

An International Perspective on the Role of Financial Technology as a Catalyst for Inclusion and Sustainable Development: A Conceptual Framework

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Abstract

The transformative significance of financial technology (fintech) in promoting sustainable and inclusive development is examined in this conceptual paper from a global standpoint. Developing interest has been shown in fintech strength to address major global development issues like poverty, inequality and lack of access to financing activities as it continues to transform financial services. When fintech developments are in line with the Sustainable Development Goals (SDGs) of the UN, especially those relating to gender equality, financial inclusion, economic empowerment, Industry, Innovation and Infrastructure, fintech becomes a vital tool for promoting equitable development.

This study offers a conceptual framework that shows how fintech applications like digital credit, mobile banking, block chain-based and SME loan access solutions help fulfil particular SDGs and also compare the percentage of financial inclusion among selected countries. Addition to it showcases global case studies that present a variety of fintech approaches from both industrialization and emerging economies. The data is gathered using both Qualitative and Quantitative data from world bank global index, IMF Report and GSMA Mobile money metrics Source, to analysis the financial inclusion among different selected companies.

Despite its potential and constraints for the widespread adoption of Fintech Inclusion. It also includes issues data privacy problem, digital disparities and regulatory fragmentation. In order to increase the global access of fintech services for development, this study concludes with conceptual framework of fintech innovation impacts on Sustainable development goals. Through a global perspective, this study elaborates how important cross-border collaboration by using fintech as a driver of equitable and sustainable development growth.

Keywords: Sustainable Development Goals, Financial Services, Financial Inclusion, Financial Technology, Case studies on Fintech, International Viewpoint.

Introduction

Fintech has unlimited users from investment apps and crypto currencies to mobile banking and insurance.

Mobile payments, digital currencies like Bitcoin, alternative lending options, small company crowdsourcing platforms and robot-advisers which give users access to expert financial advice for little or no cost are all examples of Fintech. The fintech revolution in India is transforming how millions access, manage and grow their wealth across the nation. India's unique combination of digital infrastructure, particularly the JAM trinity (Jan Dhan, Aadhaar, Mobile) has opened the doors for fintech innovation. (*Fintech Revolution in India: A Game Changer for Financial Services*, n.d.) At the same time, 190 million adults without bank accounts have been excluded from most, if not all financial services.

Financial technology or FinTech has become a disruptive force that is changing the global financial landscape in an increasingly digitalized and linked world. Its quick development has changed the way that governments, corporations and individuals get and make use of financial services. In addition to upending established financial systems, FinTech innovations from digital wallets and mobile banking to block chain and AI-powered credit scoring have created new avenues for sustainable development and financial inclusion.

The study of fintech as a driver of inclusive growth and sustainability looks at how technologically advanced financial solutions support the more general goals of gender parity, environmental sustainability, poverty alleviation and robust economic systems. Through the examination of global trends, case studies and policy dynamics, this research endeavours to offer a comprehensive comprehension of FinTech's capabilities and the essential elements required to leverage its influence for sustainable and equitable growth. (*Fintech History*, n.d.)



Literature Review

1. **(Prabhakar, 2025) A Sustainable and Inclusive Economic Development: A Global Imperative: A Global Imperative.** Its goals are to draw attention to how vital it is to achieve sustainable and inclusive economic development globally, discuss the difficulties in striking a balance between economic expansion and social and environmental concerns and encourage cooperation in order to create benefits that are fair to all populations. In order to guarantee long-term prosperity, it seeks to emphasize how vital it is to incorporate sustainability into economic strategies. The study primarily adopts a qualitative analysis approach, synthesizing existing literature, global reports and case studies to examine sustainable and inclusive economic development. It also employs comparative analysis to identify best practices and policy insights from different regions. (*View of A Sustainable and Inclusive Economic Development: A Global Imperative*, n.d.)
2. **Unveiling the nexus: unravelling the dynamics of financial inclusion, FinTech adoption and s**This Study highlights that only non-monetary and regulatory risk influences the financial inclusion. Even though there is a positive direction in financial inclusion and fintech adoption there is also a link between the financial adoption and social sustainability. This study is conducted by using 258

respondents in Malaysia. Financial inclusion, financial adoption and social sustainability are examined using an emotional, sociological and societal Sustainability aspects. (Hiew et al., 2025)

3. (Lakhdari, 2024a) **The Role of Financial Inclusion in Achieving Sustainable Development.** The study's goal is to investigate the connection between sustainable development and financial inclusion, emphasising how formal financial services can propel advancements in the social, economic, and environmental spheres. In order to improve its influence on sustainable development, it seeks to evaluate how digital financial services and regulatory frameworks support financial inclusion and offer policy recommendations. Through the use of case studies, financial indicators and survey techniques, the study analyses data from several Arab nations using both qualitative and quantitative methodologies. Along with statistical research to pinpoint important trends and connections, it also examines previous studies and publications to comprehend how financial inclusion affects sustainable development. (Lakhdari, 2024b).
4. **Unlocking the green economy in African countries: an integrated framework of FinTech as an enabler of the transition to sustainability.** The study is to investigate the potential and role of deploying green FinTech as a driving force behind the shift of African nations to a green economy. Through FinTech breakthroughs, it aims to fill research gaps, provide an integrated framework to ease this transition and offer policy suggestions to promote sustainable economic growth. In order to find themes and research gaps, the study used a systematic-cum-bibliometric analysis with the SCOPUS database to review and examine published papers on green FinTech and its relationship to green growth. Strategies like network-based bibliometric coupling, co-citation and co-occurrence analyses were used. (Tamasiga et al., 2022).

Statement of Problem

Many comprehensive conceptual models that link these innovations to measurable outcomes in sustainable development and financial inclusion are lacking, despite fintech's rapid global expansion. Through the development of an adequate framework grounded in current theoretical models and empirical data.

This study helps provide a solution for the following questions.

1. What is the percentage of Financial inclusion among different Countries.
2. How can a conceptual framework be developed to effectively link FinTech tools with Sustainable Development outcomes?
3. What do international case studies reveal about the successful impact of FinTech on sustainable practices?

Objectives:

1. To Compare the level of financial inclusion among different countries.
2. To develop the conceptual framework that links fintech tools to Sustainable Development outcomes.
3. To study international case studies which provide the impact of Fintech on Sustainable practices.

Scope of the Study

This study investigates the global significance of FinTech in fostering financial inclusion and sustainable development. It focuses on how digital financial instruments might help different economies accomplish the SDGs. The study looks at worldwide case studies, regulatory frameworks and technological

developments. It aspires to provide a conceptual framework for connecting FinTech to inclusive and sustainable outcomes.

Methodology

This Research implemented qualitative, descriptive and Quantitative approach adopting secondary data, international case Studies and certain models where fintech impact on Sustainable development goals. The Study also includes certain reports from united nation, World Bank, G20, CCAF, GSMA and IMF report to validate the appropriate conceptual framework.

Sustainable Development Goals Impacted from Fintech.

- 1. Sustainable Development Goals 1- (No Poverty):** Fintech expands access to financial services for the low-income population, especially to rural and underserved areas through mobile banking, microcredit, digital payments and digital credit.
- 2. Sustainable Development Goals 5 -Gender Equality:** Fintech solutions offer financial assistance and opportunities for women. By providing a direct control to finance and access to credit, insurance and savings.
- 3. Sustainable Development Goals 8 – Decent Work and Economic Growth:** Fintech supports a job opportunity in the digital economy, encourages start-ups and Small and Medium Enterprises with funding facilities through peer-to peer lending and crowd funding.
- 4. Sustainable Development Goals 9 – Industry, Innovation and Infrastructure:** Investment in digital infrastructure provide more scope for innovation and scalable financial system.
- 5. SDG 10 – Reduced Inequalities:** Through financial inclusiveness providing more to finance across different age, income, geography and ability which helps in reducing inequality within the country and among different countries.
- 6. Sustainable Development Goals 13 – Climate Action:** It provide green financing in order to support carbon credits, renewable energy projects and climate –risk insurance.
- 7. SDG 17 – Partnerships for the Goals:** Fintech helps in collaboration among governments, financial institutions, tech companies and international organization to provide financial inclusive solutions.

Case Studies related fintech and Sustainable Development Goals

- a) M-Pesa Kenya –Mobile Money for Financial Inclusion:** When Safaricom introduced M-Pesa in Kenya, it revolutionized mobile banking by offering easily accessible financial services without requiring a bank account. It boosted rural economic activity, improved women’s financial independence and lifted more than 2% of households out of poverty. Through the facilitation of mobile payments and microfinance, M-Pesa successfully promotes SDGs 1, SDG 5 and SDG 8.(Ndung’, 2021)
- b) Ant Forest (China)- Gamified Green Finance:** Alipay created Ant Forest, which encourages low-carbon living by giving "green energy" points for environmentally beneficial activities. These credits are then used to grow actual trees. It increases individual climate action and awareness by planting more than 122 million trees (SDG 13). It demonstrates how FinTech may advance environmental sustainability by utilizing AI, Big Data and gamification.(Zhang, 2022)
- c) Tala (India, Philippines, Mexico)- AI-Driven Microcredit:** By using AI and smartphone data to evaluate creditworthiness, Tala offers microloans to underprivileged people who don't have credit

histories. It supports entrepreneurship, financial inclusion and decreased inequality (SDGs 8 and 10) for its more than 6 million customers worldwide. Tala is a prime example of FinTech’s ability to promote inclusive economic growth by providing immediate access to capitals, particularly for low-income women. (*Fintech Expansion in Emerging Markets: OCN and Tala’s Strategic Moves in Mexico and Latin America*, n.d.)

Fintech Models and its Impacts on Sustainable Development Goals.

1. **United Nations ESCAP Model (2020): "FinTech and Sustainable Development"** (UN ESCAP report , 2020): Where fintech can democratize finance, improve financial inclusion and supports goals in reducing poverty maintaining gender equality and decent work. The Components of models includes Insurtech, RegTech, Digital Lending and Block chain a transparency tool. The model majorly contributes to the developing Asian SDGs through Digital finance. (Hasan et al., 2024)
2. **G20 Sustainable Finance Working Group (SFWG) Model (G20 SFWG Reports , 2021-23):** FinTech plays a significant role in sustainable finance by enabling green bonds, climate risk analytics, and ESG investing platforms. AI and Big Data improve sustainability evaluations, encourage openness and facilitate well-informed decision-making, assisting investors and decision-makers in achieving inclusive, accountable and long-term sustainable development results on a global scale.
3. **Cambridge Centre for Alternative Finance (CCAF) FinTech SDG Impact Model (Cambridge Centre for Alternative Finance (CCAF)):** This empirical model uses secondary data and surveys to connect FinTech advances with SDG metrics across countries. It highlights FinTech's role in fostering equitable economic growth and technical innovation, mapping its contributions to SDGs 8 (Decent Work), 9 (Innovation & Infrastructure) and 10 (Reduced Inequalities).
4. **The Triple Bottom Line + Tech Model (TBL+Tech) (bottom):** This concept, which is based on Elkington's Triple Bottom Line (People, Planet, Profit), uses FinTech as a major force in bringing social, economic, and environmental objectives into alignment. It is used in research looking at carbon tracking apps, green finance platforms, and mobile money to assess how FinTech contributes to inclusive growth and sustainable development.

Data Analysis and Interpretation

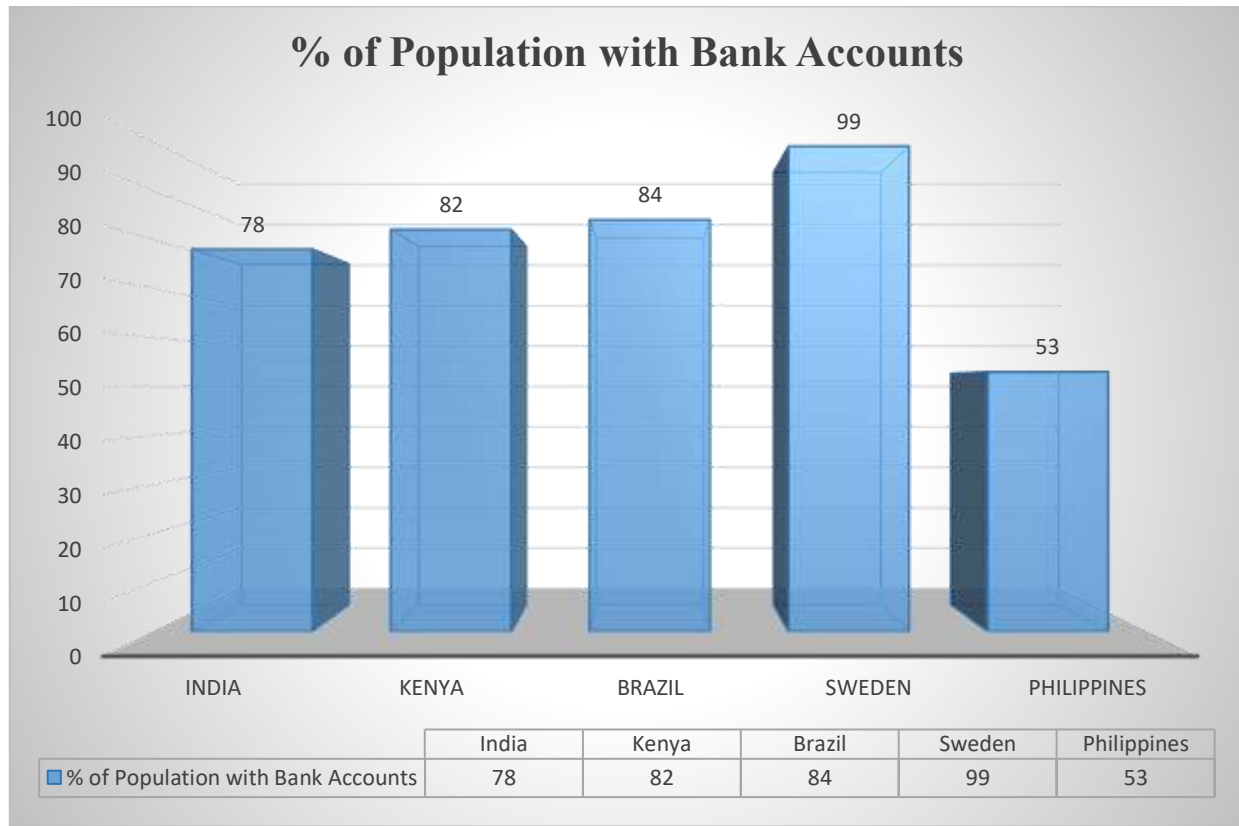
1. Bank Account ownership across different Countries.

This study undertakes to analysis the percentage of population holding bank account in different countries. The analysis is conducted by taking 5 different countries. Financial inclusion is highest in Sweden (99%), Brazil (84%) and Kenya (82%) with mobile money driving Kenya's rise. India (78%) has made strides in fintech and policy, but disparities in rural areas still exist. The Philippines (53%) falls behind, underscoring issues with access, literacy and infrastructure in the pursuit of wider financial inclusion.

Table 1: Evaluation of Bank Account Ownership among different countries. (9781464822049, n.d.)

Country	% of Population with Bank Accounts
India	78
Kenya	82
Brazil	84
Sweden	99
Philippines	53

Chart 1



In Chart No1, we can draw a conclusion that Sweden, Brazil and Kenya as a strong infrastructure, better policies and Fintech innovation will drive high financial inclusion. India’s progress is notable but uneven, while the Philippines’ low rate reflects persistent access and literacy gaps. Sweden as a more percentage of Bank account holders, whereas Philippines as less percentage of bank accounts holders which generally affects the economy.

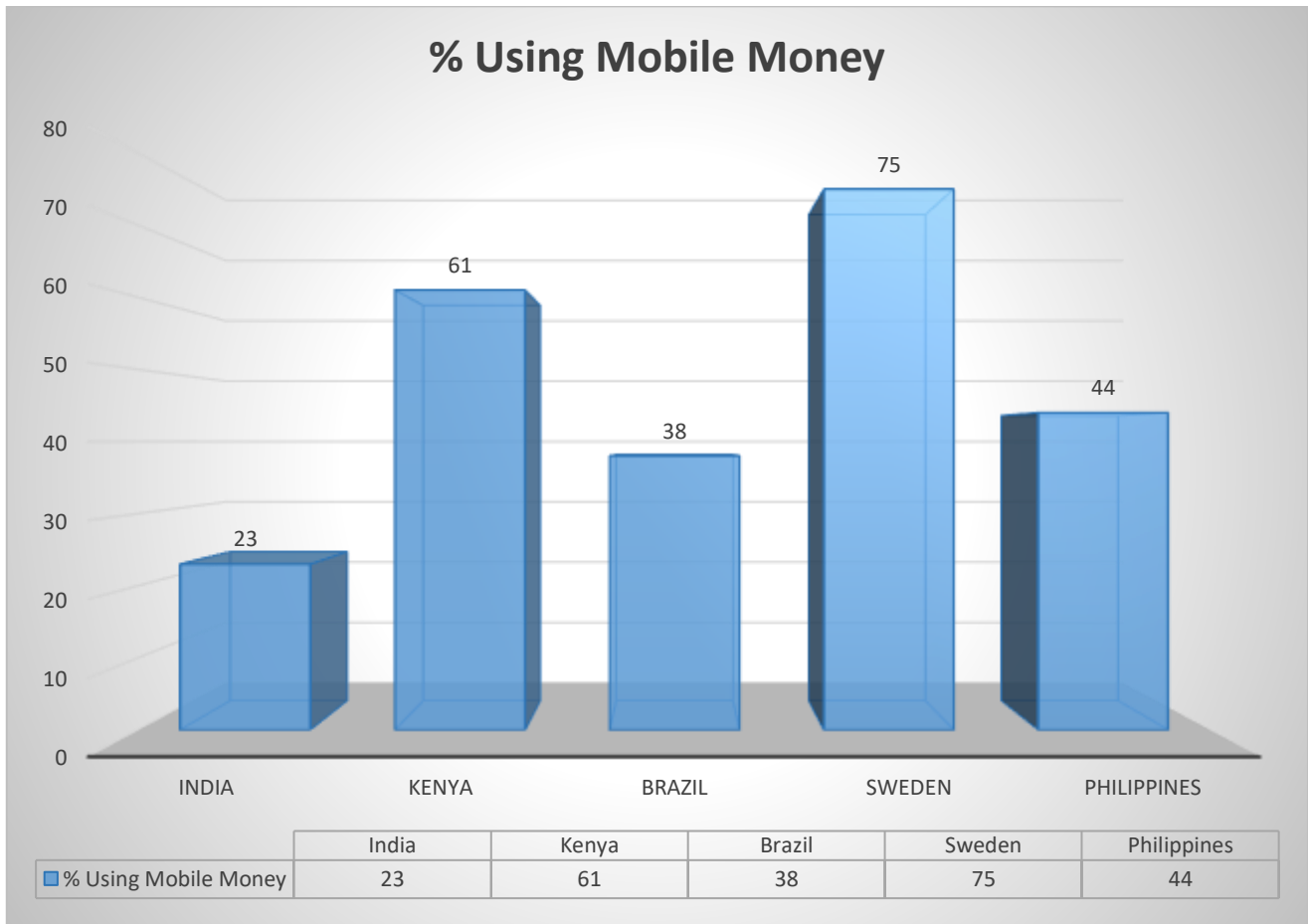
2. Mobile Money usage across different countries

The study undertakes that percentage of mobile money usage among different countries. The analysis is conducted by taking 5 different countries. Mobile money usage varies among countries, with Sweden 75% and Kenya 61% leading due to the advanced digital ecosystem and Mobile-First banking models like M-PESA. The Philippines as 44% and Brazil as 38% display with the moderate adoption, whereas India as 23% despite a strong fintech infrastructure such as UPI.

Table 2: Evaluation of Mobile Money usage among different Countries (9781464822049, n.d.)

Country	% Using Mobile Money
India	23
Kenya	61
Brazil	38
Sweden	75
Philippines	44

Chart 2



In Chart No 2, we can draw the inference that Sweden and Kenya as high adoption of mobile money usage and mobile -first solution in boosting financial access. Moderate use in Brazil and Philippines states that it is in a growing mode but less potential and India as a less usage of Mobile Money.

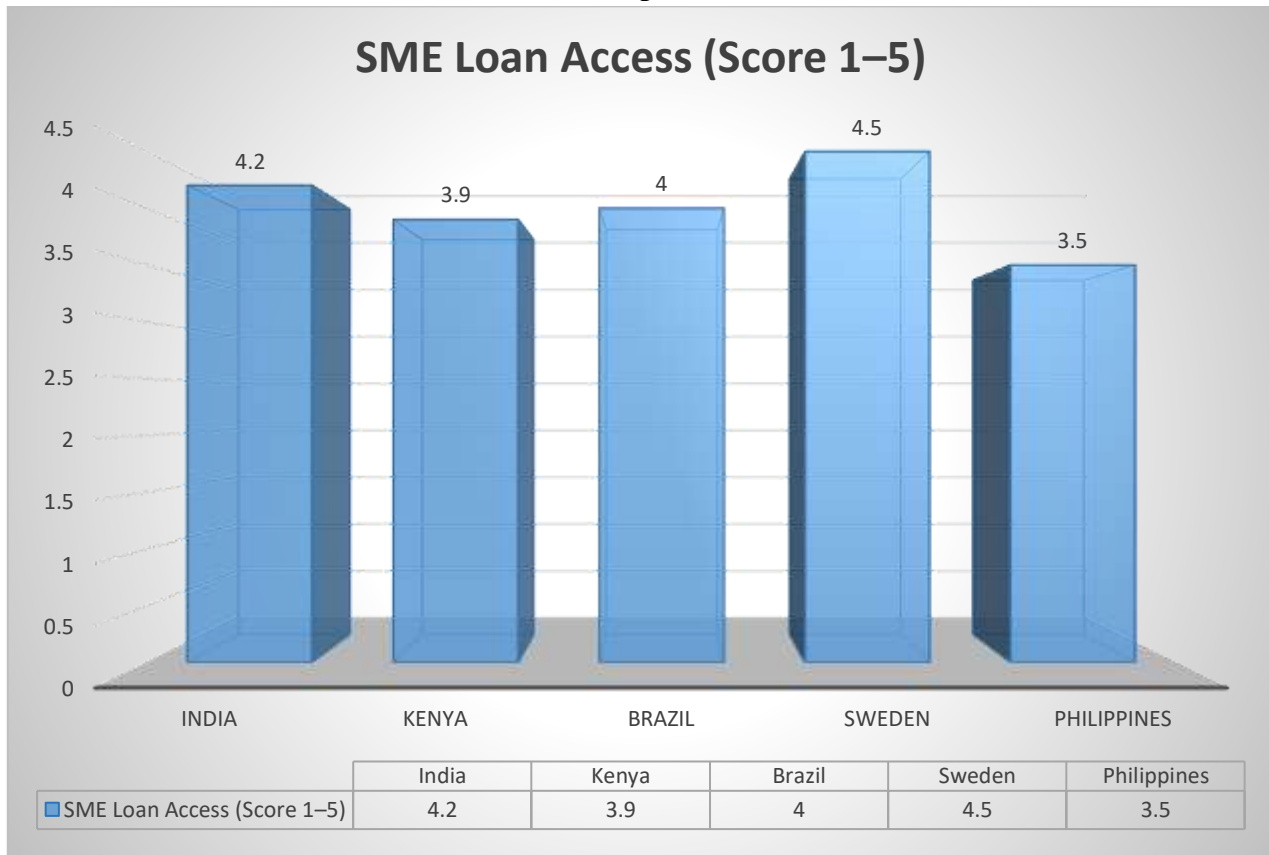
3. SME Loans access across different countries

This study undertakes the SME Loan access among different countries. Sweden has a well-developed credit market, as evidenced by its highest score of 4.5 for SME loan access. Kenya (3.9) scores mediocly, whereas Brazil (4.0) and India (4.2) both exhibit strong availability. The Philippines has the lowest ranking (3.5), which suggests that small firms have restricted access to loans.

Table 3: Examining the SME loan access among selected countries. (9781464822049, n.d.)

Country	SME Loan Access (Score 1–5)
India	4.2
Kenya	3.9
Brazil	4
Sweden	4.5
Philippines	3.5

Graph 3



In Chart No 3, We can draw the conclusion that High ratings in Sweden, India and Brazil indicate that SMEs can benefit from supporting financial institutions and fintech-enabled lending solutions. Kenya’s moderate grade shows rising digital lending but is limited by collateral and risk perceptions. The Philippines' lower score demonstrates structural hurdles, poor credit infrastructure, and the need for policy and fintech innovation to improve SME finance.

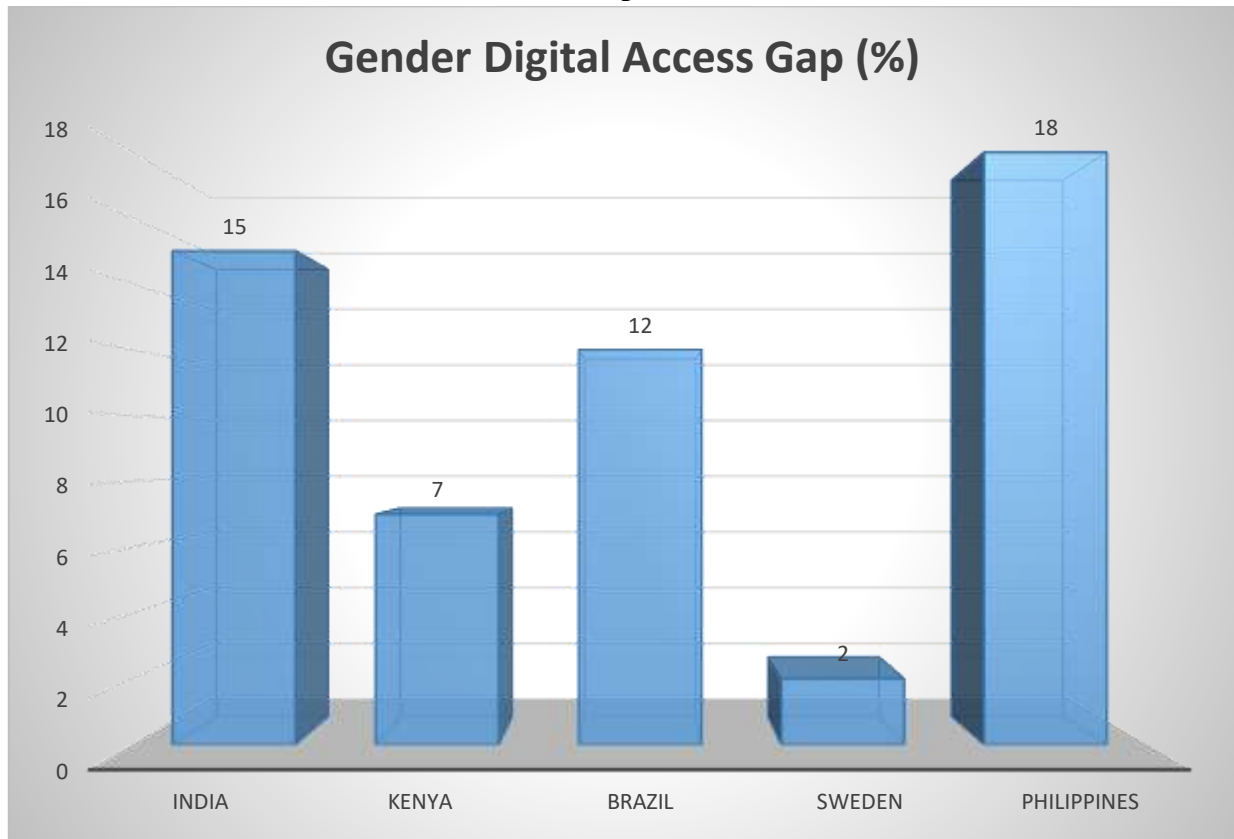
4. Gender Digital Access Gap among selected Countries.

In this Study we can understand about the gender digital access gap among selected countries. Sweden has the smallest gender digital access gap (2%), indicating nearly equal use of digital services. India (15%) and Brazil (12%) have larger discrepancies, but Kenya (7%) exhibits a mild one. Significant disparity in internet access is evident in the Philippines, where the difference is the largest at 18%.

Table 4: Evaluating the Gender Digital Access gap among Selected Countries.

Country	Gender Digital Access Gap (%)
India	15
Kenya	7
Brazil	12
Sweden	2
Philippines	18

Graph 4



In Chart No 4, We can draw the inference that Sweden country as a less percentage of Gender digital access gap as there is no gender inequality in case of financial inclusion. Whereas India and Philippines being a developing country as more percentage of Access gap of digital Financial services which leads to inequal usage of financial services among Gender.

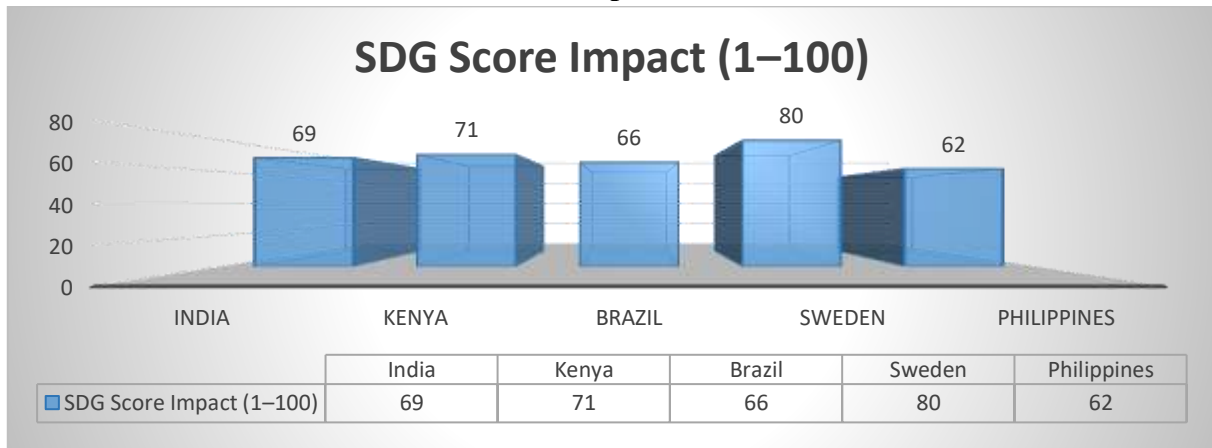
5. SDG Score impact among selected countries.

In this study we can grace the information about the SDG Score impact due to leveraging the Fintech among selected countries. Sweden records the highest SDG score impact (80), reflecting strong alignment of fintech with sustainable development. Kenya (71) and India (69) show positive progress driven by digital inclusion efforts, while Brazil (66) performs moderately. The Philippines, with 62, has the lowest impact among the five countries.

Table 5: Evaluating the SDG Score impact among the Selected Countries.

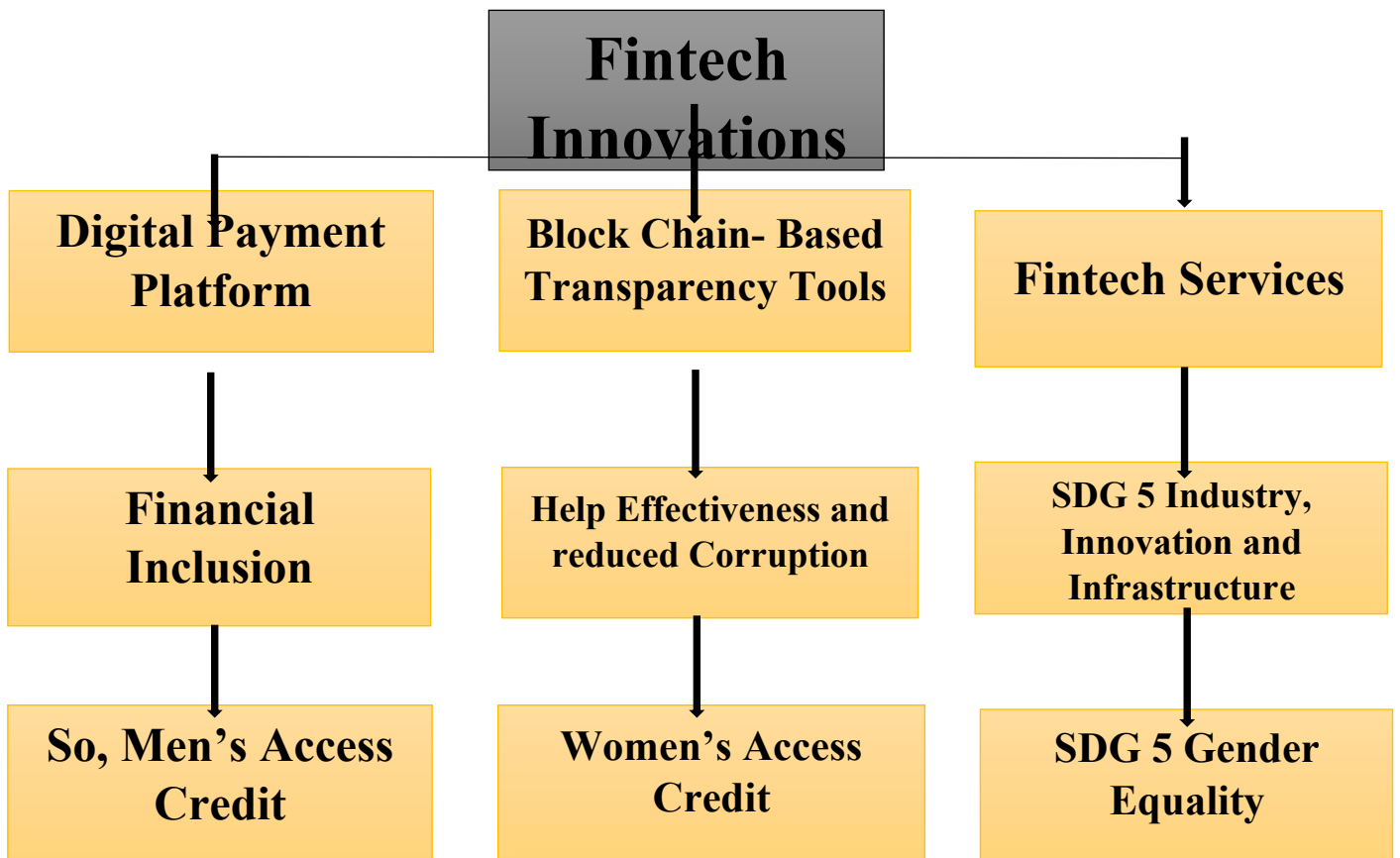
Country	SDG Score Impact (1–100)
India	69
Kenya	71
Brazil	66
Sweden	80
Philippines	62

Graph 5



In Chart No 5, We Can provide a insights that developed economies like Sweden leverage fintech to advance SDGs effectively, while emerging markets such as Kenya and India demonstrate fintech’s potential in bridging inclusion gaps. Brazil and the Philippines highlight the need for stronger policies and digital infrastructure to enhance sustainability outcomes.

Fintech Innovation Model-Conceptual Framework



Findings

- Sweden as a highest percentage of Bank accounts holder with a 99%, whereas Philippines as a lowest percentage of bank accounts holder with a 53%.

- Sweden as a highest number of Mobile money usage with a 75%, whereas India as a lower number of mobile money usage with 23%.
- Sweden as a highest number of SME Loan access with a score of 4.5, whereas Philippines as a least number of SME Loan access with a score of 3.5.
- Sweden shows near gender parity in digital access (2%), while the Philippines (18%) and India (15%) reveal significant gaps limiting women's participation.
- Sweden as a high SDG Score impact with an 80, whereas Philippines as a low SDG Score impact with a 62.
- Fintech innovations such as digital payment platforms enable men obtain loans and promote financial inclusion.
- The block-chain based on transparent technologies, a fintech invention aids in efficacy and decreases corruption, giving women access to finance.
- Fintech innovation offers a range of fintech services that support infrastructure, innovation, and industry by providing equal opportunities for men and women, which contributes to the achievement of SDG 5: gender equality.

Conclusion

Financial technology (FinTech) has emerged as a disruptive force for global financial inclusion and sustainable development. FinTech bridges the gap between established financial institutions and marginalized people by utilizing digital tools to improve accessibility, affordability and efficiency. It enables consumers and small businesses by offering new financial services such as mobile banking, microloans and digital payments. Furthermore, FinTech promotes sustainability by facilitating green financing, optimizing resource allocation, and increasing economic resilience. However, accomplishing these objectives necessitates strong regulatory frameworks, digital literacy and equitable policy approaches. To fully realize FinTech's potential, a worldwide collaboration is required. Finally, FinTech is seen as a critical enabler of inclusive growth and long-term progress in the twenty-first century.

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