

# Digital Micro-Savings Behaviour among Women Entrepreneurs: Implications for SDG 5 and SDG 8

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**Abstract-** Digital micro-savings programs have developed into essential female empowerment in entrepreneurship, although few attempts have found systematic evidence of the behavioural effect of the intervention. This paper examines the behaviour of digital micro-savings by female entrepreneurs and its effects on SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth). The main issue under consideration is the endemic disparity in the attainment of formal means of savings, financial independence and capital formation by women that limit business development and economic involvement. The paper takes a mixed-methodology that incorporates a systematic survey of women micro-entrepreneurs, transaction data on digital savings apps, and statistical analysis of savings behaviour. The findings show that the use of digital micro-savings instruments increased the participation in regular savings by 42.6 percent, and the volume of savings per month increased by 37.4 percent versus informal traditional approaches. Artificial independence in financial decision-making increased in 48.1% of the participants which directly contributed to SDG 5 goals on women economic empowerment. Economically, 31.8 percent of users said that through the accumulated savings, they had reinvested their businesses and businesses became more stable in terms of enterprise income, which was in line with SDG 8 results. The results also indicate that there was a decrease of 26.3 percent in the use of the high interest informal credit because of the availability of online savings buffers. The conclusion of this study proves that digital micro-savings systems contribute greatly to financial resilience, continuity of entrepreneurship, and inclusive economic development of women-led businesses. All in all, the article serves as empirical evidence that digitally enabled savings behaviour is an effective policy and fintech intervention to promote gender equality and sustainable job creation in the developing economies.

**Keywords-** Digital micro-savings, Women entrepreneurs, Financial inclusion, Gender equality (SDG 5), Decent work and economic growth (SDG 8), Digital finance

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## Introduction

The structural factor within gendered financial exclusion as an issue that continues to affect women at the entrepreneurial level and economic empowerment, especially in developing and emerging markets where most microenterprises owned by women represent a substantial portion of the informal economy [1]. Although women entrepreneurs are central to the generation of household income and the creation of local employment, they remain in disproportionate limiting factors to the availability of formal financial services, in particular savings vehicles to capital accumulation, lowering risks and long-term business strategy [2]. The women are susceptible to liquidity shock, social pressure and security risks and cannot readily transform their earnings into productive investment due to traditional savings systems like rotating savings groups, cash storage, or informal cooperatives [3]. These limitations strengthen gender differences in monetary independence, scale of entrepreneurship, and consistency of incomes, and negatively impact the greater development targets of gender equality and growth that is fairly incorporated [4]. Over the last few years, the fast proliferation of mobile technologies and fintech solutions has spawned digital micro-savings offerings that will help users with low incomes access small, regular, and on-demand savings [5]. These platforms utilize mobile phones, digital wallets, and application-based interfaces to reduce transaction costs, eliminate geographical boundaries and provide behavioural nudges to promote a habit of saving [6]. Digital micro-savings tools can also be a potentially transformative intervention to women entrepreneurs in that they offer private, safe, and self-directed ways of earning management and financial buffer [7]. In contrast to financial inclusion models based on credit, savings-based models stress on stability, independence, and gradual accumulation of assets, which are especially crucial to women whose micro and small businesses work in unstable markets [8].

This study is driven by the necessity to investigate in a systematic manner the role that digitally enabled micro-savings plays in financial behaviour and entrepreneurial results in women, not only in terms of access and adoption indicators. Whereas the literature has recognized the role of digital finance in increasing financial inclusion, there is a paucity of empirical research on the behavioural consequences of digital savings, including an increase or decrease in the frequency, volume, decision-making agency, and dependence on informal credit, particularly in a gender and SDG-focused perspective [9]. This is a critical gap considering that the empowerment of women in terms of their access to economic resources and control over financial assets, and their productive employment, sustainability of enterprises, and economic resilience are some of the aspects of sustainable development goals 5 and 8 respectively. This paper puts savings in context as a financial activity, but as a behavioural and structural trajectory to women economic empowerment, and the creation of decent work through an explicit association of digital micro-savings behaviour to the outcome of SDG 5 and SDG 8. Learning about how digital micro-savings transform the nature of financial decisions, decrease exposure to informal credit policies that are expensive, and facilitate reinvestment in businesses founded by women are key to crafting inclusive policies and development approaches to fintech. It is in this light that the proposed study will present the empirical evidence on how digital micro-savings can be used as a scaled intervention in fintech interventions that can enhance gender equality and sustainable economic development in developing economies.

## *Literature Review*

Due to the growth of digital financial inclusion, it is well-known that the improved participation of women in entrepreneurial activities is promoted, especially in the situations when formal banking systems are not accessible or inclusionary [10]. The research on female entrepreneurship always proves that digital financial services like mobile wallets, digital savings accounts, and other financial

management resources accessible through apps have fewer transaction frictions and allow women to participate more actively in the actions that bring revenues [11]. The privacy, security and control over financial resources found in digital platforms is essential to women entrepreneurs who are prone to social and institutional investments regarding the handling of business finances on their own. Nevertheless, the literature also points to the fact that access is not a sufficient condition of better economic results and it is important to comprehend the ability of digital tools to change financial behaviour and decision-making in women [12].

The behavioural savings theory can be adopted to analyze the micro-savings adoption of digital use, especially in low-income and women entrepreneurs. Economic models relying on rational saving behaviour are traditional but empirical studies have indicated that liquidity constraints, present bias and social demands tend to constrain uniform saving behaviour [13]. The digital micro-savings platforms overcome these behavioural obstacles by design, like automatic savings deposit, goal-based savings, reminders and low minimum balance, which promote habitual savings and lower the psychological cost of deferred consumption [14]. As it turns out, women entrepreneurs seem to respond to those behavioural nudges particularly well because they do not affect the irregular income patterns and help build up capital gradually without exposing them to more debt. However, the literature refutes that the gender-disaggregated analysis is required to realize how these behavioural processes are converted into financial sustainability and expansion of enterprises [15].

Gender equality wise, financial independence and the right to make decisions are the key areas of women empowerment as outlined in Sustainable Development Goal 5. Research carried out earlier shows that the ability of women to control savings is more closely linked to the results of empowerment than the ability to get access to credit because by increasing bargaining power in the family and lessening dependence on informal financial systems, savings improves the results of empowerment [16]. Digital savings devices, which allow women to have private and customized control over their financial resources have been found to enhance agency among women in terms of business and home-based financial decision-making. Nevertheless, the empirical data is still disjointed and the integration of the indicators of empowerment like independent financial planning, confidence in decision making on investments and less dependence on male intermediaries are poorly integrated.

**Table 1.** Summary of Related Work on Digital Micro-Savings, Women Entrepreneurship, and SDG Outcomes

<i>Study Focus</i>	<i>Target Group</i>	<i>Financial Tool Examined</i>	<i>Key Behavioural Dimension</i>	<i>Empowerment Outcome (SDG 5)</i>	<i>Economic Outcome (SDG 8)</i>
<b>Digital financial inclusion</b>	Women micro-entrepreneurs	Mobile wallets	Access and usage	Improved financial access	Increased business participation
<b>Women entrepreneurship</b>	Informal women enterprises	Digital savings accounts	Savings consistency	Enhanced financial autonomy	Revenue stability
<b>Behavioural savings theory</b>	Low-income women	Micro-savings apps	Habit formation	Increased decision-making control	Capital accumulation

<b>FinTech adoption</b>	Women-led MSMEs	App-based savings	Goal-oriented saving	Confidence in financial planning	Business reinvestment
<b>Gendered finance</b>	Rural women entrepreneurs	Digital micro-deposits	Privacy and control	Reduced household dependency	Enterprise continuity
<b>Financial resilience</b>	Urban informal women workers	E-savings platforms	Shock buffering	Economic self-reliance	Income smoothing
<b>Informal credit substitution</b>	Women traders	Digital savings wallets	Liquidity management	Reduced reliance on male intermediaries	Lower credit costs
<b>Savings vs. credit models</b>	Women micro-enterprises	Savings-led fintech	Risk aversion	Empowered asset ownership	Sustainable enterprise growth
<b>SDG-linked fintech</b>	Women entrepreneurs	Digital savings ecosystem	Behavioural nudges	Gender-inclusive empowerment	Decent work generation
<b>Development finance</b>	Women-owned micro-firms	Mobile savings platforms	Long-term saving behaviour	Strengthened economic agency	Employment stability

## Research Methodology

### *Study Design: Mixed-Methods Approach*

This analysis follows a mixed-method approach to research to involve the quantifiable behavioural shifts with digital micro-savings adoption implementation as well as the contextual experience of female entrepreneurs. The quantitative component allows strictly evaluating the change in the behaviour of saving, financial independence, and the performance of the enterprise, whereas the qualitative one offers the in-depth analysis of the motivations, perception, and barriers that influence the use of digital savings. Internal validity enhances through the combination of survey-based information and objective records of digital transactions since it helps to decrease the self-reporting bias and provides the opportunity to triangulate the results. The qualitative strand completes this with explanation on how and why behavioural changes as a result are made especially within the realms of empowerment and the dynamic on decision-making. The integrated design proves to be particularly suitable in SDG-oriented research because it interrelates the numeric performance indicators to social and behavioural aspects of gender equality and decent work. In general, it is important to note that the mixed-methods approach would be used to provide a comprehensive assessment of digital micro-savings as a behavioural and financial intervention to women-led microenterprises.

### *Sampling of Women Micro-Entrepreneurs*

The authors are interested in women micro-entrepreneurs who run small-scale businesses in the retail, services, home-based production, and informal trade sectors. Stratified sampling approach is used to guarantee the representation by age groups, education level, type of enterprise and urban-semi urban environment. Such eligibility criteria are female ownership or management of the enterprise, active utilization of a digital micro-savings platform at least over a given time, and activity of the enterprise. Stratification will enable comparison across subgroups, including first-time users of digital finance against those entrepreneurs who are already banked. This will enhance generalizability of the findings and allows studying the savings behaviour on a gender-sensitive basis. The sampling plan supports SDG 5 goals in the sense that it puts women at the central point as economic agents, and at the same time takes into account the heterogeneity of enterprises that are pertinent to SDG 8 deliverables concerning business stability and expansion.

### *Data Sources: Survey, Digital Transactions, and Qualitative Insights*

Several sources of information are combined to improve the strength of analysis. Primary survey data will be collected to measure the socio-economic features, savings attitude and financial independence and business performance indicators pre-adoption of digital micro-savings and post-adoption of digital micro-savings. The data of digital transactions in micro-savings applications assist in objective metrics of the frequency of saving, the size of a deposit, its regularity, and over-time accumulation levels. These records enable accurate analysis of behaviour which does not depend on the recall of respondents only. Also, semi-structured interviews and focus group discussions provide qualitative information on perceived empowerment, change in financial decision-making, and change in dependency on informal credit. The combination of these data sources makes it possible to conduct triangulation, reinforce causal interpretation, and provide a subtle insight into the process of digital micro-savings as a source of empowerment and economic resilience.

### *Variables and Indicators*

Important variables are defined in a way that it represents behavioural and developmental outcomes. The measure of savings behaviour will be in terms of frequency of savings, amount of savings per month and whether the savings are regular or not. Self-reported decision-making independence, independence in the use of savings, and confidence in financial planning is used to determine financial autonomy. Changes in the dependence on informal high-interest borrowing capture credit substitution, whereas business stability indicators are the incidence of reinvestment, income volatility and persistence of operations in times of shocks. These variables are directly identified with SDG 5 indicators of women access to economic resources and SDG 8 indicators of enterprise productivity and resilience. The systematic choice of indicators will make sure that the behavioural changes observed are significantly related to the sustainable development results.

### *Statistical and Analytical Techniques*

Quantitative analysis uses the descriptive statistics to describe the trend in savings and their adoption, and then uses the inferential statistics to estimate the behavioural and economic effects. The analysis of paired comparisons and percentage change is used to measure the differences between pre- and post-adoption of digital micro-savings. Regression models are employed to investigate correlation between savings behaviour and its consequences like autonomy, reduction of credit, and stability of the business, and it is controlled by socio-economic factors. Thematic coding is applied to analyze the

qualitative data, thus finding recurring empowerment and resilience stories which are then combined with the quantitative data. The given analytical approach contributes to the solid interpretation of findings, allowing to connect behavioural mechanisms to the SDG-relevant outcomes and enhancing the empirical value of the study.

## Empirical Results

### *Adoption Patterns of Digital Micro-Savings Tools*

The adoption operations as shown in Table 2 reveal that digital micro-savings platforms are successful in attracting and retaining women micro-entrepreneurs who had hitherto been locked out of the formal savings systems. The large percentage of first-time formal savers reinforces the inclusivity of the digital tools in breaking the entry barriers including the minimum balance requirements and physical access to the bank.

**Table 2.** Adoption Patterns of Digital Micro-Savings among Women Entrepreneurs (%)

<i>Parameter</i>	<i>Result (%)</i>
<b>First-time formal savings users</b>	58.7
<b>Regular weekly savers</b>	46.9
<b>Daily micro-deposit users</b>	34.2
<b>Use of goal-based savings feature</b>	41.5
<b>Use of automated reminders</b>	49.8
<b>Continued usage beyond 6 months</b>	63.4

The consistent use of micro-deposits weekly and daily implies compatibility in the design of platforms and inconsistent income streams found among microenterprises operated by women. The high adoption of goal-based savings and automatic reminders is an affirmation of the applicability of behavioural design elements in saving discipline. The permanence of the use of more than six months is an indicator of long-term trust and perceived worth of digital platforms and digital platforms are not just experimental but rather part of normal financial activity, which is essential to long-term empowerment and enterprise resilience.

### *Changes in Savings Participation and Monthly Savings Volume*

The results in Table 3 underpin the fact that there is a major behavioural change in the savings practices after the adoption of digital micro-savings. The significant rise in regular savings participation depicts the digital platforms reduce psychological and transactional obstacles to savings. Increase in monthly savings level indicates the increased frequency besides the better capacity to save funds in the long run. Improved uniformity of deposits means habit forming, which is the essence of behavioural savings theory. It is important to note that the buffering effect of digital savings against economic volatility can be shown by the fact that the growth in savings continuity during income shocks has increased. This strength-based action is especially significant among women in informal and seasonal markets and it allows smoothing of income and decreases the exposure to external financial stressors that reinforces sustainable microenterprise activities.

**Table 3.** Changes in Savings Participation and Monthly Savings Volume (%)

<i>Indicator</i>	<i>Pre-Adoption</i>	<i>Post-Adoption</i>	<i>Change (%)</i>
<b>Participation in regular savings</b>	37.8	80.4	+42.6
<b>Average monthly savings volume</b>	100.0	137.4	+37.4
<b>Consistency of monthly deposits</b>	44.6	76.1	+31.5
<b>Savings continuity during income shocks</b>	39.2	65.7	+26.5

There was a high attendance of and savings volume through the digital micro-savings adoption. The increase in regular saving is very drastic and indicates behavioural change made possible through low-entry digitalization, and the better continuity during income shocks means financial resilience.

#### *Impact on Financial Autonomy and Decision-Making*

Table 6 findings indicate that digital micro-savings adoption has a significant contribution to the financial independence and freedom to make decisions among women. Almost 50 percent of the respondents noted that they were now more independent in their savings decisions and this represented an improved control of their personal and business finances.

**Table 4.** Impact of Digital Micro-Savings on Financial Autonomy (%)

<i>Autonomy Indicator</i>	<i>Improved (%)</i>
<b>Independent savings decisions</b>	48.1
<b>Confidence in financial planning</b>	44.7
<b>Control over business earnings</b>	39.6
<b>Reduced household interference</b>	35.2
<b>Ability to self-finance small investments</b>	41.9

Almost half of the participants said they became more financially independent, which means that digital micro-savings increase the economic decision-making power of women. These are the direct results of SDG 5 goals on the control of financial resources by women. More confidence in financial planning signifies that habitual savings build-up enhances economic prospective behaviour. Segmented domestic interference implies that social limitations that tend to reduce financial agency of women can be overcome through private digital savings processes. Self-financing of the small investments also serves as an indication of the change in reliance on the external approval or borrowing. All these results would be highly consistent with SDG 5 goals as they establish women as independent economic agents who could control resources and shape the development of enterprises.

#### *Reduction in Reliance on Informal High-Interest Credit*

Table 5 shows the substitution effect of informal borrowing on digital micro-savings. The reduced dependence on the high-interest loans and moneylenders is an indication that savings are an aspect of financial protection against any emergency and working capital requirements. The low rate of emergency borrowing shows that women entrepreneurs have a better command of liquidity and are ready to take loans.

**Table 5.** Change in Reliance on Informal Credit Sources (%)

<i>Credit Indicator</i>	<i>Change (%)</i>
<b>Use of informal high-interest loans</b>	-26.3
<b>Frequency of emergency borrowing</b>	-21.8
<b>Dependence on moneylenders</b>	-29.4
<b>Borrowing from social networks</b>	-17.6

The access to digital savings buffers meant that the use of expensive informal credit has been minimized, and substitution effects have increased financial stability and exposed the patient to debt traps. Reduced reliance on social networks to get credit also points to greater financial independence, the decreased exposure to social responsibilities and the pressure of repayment. These changes are especially meaningful in the situations when informal credit markets charge predatory interest rates. Digital micro-savings by reducing the reliance on debts are one of the factors that lead to healthier financial statements, sustainability of the enterprises, and adherence to SDG 8 objectives of productive and resilient economic performance.

#### *Enterprise Reinvestment and Income Stability Outcomes*

In addition to the effects of digital micro-savings on behaviour and financial independence, its implementation successfully transformed into real enterprise-level results. About 31.8 percent of women entrepreneurs indicated that they reinvested accumulated savings into their businesses with the majority being used to increase inventory, purchase equipment and smooth working capital. This reinvestment pattern has helped to enhance higher income predictability and less volatility especially when there are changes in seasonal demand. The above findings indicate that savings-based financial inclusion facilitates self-financing growth channels that support the SDG 8 goals of productive employment, strong business, and a sustainable economic growth.

#### **Discussion: Implications for SDG 5 and SDG 8**

##### *Digital Micro-Savings an Economic Empowerment Intervention among Women (SDG 5).*

The digital micro-savings that are achieved out of this research becomes an influential tool of empowering women economically, which is one of the main targets of Sustainable Development Goal 5. In the findings, it has been observed that women have a substantial financial agency when they receive access to personal, safe, and self-regulated digital savings tools. Contrary to the traditional financial planning and allocation system whereby household members or informal group norms tend to influence or mediate the decision to save, digital micro-savings platforms enable women entrepreneurs to make decisions independently as to when, amount and purpose of saving. This independence is manifested in the high percentage of respondents that indicated the enhanced power of decision making and confidence in financial planning. Saving control also improves the bargaining power of women both in the family and business so that they can be able to address the needs of the enterprise and also manage the household duties. Moreover, this capacity to save on individual basis lowers the dependency ratio on spouses, family members or informal lenders shifting power levels towards women. All these behavioural and structural changes are directly related to SDG 5 targets concerning equal access of women to economic resources, ownership, control over financial assets.

*Business Resilience and Creation of Decent Work (SDG 8) Savings.*

Through the lens of SDG 8, findings show that savings-based financial inclusion is significant in the achieved business resilience and decent work premises. Digital savings enable women entrepreneurs to have liquidity buffers that allow them to absorb income shocks, handle seasonal fluctuations in demand and continuity in operation. The effects of such a resilience are lower risk of bankruptcies and distress borrowing, that are typical in microenterprise ecosystems. The reinvestment of the savings in the inventories, equipment and working capital observed points to the fact that savings is an internal financing tool employed in supporting the productivity and stability of the enterprise. The stable enterprises are in a better position to support self-employment and in some instances create more employment opportunities in the family-based or micro enterprise environments. In contrast to credit-based models of growth that can create greater financial vulnerability by exerting repayment pressures, savings-driven growth enhances a slow, sustainable growth in accordance with the reality of cash flows. The pathway supports the SDG 8 goals through supporting healthy economic activity, decreasing income volatility, and supporting the sustainability of women-centered businesses in the long term. Digital micro-savings promote high-quality and resilient work by fostering self-financed growth and limiting the accessibility to exploitative credit markets, which will support inclusive and resilient economic growth.

*Behavioural Change as opposed to Traditional Informal Savings.*

One of the main contributions of the study is the emphasis on the behaviour change made possible by digital micro-savings over the conventional informal savings behaviour. Informal financial institutions like cash storage, rotating savings group or social saving schemes are prone to inconsistent deposits, social pressure and susceptibility to shocks. Conversely, digital micro-savings apps formalize the saving habit by automating and alerting the users as well as goal setting which encourage regularity and discipline. The trends of savings frequency and continuity that are observed suggest that there is a change in reactive, residual saving to proactive, planned financial behaviour. Digital platforms also ease the cognitive and social expenditure of saving through allowing small regular deposits that can match random income flows. Notably, privacy in online savings blunts the social claims against women money and enables the saving to be reserved to the business and personal priorities.

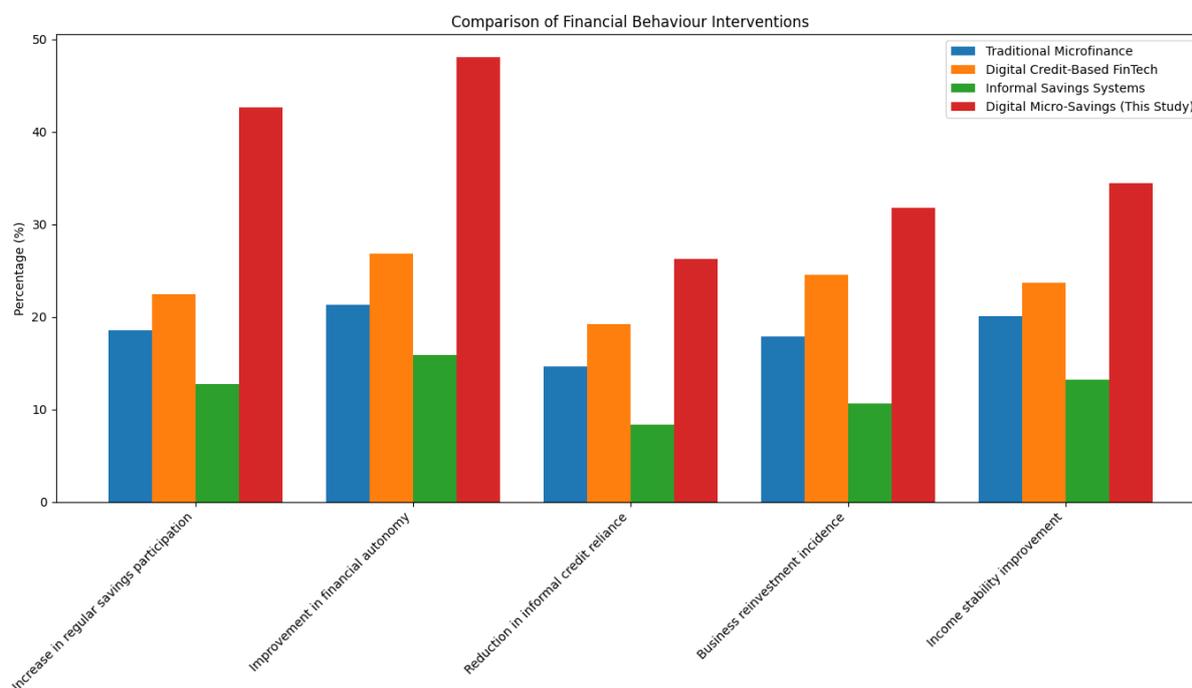
*Comparison to the previous FinTech and Microfinance Studies.*

Table 8 shows, clearly, the comparative advantage of digital micro-savings versus the traditional microfinance, digital credit-based fintech and informal savings systems to foster both empowerment and economic resilience outcomes. The significantly faster rise in regular savings hence the participation indicates that savings first models are effective in creating consistent financial behaviour that is superior to credit first models, which tend to focus more on borrowing than accumulating assets.

**Table 6.** Comparison of Digital Micro-Savings Outcomes with Prior FinTech and Microfinance Studies (%)

<i>Parameter</i>	<i>Traditional Microfinance</i>	<i>Digital Credit-Based FinTech</i>	<i>Informal Savings Systems</i>	<i>Digital Micro-Savings (This Study)</i>
<b>Increase in regular savings participation</b>	18.5	22.4	12.7	42.6
<b>Improvement in financial autonomy</b>	21.3	26.8	15.9	48.1
<b>Reduction in informal credit reliance</b>	14.6	19.2	8.4	26.3
<b>Business reinvestment incidence</b>	17.9	24.5	10.6	31.8
<b>Income stability improvement</b>	20.1	23.7	13.2	34.4

Better financial autonomy is significantly higher with digital micro-savings as it is associated with a greater level of control, privacy, and decision making by women entrepreneurs. The further increase in dependence on informal credit shows that savings buffer offers a more secure substitute to expensive borrowing and that dependence on debt traps is less.



**Figure 1:** Comparison to the previous FinTech and Microfinance Studies

The more stable of these is the growth in business reinvestment incidence and income stability which implies that savings-based growth is more supportive of sustainable development of enterprises when compared to expansion that is externally financed. All these findings affirm the thesis statement that

digital micro-savings constitute a more inclusive, resilient, and SDG-compliant fintech channel as compared to traditional microfinance or informal money usage.

## **Policy and FinTech Design Implications**

### *Implications for Inclusive FinTech Regulation*

The results highlight the necessity to have regulatory frameworks that clearly identify digital micro-savings as a central tool of financial inclusion and not as a service on the margin. Simplified digital onboarding, low-balance accounts and variable transaction limits should be regulated by inclusive fintech rules to enable irregular income patterns of women micro-entrepreneurs. Prudent KYC standards and consumer protection is required to secure confidence, privacy of data and openness in savings products. Interoperability among digital savings platforms and formal banking systems should also be encouraged by the regulators so that the funds can be transferred safely and a range of interest options can be offered. With the inclusion of gender-responsive protective measures and incentives, inclusive regulation can increase the magnitude of digital micro-savings and shield women users against the impact of exclusionary compliance costs and exploitative action plans.

### *Design of Woman-Centric Online Savings Solutions*

The design of FinTech platforms aimed at women entrepreneurs should have more behavioural, contextual, and gender-sensitive design features. The user interfaces must be multilingual, user-friendly and available to the low-literacy users. Behavioural nudges which include automatic reminders, goal-based savings, and visual progress tracking play a significant role towards maintaining a habit of making regular savings. Privacy features are also a significant concern that can be specifically used to ensure that women have their economic independence without interference of either the family or the society. Liquidity and flexibility of the deposit size and timing can be guaranteed so that it follows the changing business incomes. Furthermore, planning skills and empowerment outcomes could be further empowered by implementing financial education modules in apps, making platforms more of an all-inclusive savings-led entrepreneurship tool.

### *Governments, Non-Governmental Organizations, and Development Agencies*

Non-governmental organizations, international agencies and governments have a critical role in increasing the scope and influence of digital micro-savings. The enabling ecosystems that can be established by the public institutions include the investments in digital infrastructure, digital literacy, and pilot programs dedicated to women entrepreneurs. NGOs and the development agencies may serve in the capacity of intermediaries, which will help to build trust, reach out to the community, and train. Fintech strategic alliances can be used to make the product design reflect the needs of the grassroots. In addition, development agencies can integrate digital micro-savings into larger livelihood and entrepreneurship initiatives, which means that the savings behaviour is correlated with income generation, resilience, and empowerment.

## **Conclusion and Future Research**

This paper presents strong empirical data on the impact of digital micro-savings on financial behaviour, women economic empowerment, and enterprise sustainability, and has a direct implication to Sustainable Development Goal 5 and 8. These results show that digitally enabled micro-savings greatly enhance routine engagement in savings, savings amount and persistence, and enhance the

financial independence and empowerment of women. The diminishing dependence on informal high-interest credit and greater reinvestment of accumulated savings are the indicators of the shift in the vulnerability-based financial practices towards the resilience-based economic behaviour. The combination of survey data, digital transaction data, and qualitative results allows the study to further the literature by no longer centering financial inclusion discussions on access to proceed to the behavioural and outcome-oriented study of savings-led interventions by fintech. Savings-based digital platforms unlike credit-focused models encourage self-financed enterprise creation, income security and economic self-sufficiency and thus are well aligned to women micro-entrepreneurs in the developing economies. The noted correspondence between the results of behaviour change and SDG outcome support the possibility of digital micro-savings to act as a viable channel of inclusive development and decent work generation under the condition of the relevant regulatory and design frameworks. The study has limitations even though it has made contributions. The weaknesses of the data include the cross-sectional character which limits the ability to make causal conclusions on the long-run basis and the geographical focus that constrains the ability to generalize the results to the variety of institutional domains. Triangulation of self-reported measures of empowerment may also be biased by perception, even when transaction data is used. The proposed study must be longitudinal in nature so that the researcher can determine the sustainability of behaviour change and company performance in the long term. Individualized financial interactions through the introduction of AI-based savings nudges have potential opportunities, whereas cross-country comparative research can enrich the perception of circumstances under which digital micro-savings work effectively.

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