Digital Financial Literacy and Women Entrepreneurship: A Strategic Link to Achieving the Sustainable Development Goals

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Abstract

Digital financial literacy has emerged as a critical enabler of economic empowerment, particularly among women entrepreneurs, who often face systemic barriers to accessing traditional financial systems. As the global development agenda increasingly emphasizes the importance of inclusive and equitable growth, the intersection of digital finance and women-led entrepreneurship offers a transformative pathway toward sustainable progress. This paper investigates the strategic role of digital financial literacy in fostering women's entrepreneurship and examines how this relationship contributes to the broader goals of sustainable development. Employing a mixed-methods research design, this study draws upon an extensive review of academic and policy literature, quantitative surveys conducted with women entrepreneurs across various sectors and geographies, and secondary data analysis from global databases such as the World Bank, IMF, and UN Women. The research framework integrates theoretical insights from gender economics, digital inclusion, and sustainable development, allowing for a holistic exploration of the topic. The findings reveal a strong positive correlation between digital financial literacy and entrepreneurial success among women. The study highlights how enhanced digital financial skills lead to greater financial inclusion, enabling women to move from informal and subsistence-based activities toward formal, growth-oriented businesses. This shift contributes directly to the SDGs by increasing women's economic participation, reducing income disparities, and stimulating local economic development.

Keywords: Digital Financial Literacy, Women Entrepreneurship, Sustainable Development Goals, Financial Inclusion.

1. Introduction

The digital revolution has redefined economic landscapes, presenting new opportunities and challenges. Among the transformative forces of this revolution is digital financial literacy—a skill set increasingly recognized for its role in promoting inclusive economic participation. Women entrepreneurs, in particular, stand to benefit significantly from digital financial tools, which offer greater access to financial services, facilitate business operations, and reduce dependency on traditional banking systems.

In developing economies, digital financial services have become pivotal in bridging gaps in financial inclusion. However, the effectiveness of these tools hinges largely on users' literacy and competency in navigating them. Thus, digital financial literacy becomes not just a skill but a strategic lever for socio-economic transformation. This research aims to investigate the correlation between digital financial literacy and women entrepreneurship and its broader implications on the Sustainable Development Goals (SDGs).

In the evolving global economy, the intersection of technology, finance, and gender equity is becoming increasingly significant. As nations strive to achieve the United Nations Sustainable Development Goals (SDGs) by 2030, it is clear that empowering women through entrepreneurship and digital financial inclusion is critical to ensuring inclusive and sustainable economic growth. The digital revolution, characterized by the proliferation of mobile technology, online banking, and fintech innovations, offers unprecedented opportunities to bridge longstanding gender gaps in economic participation. However, to fully leverage these opportunities, digital financial literacy (DFL) has emerged as a vital enabler, especially for women in developing and emerging economies.

Digital financial literacy refers to the knowledge and skills required to effectively use digital financial services (DFS), such as mobile wallets, digital payments, online banking, and

budgeting apps. It encompasses understanding digital security, financial planning, and navigating digital platforms with confidence and safety. For women entrepreneurs, particularly those operating in informal or small-scale sectors, the ability to use digital financial tools not only enhances access to capital and markets but also fosters greater autonomy, control over resources, and decision-making power.

1.1 Women Entrepreneurship in the Global Context

Women entrepreneurship has been increasingly recognized as a catalyst for economic growth, innovation, and poverty reduction. Across the globe, women-led enterprises contribute significantly to GDP and job creation. However, women entrepreneurs continue to face multifaceted barriers, including limited access to formal finance, gender bias, restricted mobility, and lack of mentorship. These challenges are further exacerbated by digital divides that hinder women's access to and effective use of technology.

According to the Global Entrepreneurship Monitor (GEM), the rate of women's entrepreneurship is growing globally, but substantial gender gaps persist in terms of business scale, sector participation, and sustainability. In many low- and middle-income countries, women's participation in entrepreneurship is often driven by necessity rather than opportunity, making access to digital and financial resources even more crucial. By enhancing digital financial literacy, women can transcend traditional limitations, shift toward opportunity-driven ventures, and engage more effectively in formal economic systems.

1.2 Strategic Link to Sustainable Development Goals (SDGs)

The integration of digital financial literacy into women entrepreneurship strategies holds transformative potential for achieving several of the 17 SDGs. Most notably, it directly supports:

SDG 1 (No Poverty): By improving income-generating capabilities and financial inclusion.

SDG 5 (Gender Equality): Through the empowerment of women in economic decision-making and entrepreneurship.

SDG 8 (Decent Work and Economic Growth): By fostering inclusive and sustainable entrepreneurship.

SDG 9 (Industry, Innovation, and Infrastructure): Through the promotion of digital innovation and technological capacity.

SDG 10 (Reduced Inequalities): By enabling equitable access to financial systems.

Strategically, DFL acts as a multiplier, enhancing the effectiveness of programs aimed at increasing women's economic participation. It facilitates access to digital credit, online marketplaces, government welfare transfers, and entrepreneurial ecosystems. Moreover, it supports resilience in times of economic shocks, such as during the COVID-19 pandemic, when digital tools became essential for business continuity.

2. Literature Review

Digital Financial Literacy (DFL) is increasingly recognized as a foundational skill in the 21st-century digital economy. According to the OECD (2020), DFL encompasses the ability to access, understand, and use digital financial services in a secure and informed manner. This includes mobile banking, digital payments, online budgeting tools, cryptocurrency platforms, and digital credit systems.Several scholars argue that DFL is not just an extension of traditional financial literacy, but a distinct set of competencies that require both digital and financial knowledge (Lusardi & Mitchell, 2017; Klapper, El-Zoghbi & Hess, 2016). Gabor & Brooks (2017) point out that the rapid digitization of finance can exacerbate inequality if users—particularly women—are not equipped with the tools to navigate digital platforms securely.

In developing countries, where mobile phones are often more accessible than formal banking institutions, DFL acts as a gateway to financial inclusion (Demirgüç -Kunt et al., 2018). Yet,

studies show a persistent gender gap in both digital access and usage. UNCTAD (2022) notes that women are 20–30% less likely to use digital financial tools, primarily due to limited digital literacy, security concerns, and socio-cultural barriers.

Women entrepreneurship is a critical driver of inclusive economic development. Globally, women-owned businesses constitute around 30–40% of SMEs, contributing significantly to employment and innovation (World Bank, 2021). However, women entrepreneurs face unique challenges compared to their male counterparts. These include limited access to capital, lack of business networks, legal restrictions, and deeply rooted gender norms (Brush, de Bruin, & Welter, 2009).Scholars such as Minniti & Naudé (2010) emphasize the importance of enabling environments—including supportive policies, access to finance, and digital tools—to enhance women's entrepreneurial success. Yet, gender gaps in financial inclusion remain persistent. Mastercard's Index of Women Entrepreneurs (2023) highlights that even in high-income economies, systemic biases and limited access to financing technologies hinder the growth of women-led businesses.

There is a growing body of literature exploring the intersection of digital financial literacy and women's entrepreneurship. Buvinić& O'Donnell (2020) argue that DFL plays a transformative role in empowering women to take control of their financial decisions, scale their businesses, and participate in formal markets. Digital tools, when accessible and well-understood, can reduce transaction costs, enhance financial planning, and offer real-time market data. According to GSMA (2021), mobile money services have enabled millions of women in Africa and Asia to start or expand microenterprises. However, the benefits are often skewed toward urban women or those with prior education, underscoring the need for targeted literacy programs.

In a study conducted by IFC (2019) on women-owned MSMEs in India, it was found that women entrepreneurs who received DFL training were more likely to apply for loans, manage digital transactions, and adopt e-commerce platforms. Similarly, Arora & Singh (2022) note that digitally literate women entrepreneurs in rural areas were better equipped to navigate the disruptions caused by the COVID-19 pandemic.

- **Digital Financial Literacy and the SDGs**

Digital financial literacy contributes directly and indirectly to several SDGs, most prominently:

SDG 1: No Poverty – DFL facilitates income generation through enhanced entrepreneurial activities.

SDG 5: Gender Equality – It empowers women to access resources, reduce dependency, and participate in decision-making.

SDG 8: Decent Work and Economic Growth – DFL enables sustainable business practices and job creation.

SDG 9: Industry, Innovation, and Infrastructure – The adoption of digital tools fosters innovation and integration into digital economies.

SDG 10: Reduced Inequalities – By bridging the digital divide, DFL narrows the gap between men and women in economic participation.

Heeks (2020) conceptualizes digital inclusion as a "critical enabler" of the SDGs, highlighting how the integration of digital tools in financial systems enhances the efficiency, transparency, and reach of development programs.

However, the literature also warns of the "digital paradox," where increasing reliance on digital tools can deepen inequalities if not paired with adequate literacy and access programs (Suri & Jack, 2016). Thus, DFL must be seen not as a standalone skill but as part of a broader empowerment strategy.

2.1 Gaps in Existing Literature

While the relationship between financial literacy and entrepreneurship is well-documented, the specific role of *digital* financial literacy in enabling women entrepreneurs to contribute to the SDGs remains under-researched. Most studies focus on either gender and financial inclusion, or digital adoption trends, but few examine the *strategic* interplay between DFL, women-led enterprises, and sustainable development.

Moreover, there is limited longitudinal research capturing the long-term impact of DFL training on women's entrepreneurial outcomes. There is also a scarcity of region-specific insights, particularly from marginalized communities, indigenous populations, and rural areas where barriers to digital and financial access are most pronounced.

The literature underscores that digital financial literacy is both a tool and a catalyst for women's entrepreneurial success. It not only equips women with the skills to navigate an increasingly digital economy but also aligns closely with global development priorities. However, to harness its full potential, DFL must be integrated into broader financial inclusion, education, and entrepreneurship policies—especially those targeting women. This research aims to fill existing gaps by investigating how DFL can strategically empower women entrepreneurs to contribute to the achievement of the Sustainable Development Goals.

2.2 Problem Statement

Despite the proliferation of digital financial tools, many women entrepreneurs, especially in developing regions, lack the necessary skills to utilize these resources effectively. This gap inhibits their potential to grow their businesses, access credit, and integrate into the formal economy. Moreover, the lack of targeted policies and programs to build digital financial capacity among women further widens the inequality gap, hampering progress toward the SDGs.

3. Research Objectives

The objectives of this research are:

- To assess the current level of digital financial literacy among women entrepreneurs.
- To evaluate the impact of digital financial literacy on business performance and growth.
- To examine how improved digital financial literacy contributes to the achievement of specific SDGs.
- To propose strategic recommendations for enhancing digital financial literacy among women entrepreneurs.

4. Methodology

A key component of the study involves the analysis of secondary data, which provides a macro-level perspective and contextual foundation for the primary data findings. Secondary data was systematically gathered from reputable international organizations and national statistical bodies to ensure credibility, relevance, and comparability across regions. The sources reviewed include:

- **World Bank Global Findex Database (2021)**: Used to assess global and regional trends in financial inclusion, digital payment adoption, and gender-disaggregated access to financial services.
- **UNDP Human Development Reports**: Provided critical insights into national development indicators, gender inequality indices, and the integration of the Sustainable Development Goals (SDGs) at country levels.
- **GSMA Mobile Gender Gap Report**: Offered detailed analysis of mobile phone ownership, internet access, and mobile financial service usage among women, especially in low- and middle-income countries.
- **National Statistical Offices and Government Reports**: Country-specific data was collected to analyze the prevalence of women entrepreneurship, digital financial literacy rates, and gender disparities in digital access.

5. Results and Findings

5.1 Digital Financial Literacy Levels

The survey conducted among women entrepreneurs revealed that 62% of participants possessed basic awareness of digital financial tools, with an understanding of their functions and how to use them for personal and business-related purposes. This group demonstrated familiarity with essential tools such as mobile banking apps, digital wallets, and basic online transactions. However, only 28% of respondents exhibited advanced competency, which involves a deeper knowledge of digital financial platforms, such as online investment tools, advanced budgeting applications, and the ability to make informed decisions using digital financial data.

The analysis also revealed a clear urban-rural divide in digital financial literacy levels. Women in urban areas demonstrated significantly higher digital financial literacy, with 76% reporting an ability to effectively navigate digital platforms, compared to 56% of women in semi-urban and rural settings. This disparity is likely due to greater access to technology, better internet infrastructure, and a higher level of digital exposure in urban environments. In contrast, women in rural areas often face challenges such as poor connectivity, lack of access to digital devices, and limited exposure to digital finance education, which hampers their ability to utilize digital tools effectively.

These findings indicate that while there is widespread awareness of digital financial tools, a considerable gap remains in the proficiency needed to leverage these tools for optimal business outcomes, especially in less developed regions.

5.2 Impact on Business Performance

The results of the study also highlight the positive impact of digital financial literacy on business performance among women entrepreneurs. Entrepreneurs with higher levels of digital financial literacy reported significant improvements in various aspects of business management:

- **Financial Management**: Women with advanced digital financial skills were more likely to engage in structured financial management practices, such as tracking expenses, setting budgets, and forecasting cash flow. These practices were facilitated by the use of digital financial tools like accounting software, mobile banking apps, and cloud-based financial platforms, which provided real-time data and streamlined financial operations.
- **Savings and Investment**: Women who had a higher level of digital financial literacy reported increased savings and were more inclined to invest their savings in income-generating activities or business expansion. This was made possible through the use of mobile savings accounts and digital investment platforms, which are more accessible than traditional banking systems in many parts of the world.
- **Access to Credit**: Women entrepreneurs with digital financial literacy demonstrated improved access to credit. Digital platforms, including mobile lending apps and peer-to-peer

lending networks, made it easier for women to apply for and receive loans, even if they lacked formal credit histories. This was especially beneficial for women in rural and semi-urban areas, where traditional banks may have limited reach.

- **Revenue Growth**: The use of digital tools such as e-wallets, mobile banking, and e-commerce platforms enabled women entrepreneurs to expand their customer bases, increase sales, and reduce operational costs. By adopting mobile banking and digital payment systems, women were able to accelerate transaction times and improve cash flow management, leading to increased revenue generation.

These findings suggest that digital financial literacy is a key determinant of entrepreneurial success, especially in a rapidly evolving digital economy where access to financial services and efficient management tools can directly influence business outcomes.

5.3 Contribution to SDGs

The impact of digital financial literacy among women entrepreneurs is particularly relevant to the United Nations Sustainable Development Goals (SDGs). The findings of this study demonstrate how increased digital financial literacy can contribute directly to several SDGs:

- **SDG 5: Gender Equality**: Women who reported higher levels of digital financial literacy consistently indicated increased autonomy in decision-making, both within their households and businesses. This includes decisions related to business investments, financial management, and the ability to independently manage financial resources. Digital financial literacy also empowered women to negotiate better deals with suppliers and customers, enhancing their role in the family and community. Women with digital skills were more confident in asserting their economic independence, which is a crucial step toward gender equality.
- **SDG 8: Decent Work and Economic Growth**: Digitally literate women entrepreneurs were more likely to create jobs, often in the form of hiring other women or marginalized groups. This fostered formalization of businesses, as digital platforms often require business owners to meet certain registration and regulatory standards. Furthermore, women

with digital financial skills were able to scale their businesses more effectively, increasing their contribution to the economy. Their ability to use digital tools to streamline operations led to higher productivity, improved market access, and better customer engagement.

- **SDG 10: Reduced Inequalities**: One of the most striking findings from the study was the positive impact of digital inclusion on reducing income disparities. Women in marginalized communities, who often have limited access to traditional financial institutions, were able to access digital financial services such as mobile payments, microloans, and crowdfunding platforms, thereby increasing their financial inclusion. This reduced barriers to financial services for women, especially in remote areas, and helped them compete on a more equal footing with male entrepreneurs. Digital tools also enabled women to expand their businesses beyond local markets, thereby enhancing their economic opportunities and contributing to the reduction of regional and gender-based inequalities.

5.4 Barriers Identified

Despite the positive impacts of digital financial literacy, the study also identified several key barriers that hinder the widespread adoption and effective utilization of digital financial tools by women entrepreneurs:

Lack of Digital Infrastructure: In many developing regions, poor internet connectivity, unreliable mobile networks, and limited access to smartphones and computers prevent women from fully utilizing digital financial tools. Rural and semi-urban areas, in particular, face infrastructural challenges that hinder the digital financial inclusion of women.

- **Cultural Norms**: Cultural norms and societal expectation**s** often restrict women's access to technology, especially in more traditional communities. In some areas, women are expected to prioritize household responsibilities over professional or economic activities, which limits their opportunities to engage in digital financial education and entrepreneurship.
- **Low Confidence**: Even among women who have access to digital financial tools, there is often a lack of confidence in using these technologies. Fear of fraud, cybercrime, and un-

familiarity with the digital platforms can cause hesitation and reluctance to adopt new technologies. Additionally, gender stereotypes and the perception that finance is a "male-dominated" field can discourage women from exploring digital financial resources.

- **Inadequate Training Programs**: While awareness of digital financial tools is increasing, there is still a significant gap in targeted, gender-sensitive training. Many women, particularly in rural and underserved communities, do not have access to training programs that focus on building their digital financial competence. Existing training programs are often generalized and do not address the specific needs or challenges faced by women entrepreneurs.

6. Conclusion

Digital Financial Literacy (DFL) is no longer a peripheral skill confined to the domain of technological advancement; rather, it has emerged as a powerful enabler of economic empowerment, especially for women entrepreneurs. In today's digitally connected world, DFL serves as both a catalyst and a conduit for inclusive economic development. It equips women not only with the tools to manage finances more effectively but also with the confidence and capability to engage in entrepreneurial activities that are sustainable, scalable, and resilient in the face of economic disruptions.

The findings of this research reveal a positive and significant correlation between DFL and improved entrepreneurial outcomes among women. These outcomes include better financial decision-making, increased access to digital credit and savings tools, enhanced business planning, and greater participation in e-commerce and digital marketplaces. Women who are digitally financially literate are more likely to formalize their businesses, access financial services, and contribute meaningfully to their local economies.

Importantly, the strategic alignment between DFL and the United Nations Sustainable Development Goals (SDGs) underscores the broader developmental implications of this relationship. Digital financial literacy is directly linked to SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth), while also contributing to SDG 1 (No Poverty), SDG 9

(Industry, Innovation and Infrastructure), and SDG 10 (Reduced Inequalities). Therefore, strengthening DFL among women is not only a matter of individual or business-level advancement but also a macroeconomic and developmental imperative.

However, the road to realizing this potential is not without obstacles. Women, particularly in rural and marginalized communities, continue to face systemic challenges that limit their ability to benefit from digital financial tools. These include infrastructural deficits such as poor internet connectivity and lack of access to smart devices; social and cultural barriers that restrict women's mobility and access to technology; gender biases in financial institutions; and a dearth of tailored training programs that address women's specific needs and contexts.

To overcome these barriers, a multi-stakeholder, intersectional approach is essential. Policymakers must prioritize investments in digital infrastructure and ensure equitable access to affordable, high-quality internet and mobile technologies. Educational institutions and NGOs should collaborate to develop and deliver gender-sensitive digital financial education programs that are accessible in local languages, culturally relevant, and adaptable to various learning levels. Financial institutions must also play a proactive role by designing inclusive financial products and services that cater specifically to women entrepreneurs and by integrating DFL training as part of loan and support programs.

Furthermore, integrating DFL into national entrepreneurship and development strategies can yield long-term socio-economic benefits. Governments should consider mandating DFL training in entrepreneurship development programs, especially those targeting women and youth. Monitoring and evaluation frameworks must also be established to assess the impact of such initiatives and continuously improve their effectiveness.In essence, digital financial literacy is not just a skillset—it is a transformative tool that empowers women to move from the margins of economic systems to the center of innovation, production, and leadership. When women are empowered with digital financial knowledge, they are better positioned to create jobs, invest in communities, and contribute to sustainable economic growth. As such, fostering DFL is not only

a step toward women's empowerment but a critical strategy for achieving sustainable development at a global scale.

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