory, shaping motivation, resilience, and the ability to convert intentions into outcomes (Bandura, 1986).

While ESE generally supports entrepreneurial success, emerging evidence suggests that excessive confidence may lead to overestimation of ability, miscalculated risk, and reduced planning rigor (Koellinger et al., 2007; Hayward et al., 2006). Therefore, ESE may not always amplify the intention–performance link but could, under certain conditions, suppress it—especially if intentions are substituted by overconfidence (Hmieleski et al., 2013; Newman et al., 2019).

This study adopts the Entrepreneurial Self-Efficacy Scale (De Noble et al., 1999) with dimensions tailored to sustainability ventures: [1] Opportunity Recognition; [2] Resource Acquisition; [3] Risk Management. Based on the theoretical and empirical insights above, it is proposed that SEI functions as a mediating mechanism linking the antecedent factors—environmental awareness, innovative mindset, and social media influence—to sustainable business performance.

While entrepreneurial self-efficacy is generally linked to improved outcomes, excessive self-confidence may reduce the entrepreneur's reliance on deliberate planning, potentially weakening the effect of intentions on business performance. Therefore, it is important to test the conditional role of ESE in this relationship.

***H8: Entrepreneurial self-efficacy (ESE) moderates the relationship between sustainable entrepreneurial intentions (SEI) and sustainable business performance (SBP).***

## **RESEARCH METHODS**

### **Research Design**

This study adopts a quantitative, cross-sectional design to examine the relationships among environmental awareness (EA), innovative mindset (IM), social media influence (SMI), sustainable entrepreneurial intentions (SEI), entrepreneurial self-efficacy (ESE), and sustainable business

performance (SBP). The research is guided by a deductive approach, with hypotheses derived from established theoretical frameworks, namely Social Cognitive Theory (Bandura, 1986), Value-Belief-Norm Theory (Stern et al., 1999), and Self-Determination Theory (Ryan & Deci, 2000).

Given the complexity of the proposed model and the emphasis on prediction, Partial Least Squares Structural Equation Modeling (PLS-SEM) was chosen for data analysis. This technique is particularly suitable for studies with latent variables, non-normal data distribution, and relatively moderate sample sizes (Hair et al., 2021).

### **Population and Sample (Research Target)**

This study focused on Generation Z entrepreneurs (aged 18–27) operating in the Barlingmascakeb region of Central Java, Indonesia, which includes the regencies of Banjarnegara, Purbalingga, Banyumas, Cilacap, and Kebumen. The area is recognized for its emerging youth-led businesses and active support for micro-entrepreneurship, particularly in creative and sustainable sectors.

Respondents were selected using purposive and snowball sampling to target entrepreneurs who were actively managing businesses and making strategic decisions. Recruitment was conducted through local entrepreneurial communities and social media platforms. A total of 203 valid responses were collected, exceeding the minimum sample size required for PLS-SEM analysis. The sample represented diverse sectors such as culinary, fashion, digital services, and sustainability-based enterprises.

### **Data Collection and Instrument Development Techniques**

Data were collected through an online structured questionnaire administered using Google Forms. The instrument was presented in Bahasa Indonesia and pretested for clarity and cultural relevance. A pilot study involving 30 respondents was conducted, leading to minor modifications in wording and layout. Feedback from three academic experts in entrepreneurship and sustainability was also incorporated to enhance content validity.

All constructs were measured using items adapted from previously validated scales, modified to reflect the sustainability entrepreneurship context in Indonesia. Responses were recorded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

### **Data Analysis Technique**

Data were analyzed using SmartPLS 3.3.9, with a two-step approach:

- 1) Measurement Model Evaluation – This involved assessing indicator reliability (outer loadings), internal consistency (Cronbach's alpha and Composite Reliability), and validity (Average Variance Extracted for convergent validity, and HTMT ratio for discriminant validity).
- 2) Structural Model Evaluation – Hypotheses were tested by examining path coefficients, coefficient of determination ( $R^2$ ), effect sizes ( $f^2$ ), predictive relevance ( $Q^2$ ), and model fit (SRMR).

Mediation (H5–H7) and moderation (H8) analyses were conducted using bootstrapping with 5,000 resamples, as recommended by Preacher & Hayes (2008). The approach allowed for robust inference of indirect and interaction effects within the model.

## **RESULTS AND DISCUSSION**

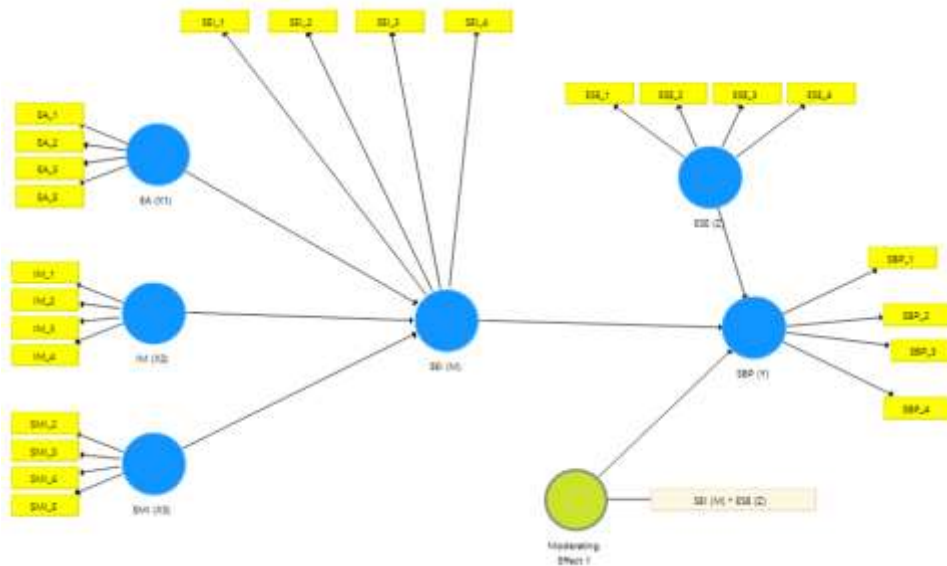


Figure 1. Outer Model

**Convergent Validity Test**

The convergent validity test confirms that the measurement model is reliable, as most indicator loadings exceed 0.7, ensuring strong construct validity. The constructs EA, ESE, IM, SBP, SEI, and SMI show high outer loadings (0.702 to 0.880), indicating that the observed variables effectively represent their respective constructs.

**Discriminant Validity Test**

The validity test results confirm strong convergent and discriminant validity. All constructs meet the recommended AVE threshold of 0.5 or higher, with values ranging from 0.519 (ESE) to 0.716 (SBP), indicating that each construct explains more than 50% of the variance in its indicators.

**Composite Reliability Test**

The Composite Reliability (CR) results show that all constructs exceed 0.7, confirming strong reliability. CR values range from 0.812 (ESE) to 0.910 (SBP), indicating that the indicators consistently measure their respective constructs.

**Collinearity Test**

The VIF test results show no significant multicollinearity issues, as all values are below the threshold of 5, ranging from 1.197 to 2.421. This indicates that the predictor variables, including EA, ESE, IM, SBP, SEI, and SMI, are not highly correlated. The interaction term (SEI \* ESE) also shows no multicollinearity with a VIF of 1.000. Overall, the model is reliable and free from multicollinearity concerns.

**Structural Model (Inner Model)**

Table 1. R-Square Test Result

	R-Square	R Square Adjusted
SBP	0.502	0.494
SEI	0.161	0.148

Source: SMARTPLS Inner Model Test Result

The R Square test results indicate that the model explains 50.2% of the variance in SBP and 16.1% of the variance in SEI. The adjusted R Square values (0.494 for SBP and 0.148 for SEI) confirm that the predictors have a moderate to strong influence on SBP and a smaller but still meaningful impact on SEI. This suggests that the model is effective in explaining SBP, while there may be room for improvement in explaining SEI.

### Q-Square

Table 2. Q-Square Test Result

$Q^2 (=1-SSE/SSO)$	
SBP (Y)	0.338
SEI (M)	0.076

Source: SMARTPLS Inner Model Test Result

The Q Square test results indicate that the model has predictive relevance, with a  $Q^2$  value of 0.338 for SBP and 0.076 for SEI. This means the model has medium to large predictive power for SBP and small predictive power for SEI. Overall, the results suggest that the model is effective in predicting SBP, while SEI's predictive relevance is weaker but still present.

### Structural Model Evaluation

The path analysis was conducted using bootstrapping with 5,000 resamples in SmartPLS. The following direct effects were found to be statistically significant:

Table 3. Direct Effect

Hypothesis	Path	$\beta$	t-value	p-value	Result
H1	EA → SEI	0.187	2.709	0.003	Supported
H2	IM → SEI	0.226	3.634	0.000	Supported
H3	SMI → SEI	0.163	2.719	0.003	Supported
H4	SEI → SBP	0.273	6.017	0.000	Supported

Source: SMARTPLS Inner Model Test Result

The results of the direct effects analysis support all four proposed hypotheses (H1–H4). Environmental awareness (H1), innovative mindset (H2), and social media influence (H3) each show significant positive relationships with sustainable entrepreneurial intentions (SEI), with  $\beta$  values of 0.187 ( $p = 0.003$ ), 0.226 ( $p = 0.000$ ), and 0.163 ( $p = 0.003$ ) respectively. This indicates that Gen Z entrepreneurs who are environmentally conscious, innovation-driven, and actively engaged with social media are more likely to develop strong intentions toward sustainability-focused entrepreneurship. Furthermore, SEI demonstrates a significant positive effect on sustainable business performance (SBP) (H4:  $\beta = 0.273$ ,  $p = 0.000$ ), confirming that these intentions play a critical role in enhancing economic, social, and environmental outcomes in business.

### Mediating Effect

The mediating role of SEI was tested using the indirect effect bootstrapping method, which revealed the following results:

Table 4. Mediating Effect

Hypothesis	Indirect Path	$\beta$	t-value	p-value	Result
H5	EA → SEI → SBP	0.051	2.424	0.008	Supported
H6	IM → SEI → SBP	0.062	2.856	0.002	Supported

H7	SMI → SEI → SBP	0.044	2.414	0.008	Supported
----	-----------------	-------	-------	-------	-----------

Source: SMARTPLS Inner Model Test Result

The mediation analysis confirms that sustainable entrepreneurial intentions (SEI) significantly mediate the relationships between the three antecedents and sustainable business performance (SBP). Specifically, SEI mediates the effects of environmental awareness (H5:  $\beta = 0.051$ ,  $p = 0.008$ ), innovative mindset (H6:  $\beta = 0.062$ ,  $p = 0.002$ ), and social media influence (H7:  $\beta = 0.044$ ,  $p = 0.008$ ) on SBP. These findings indicate that Gen Z entrepreneurs' values, creativity, and digital exposure contribute to sustainable performance primarily through the development of strong entrepreneurial intentions, reinforcing the central role of intention in the intention–behavior link.

### Moderating Effect

Moderation analysis tested the interaction effect between SEI and entrepreneurial self-efficacy (ESE) on SBP. The results are as follows:

Table 5. Moderating Effect

Hypothesis	Moderation Path	$\beta$	t-value	p-value	Result
H8	SEI × ESE → SBP	-0.259	5.541	0	Supported

Source: SMARTPLS Inner Model Test Result

The moderation analysis reveals a statistically significant negative interaction effect between SEI and entrepreneurial self-efficacy (ESE) on sustainable business performance (H8:  $\beta = -0.259$ ,  $p = 0.000$ ). This suggests that while SEI enhances SBP, its impact is weakened when ESE is high. This counterintuitive result may reflect an overconfidence effect, where entrepreneurs with elevated self-efficacy may undervalue structured planning or overestimate their capabilities, leading to diminished performance outcomes. These findings underscore the need for balanced development of confidence and planning skills among Gen Z entrepreneurs.

### Discussion

The finding supporting Hypothesis 1, which indicates a positive relationship between Environmental Awareness (EA) and Sustainable Entrepreneurial Intentions (SEI), aligns strongly with the Value-Belief-Norm (VBN) Theory (Stern, 2000). This theory posits that awareness of environmental issues forms the cognitive foundation for sustainability-oriented behavior. Among Gen Z entrepreneurs, a heightened sense of ecological responsibility—shaped by their exposure to environmental crises—encourages the formation of sustainability-driven intentions (Peng et al., 2021; Pascucci et al., 2022). This relationship is also consistent with Social Cognitive Theory (SCT), which highlights the interplay between environmental cues and personal beliefs in shaping goal-directed intentions (Bandura, 1986).

The acceptance of Hypothesis 2, linking Innovative Mindset (IM) to SEI, supports Self-Determination Theory (SDT), which suggests that intrinsic motivation, creativity, and autonomy are critical to initiating purposeful action (Deci & Ryan, 1985). Gen Z entrepreneurs with a high IM are more inclined to develop sustainable business ideas and pursue them with passion and self-drive. Prior studies also emphasize the role of cognitive flexibility and openness to innovation as significant predictors of sustainability-focused entrepreneurial intention (Zemlyak et al., 2022; Bhatta et al., 2024). SCT further reinforces this view by attributing behavioral change to personal cognitive resources such as creativity and problem-solving capabilities (Bandura, 1986).

Hypothesis 3 confirms a significant positive effect of Social Media Influence (SMI) on SEI, reflecting the growing role of digital platforms in shaping entrepreneurial behavior. In line with SCT, social media acts as a modeling environment where Gen Z observes and internalizes sustainability narratives, peer achievements, and value-laden content (Bandura, 1986). These platforms not only enhance awareness but also normalize sustainable practices, encouraging users to adopt similar

behavior (Aryoko et al., 2024; Hussain et al., 2021). SDT also supports this by showing that extrinsic stimuli—such as social recognition—can reinforce intrinsic motivation and intention (Deci & Ryan, 1985).

The support for Hypothesis 4, which confirms a positive link between SEI and Sustainable Business Performance (SBP), is well-grounded in SDT. Individuals with strong intentions, particularly those aligned with intrinsic goals such as social impact and environmental preservation, are more likely to persist in their ventures and achieve superior outcomes (Gielnik et al., 2020; Krueger et al., 2000). SCT also validates this relationship by positing that intentionality is a central component of agency, enabling individuals to mobilize resources and persist in the face of obstacles (Bandura, 1986).

Hypotheses 5, 6, and 7 further demonstrate that SEI significantly mediates the effects of EA, IM, and SMI on SBP. These mediation effects provide empirical support for the theorized value–intention–behavior chain. Specifically, environmental awareness and an innovative mindset contribute to the formation of SEI, which then translates into measurable business outcomes (Peng et al., 2021; Yodchai et al., 2021). Likewise, social media shapes SEI by offering access to sustainability trends, influencers, and community validation (Hamdi et al., 2022; Yasir et al., 2023). Collectively, these results underscore SEI as a central psychological mechanism through which cognitive and contextual factors drive sustainable entrepreneurial performance.

Turning to Hypothesis 8, the moderation analysis revealed a negative interaction effect between ESE and SEI on SBP. Theoretically, this finding introduces a paradox within Social Cognitive Theory (SCT). While SCT suggests that self-efficacy promotes motivation and action (Bandura, 1986), it also acknowledges that excessive self-confidence can distort risk perception and reduce reliance on structured planning. Among Gen Z entrepreneurs, who often display high digital confidence, elevated ESE may foster an illusion of control. And it could lead to impulsive decisions and undermining the effectiveness of intention-driven strategies. This aligns with the overconfidence bias literature (Hayward et al., 2006), where inflated self-belief replaces deliberate execution.

Moreover, the result diverges from more general assumptions in Self-Determination Theory (SDT), which treats perceived competence as a consistent driver of performance. In contrast, recent research by Newman et al. (2019) and Schmutzler et al. (2019) suggests that the ESE–SBP relationship is highly context-dependent. In underregulated entrepreneurial ecosystems like Indonesia's, high ESE may compensate for structural gaps, yet also result in reduced reflection and lower accountability, ultimately weakening the intention–performance link.

This study contributes to theory by proposing a threshold-based view of self-efficacy, where ESE enhances entrepreneurial outcomes only up to a point, beyond which it may become counterproductive. Future research should consider dual-factor models that recognize both the empowering and limiting effects of ESE, especially in volatile or low-support environments. This insight invites a refinement of SCT and SDT, emphasizing the importance of contextual boundaries when applying psychological constructs to entrepreneurship.

## CONCLUSION

### Research Conclusions

The present study explored the antecedents and consequences of sustainable entrepreneurial intentions (SEI) among Generation Z entrepreneurs in the Barlingmascakeb region of Central Java, Indonesia. Empirical findings derived from Partial Least Squares Structural Equation Modeling (PLS-SEM) indicate that environmental awareness, innovative mindset, and social media influence each have a significant positive effect on SEI. Furthermore, SEI was found to significantly influence sustainable business performance (SBP), acting as a mediating variable in the relationship between the three antecedents and SBP. Notably, entrepreneurial self-efficacy (ESE) exhibited a statistically significant negative moderating effect on the SEI–SBP relationship. This suggests that high levels of

self-efficacy may, under certain conditions, diminish the effectiveness of intention-driven strategies in achieving sustainable outcomes.

### Practical Implications

The study yields several practical implications for entrepreneurship educators, business incubators, and policymakers. First, sustainability-oriented entrepreneurship training should prioritize the integration of environmental and ethical values alongside traditional business skills to enhance intention formation. Second, innovation-centric programs should encourage creative problem-solving in tandem with sustainable business model development. Third, digital platforms such as social media can be effectively leveraged to disseminate pro-sustainability narratives, entrepreneurial role models, and peer-based learning content. Finally, considering the complex role of self-efficacy, structured mentorship and strategic planning interventions should be developed to help young entrepreneurs balance confidence with evidence-based decision-making.

### Limitations

Several limitations must be acknowledged. This study focused on a single regional cluster, which may limit the generalizability of findings to other socio-economic or cultural contexts. The reliance on self-reported survey data introduces the possibility of common method bias. The cross-sectional design precludes conclusions regarding causality or temporal development. Moreover, the measurement of business performance was perceptual rather than based on objective business outcomes, which may not fully capture real-world sustainability performance.

### Suggestions for Future Research

Future research should consider replicating this study in different geographic and institutional contexts to test for cross-regional or cross-cultural generalizability. A longitudinal design would allow for the observation of how sustainable intentions and business performance evolve over time. Researchers are also encouraged to incorporate objective business metrics—such as revenue, environmental certifications, or social impact reports—to triangulate perceptual findings. In light of the nuanced role of ESE, mixed-methods approaches may uncover underlying psychological or cultural mechanisms that explain how self-efficacy operates under different environmental and entrepreneurial conditions.

## BIBLIOGRAPHY

- Deloitte. (2021). *The Deloitte Global Millennial and Gen Z Survey*.
- Bărbulescu, O., Tecău, A. S., Munteanu, D., & Constantin, C. P. (2021). Innovation of startups, the key to unlocking post-crisis sustainable growth in Romanian entrepreneurial ecosystem. *Sustainability*, 13(2), 671.
- Danarahmanto, P. A., Primiana, I., Azis, Y., & Kaltum, U. (2020). The sustainable performance of the digital start-up company based on customer participation, innovation, and business model. *Business: Theory and Practice*, 21(1), 115-124.
- Töytäri, P., Turunen, T., Klein, M., Eloranta, V., Biehl, S., & Rajala, R. (2018). Aligning the mindset and capabilities within a business network for successful adoption of smart services. *Journal of Product Innovation Management*, 35(5), 763-779.
- Susiati, D., Nurlia, N., Utami, E. Y., & Destiana, R. (2024). Establishing an Entrepreneurial Environment in Indonesia: Impact of CEO Social Capital, Marketing, and Financial Capabilities on the Performance and Sustainability of MSMEs. *International Journal of Business, Law, and Education*, 5(1), 195-214.
- Aryoko, Yudhistira P., Anggara Ali A., & Fauziridwan, Meydy. (2024). Gen-Z Entrepreneurial Intentions: Exploring the Impact of Risk, Achievement Needs, and Social Media Engagement.

- Asian Journal of Economics, Business and Accounting*, 24 (11):307-19. <https://doi.org/10.9734/ajeba/2024/v24i111559>.
- Herlinawati, E., & Machmud, A. (2020). The effect of innovation on increasing business performance of SMEs in Indonesia. *WSEAS Transactions on Business and Economics*, 17(7), 51-57.
- Manafe, M. W. N., Ohara, M. R., Gadzali, S. S., Harahap, M. A. K., & Ausat, A. M. A. (2023). Exploring the Relationship Between Entrepreneurial Mindsets and Business Success: Implications for Entrepreneurship Education. *Journal on Education*, 5(4), 12540-12547.
- Lee, W., & Kim, B. (2019). Business sustainability of start-ups based on government support: An empirical study of Korean start-ups. *Sustainability*, 11(18), 4851.
- Tjahjadi, B., Soewarno, N., Anwar, D. N., & Fairuzi, A. (2024). Effect of Human Capital and Information Capital Readiness on Business Sustainability: Do Market Orientation and Business Performance Matter? *Sage Open*, 14(1), 21582440231221320.
- Purwoko, P., Judijanto, L., Abidin, Z., & Antesty, S. (2023). Sustainability Practices in MSMEs: A Quantitative Analysis of the Impact of Green Supply Chain Management, Consumer Awareness, and Regulatory Compliance on Market Performance. *West Science Interdisciplinary Studies*, 1(10), 1051-1060.
- Subanidja, S., Legowo, M., & Sorongan, F. (2021, April). The impact of FinTech on the financial and banking sustainable performance: Disruption or collaboration. In ICEBE 2020: Proceedings of the First International Conference of Economics, Business & Entrepreneurship, ICEBE 2020, 1st October 2020, Tangerang, Indonesia (p. 407). *European Alliance for Innovation*.
- Ajiva, O., Ejike, O., & Abhulimen, A. (2024). Empowering female entrepreneurs in the creative sector: Overcoming barriers and strategies for long-term success. *International Journal of Advanced Economics*. <https://doi.org/10.51594/ijae.v6i8.1485>.
- Brooks, W., Donovan, K., & Johnson, T. R. (2018). Mentors or teachers? Microenterprise training in Kenya. *American Economic Journal: Applied Economics*, 10(4), 196-221.
- Peng, H., Li, B., Zhou, C., & Sadowski, B. M. (2021). How does the appeal of environmental values influence sustainable entrepreneurial intention? *International journal of environmental research and public health*, 18(3), 1070.
- Yasir, N., Babar, M., Mehmood, H. S., Xie, R., & Guo, G. (2023). The environmental values play a role in the development of green entrepreneurship to achieve sustainable entrepreneurial intention. *Sustainability*, 15(8), 6451.
- Zemlyak, S., Naumenkov, A., & Khromenkova, G. (2022). Measuring the Entrepreneurial Mindset: The Motivations behind the Behavioral Intentions of Starting a Sustainable Business. *Sustainability*. <https://doi.org/10.3390/su142315997>.
- Yodchai, N., Ly, P., & Tran, L. (2021). How the creative mindset affects entrepreneurial success in the tourism sector: the mediating role of innovation capability. *International Journal of Contemporary Hospitality Management*. <https://doi.org/10.1108/ijchm-06-2021-0695>.
- Hamdi, M., Indarti, N., Manik, H. F. G. G., & Lukito-Budi, A. S. (2022). Monkey see, monkey do? Examining the effect of entrepreneurial orientation and knowledge sharing on new venture creation for Gen Y and Gen Z. *Journal of Entrepreneurship in Emerging Economies*, 15(4), 786-807.
- Park, J., Sung, C., & Im, I. (2017). Does Social Media Use Influence Entrepreneurial Opportunity? A Review of its Moderating Role. *Sustainability*, 9, 1593. <https://doi.org/10.3390/SU9091593>.
- Agu, A. G., Kalu, O. O., Esi-Ubani, C. O., & Agu, P. C. (2021). Drivers of sustainable entrepreneurial intentions among university students: An integrated model from a developing world context. *International Journal of Sustainability in Higher Education*, 22(3), 659-680.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Gielnik, M., Bledow, R., & Stark, M. (2020). A dynamic account of self-efficacy in entrepreneurship. *The Journal of applied psychology*. <https://doi.org/10.1037/apl0000451>.

- Ciuchta, M., & Finch, D. (2019). The mediating role of self-efficacy on entrepreneurial intentions: Exploring boundary conditions. *Journal of Business Venturing Insights*. <https://doi.org/10.1016/J.JBVI.2019.E00128>.
- Boyd, N., & Vozikis, G. (1994). The Influence of Self-Efficacy on the Development of Entrepreneurial Intentions and Actions. *Entrepreneurship Theory and Practice*, 18, 63 - 77. <https://doi.org/10.1177/104225879401800404>.
- Liguori, E. W., Bendickson, J. S., & McDowell, W. C. (2018). Revisiting entrepreneurial intentions: a social cognitive career theory approach. *International Entrepreneurship and Management Journal*, 14, 67-78.
- Boudreaux, C. J., Nikolaev, B. N., & Klein, P. (2019). Socio-cognitive traits and entrepreneurship: The moderating role of economic institutions. *Journal of Business Venturing*, 34(1), 178-196.
- Wang, H., & Chen, T. (2021). The Role of Entrepreneurial Environmental Awareness in Promoting Eco-Innovation. *Journal of Energy and Environmental Policy Options*, 4(3), 1-8.
- Melnyk, I., & Podorozhnyi, V. (2023). Factors of environmental awareness formation in students. *Personality and environmental issues*, 3, 5-9.
- Godinho Filho, M., Gonella, J. D. S. L., Latan, H., & Ganga, G. M. D. (2024). Awareness as a catalyst for sustainable behaviors: A theoretical exploration of planned behavior and value-belief-norms in the circular economy. *Journal of Environmental Management*, 368, 122181.
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human ecology review*, 81-97.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ, 1986(23-28), 2.
- Elkington, J. (1997). *The Triple Bottom Line of 21st Century Business*. Capstone.
- Confetto, M. G., Covucci, C., Addeo, F., & Normando, M. (2023). Sustainability advocacy antecedents: how social media content influences sustainable behaviours among Generation Z. *Journal of Consumer Marketing*, 40(6), 758-774.
- Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2019). The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development. *Sustainable Development*, 27(1), 35-49.
- Stauffer, D. A. (2015). Evaluating mindset as a means of measuring personal innovativeness. *International Journal of Innovation Science*, 7(4), 233-248.
- Rogers, E. M. (2003). *Diffusion of Innovations*, 5th Edition. Simon and Schuster.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.
- De Noble, A. F., Jung, D., & Ehrlich, S. B. (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. *Frontiers of entrepreneurship research*, 1999(1), 73-87.
- Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management journal*, 45(6), 1137-1148.
- Verdugo, G. B., & Villarroel, A. V. (2021). Measuring the association between students' exposure to social media and their valuation of sustainability in entrepreneurship. *Heliyon*, 7(6).
- Yasir, N., Mahmood, N., Mehmood, H. S., Babar, M., Irfan, M., & Liren, A. (2021). Impact of environmental, social values and the consideration of future consequences for the development of a sustainable entrepreneurial intention. *Sustainability*, 13(5), 2648.
- Sahid, S., Norhisham, N. S., & Narmaditya, B. S. (2024). Interconnectedness between entrepreneurial self-efficacy, attitude, and business creation: A serial mediation of entrepreneurial intention and environmental factor. *Heliyon*, 10(9).
- Chen, X., Ma, Y., & Xie, Y. (2024). The Influence Mechanism of Online Social Network Relationships on Sustainable Entrepreneurial Success. *Sustainability*, 16(9), 3755.

- Confetto, M. G., Covucci, C., Addeo, F., & Normando, M. (2023). Sustainability advocacy antecedents: how social media content influences sustainable behaviours among Generation Z. *Journal of Consumer Marketing*, 40(6), 758-774.
- Pascucci, T., Cardella, G. M., Hernández-Sánchez, B., & Sánchez-García, J. C. (2022). Environmental sensitivity to form a sustainable entrepreneurial intention. *Sustainability*, 14(16), 10398.
- Bhatta, D. D., Pi, Y., Sarfraz, M., Jaffri, Z. U. A., Ivascu, L., & Ozturk, I. (2024). What determines the entrepreneurial intentions of employees? A moderated mediation model of entrepreneurial motivation and innovate work behavior. *Heliyon*, 10(2).
- Hussain, I., Nazir, M., Hashmi, S. B., Shaheen, I., Akram, S., Waseem, M. A., & Arshad, A. (2021). Linking green and sustainable entrepreneurial intentions and social networking sites; the mediating role of self-efficacy and risk propensity. *Sustainability*, 13(13), 7050.
- Krueger Jr, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal Of Business Venturing*, 15(5-6), 411-432.
- Radipere, S., & Ladzani, W. (2014). The effects of entrepreneurial intention on business performance. *Journal of Governance and Regulation*, 3(4), 210-222.
- Hmieleski, K. M., Corbett, A. C., & Baron, R. A. (2013). Entrepreneurs' improvisational behavior and firm performance: A study of dispositional and environmental moderators. *Strategic Entrepreneurship Journal*, 7(2), 138-150.
- Koellinger, P., Minniti, M., & Schade, C. (2007). "I think I can, I think I can": Overconfidence and entrepreneurial behavior. *Journal Of Economic Psychology*, 28(4), 502-527.
- Hayward, M. L., Shepherd, D. A., & Griffin, D. (2006). A hubris theory of entrepreneurship. *Management Science*, 52(2), 160-172.
- Newman, A., Obschonka, M., Schwarz, S., Cohen, M., & Nielsen, I. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal Of Vocational Behavior*, 110, 403-419.
- Schmutzler, J., Andonova, V., & Diaz-Serrano, L. (2019). How context shapes entrepreneurial self-efficacy as a driver of entrepreneurial intentions: A multilevel approach. *Entrepreneurship Theory and Practice*, 43(5), 880-920.