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FinTech and Financial Inclusion for SMEs: Evidence from Emerging Economies

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ABSTRACT

The study systematically reviewed the latest literature on how financial technology (FinTech) improves financial inclusion among small and medium-sized enterprises (SMEs) in emerging markets. This study uses a Systematic Literature Review (SLR) approach to identify patterns, current knowledge, and research gaps. FinTech plays a crucial role in expanding SME access to finance through digital lending, peer-to peer financing, crowdfunding, and mobile banking platforms, while enhancing business competitiveness and resilience. The review revealed that FinTech contributes positively by improving access to affordable credit, accelerating transaction efficiency, and improving financial literacy among SMEs. However, inclusive growth remains hindered by several barriers, including limited digital infrastructure, regulatory uncertainty, cybersecurity risks, and low digital adoption in rural areas. The study integrates diverse evidence to explain how FinTech-driven inclusion supports the sustainability and economic growth of SMEs in developing countries. It also highlights research gaps, by providing policy implications to strengthen the long-term effects of FinTech in supporting financial inclusion on SME Performance.

Keywords: *Emerging Economies, Financial Inclusion, Financial Technology, SMEs.*

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1. | INTRODUCTION

Small and medium-sized enterprises SMEs are widely recognized as key drivers of employment, innovation, and inclusive economic growth in emerging economies, yet they continue to face persistent financing constraints due to information asymmetries, collateral shortages, and high transaction costs in traditional banking systems (Jha & Dangwal, 2024; Sanga & Aziakpono, 2024). Empirical evidence from Indonesia, China, and other developing countries shows that smaller and younger firms are more severely credit-rationed than larger enterprises, which undermines their ability to invest, innovate, and expand (Cornelli et al., 2023; Guan et al., 2025). These structural constraints have motivated policymakers and international organizations to prioritise financial inclusion as a central pillar of inclusive and sustainable development strategies in emerging markets (Ghouse et al., 2025).

Against this backdrop, financial technology (FinTech) has emerged as a potential game changer in SME finance by leveraging digital technologies to provide financial services that are more accessible, flexible, and cost-efficient than conventional models (Cornelli et al., 2023; Guan et al., 2025). Recent empirical studies on mobile-based digital lending in Kenya and China, as well as QR-based payment systems for Indonesian micro and small enterprises, suggest that algorithmic credit scoring and real-time digital transactions can broaden access to credit for previously underserved entrepreneurs while improving cash-flow management and business operations (Chen et al., 2025; Monye, 2024).

However, recent work also shows that FinTech is not automatically inclusive and may introduce new risks and forms of exclusion if not embedded in supportive institutional and infrastructural environments (Monye, 2024; Tao, 2025). Studies on digital lending ecosystems in Nigeria and other African countries highlight regulatory gaps, weak consumer protection, and the role of informal intermediaries in shaping access to digital credit and exposure to predatory practices (Monye, 2024; Sanga & Aziakpono, 2024). Time-series analyses from Malaysia further document that while digital channels can strengthen modern forms of financial inclusion, they may simultaneously weaken traditional channels such as bank branches and ATMs, with potential adverse consequences for SMEs that still rely on physical infrastructure (Alnafrah & Mouselli, 2025).

Between 2022 and 2025, research on FinTech, financial inclusion, and SME performance has expanded rapidly, employing methodological approaches such as panel data models, structural equation modelling, macro time series analysis, and systematic reviews focusing on developing nations (Jha & Dangwal, 2024; Sanga & Aziakpono, 2024). Recent contributions emphasise the complex linkages through which digital financial services shape financial inclusion and economic outcomes, including connections to green innovation and environmental sustainability in E 7 economies (Ghouse et al., 2025). Nevertheless, the existing evidence remains fragmented across technologies, regions, and outcome measures, and only a limited number of studies systematically synthesise how FinTech-enabled financial inclusion translates into SME performance and resilience in the specific context of emerging economies (Jha & Dangwal, 2024; Cornelli et al., 2023).

Responding to these gaps, this study undertakes a PRISMA guided Systematic Literature Review of peer-reviewed contributions published between 2022 and 2025 that examine FinTech, financial inclusion, and SMEs in emerging and developing economies (Jha & Dangwal, 2024; Sanga & Aziakpono, 2024). The review aims to synthesise current knowledge

on how FinTech enhances SME financial inclusion, identify the main mechanisms and business models such as digital lending, peer-to-peer platforms, crowdfunding, and mobile banking through which FinTech affects SME outcomes, and map the barriers, risks, and research gaps that still limit the inclusive potential of FinTech for SME performance and sustainable development (Cornelli et al., 2023; Monye, 2024). By integrating findings from diverse regional contexts, the study seeks to provide a coherent understanding of the role of FinTech in promoting financially inclusive and resilient SME sectors in emerging economies (Chen et al., 2025).

2. | LITERATURE REVIEW

The literature review represents the theoretical core of this article by synthesizing and critically evaluating prevailing research on how financial technology (FinTech) enhances financial inclusion for small and medium-sized enterprises (SMEs) in emerging economies. Rather than merely summarizing, this section reviews the evolution of scholarly frameworks and empirical findings to clarify the mechanisms, benefits, and barriers related to FinTech-driven inclusion (Jha & Dangwal, 2024; Del Sarto & Ozili, 2025).

Recent studies reveal that FinTech has transformed access to credit and formal financial services among SMEs through innovative solutions such as mobile banking, peer-to-peer lending, blockchain, and digital payment systems. These solutions are widely recognized for lowering entry barriers, increasing efficiency, and addressing persistent challenges faced by SMEs, including lack of collateral, high transaction costs, limited credit histories, and regulatory complexity (Guan et al., 2025; Rehman et al., 2023). Theoretical models like Diffusion of Innovation, Technology Acceptance Model, and Resource-Based View frequently surface in these studies, emphasizing how perceived usefulness, trust, digital readiness, and institutional frameworks shape the adoption and effectiveness of FinTech in emerging settings (Okello et al., 2024; Al Ghunaimi et al., 2025).

There is a growing consensus across regions, such as Asia and Africa, that FinTech not only widens financial accessibility for SMEs, but also strengthens resilience and encourages entrepreneurial activity. However, literature also identifies significant disparities in adoption outcomes often attributed to variations in digital infrastructure, regulatory support, and sociocultural conditions (Bekele, 2023; Karim et al., 2022). Critical examination of these findings suggests that while FinTech facilitates financial inclusion and business growth, challenges such as digital divide, lack of digital literacy, and regulatory barriers can perpetuate exclusion or create new forms of risk for under-resourced SMEs (Banna et al., 2022; Davaadorj, 2024).

In response, reviewed works consistently advocate for comprehensive policy interventions and advancements in digital infrastructure to unlock the full potential of FinTech for SME financial inclusion. Methodologically, the literature displays a robust combination of quantitative and qualitative approaches, enabling a nuanced triangulation of dominant themes and persistent gaps (Verma et al., 2025; Soni et al., 2022). Ultimately, this synthesis not only reinforces the centrality of technology in reducing structural barriers for SMEs, but also highlights the continuing need for cross-regional evidence, interdisciplinary approaches, and adaptive policy frameworks to ensure that FinTech driven inclusion is broad-based, sustainable, and equitable (Jha & Dangwal, 2024; Azmeh & Al-Raeei, 2024).

3. | RESEARCH METHOD

This section outlines the systematic steps applied to examine, synthesize, and validate recent scholarly work regarding FinTech and financial inclusion for SMEs in emerging economies. The SLR approach was rigorously designed to facilitate transparency and allow future researchers to replicate findings with confidence (Jha & Dangwal, 2024; Del Sarto & Ozili, 2025).

The review targeted peer-reviewed journal articles published between 2022 and 2025 that investigated the intersection of FinTech, financial inclusion, and SMEs in emerging or developing economies (Guan et al., 2025; Banna et al., 2022). These articles were sourced from various regions including Asia, Africa, Latin America, and the Middle East, ensuring broad contextual representation. The unit of analysis was individual scholarly studies focused on SME FinTech adoption and performance. Inclusion was limited to Q1 and Q2 journals indexed by Scopus, written in English, and containing either conceptual models or empirical findings relevant to the research questions. Initial database queries yielded 559 records, and after thorough screening, 50 studies were included in the final synthesis (Jha & Dangwal, 2024; Soni et al., 2022).

Data collection employed a structured keyword-based search strategy across leading databases such as Scopus and Web of Science. Key terms included "FinTech for SMEs," "Financial Inclusion," "Technology Adoption SMEs," "Digital Lending," and "Emerging Economies." These searches were further supplemented by manual review of publisher platforms and backward citation tracing in recent review articles (Del Sarto & Ozili, 2025; Chen et al., 2024). All identified records were exported into reference management software for deduplication, and a PRISMA flow diagram was developed to track each stage of article selection and ensure procedural transparency (Jha & Dangwal, 2024).

For every study included, detailed data extraction was conducted covering author information, year, country, FinTech business model examined, research methodology (quantitative, qualitative, or mixed methods), sample profile, outcome variables (such as SME credit access, operational efficiency, financial literacy), and barriers to adoption (e.g., infrastructure, regulation, trust) (Guan et al., 2025; Soni et al., 2022). The review applied thematic synthesis to group findings into dominant patterns and gaps in the literature, with independent coding and triangulation across regional and methodological dimensions to enhance reliability and validity (Banna et al., 2022; Verma et al., 2025).

4. | RESULTS

This systematic literature review identified 50 eligible studies published between 2022 and 2025 that examined the relationship between financial technology (FinTech) and financial inclusion for small and medium-sized enterprises (SMEs) in emerging economies. The selection process followed PRISMA 2020 guidelines, ensuring transparency and reproducibility. Records were retrieved from Scopus using targeted keywords such as FinTech for SMEs, Financial Inclusion, Digital Lending, and Technology Adoption. After removing duplicates, automation-flagged entries, and ineligible records, 236 studies were screened. Of these, 64 reports were sought for retrieval, and 50 were assessed and included in the final synthesis. An additional 2 studies were identified through other sources. Subsequent title–abstract screening and full text assessment led to the retention of a final set of recent studies

that directly examine FinTech, financial inclusion, and SMEs in emerging and developing economies (Jha & Dangwal, 2024; Sanga & Aziakpono, 2024).

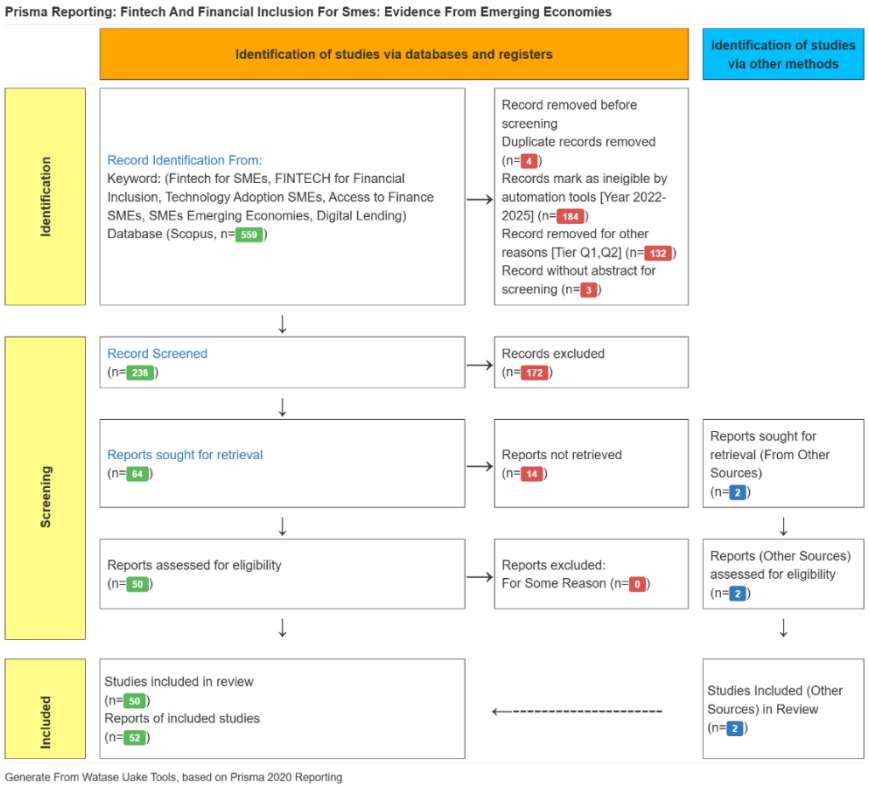

Figure 1. PRISMA Flow Diagram

Descriptive profile of the reviewed studies

The reviewed articles published between 2022 and 2025 reveal a marked increase in scholarly attention to FinTech driven SME finance in emerging economies, with a strong concentration of studies on Asian and African countries and growing coverage of Latin America and the Middle East (Cornelli et al., 2023; Sanga & Aziakpono, 2024). Many contributions focus on large emerging economies such as China, India, Indonesia, and members of the E 7 group, while others investigate regional patterns of digital financial inclusion across panels of African or developing nations (Ghouse et al., 2025; Guan et al., 2025). Quantitative designs dominate the sample and include panel data models, structural equation modelling, macro time series analysis, and cross-sectional surveys, complemented by qualitative case studies and mixed methods research that explore regulatory initiatives, digital lending ecosystems, and views of practitioners (Monye, 2024; Tao, 2025.)

From a methodological perspective, several studies employ composite indices such as the Peking University Digital Financial Inclusion Index or newly constructed digital finance indicators to capture regional FinTech development and inclusion levels, which are then linked to SME financing constraints, productivity, or environmental outcomes (Guan et al., 2025; Ghouse et al., 2025). Others rely on firm level or household level survey data to estimate the effects of FinTech adoption on access to credit, use of digital payments, and business performance among micro and small enterprises in countries like Indonesia, Kenya, and Nigeria (Chen et al., 2025; Monye, 2024). This combination of macro, meso, and micro perspectives provides a rich empirical basis for analysing how FinTech interacts with institutional and infrastructural factors to shape financial inclusion outcomes in different settings (Sanga & Aziakpono, 2024).

Types of FinTech and financial inclusion indicators

Across the reviewed studies, digital lending and peer to peer (P2P) lending platforms emerge as the most frequently analysed FinTech business models for SME financing (Cornelli et al., 2023; Guan et al., 2025). Empirical evidence from Kenya, China, and ASEAN countries indicates that these platforms use alternative data and algorithmic scoring to extend credit to borrowers who lack conventional collateral or formal credit histories, thereby easing long standing access to finance constraints for small firms (Chen et al., 2025; Monye, 2024). Crowdfunding and related market-based instruments such as equity crowdfunding and marketplace lending in Malaysia are examined as mechanisms for supporting start up and growth finance where traditional capital markets are shallow, although some studies also highlight dual effects on traditional banking channels (Cornelli et al., 2023; Alnafrah & Mouselli, 2025).

Mobile money and digital payment solutions, including QR code systems and e wallets, are another major focus of the literature, especially in Sub Saharan Africa and Southeast Asia (Monye, 2024; Chen et al., 2025). These services are found to reduce cash handling costs, improve transaction speed and security, and facilitate participation in digital commerce, thereby supporting day to day liquidity management for micro and small enterprises. In addition, platform based supply chain finance models in China demonstrate how integrating banks, FinTech firms, and anchor companies can provide data driven working capital finance to SMEs, improving financing efficiency and strengthening bargaining positions for small suppliers (Guan et al., 2025).

Financial inclusion in the reviewed literature is operationalised through a range of indicators that capture both traditional and digital dimensions. At the macro level, studies use indicators such as the number of bank branches and ATMs per capita, account ownership rates, and composite indices of traditional and modern financial inclusion to compare countries or regions (Alnafrah & Mouselli, 2025; Sanga & Aziakpono, 2024). At the micro level, financial inclusion is measured using survey-based variables on SMEs' access to and use of formal credit, digital accounts, mobile money, e wallets, and other digital financial services, as well as self-reported financial literacy or capability (Chen et al., 2025; Jha & Dangwal, 2024).

Effects of FinTech on SME financial inclusion

Most empirical studies report that FinTech has a positive effect on financial inclusion outcomes for SMEs and micro entrepreneurs in emerging economies (Cornelli et al., 2023; Sanga & Aziakpono, 2024). Micro level analyses from Kenya, China, and Indonesia show that SMEs using digital lending platforms or mobile credit are more likely to obtain formal or semi formal loans, enjoy faster loan approval and disbursement, and face lower effective transaction costs compared with reliance on traditional bank branches alone (Chen et al., 2025; Monye, 2024). Studies employing digital inclusive finance indices further indicate that regions with higher FinTech development tend to exhibit reduced financing constraints and improved financing efficiency for SMEs, particularly those operating in innovative or asset light sectors (Guan et al., 2025).

Evidence on digital payments and mobile money likewise suggests that FinTech can broaden usage of formal financial services, with SMEs that adopt e wallets and QR code payments showing greater participation in digital commerce and improved ability to manage working capital (Chen et al., 2025; Jha & Dangwal, 2024). At the macro level, panel studies of developing and E 7 economies find that higher levels of digital financial inclusion captured

by indices of mobile and internet transactions are associated with stronger financial deepening and, in some cases, with improved environmental performance through channels such as green innovation and cleaner investment (Ghouse et al., 2025; Sanga & Aziakpono, 2024).

Impacts on SME performance, competitiveness, and resilience

A significant subset of the reviewed literature examines how FinTech enabled financial inclusion translates into SME performance and resilience. Firm level studies report that SMEs that actively use digital lending, P2P platforms, or digital payment systems tend to report higher sales growth, profitability, and market expansion, controlling for size, sector, and other characteristics (Cornelli et al., 2023; Monye, 2024). Panel analyses of Chinese listed SMEs show that regional FinTech development is positively associated with total factor productivity and financing efficiency, suggesting that digital finance can improve resource allocation and support innovation in supply chains (Guan et al., 2025).

Several contributions also link FinTech adoption to business resilience, particularly during periods of disruption such as the COVID 19 pandemic. Case studies and survey evidence indicate that SMEs embedded in digital ecosystems using online marketplaces, digital payments, and FinTech credit were better able to maintain operations, adjust business models, and access emergency liquidity than firms relying solely on offline channels (Monye, 2024; Jha & Dangwal, 2024). At the macro level, research on E 7 economies suggests that FinTech and financial inclusion can contribute to environmental sustainability by facilitating green investment and supporting cleaner technologies through improved access to finance (Ghouse et al., 2025).

Barriers, risks, and uneven inclusion

Despite these positive findings, the reviewed literature consistently highlights significant barriers and risks that limit the inclusive potential of FinTech for SMEs (Monye, 2024; Tao, 2025). Infrastructure gaps such as limited network coverage, unreliable electricity, and high internet costs continue to constrain digital financial service adoption in rural and remote areas, leading to unequal access between urban and rural SMEs Sanga & Aziakpono, 2024. Regulatory challenges, including fragmented or underdeveloped legal frameworks for digital lending, weak enforcement of consumer protection rules, and uncertainties around data governance, create additional obstacles for both providers and users of FinTech services (Monye, 2024; Alnafrah & Mouselli, 2025).

Low levels of digital and financial literacy especially among micro and informal enterprises also hinder effective and responsible use of FinTech, increasing vulnerability to fraud, cyber-attacks, and over indebtedness (Chen et al., 2025; Tao, 2025). Several studies document gender, income, and geographic disparities in access to and benefits from FinTech, showing that women owned and rural SMEs are less likely to adopt digital services and more likely to encounter trust and usability barriers (Jha & Dangwal, 2024; Sanga & Aziakpono, 2024). These findings underscore that while FinTech can expand financial inclusion and enhance SME performance, its benefits are not evenly distributed and must be supported by complementary policies on infrastructure, regulation, and capability building (Ghouse et al., 2025; Cornelli et al., 2023).

5. | DISCUSSION

The findings of this systematic literature review reaffirm the critical role of financial technology (FinTech) in enhancing financial inclusion for small and medium-sized enterprises

(SMEs) across emerging economies. Building upon the demonstrated effectiveness of mobile banking, digital lending, peer-to-peer financing, and crowdfunding in expanding access to finance and improving transaction efficiency, these outcomes align closely with well-established theoretical frameworks such as the Diffusion of Innovation and Technology Acceptance Model. The latter emphasize that perceived relative advantage, usefulness, and trust consistently drive technology adoption, reinforcing the importance of sociobehavioral dimensions in FinTech diffusion (Rogers, 1962; Davis, 1989).

Beyond firm level benefits, our review underscores FinTech's broader developmental implications, confirming its contribution to household financial resilience, entrepreneurial activity, and poverty alleviation, consistent with Sustainable Development Goals (SDGs). For instance, regional studies reveal that FinTech proliferation reduces credit risk among microfinance institutions and advances income equality, thereby supporting not only microeconomic but also macroeconomic stability (Hussain & Rasheed, 2023; Rani et al., 2025).

The pronounced regional disparities in FinTech uptake and impact highlight the indispensable role of enabling environments. Kenya's pioneering mobile money ecosystem exemplifies the transformative effect of infrastructural readiness and trust-building, whereas slower progress in Ethiopia and the MENA region illustrates how infrastructural deficits, regulatory inertia, and entrenched social norms particularly gender biases can stymie inclusive adoption (Bekele, 2023; Berguiga & Adair, 2024). These contextual variations demand nuanced, localized strategies addressing both technological and socio-institutional barriers a position echoed in prior research advocating tailored policy frameworks over uniform digital financial inclusion models (Pradhan & Sharma, 2022; Adel, 2024).

Persistent obstacles such as infrastructure gaps, low digital literacy, cybersecurity risks, and regulatory ambiguities emerged as significant constraints, confirming concerns raised in earlier studies. The failed blockchain example of Wala in Africa exemplifies the perils of deploying advanced technologies without sufficient ecosystem maturity and public trust (di Prisco & Strangio, 2021). Moreover, the increasing focus on emergent technologies like artificial intelligence and blockchain warrants balanced attention to their potential for personalization and transparency versus risks related to governance, privacy, and digital divides (Akande et al., 2025).

Synthesizing these insights, the review strengthens the argument for integrated approaches that marry technological innovation with supportive policies, infrastructure development, and capacity building. This comprehensive lens is essential to unlock sustainable, inclusive financial ecosystems that can adapt to the evolving needs of SMEs, empower marginalized groups, and foster resilient economic growth across regions.

6. | CONCLUSION

This study demonstrates that FinTech serves as a crucial driver of financial inclusion for SMEs in emerging economies, enhancing access to formal finance, reducing transaction costs, and supporting SME resilience and productivity. Digital modalities such as mobile banking, digital lending, peer-to-peer financing, and crowdfunding consistently improve SME financial outcomes across diverse regional contexts, especially within emerging and E7 economies. These innovations not only facilitate financial deepening but, when supported by robust

institutional frameworks, also contribute to broader development goals including environmental sustainability.

However, several limitations temper these conclusions. The exclusive reliance on Scopus indexed Q1Q2 journals may have restricted the comprehensiveness of the evidence base, potentially omitting relevant regional studies from other databases or non-English sources where FinTech adoption dynamics are rapidly evolving. Furthermore, the predominance of cross-sectional designs and the scarcity of longitudinal data limit the ability to assess sustained long-term impacts and causality. These methodological constraints underscore the need for caution in generalizing findings to all emerging economy contexts, particularly where infrastructural, regulatory, and socio-cultural factors differ markedly.

The identified barriers such as uneven digital infrastructure, regulatory uncertainties, cybersecurity risks, low digital and financial literacy, and cultural constraints highlight that FinTech alone is insufficient to ensure inclusive SME finance. Instead, the benefits of FinTech depend critically on complementary investments in infrastructure development, coherent and adaptive regulation, consumer protection, and capacity building programs tailored to the diverse needs of SMEs, especially those led by women and operating in rural or informal sectors.

Future research should prioritize longitudinal and comparative multi-country studies integrating quantitative and qualitative approaches to capture the complexity of FinTech adoption and its outcomes. In particular, the emerging roles of artificial intelligence, blockchain, and embedded finance warrant deeper investigation into both their inclusive potential and associated risks. Understanding gender dynamics, rural adoption challenges, and regulatory efficacy will further inform policy and practice.

In summary, this review affirms FinTech’s transformational potential as a structural enabler of inclusive growth for SMEs in emerging economies, while emphasizing that sustainable impact requires a holistic ecosystem approach including infrastructure, regulation, education, and trust building interventions.

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Conflict of Interest Statement

The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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