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Beyond Digital Narratives: How Ethical Concerns Shape Gen Z's ESG Investment Choices

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Abstract

This study aimed to analyze the factors influencing Generation Z's sustainable financial investment intention in Indonesia, focusing on the roles of digital banking, social media, and ethics, and on the moderating effects of Artificial Intelligence (AI) and financial literacy. Motivated by the paradox between high ESG awareness and low actual investment participation, the study integrated the Theory of Planned Behavior and the Unified Theory of Acceptance and Use of Technology, applying the SEM-PLS method to a sample of 151 Gen Z respondents selected via purposive sampling. The results indicate that Ethics was found to have a strong and significant positive influence, confirming that intrinsic personal values are the primary driver of investment decisions. Conversely, Digital Banking and social media showed no significant influence, attributed to the minimal integration of ESG analysis features on digital platforms and Gen Z's skepticism toward greenwashing. Furthermore, both AI and Financial Literacy failed to moderate the relationships, signalling a gap in technology implementation and a lack of specific ESG literacy.

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1 Introduction

Sustainable finance investment has emerged as a prominent trend in recent years, with the sustainable finance portfolio in Indonesia experiencing rapid growth of 38%, reaching 210 trillion rupiah in 2023, up from 152 trillion rupiah in 2022. This trajectory signifies a positive investor preference for social and environmental values. Nonetheless, this increasing investment trend appears to contrast with the investment behavior among Generation Z (Gen Z), despite their recognized environmental consciousness; only 20% of Gen Z invest in sustainable instruments (KSEI, 2023). The Deloitte Global Survey (2023) reinforces this finding, indicating that 72% of Gen Z are influenced by sustainability content on social media. However, this influence seldom translates into concrete action. This lack of engagement is suggested to stem from either insufficient understanding of sustainable investing or concerns regarding the risk of greenwashing (Bengo et al., 2021).

Furthermore, Indonesia has recorded the highest growth of digital banking service users in ASEAN, reaching 65 million active users in 2023 (Statista, 2024). This increase is projected to continue, potentially reaching 74 million users (39%) by 2026 (Katadata, 2021). Consistent with this trend, the transaction value of digital banking has rapidly expanded, achieving a year-on-year increase of 54.89% in September 2024 (Antara News, 2024). Digital banks, such as Jenius and BCA Digital, facilitate this access by offering features like Eco Portfolio and fractional transactions, thus easing the path to sustainable investing (OJK, 2023).

The adoption of digital banking in Indonesia is widespread, extending across various demographics, including Generation Z (Gen Z), whose population is estimated at 76 million (BPS, 2023). Approximately 40% of this population, around 30 million individuals, are estimated to use mobile or internet banking services (BI, 2023). However, a significant gap exists between access and investment action: the Financial Services Authority (OJK, 2023) reports that only 15% (approximately 4.5 million) of Gen Z possess an investment portfolio such as stocks, bonds, or sharia fintech. Furthermore, out of this investing group, only 20% select sustainable finance investment instruments (KSEI, 2023). This low uptake is notable given that 67% of young investors reportedly prefer platforms that offer environmentally friendly investment options (Bijak Invest, 2023).

The observed data disparity presents a paradox regarding Gen Z's sustainable finance investments. Despite high rates of digital banking service usage and a strong understanding of sustainability values, these factors do not correlate with Gen Z's actual investment behavior, even though the convenience and security features of digital banking are noted attractions for this demographic (Alam et al., 2022). Consequently, only 15% of Gen Z hold an investment portfolio (OJK, 2023). Therefore, this study is designed to examine whether digital banking influences Gen Z's intention to invest in sustainable finance instruments.

As digital natives (Prensky, 2001), social media serves as the primary source of information for Gen Z, with 89% accessing it for more than five hours daily (APJII, 2023). However, skepticism persists, with 41% expressing doubt towards the recommendations of financial influencers. Sustainability content on social media influences their investment preferences (Deloitte, 2023). The average exposure time to green investment content on platforms like YouTube and LinkedIn is approximately 7.2 hours per week. This preference is further supported by Sharma et al. (2023), who reported that 68% of young investors aged 18–25 prioritize aligning their investments with ESG principles, driven by awareness of climate change and social justice.

Furthermore, Conversely, Paul & Bhattacharya et al. (2024) suggest that Gen Z's adoption of 'green' investments is often driven by trend popularity rather than a genuine understanding of environmental impact, a phenomenon amplified by viral social media content. This is compounded by the challenge of greenwashing, with Bengo et al. (2021) finding that 62% of young investors struggle to distinguish authentic sustainability practices from misleading, emotionally-driven corporate narratives. Thus, despite Gen Z's high social media exposure (89% accessing 5 hours/day) and high information absorption (72% exposed to sustainable content), a contradiction exists between the ESG-driven motivations (Sharma et al., 2023) and the trend-based motivations (Paul & Bhattacharya et al., 2024). Therefore, this study aims to specifically investigate how exposure to sustainable investment content on social media influences Gen Z's intention to invest in sustainable finance instruments.

The capability of Artificial Intelligence (AI) to deliver investment recommendations aligned with user profiles and to detect greenwashing represents a major attraction for Generation Z (Mei et al., 2023). The intention to adopt AI-based financial services is significantly influenced by the technology's perceived usefulness and the level of user trust (Atwal & Bryson, 2021). Separately, sustainable investment necessitates an adequate level of financial literacy among potential Gen Z investors. A World Bank report (2021) indicates that Gen Z, with above-average financial literacy scores, is 45% more likely to examine independent certifications, such as SASB and GRI, prior to investing.

Conversely, approximately 22% of Gen Z with low financial literacy struggle to comprehend ESG performance indicators presented in annual reports.

The low financial literacy among Generation Z (Gen Z) is corroborated by Utami et al.'s (2025) study, which found that conventional financial knowledge is insufficient for comprehending sustainable instruments, necessitating a more specific literacy approach. This finding is supported by the Financial Services Authority (OJK, 2023), which stated that education regarding sustainable products remains limited, despite ESG stocks being recognized as strategic tools for achieving the Sustainable Development Goals (SDGs). Other research indicates that sound financial literacy enables objective risk evaluation among students (Sembel et al., 2024), while risk tolerance and social interaction strengthen the intention to invest in the sustainable stock market (Manaf et al., 2024).

This study is underpinned by the crucial roles of Artificial Intelligence (AI) and financial literacy in sustainable investment. AI has proven capable of detecting greenwashing and offering investment recommendations aligned with user values (Mei et al., 2023), while financial literacy is essential for enhancing the ability to analyze risk-return profiles (Sembel et al., 2024). Nevertheless, a significant gap exists between awareness and action regarding sustainable investment among Generation Z (Gen Z), which is exacerbated by the risk of misinformation on social media. Therefore, this research is designed to examine whether Artificial Intelligence (AI) and financial literacy moderate the influence of digital banking, social media, and ethics on Gen Z's sustainable financial investment intention. The findings of this study are pertinent for providing strategic recommendations to the financial industry and regulators to foster a more transparent, inclusive, and sustainable investment ecosystem (Alnemer, 2022).

Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003), serves as the primary framework for analyzing the factors driving technology adoption. UTAUT represents a comprehensive synthesis of eight established theoretical models of technology acceptance, including the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and the Motivated Action Theory (MAT). This theory was selected as the conceptual foundation for the current study due to its superior capability in elucidating complex technology adoption behavior, particularly among Gen Z. Given Gen Z's status as a digital native population, they tend to view digital banking services not merely as functional tools but rather as an extension of their personal identity and values. With its four core dimensions, UTAUT offers a relevant analytical lens for comprehending the variation in the intention to adopt sustainable investment features within digital banking applications—a phenomenon that is not adequately explained by conventional financial theories. The four core UTAUT constructs that are the focus of this study include Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions.

Theory of Planned Behavior

The Theory of Planned Behavior (TPB), introduced by Ajzen (1991), is utilized in this study as a theoretical framework to analyze the determinants of individual behavioral intention. TPB was selected due to its robust ability to delineate the decision-making process involving the interplay between attitude (Attitude), social norms (Subjective Norm), and perceived behavioral control (Perceived Behavioral Control). This theory is highly pertinent to the research context, as it explains the complexity of Gen Z investment behavior, which is influenced not only by financial considerations but also by sustainability values and social pressure. By focusing on its three core dimensions, such as Attitude, Subjective Norm, and Perceived Behavioral Control. TPB effectively helps reveal why Gen Z's stated interest in Environmental, Social, Governance (ESG) issues does not always translate directly into actual sustainable investment actions.

Sustainable Financial Investment Intention

Investment intention is defined as an individual's inclination or desire to allocate resources (money, time) into investment instruments with the expectation of future returns. The *Theory of Planned Behavior* (TPB) asserts that this intention is influenced by attitude, subjective norms, and perceived behavioral control (Ajzen, 1991). In the context of sustainable financial investment, this strategy is expanded to integrate Environmental, Social, and Governance (ESG) criteria into the investment decision-making analysis. This is done not only to manage long-term risk and achieve financial returns but also to create a positive impact (GSIA, 2022). Therefore, sustainable financial investment

intention is conceptualized as an individual's desire to allocate resources toward investment instruments that explicitly consider ESG factors and aim to generate long-term positive social and environmental impact. Drawing upon the TPB framework, sustainable financial investment intention in this study is operationalized through the following indicators: Intention to Purchase Sustainable Instruments, Consistency of Attitude with ESG Values, and Practical Ability to Engage in Green Investment (Alalwan et al., 2017).

Digital Banking

Digital banking is conceptualized as the transformation of conventional financial services into technology-based platforms designed to enhance accessibility, security, and innovation (OJK, 2023). Both the Financial Services Authority (OJK, 2023) and Bank Indonesia (BI, 2023) concur that digital banking leverages digital infrastructure to provide essential banking services (savings, loans, and investment) in real-time. Regulatory compliance is reinforced through BI Regulation No. 19/12/PBI/2017 and OJK Regulation No. 13/POJK.02/2018, which govern digital financial services and Digital Financial Innovation, ensuring stringent consumer data security and strict oversight. From an academic standpoint, digital banking is viewed as an ecosystem that extends traditional banking functions via mobile and web applications, prioritizing improved user experience (UX) and user trust (Alam et al., 2022). Further studies underscore the critical role of intuitive User Interface (Sebayang et al., 2023) and the platform's capacity to offer Environmental, Social, Governance (ESG)-based investment recommendations as key adoption factors, particularly among younger generations (Kasemharuethaisuk & Samanchuen et al., 2023). Adopting the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, which is pertinent to studies on digital investment (Prasarry et al., 2023) and mobile banking (Iskandar et al., 2020), the digital banking variable in this research is operationalized using the following indicators: Perceived Ease of Use, Performance Expectancy, Perceived Usefulness, Trust, Perceived Risk, Features, Hedonic Motivation, Social Influence, and Facilitating Conditions.

The ease of access and the availability of sustainable instruments (such as Sharia mutual funds or green bonds) within digital banking platforms significantly influence Generation Z's (Gen Z) investment intention. Prior studies indicate that Gen Z exhibits a clear preference for platforms that are both efficient and offer dedicated green investment products (Sebayang et al., 2023). Conversely, systemic complexity and the suboptimal integration of sustainable products can pose significant barriers to participation. Grounded in this theoretical and empirical evidence, the following hypothesis is formulated:

H1: Digital Banking significantly and positively influences Gen Z's Sustainable Financial Investment Intention

Social Media

Social media is defined as a digital platform facilitating real-time interaction and content dissemination, serving as a primary source of information, particularly for younger generations (APJII, 2023). Empirically, social media acts as an information amplifier that rapidly influences investment perceptions and behavior, evidenced by the surge in environmental issue discussions impacting the flow of sustainable assets (Sousa et al., 2023). Bengo et al. (2021) observed that the majority of young investors struggle to distinguish authentic sustainability claims from fabricated ones, a finding reinforced by evidence that only a small proportion of Gen Z actively verify claims using independent sources (Sirajuddin et al., 2024). Drawing upon the studies by Bengo et al. (2021) and Sirajuddin et al. (2024), the social media variable in this research is operationalized using the following indicators: Frequency of Social Media Use, Social Media Sentiment, Perceived Risk, Interaction with Investment Content, and Influencer Credibility.

Exposure to sustainability content on social media plays a role in raising ESG investment awareness among Generation Z. The majority of young investors prioritize aligning their investments with ESG principles, driven by concerns over climate change and social justice (Sharma et al., 2023). However, while the influence of certified financial *influencers* positively contributes to education, the risk of information asymmetry and greenwashing practices, amplified by viral content, potentially misleads investment decisions (Bengo et al., 2021). This phenomenon often leads Gen Z to adopt "green" investments based solely on trending popularity rather than on a substantive understanding of the real impact (Paul & Bhattacharya et al., 2024). Despite the inherent risk of misinformation, social media is generally considered a vital channel that reinforces the intention to invest according to personal values. Based on this framework, the following hypothesis is formulated:

H2: Social media significantly and positively influences Gen Z's Sustainable Financial Investment Intention.

Ethics

Ethics in sustainable investment refers to the moral principles that guide individuals in selecting financial instruments by considering ESG impact, thereby ensuring alignment between personal values and financial actions (Sharma et al., 2023). Ethics in this context is multidimensional, encompassing a commitment to avoid detrimental practices and demanding operational transparency. Data indicate that Gen Z possesses high ethical concern (GSIA, 2023). However, there is often a discrepancy between stated concern (89% care about the environment) and the consistency of action (only 52% consistently reject investments in poorly performing ESG companies) (Shahid et al., 2024). This risk can be mitigated by technology: the use of AI-based chatbots, for instance, significantly increases the frequency of ESG certification verification (Yanida et al., 2023), helping investors identify discrepancies between corporate claims and actual practices. Although positive attitude and behavioral control have been shown to increase green investment intention, subjective norms are not always significant (Zulistiawati et al., 2024). Based on the findings of Sharma et al. (2023) and Zulistiawati et al. (2024), the ethics variable in this study is measured using the following indicators: Alignment of Personal Values with ESG, Willingness to Sacrifice Short-Term Returns, Verification of Sustainability Claims, and Consistency of Attitude and Action. Grounded in this theoretical and empirical evidence, the following hypothesis is formulated:
H3: Ethics significantly and positively influence Gen Z's Sustainable Financial Investment Intention.

Financial Literacy

Financial literacy is defined as an individual's critical competency in understanding, analyzing, and applying financial information to make informed decisions, particularly in the context of investment. This literacy encompasses understanding financial instruments like stocks and bonds, the ability to assess risk and return, and awareness of applicable regulations (Utami et al., 2025). More comprehensively, financial literacy not only involves technical knowledge but also the attitude and awareness crucial for financial management, which has been proven to influence investment choices (Sharma & Pokharel, 2025). Financial literacy serves as an enabler that permits the critical evaluation of information, aligning with OJK's recommendations (2023) to bolster sustainable investment intention among Gen Z.

Furthermore, literacy acts as a bridge that integrates the convenience of digital banking with Gen Z's critical awareness of sustainability, ensuring investment decisions are based on a holistic understanding and personal ethical values (Putri et al., 2024). Although studies indicate that financial knowledge alone is insufficient, they emphasize the vital role of attitude and awareness in decision-making (Sharma et al., 2025).

The study by Manaf et al. (2024) indicates that Generation Z individuals with higher financial literacy tend to use social media selectively, for instance, by utilizing investment forum discussions or financial webinars to deepen their understanding of ESG criteria. They are better equipped to differentiate between educational information and potentially misleading promotional content. Conversely, individuals with low literacy are more susceptible to get-rich-quick investment narratives that neglect sustainability aspects, resulting in investment intentions that are speculative and lack a long-term orientation.

Research by Sharma et al. (2023) indicates that inadequate financial literacy can impede the actualization of Gen Z ethical values in investment decisions. Although Gen Z may express strong concern about issues such as climate change, a lack of technical literacy makes it difficult to distinguish between regulated sustainable instruments and misleading investment products (greenwashing). Consequently, this uncertainty and ignorance regarding the practical application of ethical principles potentially hinders their interest in green investment.

Based on literature confirming financial literacy's role in facilitating critical engagement with digital platforms (Putri et al., 2024), social media (Manaf et al., 2024), and ethical consistency (Sharma et al., 2023), the following moderating hypotheses are proposed:
H4: Financial literacy moderates the influence of Digital Banking on Sustainable Financial Investment Intention.
H5: Financial literacy moderates the influence of Social Media on Sustainable Financial Investment Intention.
H6: Financial literacy moderates the influence of Ethics on Sustainable Financial Investment Intention.

Artificial Intelligence

Artificial Intelligence (AI) is defined as a computational system designed to mimic human intelligence through its capacity for data analysis, self-learning, such as machine learning and deep learning, and algorithm-based decision-making (Mei et al., 2023). In the financial context, AI processes information on a large scale and in real-time to enhance the accuracy of investment outcome predictions. AI's role is not limited to analysis; it also functions as a driver of adoption and financial literacy. Studies indicate that the combination of transparency and low perceived risk in AI-based services increases adoption among younger age groups (Atwal & Bryson, 2021). Furthermore, AI plays a crucial role in risk mitigation, where the detection of algorithmic bias can significantly reduce investor exposure to greenwashing practices (Orra et al., 2022). This dual role of AI as both an analytical tool and a risk mitigator empowers Gen Z to make sustainable investment decisions more informatively and responsibly.

Digital banking integrated with AI plays a crucial role in personalizing investments by filtering users' ethical preferences to generate aligned investment recommendations. Mei et al. (2023) illustrate that AI algorithms analyze transaction history and user interactions on the platform to map individual ESG profiles. For instance, if a user frequently interacts with environmental donation platforms, the AI will recommend portfolios based on companies with low carbon performance. This mechanism effectively enhances the relevance of investment offerings, thereby strengthening Gen Z interest as they perceive their personal values to be accommodated.

Social media frequently serves as a conduit for the dissemination of *greenwashing*. AI moderates this risk by analyzing digital content using techniques such as Natural Language Processing (NLP) and sentiment analysis. Research by Orra et al. (2022) indicates that AI can identify inconsistencies between promotional narratives and factual evidence, successfully reducing Gen Z exposure to deceptive information by 22%. Consequently, AI effectively enhances the quality of information consumed by investors, thereby promoting more informed and accurate sustainable investment decisions.

AI serves to moderate the gap between Gen Z ethical principles (such as social justice or environmental protection) and their actual investment choices. AI-driven personalization significantly enhances Gen Z's engagement in green investment, with a study by Mei et al. (2023) noting a 34% increase in participation. This mechanism is effective because AI can recommend investments highly aligned with users' moral convictions, thereby facilitating consistency between their personal ethical values and their financial actions. Grounded in this theoretical and empirical evidence, the following hypotheses are formulated:

H7: Artificial Intelligence moderates the influence of Digital Banking on Sustainable Financial Investment Intention.
H8: Artificial Intelligence moderates the influence of Social Media on Sustainable Financial Investment Intention.
H9: Artificial Intelligence moderates the influence of Ethics on Sustainable Financial Investment Intention.

2 Materials and Methods

Population and Sample

The Generation Z population for this study, consisting of individuals aged 18 to 28 years old (born between 1997 and 2012), was selected using a purposive sampling method based on a set of specific criteria: respondents must be domiciled within Indonesia, must be active users of digital banking services for a minimum of the last six months, must demonstrate an intensity of social media usage of at least five hours per day, and must possess either the intention or prior experience in investing in financial investment instruments. Following the rule of thumb by Sugiyono (2021) of using 5 to 10 times the number of indicators, the sample size was set at 145 respondents since this study uses 29 indicators.

Data Collection and Analysis Procedure

Data for this study were collected using a survey method with a questionnaire distributed via Google Forms. The questionnaire was disseminated through various social media platforms (Facebook, TikTok, and Instagram). This method was considered appropriate given the large and geographically dispersed nature of the target respondent group.

Data for this study were collected using a structured questionnaire developed based on the established indicators for each research variable. Respondent attitudes and perceptions were quantified using a 6-point Likert scale, ranging from 6 (Strongly Agree) to 1 (Strongly Disagree). The analysis was conducted using the Structural Equation

Modeling—Partial Least Squares (SEM-PLS) method. SEM-PLS was selected because it is a variance-based technique that simultaneously evaluates the measurement model (assessing validity and reliability) and the structural model (testing causality and hypotheses), enabling robust analysis of complex relationships among multiple variables. The sources for the questionnaire's indicators are presented in Table 1.

Table 1
Source of Questionnaire Indicators

Construct	Number of Items	Source
Digital Banking	9	Yudhita et.al (2023); Maja Iskandar et.al (2020)
Social Media	5	Bengo et al. (2021); Sirajudin et al. (2024)
Ethics	4	Sharma et al. (2025); Zulistiawati et.al (2024
Artificial Intelligence	4	Atwal & Bryson et al. (2021)
Financial Literacy	4	Sharma et al. (2025)
Sustainable Financial Investment Intention	3	Ajzen (1991)

Research Framework

Based on the preceding hypothesis formulation, the conceptual framework for this study, which explains the influence of Digital Banking, Social Media, and Ethics on Gen Z's Sustainable Investment, as also moderated by Artificial Intelligence and Financial Literacy, can be illustrated as follows:

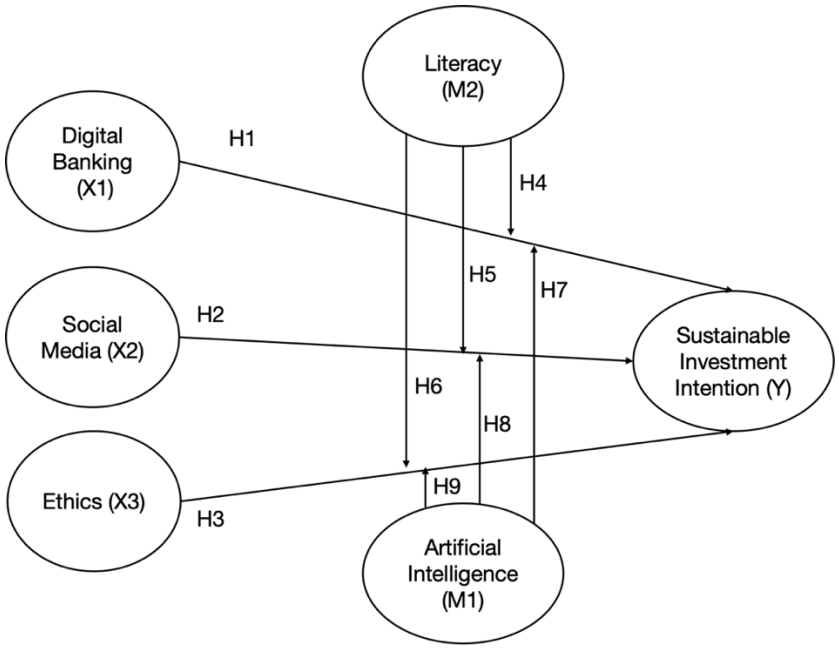

Figure 1. Research Framework

3 Results and Discussions

3.1 Results

Demographic Profiles of Respondents

The total number of Generation Z respondents who completed the questionnaire was 151. In terms of gender, the majority of respondents were Male (96 respondents or 63.5%), while Female respondents accounted for 55 individuals (36.4%). Regarding domicile, the distribution of respondents shows a high concentration in Bali Province (115 respondents or 76.2%), followed by Jayapura (15 respondents or 9.9%), and East Java (7 respondents or 4.6%). The remaining respondents were distributed across West Java and Mataram (3 respondents each or 2.0%), Central Papua, Central Java, and DKI Jakarta (2 respondents each or 1.3%), NTT Kupang and Papua Pegunungan (1 respondent each or 0.7%). All respondents were confirmed to be active users of digital banking within the last six months and active social media users, averaging five hours per day, which concurrently indicates that the respondents possess an interest in investing in line with the study's criteria.

Descriptive Analysis

Descriptive analysis was performed to ascertain respondent perceptions of the research variables. This involved calculating the mean value for each indicator to represent the overall perception of the entire respondent group. The descriptive categories were formulated based on an interval range derived from the answer scale. The average value of each variable is presented in Table 2 as follows:

Table 2
Description of Research Variable Value

Variable	Average Value
Digital Banking	4.2
Social Media	4
Ethics	4
Artificial Intelligence	3.84
Literacy	4
Sustainable Investment Intention	3.74

All research variables received positive ratings from respondents. Digital Banking, Social media, Ethics, AI, Literacy, and Sustainable Investment Intention were rated high. These findings indicate that Gen Z has a strong, positive perception of Sustainable Investment.

Inferential Analysis (SEM-PLS Analysis)

Convergent validity was assessed to determine the extent to which the indicators positively correlate with alternative indicators of the same latent construct (variable). The measurement criteria for establishing convergent validity are based on the outer loading values exceeding 0.7 and the Average Variance Extracted (AVE) values being greater than 0.5. If these two criteria are met, the indicators for the latent construct are considered valid and consistent. The results of the convergent validity test are presented in Figure 2 below.

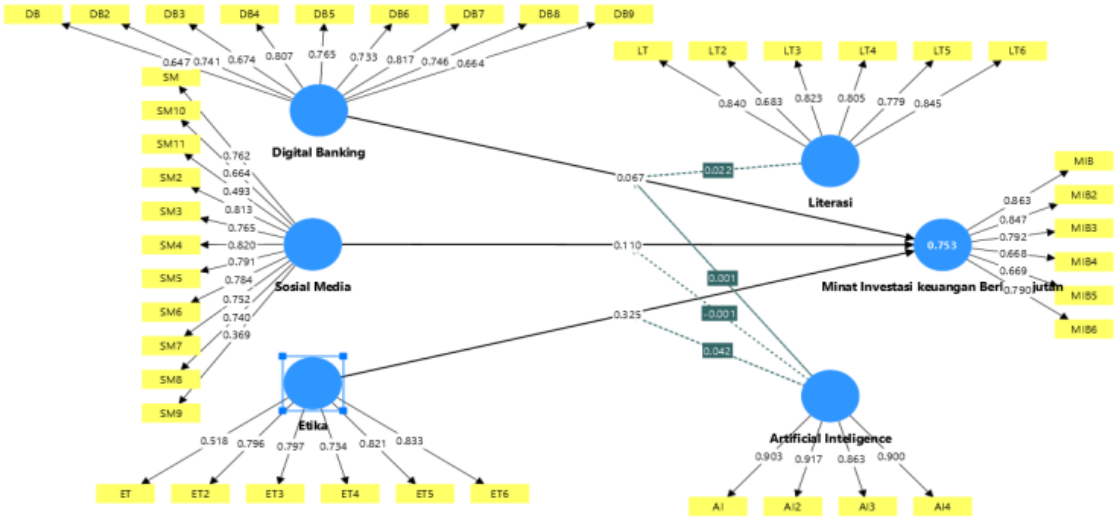

Figure 2. Outer Model

Based on the results of the Outer Model analysis, ten indicators were identified as failing to meet the convergent validity criterion, as their *outer loading* values fell below the 0.7 threshold. These indicators—specifically X1.1 (0.647), X1.3 (0.675), X1.9 (0.664), X2.9 (0.369), X2.10 (0.664), X2.11 (0.493), X3.1 (0.518), M2.2 (0.683), Y.4 (0.668), and Y.5 (0.669)—were consequently removed from the model to enhance measurement validity. Following the elimination of these ten indicators, the final validity test results are presented in Figure 3 below.

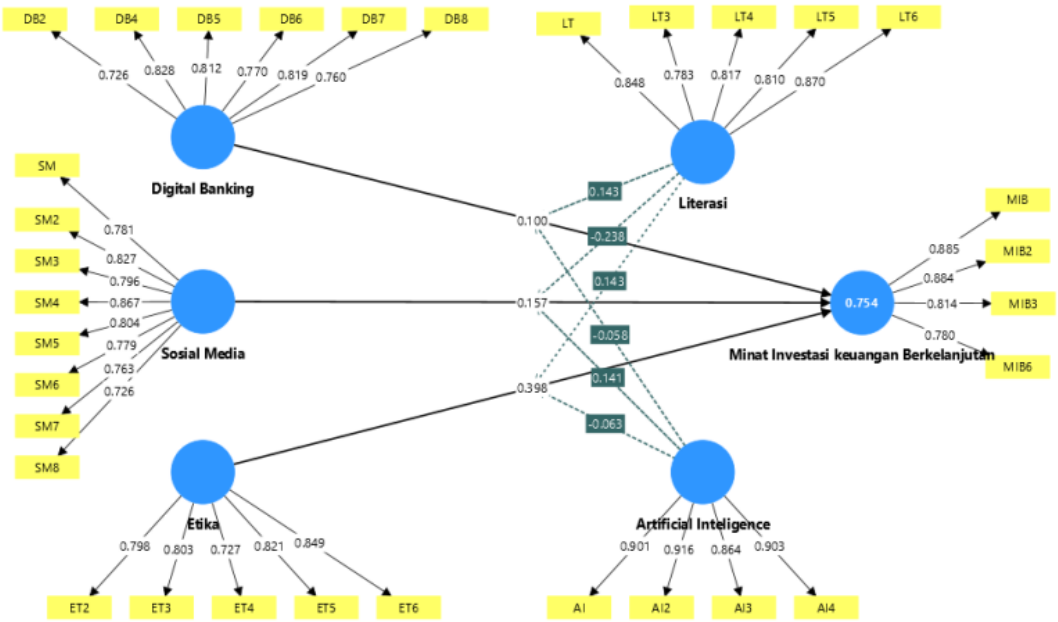

Figure 3. Second Outer Model

The evaluation results for the reflective measurement model (Outer Model), which includes tests for convergent validity and composite reliability, are presented in Table 3.

Table 3
Convergent Validity and Composite Reliability Test

	Variable	Outer Loading	Criteria	Explanation
Convergent Validity	Digital Banking (X1)	0.770 - 0.828	> 0.7	Valid
	Social Media (X2)	0.726 - 0.867	> 0.7	Valid
	Ethics (X3)	0.727 - 0.849	> 0.7	Valid
	Artificial Intelligence (M1)	0.864 - 0.903	> 0.7	Valid
	Literacy (M2)	0.783 - 0.870	> 0.7	Valid
	Sustainable Investment Intention (Y)	0.780 - 0.885	> 0.7	Valid
	Variable	**AVE**	**Criteria**	**Explanation**
	Digital Banking (X1)	0.619	> 0.5	Valid
	Social Media (X2)	0.630	> 0.5	Valid
	Ethics (X3)	0.641	> 0.5	Valid
	Artificial Intelligence (M1)	0.803	> 0.5	Valid
	Literacy (M2)	0.682	> 0.5	Valid
	Sustainable Investment Intention (Y)	0.709	> 0.5	Valid
Composite Reliability	**Variable**	**Cronbach Alpha**	**Criteria**	**Explanation**
	Digital Banking (X1)	0.878	> 0.7	Reliable
	Social Media (X2)	0.916	> 0.7	Reliable
	Ethics (X3)	0.860	> 0.7	Reliable
	Artificial Intelligence (M1)	0.918	> 0.7	Reliable
	Literacy (M2)	0.883	> 0.7	Reliable
	Sustainable Investment Intention (Y)	0.862	> 0.7	Reliable
	Variable	**Composite Reliability**	**Criteria**	**Explanation**
	Digital Banking (X1)	0.895	> 0.7	Reliable
	Social Media (X2)	0.917	> 0.7	Reliable
	Ethics (X3)	0.866	> 0.7	Reliable
	Artificial Intelligence (M1)	0.922	> 0.7	Reliable
	Literacy (M2)	0.888	> 0.7	Reliable
	Sustainable Investment Intention (Y)	0.868	> 0.7	Reliable

Table 4 confirms both the convergent validity and reliability of the research instrument. All variables satisfied the convergent validity criteria, evidenced by all Outer Loadings being above the 0.70 threshold and all AVE values exceeding 0.50. Furthermore, the instrument demonstrated good reliability, as all variables yielded Composite Reliability and Cronbach's Alpha values above the required 0.70 benchmark. To complete the validity assessment, a discriminant validity test will subsequently be conducted, which compares an indicator's correlation with its own construct against its correlation with other constructs.

Table 4
Cross Loading Value

	X1	X2	X3	M1	M2	Y
X1.2	**0.726**	0.411	0.455	0.372	0.369	0.346
X1.4	**0.828**	0.484	0.514	0.447	0.423	0.534
X1.5	**0.812**	0.482	0.511	0.513	0.457	0.567
X1.6	**0.770**	0.505	0.55	0.597	0.562	0.516
X1.7	**0.819**	0.685	0.605	0.525	0.550	0.662
X1.8	**0.760**	0.373	0.433	0.343	0.318	0.413

	X1	X2	X3	M1	M2	Y
X2.1	0.479	**0.781**	0.498	0.465	0.559	0.471
X2.2	0.546	**0.827**	0.577	0.594	0.545	0.553
X2.3	0.471	**0.796**	0.582	0.533	0.498	0.531
X2.4	0.531	**0.867**	0.557	0.534	0.507	0.574
X2.5	0.503	**0.804**	0.561	0.493	0.459	0.554
X2.6	0.489	**0.779**	0.592	0.451	0.446	0.563
X2.7	0.527	**0.763**	0.651	0.518	0.518	0.544
X2.8	0.509	**0.726**	0.564	0.522	0.621	0.530
X3.2	0.516	0.555	**0.798**	0.471	0.418	0.599
X3.3	0.447	0.610	**0.803**	0.420	0.476	0.633
X3.4	0.522	0.511	**0.727**	0.660	0.68	0.551
X3.5	0.533	0.504	**0.821**	0.640	0.697	0.625
X3.6	0.611	0.700	**0.849**	0.571	0.555	0.723
M1.1	0.512	0.606	0.601	**0.901**	0.707	0.674
M1.2	0.593	0.631	0.673	**0.916**	0.730	0.710
M1.3	0.512	0.489	0.565	**0.864**	0.614	0.604
M1.4	0.547	0.593	0.615	**0.903**	0.746	0.710
M2.1	0.517	0.504	0.631	0.625	**0.848**	0.633
M2.3	0.509	0.520	0.572	0.637	**0.783**	0.512
M2.4	0.448	0.590	0.610	0.638	**0.817**	0.606
M2.5	0.421	0.503	0.521	0.657	**0.810**	0.552
M2.6	0.505	0.595	0.562	0.684	**0.870**	0.637
Y1	0.598	0.677	0.694	0.734	0.680	**0.885**
Y2	0.645	0.616	0.648	0.667	0.572	**0.884**
Y3	0.483	0.620	0.718	0.489	0.475	**0.814**
Y6	0.506	0.456	0.588	0.637	0.676	**0.780**

Based on Table 2, the discriminant validity test confirms that the correlation of each variable with its own indicators is consistently higher than its correlation with any other variable. This finding holds for all constructs, namely digital banking (X1), social media (X2), ethics (X3), Artificial Intelligence (M1), Literacy (M2), and Sustainable Investment Intention (Y). Consequently, we conclude that all indicators for each variable are valid.

With the validity and reliability of the measurement model's indicators now confirmed, the analysis proceeded to the structural model to assess the overall model's goodness-of-fit. The R^2 value for Sustainable Financial Investment Intention Y is 0.734, indicating that the model demonstrates a good level of explanatory power.

Hypothesis Testing

In the bootstrapping resampling method employed in this study, a hypothesis is accepted if the t-statistic value is greater than 1.96 and the p-value is less than 0.05. If these conditions are met, the alternative hypothesis Ha is accepted. The results of the empirical model analysis using the PLS method are shown in Figure 4.

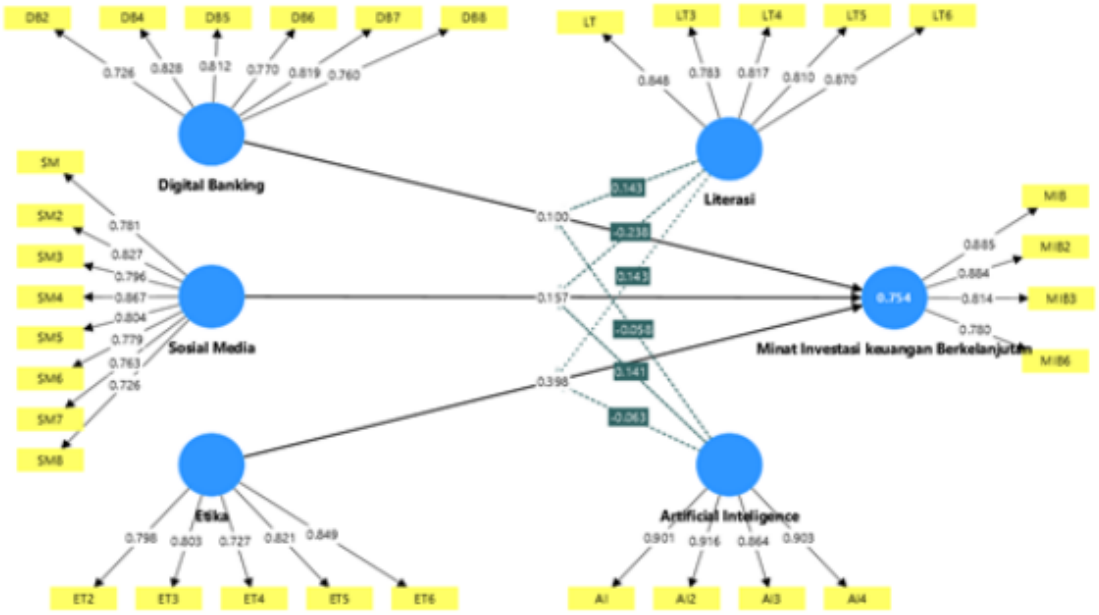

Figure 4. PLS Bootstrapping Empirical Model of Research Variables

The results are summarized in Table 5:

TabLe 5
Hypothesis Testing

Hypothesis	*Original Sample*	*T-statistics*	*p values*	Explanation
Direct Effect				
Digital Banking -> Sustainable Investment Intention	0,100	1,290	0,197	Not Significant
Social Media -> Sustainable Investment Intention	0,157	1,700	0,089	Not Significant
Ethics -> Sustainable Investment Intention	0,398	3,790	0,000	Significant
Moderation Effect				
Artificial Intelligence X Digital Banking -> Sustainable Investment Intention	-0,058	0,373	0,709	Not Significant
Artificial Intelligence X Social Media -> Sustainable Investment Intention	0,141	1,001	0,317	Not Significant
Artificial Intelligence X Ethics -> Sustainable Investment Intention	-0,063	0,416	0,678	Not Significant
Literacy X Digital Banking -> Sustainable Investment Intention	0,143	1,085	0,278	Not Significant
Literacy X Social Media -> Sustainable Investment Intention	-0,238	1,868	0,062	Not Significant
Literacy X Ethics -> Sustainable Investment Intention	0,143	1,163	0,245	Not Significant

3.2 Discussion

The Influence of Digital Banking on Sustainable Financial Investment Intention among Gen Z

The analysis found that digital banking has no significant influence on Gen Z's sustainable financial investment intention, with test results showing a t-statistic of 1.290 (< 1.96) and a p-value of 0.197 (> 0.05). This finding contradicts the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), which posits that perceived ease of access and performance expectancy should drive technology adoption. Although the majority of respondents (76.2%) are active digital banking users, this outcome is substantiated by respondent dissatisfaction with the variety and features of ESG products offered. This finding is consistent with the critique by Alam et al. (2022), who argue that the user interface of digital banking in Indonesia remains focused on conventional transactions rather than sustainable investment education. While the study by Sebayang et al. (2023) in Malaysia found that automated ESG-based recommendation features increased green investment interest by 34%, the lack of integrated ESG analysis tools (e.g., carbon scores) in Indonesian banking applications (OJK, 2023) explains why digital banking has not yet become a primary driver.

The Influence of Social Media on Sustainable Financial Investment Intention among Gen Z

This study found that social media has no significant influence on Gen Z's sustainable financial investment intention. This is based on the test results where the t-statistic value was 1.700 (< 1.96) and the p-value was 0.089 (> 0.05). This finding contradicts the Theory of Planned Behavior (TPB) (Ajzen, 1991), which emphasizes the role of subjective norms as a determinant of behavioral intention. Although the majority of respondents access social media intensively (> 5 hours/day), this result indicates skepticism among Gen Z toward investment content on social media, which is largely triggered by the prevalence of greenwashing practices (Bengo et al., 2021; Olanrewaju et al., 2020). A significant 62% of respondents experienced difficulty differentiating between authentic and false green investments, especially when facing emotional narratives. Furthermore, influencer credibility acts as an inhibitory factor, where only 28% of Gen Z trust investment recommendations from influencers without official certification (Sirajuddin et al., 2024). Thus, although social media successfully enhances ESG preference in other countries, such as India (Sharma et al., 2023), in Indonesia, the combined risk of greenwashing and low trust in content sources (Paul & Bhattacharya, 2024) creates a condition that weakens social media's role as a primary driver of sustainable investment intention.

The Influence of Ethics on Sustainable Financial Investment Intention among Gen Z

The research findings indicate that Ethics has a strong and significant positive influence on sustainable financial investment intention. This is supported by the test results, which show a t-statistic of 3.790 (> 1.96) and a p-value of 0.000 (< 0.05). This finding is consistent with the Theory of Planned Behavior (TPB) (Ajzen, 1991), which posits that attitude, value-based personal principles, is a strong predictor of behavioral intention. This result further aligns with the study by Shahid et al. (2024), confirming that Gen Z prioritizes the alignment of investments with ESG principles. This local finding corroborates global data, where 74% of Gen Z across 18 countries choose ESG instruments due to alignment with moral principles (Deloitte, 2023; Sumartini et al., 2024). Furthermore, the results reveal that respondents from Bali (76.2%) tend to reject investments in companies with low governance scores, which reflects the influence of the local wisdom of Tri Hita Karana (the balance between environment, social, and spiritual well-being) on their financial decisions.

The Moderating Role of Financial Literacy on the Influence of Digital Banking, Social Media, and Ethics on Sustainable Investment Intention

Based on the research findings, the Financial Literacy variable failed to significantly moderate the relationship between digital banking, social media, and ethics on sustainable investment intention, as demonstrated by all relevant p-values being greater than 0.05. This outcome contradicts the hypothesis formulated based on the Financial Literacy Framework (Lusardi & Mitchell, 2014). A significant ESG knowledge gap exists: while 68% of respondents reported understanding basic investment concepts (as stated in the questionnaire), only 31% were capable of analyzing a company's annual report regarding its ESG performance. Data from the OJK (2023) supports this finding by indicating

that conventional financial literacy modules do not adequately cover sustainability aspects. The study by Utami et al. (2025) found that sustainable financial literacy requires three components—Technical Knowledge (met by 35% of respondents), Analytical Skills (22%), and Critical Attitude (only 15%)—suggesting that crucial dimensions of literacy tend to be overlooked. In contrast, the "ESG Literacy Bootcamp" program implemented by the SEC Thailand successfully increased Gen Z's green portfolio allocation by 18% within six months (Sharma & Pokharel, 2025). This highlights that, in Indonesia, sustainability education remains fragmented and insufficiently institutionalized.

The Moderating Role of Artificial Intelligence on the Influence of Digital Banking, Social Media, and Ethics on Sustainable Investment Intention

The research findings indicate that AI failed to significantly moderate the relationship between digital banking, media social, and ethics on sustainable investment intention, as all relevant p-values were greater than 0.05. This result deviates from the study by Mei et al. (2023), which posited that AI could enhance the quality of investment decisions by up to 34% through comprehensive ESG data analysis. This contradiction is likely due to an implementation gap in Indonesian technology. Although 92% of respondents reported familiarity with automated recommendation features, only 23% genuinely understood the underlying AI algorithm's functionality. Furthermore, field studies by the OJK (2023) reveal that most Indonesian digital banking platforms still utilize basic AI for risk analysis, falling short of the predictive level required for sophisticated ESG instruments. Respondents' trust score in AI only reached 3.9 out of a 6-point scale, reflecting significant skepticism. This finding is consistent with Atwal & Bryson (2021) critique regarding the low perceived usefulness of AI in developing countries due to a lack of algorithmic transparency. While Orra et al. (2022) demonstrated that AI could reduce greenwashing exposure by 22% in Singapore, the lack of a standardized ESG database in Indonesia (OJK, 2023) limits AI's effectiveness in filtering sustainability claims, thus undermining its moderating potential.

4 Conclusion

This study aimed to analyze the factors influencing Gen Z's sustainable investment intention amidst the paradox of high ESG awareness and low actual investment participation. The results show that Ethics was found to have a strong and significant positive influence on investment intention (T=3.790, p-value=0.000), confirming that intrinsic personal values are the primary driver of Gen Z's investment decisions, which is consistent with the Theory of Planned Behavior (TPB) and global data (Deloitte, 2023). Conversely, Digital Banking (T=1.290, p-value =0.197) and Social Media (T =1.700, p-value =0.089) did not show a significant influence, indicating that investment interest is not driven by technological facilities or content exposure. Instead, it is constrained by the lack of integrated ESG analysis features in digital banking (OJK, 2023) and skepticism resulting from pervasive *greenwashing* on social media (Bengo et al., 2021). Furthermore, both Artificial Intelligence (AI) and Financial Literacy failed to significantly moderate the relationships (all p-values> 0.05), primarily due to a technology implementation gap (low understanding of AI algorithms) and the ESG knowledge gap within conventional literacy modules (Utami et al., 2025). Overall, these findings conclude that Gen Z's sustainable investment intention is more influenced by intrinsic ethical values than external factors, leading to strategic implications focused on innovating ESG features on digital platforms, strict regulation against greenwashing, and a more holistic sustainable literacy education

Managerial Implication

For the financial industry, this research unveils both strategic opportunities and challenges. Although 76.2% of respondents actively use digital banking, the insignificant influence of the platform on sustainable investment intention signals the critical need for feature innovation. Banks should adopt models observed in Malaysia (Sebayang et al., 2023), integrating comprehensive ESG analysis tools such as carbon scoring and automated sustainability risk-based recommendations. Furthermore, the findings highlight Gen Z's skepticism toward investment content with 62% struggling to identify *greenwashing*, necessitating platform collaboration with regulatory bodies to ensure mandatory influencer certification (Sirajuddin et al., 2024). Studies like Sharma et al. (2023), indicate a potential increase in ESG interest by up to 68% through verified content. The finding regarding low ESG literacy levels suggest developing structured educational modules, drawing reference from the success of the "ESG Literacy Bootcamp" in Thailand (Sharma & Pokharel, 2025), which successfully raised Gen Z's green portfolio allocation by 18%.

Limitation

This study faced limitations primarily concerning its scope and generalizability. Future research should aim to broaden the geographical scope beyond Bali Province to capture diverse regional investment behaviors. Furthermore, future studies could enhance the explanatory power of the model by incorporating additional moderating variables, such as trust in technology, and by utilizing mixed methods to better explain underlying psychological barriers that inhibit sustainable investment action among Gen Z.

Conflict of interest statement
The authors declared that they have no competing interests.

Statement of authorship
The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

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