Journal of Finance, Economics and Business
Vol. 3 No. 2, November 2024
https://risetekonomi.com/jurnal/index.php/feb

FROM EXCLUSION TO INCLUSION: THE ROLE OF FINANCIAL TECHNOLOGY IN ENHANCING SUSTAINABILITY PERFORMANCE IN INDONESIAN MUSLIM MSMEs

Apia Dewi Agustin[1], Muhammad Hanif Ibrahim[2]

[1] Gadjah Mada University, Yogyakarta, Special Region of Yogyakarta, Indonesia
[2] Gadjah Mada University, Yogyakarta, Special Region of Yogyakarta, Indonesia

ABSTRACT

Purposes: This study aims to reveal the impact of financial technology (FinTech) in enhancing the sustainability performance of Indonesian Muslim Micro, Small, and Medium Enterprises (MSMEs). Furthermore, this study also investigates the mediating roles of financial literacy, financial accessibility, competitiveness, and green innovation, and the moderating effects of Sustainable Development Goals (SDGs) consciousness and religiosity on the relationships between these mediators and the sustainability performance of Muslim MSMEs.

Methods: Data were collected from 179 Indonesian Muslim MSMEs. And analyzed using Structural Equation Modeling (SEM) using quantitative aproach. Results: By the objectives, the results reveal that FinTech adoption positively impacts the sustainability performance of Indonesian Muslim MSMEs. Financial literacy, financial accessibility, SDGs knowledge enhancing the overall effect of FinTech on sustainability performance. Furthermore, religiosity significantly moderates these relationships, with higher levels of these moderators strengthening the positive impacts.

Conclusion and suggestion: This study underscores the critical role of FinTech in advancing sustainable performance among Indonesian Muslim MSMEs. By enhancing financial literacy, financial accessibility, competitiveness, and green innovation, FinTech can substantially improve sustainability outcomes. Additionally, integrating SDG consciousness and religiosity into MSME practices can further strengthen these positive impacts. Policymakers and practitioners should account for these factors, particularly within the Islamic context, when developing strategies to support the sustainable growth of MSMEs.

Keywords: *Islamic Financial Technology (Fintech); Financial Inclusion; Sustainability Performance; Indonesian Muslim Micro, Small, And Medium Enterprises (Msmes)*

ARTICLE HISTORY:
Published Online: 301-2024

CORRESPONDING:
Name : Apia Dewi Agustin
E-mail: apiadewi00@mail.ugm.ac.id

E-ISSN: 2988-1234
DOI : 10.59827/jfeb.v3i2.147
PUBLISHER:
Laboratorium Riset Ekonomi

INTRODUCTION

The circular economy (CE) has recently attracted considerable global attention (Andrews, 2015; Baah et al., 2024; Korhonen et al., 2018; Kowasch, 2022; Nguyen, 2023; Pizzi et al., 2021b; Thorley et al., 2022). CE is regarded as a key environmental strategy aimed at minimizing waste and restoring natural ecosystems (Bag et al., 2021). By implementing CE, businesses are encouraged to adopt sustainable practices that promote environmental conservation and efficient energy use (Arsawan et al., 2021; Gupta et al., 2021). Furthermore, achieving significant sustainable development through CE requires concrete actions and investments from both 2 policymakers and the private sector (Scheyvens et al., 2016). Within the private sector, small and medium enterprises (SMEs) are particularly well-positioned to drive the transition to CE (OECD, 2019). However, their contributions have been limited by various economic and organizational challenges (Caldera et al., 2019), such as the lack of sufficient economic, human, or technical resources (Bartolacci et al., 2020).

In Indonesia, a similar scenario is evident, with micro, small, and medium enterprises (MSMEs) playing a crucial role in job creation and adding value to the economy (Bappenas, 2017). At the beginning of 2022, there were 64.2 million MSMEs in Indonesia, contributing 61% to the country's GDP and representing 97% of the total workforce (Coordinating Ministry for Economic Affairs Republic of Indonesia, 2022). However, SMEs simultaneously pose a challenge to policymakers who want to support their growth. Judging the Indonesia conditions, the majority of Indonesia’s population is Muslim and many of them are SME actors. Islam clearly support commerce and trade by becoming an entrepreneur through Al-Quran (the Holy Book for Muslims). Islamic entrepreneurship is doing business through innovation or risk but still followingsome of the guidelines set in the Al-Quran namely by prohibiting dishonesty, greed, exploitation, monopoly, uncertainty, interest, and transacting prohibited (haram) goodsand services.

According to Burger et al. (2015), Indonesian MSMEs both conventional MSMEs and Muslim MSMEs face four major challenges: access to financial and credit services, access to raw materials, labour and human resources issues, and access to markets and demand. Therefore, improving MSMEs' access to formal financial services is crucial for meeting their capital needs, which in turn enhances

their productivity and economic performance. Nevertheless, many Muslim MSMEs still lackaccess to these services due to low financial literacy and cultural and religious barriers. The rise of fintech (digital financial services) offers a potential solution to bridge this gap and provide Muslim MSMEs with greater access to modern financial services (Bappenas, 2017).

This issue is addressed in Indonesia's SDGs Roadmap Towards 2030, specifically under SDG No. 8 (decent work and economic growth). The plan aims to increase MSMEs' access to financial services to 33.17% without intervention and up to 41.60% with intervention (Ministry of National Development Planning, 2022). FinTech is expected to provide easy access to finance and improve MSME businesses positively as well as solutions to MSME financing and operational problems, in this study focuses on the role of Muslim MSMEs in Indonesia (Cheng & Qu, 2020; Goswami et al., 2022; Pashang & Weber, 2021; Yang & Wang, 2022). Despite its potential, fintech adoption among Muslim SMEs remains relatively low (Setiawan et al., 2021), due to concerns about financial risk, legal uncertainty, security and privacy issues, and low levels of financial literacy (Nugraha et al., 2024; Utomo & Darwanto, 2024). Hence, understanding the factors that drive fintech adoption is crucial for improving financial access for Muslim MSMEs in Indonesia. Policymakers should consider these drivers when developing strategies to promote fintech services that align with the needs of Muslim SMEs. Addressing these factors is essential todesigning effective strategies that can enhance financial inclusion and support the growth of Muslim MSMEs. Unfortunately, although several empirical studies 3 (Igamo et al., 2024; Rahayu et al., 2024; Setiawan et al., 2021) have explored fintech adoptionfrom the perspective of individual users in Indonesia, little attention has been given toMuslim MSMEs user level.

Given the scarcity of research on this phenomenon, this study aims to addressthe following research question: (RQ1) What the key factors influencing the adoption of fintech by Musim MSMEs? By answering this question, the study seeks the primary factor affecting the FinTech adoption, to offer insights that can help enhance financial access for Muslim MSMEs through effective fintech adoption strategies.

Furthermore, current sustainability concerns also highlight fintech's role in supporting a sustainable economic model by enhancing access to finance and improving various dimensions of a firm's sustainability performance (Knight et al.,

2019). By adopting fintech, Muslim MSMEs can improve financial access equality, contributing to the achievement of the United Nations Sustainable Development Goals (UN SDGs), particularly in alleviating extreme poverty and increasing shared prosperity. Fintech, driven by digital productivity (Khan et al., 2022), significantly helps Muslim MSMEs transition to more sustainable business models (Pizzi et al., 2021). FinTech firms that contribute to sustainability, especially economically, often collaborate with banks through equity agreements (Arner et al., 2020; Cosma et al., 2023). This partnership helps bridge short-term and long-term benefits, enabling Industry 4.0 to enhance sustainable and circular economies (Lopes de Sousa Jabbouret al., 2018; Luthra et al., 2020).

Previous research on sustainability by MSMEs has extensively covered corporate social performance (Arsawan et al., 2021; Paulraj, 2011; Scheyvens et al., 2016). However, there is a lack of studies connecting fintech adoption and sustainability performance in developing countries, particularly in Indonesia (Pizzi et al., 2021b; Saadah & Setiawan, 2023). Therefore, it is crucial to explore the relationship between financial technology use and sustainability issues. Additionally, this will provide valuable insights for regulators and governments to develop comprehensive strategies supporting digital financial transformation, promoting both financial inclusion and sustainable, balanced growth.

Given these considerations, RQ2 addresses: How does fintech adoption impact the economic performance of Muslim MSMEs? In what ways does fintech adoption contribute to the social and environmental sustainability of Muslim MSMEs? This paper credits the novelty of integrating Ecological Modernization Theory (EMT), Resource-based View (RBV), and Technology Acceptance Model (TAM) to investigate the key drivers of fintech adoption that promote the execution of SDGs in Indonesia. This study makes several contributions to the literature on technology adoption and sustainability. Firstly, it identifies the key drivers (such as literacy, government support, user innovativeness, and competitive pressure) and barriers (such as perceived risk) to fintech adoption among Muslim MSMEs, with user innovativeness emerging as the main driving factor alongside the significant role of government support. Secondly, it evaluates the impact of fintech adoption on the sustainability performance of Muslim MSMEs across environmental, economic, and social dimensions. Notably, the social dimension experiences the most substantial impact, potentially linked to enhanced financial

inclusion and community well-being (Hudaefi, 2020). Lastly, this study provides policy recommendations to promote fintech adoption and maximize its benefits for the sustainability performance of Muslim MSMEs, based on the identified driving factors and the sustainability dimensions thatare most likely to be optimized.

From this observation, enhancing Muslim MSMEs' access to financial resources and promoting technological innovation through FinTech supports economic growth (SDGs No. 8) and drives comprehensive and inclusive progress across various sectors in Indonesia (Bappenas, 2017). Moreover, this study adds to the expanding body of literature on fintech and the Sustainable Development Goals (SDGs) in emerging economies, with a particular emphasis on the role of Muslim MSMEs.

The rest of the document is organized as follows: The next section discusses the development of conceptual models and their associated hypotheses. Section 3 explains the research methodology, including data collection and analysis. Section 4 presents the findings. The final section concludes with theoretical and managerial implications, reflections on limitations, and avenues for further research

LITERATURE REVIEW

2.1 Underpinning Theory

2.1.1 Ecological Modernization Theory (EMT)

Ecological Modern Theory (EMT) refers to environmental problems that arise due to economic growth, which can be addressed by improving resource efficiency through technological advancements, such as FinTech innovations (Khan, 2022). Existing institutions, such as MSMEs, will be able to overcome ecological sustainability challenges, this is a result of the goal of ecological modernization (Pataki, 2009). EMT is the starting point for industrial transformation according to ecological criteria (Mol, 1996). EMTs place great emphasis on technological advancement, innovation creation, and cleaner diffusion of new technologies (Pataki, 2009). EMTs try to combine the environment and social sustainability with respect for the profitability of the capitalist economy. On the other hand, York et al. (2004) explain that social modernization is necessary to advance ecological sustainability. The modernization concept suggests the development of new and integrated technologies

and simultaneously the development of new and more competitive products (Andersen & Massa, 2000). However, concepts such as environmental efficiency and environmental productivity need to be maintained in ecological modernization (Mol & Spaargaren, 2000). Through innovation and technological advancement, EMTs strive to achieve economic growth and environmental preservation (Spaargaren, 2000). The current literature has discussed the adoption of EMT technology to understand the relationship between I4.0 technology and sustainability (Khan, 2024). Therefore, we use EMT as a lens to determine FinTech innovation and corporate sustainability performance

2.1.2 Resource-based View (RBV)

In recent years, the resource-based view (RBV) has become a prominent approach in assessing an organization's competitive advantage (Newbert, 2007). This perspective highlights the importance of an organization's unique resources and capabilities, such as physical, financial, human, and intellectual assets, in building a sustainable competitive advantage (Barney, 1991; Gunasekaran et al., 2017). In building a competitive advantage, companies need to concentrate on valuable, scarce, difficult-to-replicate, and irreplaceable resources (Miller, 2003). The everdynamic need makes it necessary for companies to integrate, build, and configure resources to cope with the rapidly changing business environment (Teece, 2012). However, recently the RBV theory (Barney, 1991) has been expanded to include environmental and sustainable challenges that can be addressed and practised with concrete resources. Research from Knight et al. (2019) Reveals that adequate resources (e.g., finance) are necessary for environmentally friendly practices and sustainable efforts. Companies with adequate resources will easily engage in sustainable activities and environmental projects (Ullah et al., 2021). Therefore, this study takes ideas from RBV to assess the sustainability performance of a company

2.2 Hypothesis Development

2.2.1 FinTech adoption and financial literacy

Financial literacy is the knowledge and understanding that individuals have about financial concepts, which allows them to make effective financial decisions (Chen & Volpe, 1998). A person with high financial literacy tends to have a better understanding

of financial products and services, including fintech services. With a better understanding, they are more likely to adopt financial technology (fintech) in their daily lives (Lusardi & Mitchell, 2014). On the other hand, individuals with low financial literacy may have a less understanding of the benefits and risks associated with fintech, so they may be more hesitant or slow to adopt the technology (R. T. Thakor & Quinn, 2020). Therefore, the level of financial literacy is expected to positively influence fintech adoption. Hence, this study hypothesized that:

H1: FinTech has a positive effect on financial literacy

2.2.2 FinTech adoption and financial accessibility

A plethora of literature has investigated the effect of financial technology adoption on access to finance or financial inclusion (Abbasi et al., 2021; Bollaert et al., 2021). Fintech offers an alternate source of financing for enterprises and people, increases credit availability for some neglected sectors, and boosts the efficiency of financial intermediation (Croutzet & Dabbous, 2021). The advancement of fintech has increased credit market information exchange. Obtaining data-rich information from other creditors may help lower the cost of assessment and monitoring, and information exchange can also help rein in borrower's behaviour and mitigate credit risk (Sutherland, 2018). Based on these arguments, the following hypothesis was developed:

H2. FinTech adoption has a positive effect on financial accessibility

2.2.3 Financial Literacy and Sustainability Performance

Financial literacy is the capacity to make sound judgments and prudent financial decisions (Beal & Delpachitra, 2003). A financially literate individual must be able to interpret, evaluate, and communicate personal financial conditions influencing his material well-being, make solid financial choices, and communicate money and financial issues without displeasure. As per Wachira & Kihiu (2012), financial literacy continues to be an intriguing issue in both developed and emerging countries and has sparked considerable traction in recent years, given the rapid evolution of the financial landscape. Babajide et al. (2021) asserted that a small organization’s Financial literacy knowledge and practice enable it to attain a higher degree of economic sustainability. Financial literacy contributes to overall organizational sustainability by assuring environmental, economic, and social sustainability performance (Swiecka et

al., 2020). Hence, this study hypothesized that:
H3. Financial literacy has a positive effect on sustainability performance

2.2.4 Financial Accessibility and Sustainability Performance

Firms invest profitably (i.e., with a positive net present value) to achieve greater performance and a sustainable competitive edge. Capital constraints relate to market frictions that may prohibit a company from funding all intended investments. This difficulty in getting financing may be “due to credit constraints or inability to borrow, inability to issue equity, dependence on bank loans, or illiquidity of assets” (Lamont et al., 2001). Financial resources are essential for the seamless functioning of business operations and eco-friendly and sustainable practices (Knight et al., 2019b). Before implementing sustainable measures, most businesses assess their financial health and access to credit. Not only is financial capital critical for financial success, but it is also critical for a company’s non-financial and environmental performance. Specifically, corporations require sufficient funds to engage in economically and environmentally sustainable operations (Scholtens, 2006). Ullah et al. (2021) argued that access to internal and external financing strongly influences different dimensions of a firm’s sustainability performance. Likewise, this study also posited that Financial accessibility has a positive linkage with sustainability performance and hypothesized that:
H4. Financial accessibility has a positive effect on sustainability performance

2.2.5 SDGs Knowledge and Sustainability Performance

The Sustainable Development Goals (SDGs) are a set of global goals designed to achieve a more sustainable and inclusive future (Hák et al., 2016). Deep knowledge of the SDGs within a company or organization can encourage the implementation of practices that support sustainability, such as resource efficiency, carbon emission reduction, and corporate social responsibility (Kolk & van Tulder, 2010). Individuals or organizations with better knowledge of the SDGs are expected to be more aware of the importance of sustainability and more motivated to improve their sustainability performance (Rashid & Ali, 2021). Conversely, a lack of understanding of the SDGs can hinder an organization's progress in achieving sustainability goals. Therefore, knowledge of the SDGs is assumed to have a positive impact on an organization's sustainability performance.

H5. SDGs knowledge has a positive effect on environmental sustainability performance

2.2.6 FinTech Adoption and Sustainability Performance

Academics define fintech as “the use of technology to provide new and improved financial services” (Thakor, 2019). Fintech has attracted much academic attention and attention in recent years since it is redefining conventional finance by enabling greater financial inclusion and providing customized consumer experiences (Vergara & Agudo, 2021; Zarrouk et al., 2021). Whereas, sustainability performance refers to a company's sustainability across all dimensions and for all sustainability determinants. Furthermore, the term “corporate sustainability performance” refers to the environmental, social, and economic aspects of corporate governance, especially in the context of general and corporate sustainability management (Schaltegger & Wagner, 2006; Zheng et al., 2021). Several studies have been conducted to explore the determinants of corporate social performance in both developed (Folger-Laronde et al., 2022; T. H. H. Nguyen et al., 2021; Rajesh et al., 2022). Previous literature suggests that fintech, as an industry that has developed under the impact of Industry 4.0, has the potential to play a significant role in helping MSMEs transition to a more sustainable business model (Pizzi et al., 2021a). EMT offers a constructive perspective to view fintech as an important driver of corporate sustainability performance because fintech as a 4.0 technology has the potential to reduce corporate environmental consequences and improve sustainability performance (Khan, 2022; Tang et al., 2022). Thus, we leverage the EMT perspective to argue that fintech as an ecological modernization tool can enhance corporate sustainability performance and hypothesize that:

H6. Fintech adoption has a positive effect on sustainability performance

2.2.7 Government Support Moderates the Relationship between FinTech Adoption and Financial Literacy

The government can play an important role in strengthening the relationship between financial literacy and fintech adoption by providing regulations, policies, and incentives that support the use of financial technology (Ozili, 2018). For example, government-supported financial literacy programs or initiatives to expand access to

financial technology can make people more aware and more ready to adopt fintech (Lusardi & Mitchell, 2014). Therefore, government support moderates the relationship between fintech adoption and financial literacy, where stronger government support increases the positive effect of financial literacy on fintech adoption. The hypothesis is built as follows:

H7: Government support government support strengthens the positive effect on financial literacy and fintech adoption

2.2.8 Government Support Moderates the Relationship between FinTech Adoption and Financial Accessibility

Financial accessibility refers to the ability of individuals or businesses to obtain adequate and affordable financial services (Gabor & Brooks, 2016). The government can facilitate fintech adoption by expanding digital financial infrastructure, reducing regulatory barriers, and providing incentives for fintech providers (World Bank, 2015). This can increase financial 8 accessibility, thereby encouraging more individuals and businesses to adopt fintech services. Thus, government support moderates the relationship between fintech adoption and financial accessibility, where greater government support strengthens the positive effect of financial accessibility on fintech adoption, and hypothesize that:

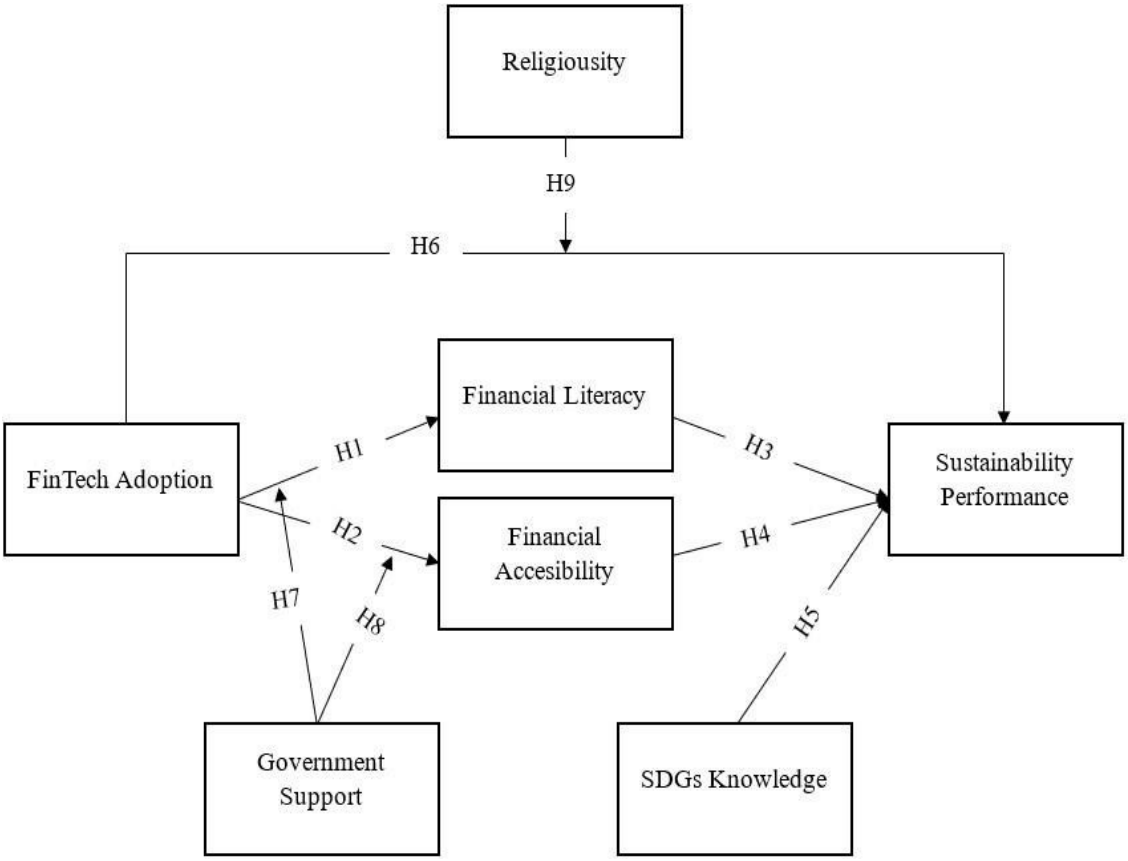
H8: Government support strengthens the positive effect on financial accessibility andfintech adoption

2.2.9 Religiosity Moderates the Relationship between FinTech Adoption and Sustainability Performance

Religiosity is often associated with ethical values and conservative views toward new technologies (Shin et al., 2021). In this context, individuals or organizations with high levels of religiosity may be more sceptical of fintech adoption, especially if they perceive the technology to conflict with their religious principles or ethical values (Dusuki & Abdullah, 2007). This may reduce the potential for fintech to improve sustainability performance among religious users. Therefore, religiosity moderates the relationship between fintech adoption and sustainability performance, with higher religiosity weakening the positive relationship between fintech adoption and sustainability performance, with the following hypothesis:

H9: Religiosity strengthens the positive effect on FinTech adoption and sustainability performance

Figure 1. **Framework Design**



RESEARCH METHOD

This study uses a quantitative approach, the collection of respondents was carried out by distributing online questionnaires using Google Forms. The focus of this studyis MSMEs with the Islamic religion in Indonesia. In addition, this study uses a non- probability sampling technique with purposive sampling as a reference for data collection design. The criteria used include MSMEs in Indonesia and Muslim owners. This research model consists of 7 latent variables with 35 manifest variables and uses a 5-point Likert scale (i.e. 1 strongly disagree to 5 strongly agree). In addition, this study also adapted questionnaire questions from previous studies that have been

tested for validity and reliability, including FinTech adoption adopted from (Hasan et al., 2021; Moreira-Santos et al., 2022), government support adopted from (Jahanmir & Cavadas, 2018; Twum et al., 2021), financial literacy adopted from (Kass-Hanna et al., 2022; Lusardi, 2019), financial accessibility adopted from (Wasiuzzaman, 2019), SDGs knowledge adopted from (Stauropoulou et al., 2023), religiosity adopted from (Junaidi, 2021), and MSMEs sustainability performance adopted from (Paulraj, 2011; Zhu et al., 2008).

PLS-SEM was used to test this research model because PLS-SEM is suitable for complex models with relatively small samples and can also identify the main "driving" constructs (Hair et al., 2021). Regarding sample adequacy, this study used G*Power software (Memon et al., 2020). The output shows a minimum sample of 130 respondents with the presence of 10 exogenous constructs and a significance level of 0.05 to achieve a statistical power of 80%. Thus, a sample size of 179 was obtained which was sufficient for this study.

RESULT AND DISCUSSION

4.1 Characteristic of Respondent

The final study sample was 179 respondents, with a spectrum that varied based on gender owner, age, education, MSMEs domicile, income, and business age. In the spectrum, it is dominated by gender (59.2% male), education (bachelor 65.4%), MSMEs domicile (Java 61.5%), income (Rp. 1,000,000 – 5,000,000 50.3%), and business age (6-10 years 59.2%). How to write the table as follows:

Table 1 Responden's Characteristic

User Characteristics	Description	Frequency	Percentage (%)
Gender Owner	Male	106	59.2
	Female	73	40.8
Education	Senior High School	12	6.7
	Diploma	19	10.6

	Bachelor	117	65.4
	Master	20	11.2
	Doctor	11	6.1
MSMEs Domicile	Sumatera	23	12.8
	Java	110	61.5
	Nusa Tenggara and Bali	15	8.4
	Kalimantan	9	5.0
	Sulawesi	14	7.8
	Papua	8	4.5
Income	>Rp. 1,000,000	41	22.9
	Rp. 1,000,000 – 5,000,000	90	50.3
	Rp. 5,000,001 – 10,000,000	19	10.6
	Rp. 10,000,001 – 20,000,000	10	5.6
	Rp. 20,000,001 – 50,000,000	12	6.7
	>Rp. 50,000,000	7	3.6
Business Age	1 – 5 years	56	58.5
	6 – 10 years	106	59.2
	>10 years	17	9.5

4.2 Data Screening

No missing values or straight-lined patterns were found in this study. (Juneman, 2013) and (Podsakoff et al., 2003) used Harman's single-factor test to address Common Method Bias (CMB), which can compromise construct validity. Nine factors had eigenvalues greater than 1, and none contributed more than 50% (48.612%) to the total covariance across variables. This study concludes that CMB does not offer any risks (Rodríguez-Ardura & Meseguer-Artola, 2020).

4.3 Measurement Model Assessment (Outer Model)

Reflective measurement model. Internal consistency of the reflected measurement model was assessed using Cronbach's alpha (α) and composite reliability (CR). Cronbach's alpha varied from 0.771 to 0.926, while composite reliability was 0.868 to0.941. With α values between 0.77 and 0.92, our results meet established internal consistency levels (Hair et al., 2019). Outer loadings and AVE values were examined for convergent and discriminant validity. Outer loadings above 0.700 and AVE values above 0.50 indicate convergence. The study also checked validity using the Heterotrait-Monotrait Ratio (HTMT). All HTMT values were < 0.9, supporting constructuniqueness (Henseler et al., 2015)

4.4. Structural model assessment (inner model)

Standardized root mean square residual (SRMR) was applied to verify the model fit. The SRMR results showed the expected results (model saturated = 0.075 and model estimated = 0.079); these results are below the threshold <0.080, indicatingthat the goodness of fit measure for PLSSEM can be used to avoid model specification errors (Henseler et al., 2015). In addition, the VIF results showed a range of 1.632–4.775, which is below the threshold of 5, as recommended by (Hairet al., 2019). This VIF value confirms that this study does not show symptoms of multicollinearity. Entering the hypothesis testing stage, this study assessed the levelof significance using a 5000 bootstrap approach (resampling) with bias-corrected and accelerated confidence intervals, as well as p-values for two-way significance (p: 0.05, p: 0.01, and p: 0.001).

CONCLUSION AND SUGGESTION

A. Conclusion

The purpose of this study is to investigate how the adoption of financial technology (FinTech) can affect the sustainability performance of MSMEs in Indonesia, focusing on the role of financial literacy, financial accessibility, and knowledge of the Sustainable Development Goals (SDGs). Overall, this study reveals that FinTech plays an important role in improving financial literacy and accessibility, which then has a positive impact on the sustainability of MSMEs' aspirations. However,

the effectiveness of government support in facilitating this process seems to be limited. Religiosity was found to have a significant role in moderating the relationship between FinTech adoption and the sustainability of MSMEs. MSMEs with religious commitments tend to use FinTech in a more ethical, transparent manner, and by their moral and religious values. This religious commitment can encourage MSMEs to focus more on long-term goals that are not only financially profitable but also in line with the principles of intuition and social responsibility. Thus, religiosity strengthens the benefits gained from FinTech adoption in the context of business sustainability.

5.1 Theoretical Implication

This research develops ideas in financial technology (FinTech), company sustainability, and the moderating impact of social variables like religion and government backing. First, this research adds to Ecological Modernization Theory by showing that FinTech adoption affects MSMEs' sustainability and economic efficiency. Following ecological modernity, which recommends using technology to tackle environmental issues, financial technology may help firms adopt sustainable practices. Second, under the Resource-Based View (RBV), financial knowledge and accessibility are strategic resources that help MSMEs preserve competitive advantage. This research shows that FinTech enhances financial knowledge and accessibility, allowing MSMEs to make wiser financial choices and improve sustainability. These results emphasize the need to manage internal resources like knowledge and financial services for sustained competitive advantage within the RBV framework. This research demonstrates that religion increases the association between FinTech adoption and MSME sustainability performance. This innovative financial technology-sociocultural literary contribution is novel. Research suggests that religious principles may boost technological adoption by promoting ethical and socially responsible activities, leading to greater sustainability. This research verifies ideas and sheds fresh light on how technology, internal resources, and societal variables affect corporate sustainability. These theoretical implications maybe used to study how social and technical elements enhance MSME sustainability across cultures and regions.

5.2. Practical Implication

This study has important implications for MSMEs, FinTech service providers,

governments, and religious groups seeking to improve MSME performance using financial technology. The study shows that MSMEs need FinTech to improve their financial literacy and accessibility. FinTech helps MSMEs understand financial management and access financial services that were previously unavailable, especially in rural areas. This helps MSMEs make better financial choices, which can impact their long-term goals. Starting with FinTech-based financial management software can help MSMEs improve efficiency and sustainability. Second, the study shows that FinTech service providers need to provide products and services that promote financial literacy and financial accessibility for MSMEs. FinTech providers should provide easy-to-use, low-cost, and accessible solutions for MSMEs in rural areas that are underserved by traditional banking. FinTech firms can increase their client base and promote inclusive economic development by providing MSME-specific solutions. Third, our study shows that government assistance may not moderate the relationship between FinTech adoption and MSME financial literacy and accessibility. To encourage MSMEs to use FinTech, the government must create more targeted and effective policies. Financial literacy training, digital infrastructure, and incentives for the adoption of financial technology for MSMEs are also included. FinTech innovation must be supported by government regulations without hindering MSME access. Fourth, this study emphasizes the importance of religious groups in encouraging MSMEs to use financial technology for sustainability. MSMEs can benefit from religious groups advocating religious principles that align with their goals by using FinTech as a tool to achieve them. Integrating religious beliefs into FinTech adoption can encourage MSMEs to embrace ethical and socially responsible business practices. The practical implications of this study help stakeholders embrace FinTech and sustain MSMEs. In an increasingly competitive and extinction-oriented business world, Indonesian MSMEs can survive and thrive with more focused, inclusive, and sustainable strategies.

5.3. Limitation

This research sheds light on how FinTech adoption affects MSMEs' financial literacy, accessibility, and sustainability, but it has numerous drawbacks. First, this research only covers Indonesian MSMEs, which have distinct economic, legal, and cultural features. This restricts the results' applicability to nations or areas with varied technology adoption and MSME growth patterns. This research also uses cross-

sectional data, which fails to reflect long-term FinTech adoption patterns and their effects on MSMEs. Therefore, causal linkages between variables may not be entirely observable. A quantitative technique that measures variables without considering contextual factors or subjective impressions may also limit outcomes. This research does not explicitly include technological trust, change resistance, or other contextual variables that may impact MSME FinTech adoption. Religious moderation was also important, although the method by which it affected FinTech uptake and sustainability performance was unknown.

5.4. Future Research

Due to these constraints, various research suggestions are made. First, future studies may test the same model in various nations or areas with diverse economic and social conditions. This will help researchers determine whether this study's results are universal or if situations vary. Comparative studies between nations may also reveal how government legislation, digital infrastructure, and financial literacy affect FinTech adoption and MSME performance. To study MSMEs' FinTech uptake over time, longitudinal research is required. The longitudinal study will help quantify FinTech's influence on financial literacy, accessibility, and company sustainability. Qualitative research may also reveal MSMEs' FinTech adoption motives, perspectives, and experiences. In-depth interviews and case studies may reveal contextual and subjective aspects that quantitative approaches may miss. Further study should examine how religious beliefs affect corporate choices and technology adoption, as well as the moderating processes of religiosity. Exploring other aspects such as faith in technology or aversion to change may help MSMEs design better technology adoption strategies. Future research may improve our knowledge of how financial technology can help MSMEs develop and survive in different situations by resolving restrictions and broadening their reach.

B. Suggestion

The study emphasizes the critical role of government support in enhancing financial literacy and accessibility through the adoption of financial technology (FinTech) among Muslim MSMEs. However, the findings indicate that current policies may not be sufficiently effective in promoting financial inclusion for Muslim MSMEs. Therefore, more targeted initiatives are necessary, particularly in education and

infrastructure development, to make FinTech more accessible, especially in rural areas. FinTech adoption positively impacts the sustainability performance of MSMEs by improving financial literacy and access to financial resources. The use of FinTech enables MSMEs to adopt more environmentally sustainable practices, such as reducing emissions and energy consumption, through tools that enhance financial management and investments in green technologies.

Religiosity plays a significant role in moderating the relationship between FinTech adoption and sustainability performance. MSMEs with higher levels of religious commitment are more likely to adopt FinTech solutions that align with their ethical and social responsibilities. Incorporating religious values into FinTech adoption strategies can further strengthen sustainability outcomes for Muslim MSMEs.Improving financial literacy among MSME owners is essential, as it significantly contributes to their sustainability performance. MSMEs with greater financial literacy are better equipped to make long-term business decisions that promote environmentally and socially responsible practices. FinTech providers should focus on developing educational content and easy-to-use tools specifically designed to enhance the financial management capabilities of MSMEs. Understanding the Sustainable Development Goals (SDGs) can help MSMEs align their business strategies with global sustainability objectives. Promoting SDG knowledge among MSMEs could encourage the adoption of more responsible business practices, contributing to better sustainability performance.

REFERENCE

Abbasi, K., Alam, A., Brohi, N. A., Brohi, I. A., & Nasim, S. (2021). P2P lending Fintechs and SMEs' access to finance. *Economics Letters*, *204*, 109890. https://doi.org/10.1016/j.econlet.2021.109890

Andersen, M. S., & Massa, I. (2000). Ecological modernization — origins, dilemmas and future directions. *Journal of Environmental Policy & Planning*, *2*(4), 337–345. https://doi.org/https://doi.org/10.1080/714852820

Andrews, D. (2015). The circular economy, design thinking and education for sustainability. *Local Economy: The Journal of the Local Economy Policy Unit*, *30*(3), 305–315. https://doi.org/10.1177/0269094215578226

Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and Financial Inclusion. *European Business Organization Law Review*, *21*(1), 7–35. https://doi.org/10.1007/s40804-020-00183-y

Arsawan, I. W. E., Koval, V., Duginets, G., Kalinin, O., & Korostova, I. (2021). The impact of green innovation on environmental performance of SMEs in an emerging economy. *E3S Web of Conferences*, *255*, 01012. https://doi.org/10.1051/e3sconf/202125501012

Audrey Sazkhya Sinaga, K., Irene, J., & Christanti, R. (2023). Digital Adoption and Financial Performance: Evidence From Indonesian SMES in Food and Beverage Sector. *Return : Study of Management, Economic and Bussines*, *2*(04), 423–435. https://doi.org/10.57096/return.v3i04.94

Baah, C., Rijal, A., Agyabeng-Mensah, Y., Afum, E., & Acquah, I. S. K. (2024). Does circular economy entrepreneurship drive technical capabilities for circular economy performance? The moderating role of environmental dynamism. *Management of Environmental Quality: An International Journal*, *35*(3), 567–586. https://doi.org/10.1108/MEQ-07-2023-0233

Babajide, A., Osabuohien, E., Tunji-Olayeni, P., Falola, H., Amodu, L., Olokoyo, F., Adegboye, F., & Ehikioya, B. (2021). Financial literacy, financial capabilities, and sustainable business model practice among small business owners in Nigeria. *Journal of Sustainable Finance & Investment*, *13*(1), 1–23. https://doi.org/https://doi.org/10.1080/20430795.2021.1962663

Bag, S., Yadav, G., Dhamija, P., & Kataria, K. K. (2021). Key resources for industry 4.0 adoption and its effect on sustainable production and circular economy: An empirical study. *Journal of Cleaner Production*, *281*, 125233. https://doi.org/10.1016/j.jclepro.2020.125233

Bappenas. (2017). Peta Jalan Sustainable Development Goals (SDGs) di Indonesia. *Kementerian PPN/Bappenas*, 35. https://sdgs.bappenas.go.id/website/wpcontent/uploads/2021/02/Roadmap_Bahasa-Indonesia_File-Upload.pdf

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journalof Management*, *17*(1), 99–120. https://doi.org/https://doi.org/10.1177/014920639101700108

Bartolacci, F., Caputo, A., & Soverchia, M. (2020). Sustainability and financial performance of small and medium sized enterprises: A bibliometric and

systematic literature review. *Business Strategy and the Environment*, *29*(3), 1297–1309. https://doi.org/10.1002/bse.2434

Beal, D. J., & Delpachitra, S. B. (2003). Financial literacy among Australian university students. . *Economic Paper*, *22*(1), 65–78. https://doi.org/https://doi.org/10.1111/j.17593441.2003.tb00337.x

Bollaert, H., Lopez-de-Silanes, F., & Schwienbacher, A. (2021). Fintech and accessto finance. *Journal of Corporate Finance*, *68*, 101941. https://doi.org/10.1016/j.jcorpfin.2021.101941 Burger, N., Chazali, C.,

Gaduh, A., Rothenber, A. D., Tjandraningsih, I., & Weilant, S. (2015). Reforming policies for small and medium-sized enterprises in Indonesia. *RAND Corporation in Collaboration with Tim Nasional Percepatan Penanggulangan Kemiskinan (TNP2K)*, 136. http://www.tnp2k.go.id/images/uploads/downloads/Reforming SMEs_0529_lowres_2015-1.pdf

Caldera, H. T. S., Desha, C., & Dawes, L. (2019). Evaluating the enablers and barriers for successful implementation of sustainable business practice in 'lean' SMEs. *Journal of Cleaner Production*, *218*, 575–590. https://doi.org/10.1016/j.jclepro.2019.01.239

Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, *7*(2), 107–128. https://doi.org/https://doi.org/10.1016/S1057-0810(99)80006-7

Cheng, M., & Qu, Y. (2020). Does bank FinTech reduce credit risk? Evidence from China. *Pacific-Basin Finance Journal*, *63*, 101398. https://doi.org/10.1016/j.pacfin.2020.101398 Cosma, S., Cosma, S., & Pennetta, D. (2023). *The Rise of Financial Services Ecosystems: Towards Open Banking Platforms* (pp. 191–213). https://doi.org/10.1007/978- 3-031-23069-1_8

Croutzet, A., & Dabbous, A. (2021). Do FinTech trigger renewable energy use? Evidence from OECD countries. *Renew. Energy*, *179*, 1608–1617. https://doi.org/Do FinTech trigger renewable energy use? Evidence from OECD countries

Dusuki, A. W., & Abdullah, N. I. (2007). Maqasid al-Shari`ah, Maslahah, and Corporate Social Responsibility. *American Journal of Islam and Society*, *24*(1), 25–45. https://doi.org/10.35632/ajis.v24i1.415

Folger-Laronde, Z., Pashang, S., Feor, L., & ElAlfy, A. (2022). ESG ratings and financial performance of exchange-traded funds during the COVID-19 pandemic. *Journal Sustainability Finance Investment*, *12*(2), 490–496. https://doi.org/https://doi.org/10.1080/ 20430795.2020.1782814

Gabor, D., & Brooks, S. (2016). The digital revolution in financial inclusion: international development in the fintech era. *New Political Economy*, *22*(4), 423–436. https://doi.org/https://doi.org/10.1080/13563467.2017.1259298

Goswami, S., Sharma, R. B., & Chouhan, V. (2022). Impact of Financial Technology (Fintech) on Financial Inclusion(FI) in Rural India. *Universal Journal of Accounting and Finance*, *10*(2) 483–497. https://doi.org/10.13189/ujaf.2022.100213

Gunasekaran, A., Papadopoulos, T., Dubey, R., Wamba, S. F., Childe, S. J., Hazen,B., & Akter, S. (2017). Big data and predictive analytics for supply chain and organizational performance. *Journal of Business Research*, *70*, 308–317. https://doi.org/https://doi.org/10.1016/j.jbusres.2016.08.004

Gupta, H., Kumar, A., & Wasan, P. (2021). Industry 4.0, cleaner production and circular economy: An integrative framework for evaluating ethical and sustainable business performance of manufacturing organizations. *Journal of Cleaner Production*, *295*, 126253. https://doi.org/10.1016/j.jclepro.2021.126253

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and howto report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hák, T., Janoušková, S., & Moldan, B. (2016). Sustainable Development Goals: A need for relevant indicators. *Ecological Indicators*, *60*, 565–573. https://doi.org/10.1016/j.ecolind.2015.08.003