Digital Transformation, Green Finance and Fintech in a Sustainable Digital Economy

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ABSTRACT

This study aims to analyze the promotion of a green digital economy and evaluate the role of digital transformation, green finance, and financial technology (Fintech) in supporting a sustainable economy. Using a quantitative method with a purposive sampling technique, 100 respondents were obtained through a survey. The analysis was carried out descriptively and using the Partial Least Squares (PLS) approach as a variance-based structural modeling technique. The results of the study indicate that digital transformation, green finance, and Fintech each have a positive and significant effect on the development of a sustainable economy. These findings emphasize the importance of integrating digital innovation and green financial strategies in supporting long-term sustainability. This study recommends that further studies use different groups of respondents and apply alternative analytical methods to broaden the perspective. Thus, further research can provide a more comprehensive understanding of the contribution of digital and financial innovation to achieving a green digital economy.

***Keywords**: Digital Transformation, Green Digital Economy, Green Finance, Fintech, Sustainable Economy*

ABSTRAK

Penelitian ini bertujuan menganalisis promosi ekonomi digital hijau serta mengevaluasi peran transformasi digital, keuangan hijau, dan teknologi keuangan (Fintech) dalam mendukung ekonomi berkelanjutan. Menggunakan metode kuantitatif dengan teknik purposive sampling, diperoleh 100 responden melalui survei. Analisis dilakukan secara deskriptif dan menggunakan pendekatan Partial Least Squares (PLS) sebagai teknik pemodelan struktural berbasis varians. Hasil penelitian menunjukkan bahwa transformasi digital, keuangan hijau, dan Fintech masing-masing berpengaruh positif dan signifikan terhadap pengembangan ekonomi berkelanjutan. Temuan ini menekankan pentingnya integrasi inovasi digital dan strategi keuangan ramah lingkungan dalam mendukung keberlanjutan jangka panjang. Penelitian ini merekomendasikan agar studi selanjutnya menggunakan kelompok responden yang berbeda dan menerapkan metode analitis alternatif untuk memperluas perspektif. Dengan demikian, penelitian lanjutan dapat memberikan pemahaman yang lebih komprehensif mengenai kontribusi inovasi digital dan keuangan terhadap pencapaian ekonomi digital hijau.

***Kata kunci**: Ekonomi Digital Hijau, Transformasi Digital, Keuangan Hijau, Fintech, Ekonomi Berkelanjutan frasa*

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INTRODUCTION

The transition to a digital economy has fundamentally reshaped various sectors, including business, education, healthcare, and entrepreneurship. This transformation is driven by the post-dotcom wave of technological advances in computing and connectivity (Munna & Kalam, 2021), which has enhanced service delivery, improved learning experiences, and increased operational efficiency (Demir et al., 2021). In addition, the rise of creative and digital economy requires human resources to adapt to evolving industrial and economic landscapes (Osipov, 2020). Digitization has also encouraged broader participation in entrepreneurship, challenging traditional business institutions and models (Vasilev et al., 2020). The impact of digital transformation extends to sectors like healthcare, where models such as Enhanced Recovery After Surgery (ERAS) demonstrate the importance of multidisciplinary collaboration and systemic change (Smith et al., 2020). These developments signify deeper socioeconomic shifts that affect social structures and interaction patterns (Nundy et al., 2021).

The digitization process, by converting information into non-physical formats, has revolutionized how data is stored, transferred, and manipulated (Legner et al., 2017). In China, for instance, digital transformation has significantly increased value in aquaculture industry (Yang et al., 2022). Similarly, smart entrepreneurship models have emerged to manage advanced knowledge reproduction (Ostrovska et al., 2023). These innovations demand theoretical advancements in understanding entrepreneurship in the context of a rapidly digitizing economy (Garcez et al., 2022). The digital-for-development paradigm highlights a shift in how ICT and development are integrated, leading to new epistemological frameworks (Heeks, 2022). To meet 21st-century skill demands, pedagogical support plays a key role (Androutsos & Brinia, 2019). Furthermore, changes in accounting practices offer an opportunity to analyze the alignment between financial reporting and scientific methodologies (Kirian & Radchenko, 2022; Alabdullah & Zubon, 2023).

Despite these technological advancements, the international community faces a pressing challenge: the negative environmental impacts of conventional economic activities. Increasing awareness of global warming, environmental degradation, and diminishing natural resources has prompted many nations to adopt sustainable economic models that integrate ecological preservation with growth objectives (Susanti et al., 2023). Indonesia, as a developing country with abundant natural resources, must pursue sustainable development through initiatives such as reducing carbon emissions, enhancing biodiversity, and improving environmental resilience. These goals require cross-sector collaboration and technological innovation to achieve meaningful transformation. In this context, financial sector plays a pivotal role. Green finance—defined as financial activities that promote environmental sustainability—has emerged as a critical mechanism to support sustainable development (Dewi & Hasibuan, 2024). Policies and investment strategies that incorporate green principles are essential to reduce environmental impacts and promote innovation in clean technologies (Utami & Nuraini, 2020). The green economy, which integrates economic, environmental, and social dimensions, serves as a holistic framework for sustainable growth (Oktaviani, 2024).

At the same time, financial technology (Fintech) has rapidly altered the global financial landscape. Fintech enhances financial inclusion by integrating ICT into financial services, enabling broader, faster, and more affordable access—especially for populations underserved by traditional financial institutions. It facilitates banking transactions, digital payments, microloans, and financial planning tools without the need for conventional banking infrastructures. In this way, Fintech acts as a catalyst for inclusive and sustainable financial systems. Indonesia holds significant potential to capitalize on the synergy between green finance, Fintech, and digital transformation. With its vast population and digital infrastructure growth, the country is well-positioned to implement eco-friendly economic strategies across production, distribution, and consumption sectors (Rasyid et al., 2023). However, achieving this transformation requires a deeper understanding of the interplay between these three components.

Although numerous studies have examined digital transformation, green finance, and Fintech individually, there remains a lack of integrated analysis that evaluates their combined influence on sustainable economic development. Previous research highlights various challenges, such as digital literacy gaps by Kraus et al. (2022) human resource readiness by Aniqoh (2020), and sector-specific disruptions by Vaska et al. (2021), indicating the complexity of implementing these changes across industries. This gap underscores the need for holistic, interdisciplinary studies that capture the interconnected roles of technology, finance, and sustainability. Therefore, this research aims to evaluate the effects of digital transformation, green finance, and Fintech on the development of a sustainable economy. By exploring these components collectively, study seeks to provide empirical insights that can inform policy decisions and strategic initiatives for inclusive and environmentally responsible growth.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Digital Transformation and a Sustainable Economy

Digital transformation involves utilizing technologies, such as cloud computing, mobile computing, and virtualization technology, to unify all aspects within a company (Cestero et al., 2023). Furthermore, it can be described as the merging of commerce and technological advancement that transforms the organization's framework, principles, procedures, roles, and environments both internally and externally. Businesses must undergo a transformation in the digital age to stay relevant, as both companies and communities depend on data and technology to improve efficiency and deliver more to customers (Ellström & Josefsson, 2021). The impact of digital transformation in a country or region can be measured using several key indicators. Internet access, including broadband availability and connection speed, is a primary factor. Technology adoption reflects the widespread use of digital devices such as smartphones and computers. E-commerce usage, shown through online sales and consumer activity, highlights digital market growth.

The availability of digital services like e-government, e-health, and digital finance demonstrates integration into daily life. Innovation and R&D are assessed through investment levels and patent outputs. Business efficiency is improved through automation and data analytics. A digitally skilled workforce and high digital literacy support transformation efforts. Cybersecurity measures, including protection levels and incident rates, are vital to securing digital infrastructure. Digital connectivity in rural areas ensures inclusivity, while online presence—reflected in social media and digital platform engagement—shows population-level participation in the digital space. These aspects of digital transformation not only enhance operational and economic efficiency but also contribute to sustainability goals by reducing resource consumption, enabling remote access to services, and supporting inclusive economic participation. Therefore, understanding the extent of digital transformation is essential in assessing its potential role in advancing a sustainable economy.

H1: Digital transformation has a significant effect on a sustainable economy.

Green Finance and Sustainable Economy

Green finance is essential to sustainable development, including government and private sector investment financing (Zhou et al., 2022). This has received attention in policy literature but with limited attention in mainstream finance journals (Ozili, 2022). Furthermore, reports from China have shown the considerable effectiveness of development in lowering carbon emissions. The role of green finance development may experience delays, specifically in regions with previously low levels (Hou et al., 2023). In China, the development has been comprehensively analyzed through green credit, bonds, insurance, and funds, showing the multifaceted nature. Here are some relevant indicators:

Green finance can be evaluated through several key indicators that reflect its scope and effectiveness. One major indicator is the green investment value, which encompasses the

total funding directed toward sustainable initiatives such as renewable energy, eco-friendly transportation, and waste management. The volume of green bond issuance also serves as a key metric, measuring both the number and value of bonds released by governments, corporations, and financial institutions to fund environmentally conscious projects. Additionally, the development of sustainable financial products, including green loans, mutual funds, and environmental insurance, signals diversification in green finance offerings. The growth of sustainable financial markets, such as green bonds, sustainable stocks, and environmental derivatives, further illustrates market expansion. Moreover, the integration of Environmental, Social, and Governance (ESG) criteria into investment decisions reflects a shift in investor priorities. Another important aspect is regulatory compliance, where the alignment of financial activities with green standards set by national and international bodies indicates institutional commitment. Lastly, the measurement of environmental and social impact—through metrics like carbon emissions reduction, improved waste management, and positive community outcomes—demonstrates accountability and the real-world effects of sustainable finance.

H2: Green finance has a significan effect on a sustainable economy.

Fintech and Sustainable Economy

Fintech refers to the innovative application of technology to deliver a wide range of financial services, including digital lending platforms, payment solutions, wealth management tools, and crowdfunding (Anifa et al., 2022). This technology has rapidly gained popularity, particularly among younger generations such as Generation Z, who increasingly adopt fintech lending and view digital payment services as convenient and advantageous (Kanga et al., 2022). The growth of fintech significantly impacts Indonesia's financial landscape and extends globally, acting as a transformative force that both enhances and disrupts traditional financial services (Alt et al., 2018). Research has further explored fintech's potential to contribute to sustainable development, emphasizing its role in driving economic growth and promoting financial inclusion (Deng et al., 2019; Visconti et al., 2020).

The development of fintech is assessed through multiple comprehensive indicators, including the level of financial technology adoption, transaction volumes across payments, loans, and investments, and overall market growth measured by value and active companies. Innovation in fintech products and services enhances functionality and user experience, while fintech's expansion of financial access particularly benefits underserved and unbanked populations through microfinance solutions. Collaborations among fintech firms, traditional financial institutions, government bodies, and academic institutions play a critical role in fostering innovation and expanding reach. Furthermore, regulatory compliance, public awareness, education initiatives, and talent development underpin sustainable growth in fintech. The social and economic impacts of fintech are evident in job creation, reduced economic inequality, and broader financial inclusion, marking fintech as a key driver of economic transformation.

H3: Fintech has a significan effect on a sustainable economy.

Sustainable Economy

Sustainable development requires long-term economic growth to meet both economic and environmental goals (Agbedahin, 2019). The concept is integral to sustainable development programs in many countries (Sampedro, 2021). Meanwhile, researchers have investigated the correlation between economic advancement, trade accessibility, and the accumulation of capital, finding indications of a cause-and-effect relationship between these factors. Sustainable growth necessitates combining ecological, financial, and societal dimensions, highlighting the importance of guidelines that can be applied universally (Fonseca et al., 2020). Green growth has emerged as the primary strategy in addressing climate change and environmental destruction, underscoring the significance

of fostering sustainable economic growth within an ecological framework (Chen et al., 2023).

Sustainable economic development can be measured through various interconnected indicators. Economic growth, typically gauged by GDP, must be evaluated beyond resource exploitation and pollution. Carbon and greenhouse gas emissions are critical markers, with emphasis on reduction through renewable energy and efficiency. Land sustainability, including soil fertility and biodiversity preservation, reflects ecological balance. Social indicators such as poverty levels, income inequality, and access to health and education services highlight social justice. Financial inclusion tracks access to services in marginalized areas. Employment indicators focus on reducing unemployment and promoting decent work. Investments in green infrastructure—such as clean energy, waste management, and green buildings—indicate commitment to sustainability. Economic balance ensures growth aligns with environmental and social priorities. Waste and pollution reduction, along with sustainable product life cycles, further support environmental goals. Lastly, community engagement in decision-making reinforces inclusive and participatory development.

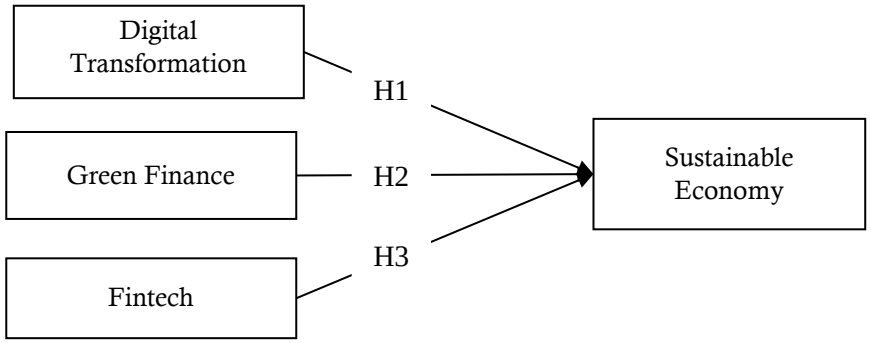

Figure 1. Research Framework

Based on the Figure 1, the hypotheses presented focus on examining the impacts of three key factors on a sustainable economy. The first hypothesis (H1) proposes that digital transformation significantly influences sustainable economic development by integrating advanced technologies to improve efficiency and innovation. The second hypothesis (H2) suggests that green finance plays a crucial role in supporting sustainability by directing investments toward environmentally friendly projects and promoting green economic practices. Lastly, the third hypothesis (H3) highlights the significant effect of fintech in driving sustainable economic growth through enhancing financial inclusion, facilitating innovative financial services, and expanding access to financial resources. Together, these hypotheses explore how technological advancements and financial mechanisms contribute to the achievement of sustainable economic goals.

RESEARCH METHOD

This investigation is categorized as a quantitative inquiry and according to Kas et al. (2019), the research methodologies embody scientific attributes for procuring data with distinct intentions and applications. Hair et al. (2017) stated that descriptive research comprised scrutinizing the current status of the subject matter through observations, interviews, or surveys. Meanwhile, data was collected in order to test theories or answer questions through the use of surveys and other tools. In the context of descriptive inquiry, the prevailing circumstances concerning the subject under scrutiny were stated. This research was carried out to promote a green digital economy using purposive sampling, which resulted in a sample size of 100 respondents. The method of analysis involved the use of Partial Least Squares (PLS), which is a type of structural equation modeling based on variance or components.

According to Kas et al. (2019), Partial Least Squares Structural Equation Modeling (PLS-SEM) constructs or refines a theory and serves to show the presence of relationships among latent variables. Additionally, PLS is developed as a robust analytical approach due to the flexibility regarding data scaling and suitability for small sample sizes, as asserted by (Hair, 2020). Tests to verify the accuracy and reliability of measurements involve several key assessments. Convergent validity evaluates the correlation between individual items and the overall construct, indicated by standardized factor loadings typically greater than 0.7, which reflect a strong relationship. Discriminant validity is examined through a measurement model by comparing the Average Variance Extracted (AVE) values, where scores above 0.5 confirm validity. Composite reliability is measured using the coefficient of latent variables, with values exceeding 0.70 indicating high reliability. Additionally, Cronbach's Alpha assesses the reliability of combined measurement results, where a value greater than 0.7 denotes a reliable variable.

The instrument testing uses the Heterotrait–Monotrait Ratio (HTMT) to assess validity and reliability. Convergent validity is measured using the Average Variance Extracted (AVE); a high AVE indicates that the indicators consistently measure the intended construct. Reliability is tested using Cronbach's Alpha and Composite Reliability, both of which ensure strong internal consistency of the instrument. The R-squared test explains how much independent variables influence the dependent variable. Inner Model Analysis (Structural Model) in SmartPLS predicts relationships between variables and tests assumptions. Hypothesis testing is conducted using t-statistics and p-values. The alternative hypothesis (Ha) is accepted if the t-statistic exceeds 1.96 and the p-value is below 0.05, indicating a significant effect. If the t-statistic is below 1.96 and the p-value is above 0.05, the null hypothesis (H0) is accepted, suggesting no significant effect. These steps confirm the instrument's validity, reliability, and the strength of relationships among variables.

RESULTS

The outer model is assessed based on four criteria, Convergent Validity, Discriminant Validity, Composite Reliability, and Cronbach's Alpha. The diagram present below offers a more detailed illustration of the theoretical framework underpinning this study.

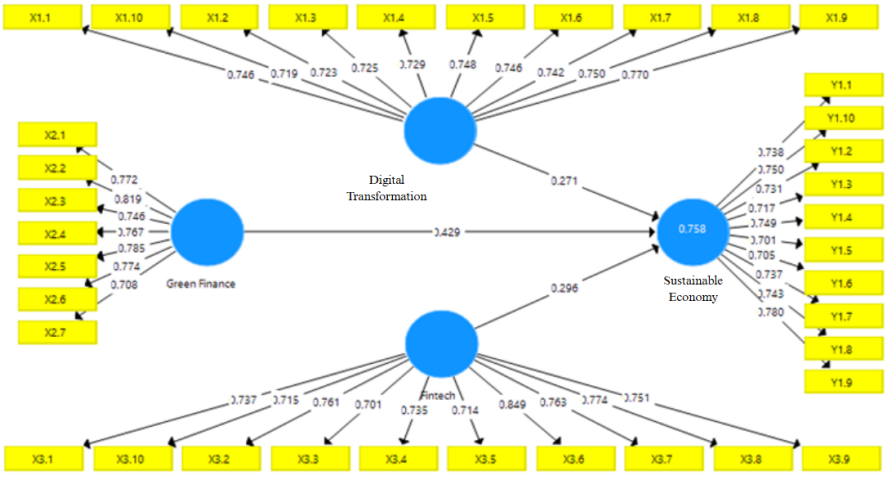

Figure 2. Outer Model

Figure 2 above illustrates a Partial Least Squares Structural Equation Modeling (PLS-SEM) structural model analyzing the influence of digital transformation, green finance, and fintech on sustainable economy. Each latent construct is represented by a blue circle, while the indicators used to measure them are shown in yellow boxes with their respective loading values. Most loading values exceed 0.7, indicating strong contributions of the indicators to their constructs. The paths between constructs are marked with arrows and path coefficients. Digital transformation directly influences the sustainable economy with

a coefficient of 0.271, green finance with 0.429, and fintech with 0.296. The R^2 value of 0.758 for the sustainable economy construct suggests that 75.8% of its variance is explained by the three predictor variables. This reflects a robust and well-fitting model that highlights the critical roles of digital and financial innovations in fostering sustainable economic development.

Distinctiveness among latent variables or constructs is crucial, and Discriminant Validity serves the purpose. The Herriott-Monotrait Ratio (HTMT) is used to evaluate the current status accurately. According to Ghozali (2018), a construct shows robust discriminant validity when HTMT value falls under 0.90.

Table 2. Heterotrait – Monotrait Ratio (HTMT)

Variable	Sustainable Economy	Fintech	Green Finance	Digital Transformation
Sustainable Economy				
Fintech	0.824			
Green Finance	0.839	0.669		
Digital Transformation	0.807	0.801	0.641	

Based on the Table 2, the HTMT ratio of the variables is less than 0.9, indicating good discriminant validity among the constructs. In addition, another method to evaluate discriminant validity is by analyzing the square root of AVE values Dirgayasa and Darma, (2024). According to Ghozali (2018), an AVE value exceeding 0.5 is recommended as presented in the following table:

Table 3. Average Variant Extracted (AVE)

Variable	Average Variance Extacted	Cronbach' Alpa	Composite Reliability
Sustainable Economy	0.541	0.906	0.922
Fintech	0.564	0.914	0.928
Green Finance	0.590	0.884	0.910
Digital Transformation	0.547	0.908	0.924

Table 3 displays the results of validity and reliability testing for each research variable: Sustainable Economy, Fintech, Green Finance, and Digital Transformation. The Average Variance Extracted (AVE) values for all variables exceed the 0.5 threshold, indicating good convergent validity—specifically, 0.541 for Sustainable Economy, 0.564 for Fintech, 0.590 for Green Finance, and 0.547 for Digital Transformation. In terms of reliability, all variables show strong internal consistency, with Cronbach's Alpha values above 0.88 and Composite Reliability scores above 0.91. These results confirm that the measurement instruments used in this study are both valid and reliable. The research variables surpass the designated AVE threshold of 0.5 (AVE > 0.5). Specifically, Sustainable Economy, Fintech, Green Finance, and Digital Transformation achieve an AVE of 0.541, 0.564, 0.590, and 0.547, respectively. By computing the AVE value, the variables exceeding the 0.5 threshold satisfy the criterion for strong discriminant validity.

Ghozali (2018) analyzed the composite reliability of the indicator blocks for the construct. A construct is deemed reliable if its composite reliability value is above 0.70, Satisfactory results for composite reliability, with each variable reporting high scores. Specifically, Sustainable Economy, Fintech, Green Finance, and Digital Transformation achieve a composite reliability value of 0.922, 0.928, 0.910, and 0.924, respectively. These results suggest that the variables possess composite reliability values exceeding 0.7. Cronbach's alpha complements the composite reliability test by providing additional insights. Meanwhile, a value exceeding 0.7 signifies reliability for a given variable.

With respect to route coefficients, these values indicate the relative strength of the relationships between constructs. Their significance can be assessed using a t-test obtained through the bootstrapping method, provided it is consistent with the underlying theoretical framework (Dirgayasa & Darma, 2024). Figure 3 presents the t-test results comparing the inner and outer model components.

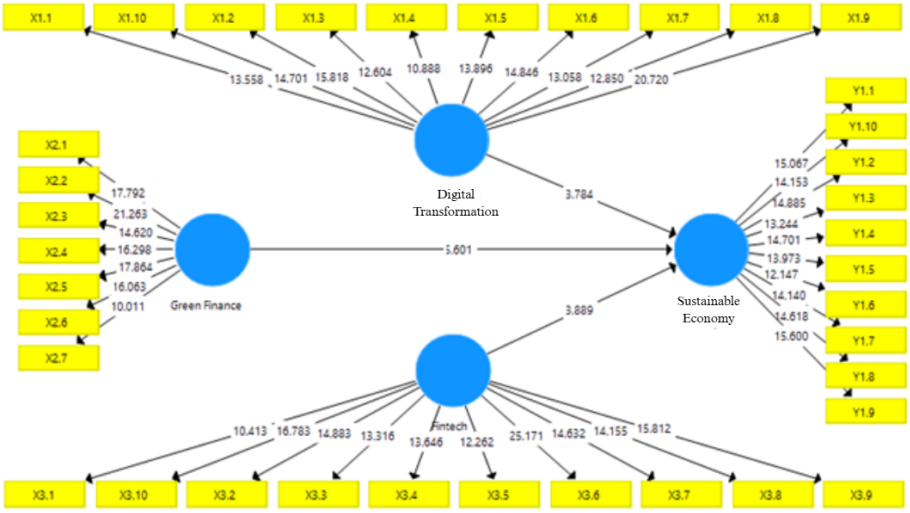

Figure 3. Inner Model

Figure 3 illustrates the structural model results using Partial Least Squares Structural Equation Modeling (PLS-SEM), showing the influence of Digital Transformation, Green Finance, and Fintech on Sustainable Economy. Each latent variable is represented by several indicators: Digital Transformation (X1.1–X1.10), Green Finance (X2.1–X2.7), Fintech (X3.1–X3.10), and Sustainable Economy (Y1.1–Y1.9). The path coefficients reveal that Green Finance has the strongest impact on Sustainable Economy (5.601), followed by Fintech (3.889) and Digital Transformation (3.784). All indicator loadings are above 10, indicating strong contributions to their respective constructs. This model highlights that all three factors significantly and positively influence sustainable economic development. The t-test utilized is based on a sample from bootstrap analysis, which contrasts the t-distribution values with the outcomes shown in Figure 3.

Table 4. Hypothesis Test Results

Hypothesis	T Statistics	P Values
Fintech -> Sustainable Economy	3.538	0.000
Green Finance -> Sustainable Economy	5.723	0.000
Digital Transformation -> Sustainable Economy	3.208	0.001

Based on the Table 4 The hypothesis testing results demonstrate that Fintech significantly impacts the Sustainable Economy, as reflected by a T statistic of 3.538 and a P value of 0.000. The T statistic exceeding the critical threshold and the P value falling below the standard alpha level provide strong evidence that Fintech plays a role in shaping the Sustainable Economy. Therefore, superior performance in Fintech can increase a Sustainable Economy, confirming the acceptance of the first hypothesis (H1).

The analysis demonstrates that Green Finance has a significant impact on the Sustainable Economy, as evidenced by a T-statistic of 5.723 and a P-value of 0.000. Given that the T-statistic exceeds the threshold and the P-value is well below the standard significance level, it can be concluded that Green Finance plays a positive role in promoting the development of a Sustainable Economy. Therefore, enhanced performance in Green Finance can contribute to the improvement of Sustainable Economy, supporting the acceptance of the second hypothesis (H2).

The results of the hypothesis test demonstrate that Digital Transformation significantly influences the Sustainable Economy, as shown by a T-statistic of 3.208 and a P-value of 0.001. Given that the T-statistic exceeds the critical threshold and the P-value is below the standard significance level, it can be inferred that Digital Transformation exerts a positive impact on the Sustainable Economy. Therefore, superior performance in Digital Transformation can enhance Sustainable Economy, confirming the acceptance of the third hypothesis (H3).

DISCUSSION

The findings of this study confirm the significant influence of Fintech, Green Finance, and Digital Transformation on the development of a Sustainable Economy. The effect of Fintech is evident through a T statistic of 3.538 and a P value of 0.000, indicating a statistically significant relationship. The positive path coefficient highlights Fintech's constructive contribution to sustainability. This supports the first hypothesis (H1), consistent with previous studies (Yang et al. 2021; Wen & Siddik, 2023), which emphasize Fintech's role in enhancing financial inclusion, expanding access to services, and promoting economic participation—key elements in fostering sustainability. As financial technologies evolve, they reduce barriers for underserved populations, increase digital financial literacy, and support low-carbon financial ecosystems.

Green Finance also demonstrates a robust impact on sustainable economic outcomes. With a T statistic of 5.723 and a P value of 0.000, its influence exceeds critical thresholds, validating the second hypothesis (H2). The positive coefficient confirms that green financial practices foster sustainability by promoting responsible investment and supporting environmental goals. These findings are reinforced by prior research (Liu et al. 2020; Lee et al. 2023), which underscores the role of green bonds, sustainable credit, and ESG-aligned policies in mitigating environmental degradation. In line with Indonesia's sustainability priorities (Susanti et al. 2023; Dewi & Hasibuan, 2024), green finance mechanisms are pivotal for supporting renewable energy, biodiversity conservation, and resilient infrastructure. Policies that embed ecological values into financial systems are essential for long-term sustainability.

Digital Transformation's role in sustainable economic development is also significant, with a T statistic of 3.208 and a P value of 0.001, confirming the third hypothesis (H3). The positive path coefficient reveals how digitization advances sustainability through increased efficiency, reduced resource consumption, and enhanced service delivery. Supported by Kadom and Kader (2021), Rosário and Dias (2022), and Akarsu (2024) this finding aligns with the broader literature on digitalization's societal and economic impacts. The shift to digital platforms—driven by innovations in cloud computing, mobile technologies, and virtual services—has not only improved business operations (Cestero et al. 2023) but also redefined social engagement and service accessibility (Munna & Kalam, 2021; Demir et al., 2021). For example, in sectors such as healthcare and education, digital models increase research efficiency and inclusiveness by Androutsos and Brinia (2019) and Smith et al. (2020), while in entrepreneurship, digital models encourage research participation and innovation by Osipov (2020) and Ostrovska et al. (2023).

Indonesia stands at a critical intersection where Fintech, Green Finance, and Digital Transformation can be leveraged synergistically to build a sustainable economy (Rasyid et al., 2023). However, realizing this vision requires overcoming challenges such as digital literacy gaps, regulatory adaptation, and cross-sector collaboration (Vaska et al., 2021; Kraus et al., 2022). This study addresses the gap in integrated research by evaluating these three components collectively, offering empirical evidence for policy formulation and strategic planning. As sustainability becomes a global imperative, understanding the interplay between technological innovation and environmental stewardship is essential to designing inclusive and resilient economic systems.

CONCLUSION

This study concludes that Fintech, Green Finance, and Digital Transformation each play a significant and complementary role in advancing a sustainable economy. The findings demonstrate that these three elements not only improve efficiency, inclusivity, and innovation, but also support environmental goals through financial and technological integration. The synergy between them offers a strategic pathway for countries like Indonesia to pursue sustainable development while maintaining economic growth. The practical implications of this research highlight the need for inclusive digital infrastructure, expanded access to green financial instruments, and supportive regulatory

frameworks that align technological advancement with sustainability objectives. For policymakers and practitioners, integrating Fintech solutions with environmental finance mechanisms can accelerate low-carbon innovation and broaden financial access in underserved regions. Theoretically, this study contributes to the growing discourse on the intersection of technology, finance, and sustainability by offering an integrated model that connects these domains. It supports a shift toward interdisciplinary research that addresses the complexity of sustainable transformation in the digital age. However, the study has limitations. The scope was limited to a single analytical model and specific respondent groups, which may constrain generalizability. In addition, contextual differences—such as regional infrastructure or policy variations—were not deeply explored.Future research should adopt comparative or longitudinal designs to capture dynamic changes over time. Exploring sector-specific case studies or integrating qualitative insights could also deepen understanding of the mechanisms linking Fintech, green finance, and digital transformation. Broader sampling and alternative methodologies are recommended to validate and extend these findings across different economic contexts.

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