Customer-centric and responsible digital credit solutions for urban and rural nonfarm entrepreneurs and smallholder farmers

Analysis report from research on digital credit users in Indonesia, India, and Kenya

MicroSave Consulting

September, 2022

Executive summary (1)

About the study	 MSC assessed the needs and preferences of borrowers for credit, the role of digital credit in meeting their borrowing needs, and the attributes of ideal digital credit solutions. We identified learning points that tackle systemic challenges and structural barriers to the access and use of digital credit.
Approach and methodology	 of institution offering digital credit, the frontend channel, and the source of funds for on-lending. Define key user personas and their needs, aspirations, and behaviors. Identify the attributes the users prefer to choose and use digital credit solutions.

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Executive summary (2)

- Low- and moderate-income households require credit for various use-cases. A household's income and expense patterns and the attributes of the credit product impact its financial health.
- Good (optimal) and bad (suboptimal, detrimental, and hazardous) credit models depend on attributes, such as cost to the borrower, use of funds, the lender's process for assessing repayment ability, the flexibility of repayment schedules, returns on investment compared to the cost of funds to the institution, and attribution of risk to different players in the loan process.
- Low- and moderate-income populations have routine, salient, and aspirational goals. Digital credit solutions in their current form are optimal for most routine goals and some salient goals. Digital credit solutions are suboptimal or detrimental for aspirational goals, such as asset building.
- Digital credit models across the focus countries (Indonesia, India, and Kenya) depend on the type of institution offering digital credit, the frontend channel, and the source of funds for on-lending.
- The three key personas for this study are non-farm rural entrepreneurs, non-farm urban entrepreneurs, and semi-subsistence smallholder farmers. Each persona has diverse social, economic, and financial lives coupled with vastly different needs, aspirations, and behaviors, which lead to differences in how they demand various financial services.
- Considering the differences in digital skills and access alongside business aspirations highlights the opportunities and challenges these personas face.
- Non-farm rural entrepreneurs prefer affordable, flexible, and easy-to-understand credit products. Non-farm urban entrepreneurs require easy access to credit and flexible solutions to meet their needs. Semi-subsistence smallholder farmers prefer affordable loan products and repayments that match their volatile income cycle.
- Providers face several constraints in meeting the needs of these personas. Primary among them are limited digital footprint, lack of financial records to assess creditworthiness, high operational and financial costs, and inadequate credit information sharing among the actors.



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Key findings

Executive summary (3)

Based on our analysis of the digital credit landscape, we recommend the following to deepen digital credit for the key segments:

- Research, innovations, design, pilot, and implementation
 - Support UI and UX innovations on existing digital agriculture lending platforms through research, pilots, and scaled interventions
 - Pilot catalytic online-to-offline models for digital credit
 - Back marketplace models to scale to enable price discovery
 - Research, disseminate knowledge of, and adopt best practices on gender-neutral credit-scoring platforms
 - Provide product development support to expand the range of financing solutions available to meet different use-cases
 - Provide digital transformation support to high-potential microfinance institutions and banks that serve the mass market
 - Research and support pilots to test social commerce data for digital lending

• Partnerships

- Support data analytics providers to partner with financial institutions to design solutions for entrepreneurs and farmers
- Enable catalytic partnerships between AgTech firms and financial service providers for an integrated solution

• Funding

• Set up an innovation or challenge fund to encourage new business models for digital lending for agriculture

Policy support

- Provide research and policy support to strengthen consumer protection on digital credit
- Provide policy support and pilots to efficiently deliver existing government lending programs on agriculture through digital channels
- Provide policy and implementation support to test how government programs are delivered through catalytic partnerships with FinTechs.
- Provide policy support to incentivize FinTechs that lend to excluded segments



Key recommendations

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Please see Annex 1 for details about the study

1. Types of credit and adequacy of digital credit

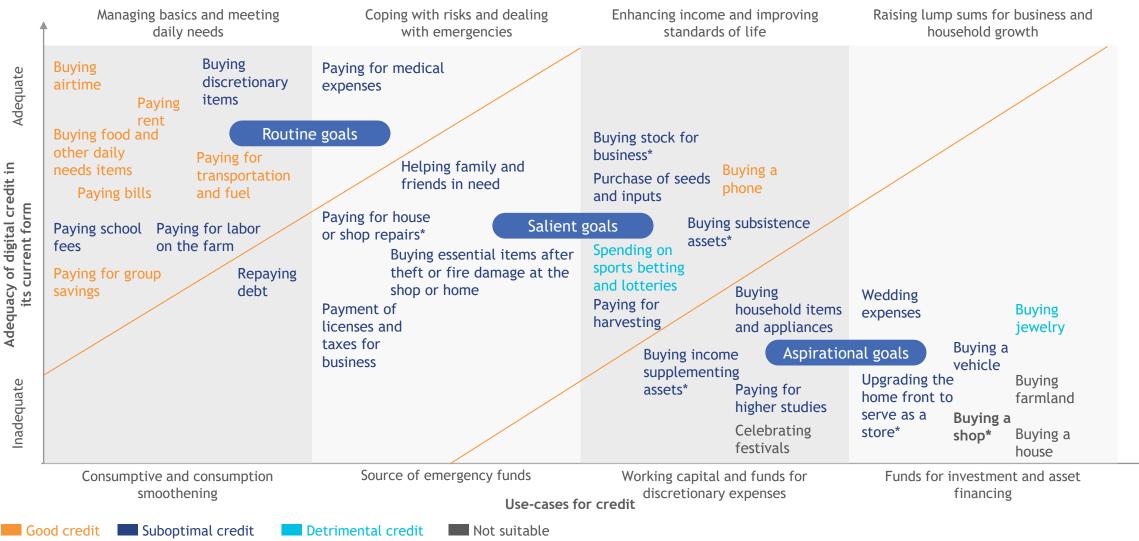


Credit and its impact on the household's financial health

			edit	"Bad" credit		
	Neede	ed Affordable Timely	Respectful Reachable	Mistimed Misaligned Mis-sold	Misutilized Unaffordabl	e
	Income High	Optimal credit	Suboptimal credit	Detrimental credit	Hazardous credit	Expens Low
Line of financial —	Comfort zone	Income increases immediately and creates a wider positive gap between income and expense.	Expense increases in the immediate term but is backed by an anticipated increase in income in the medium-term future.	Expense increases in the immediate term, but an anticipated increase in income in the near-term future is not guaranteed.	Expense increases in the immediate term, but an anticipated increase in income is unlikely.	
inancial health	Fluid zone	Expense increases in the immediate term but is backed by an anticipated increase in income soon.	Income increases gradually or remains above the financial distress level.			
financial – distress Line of	Stress zone			Income decreases or remains below expenses, moving the household below the financial distress level, which forces the household to borrow from friends and family.		
financial hazard	Blast zone				Income decreases or remains below subsistence level expenses, pushing the household to sell off their assets	
urce: MSC analysis	Low					High

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Use-cases of credit and adequacy of digital credit in meeting the needs of low- and moderate-income populations



Source: Effect of digital credit on poverty reduction among low-income borrowers in Kenya, Making digital credit truly responsible by MSC, MSC field research and analysis *marked ones are where specific enterprise digital lending products, such as invoice financing, pay later, PoS lending, digital mortgage, and supply-chain financing are available



2. Digital credit models across the focus countries (Indonesia, India, and Kenya)



Digital credit models across the focus countries (Indonesia, India, and Kenya) depend on the type of institution offering digital credit, the frontend channel, and the source of funds for on-lending

Туре	Bank digital credit	MNO-facilitated digital credit	FinTech digital credit for users (B2C)	FinTech digital credit for enterprises and value chain actors (B2B)	P2P and crowdfunding platforms
Partners and their roles	 A bank manages the process end to end In some cases, the bank works with third-party providers, such as credit scoring firms and debt collection firms 	 An MNO serves as the face of the offering A bank manages the compliance, risk assessment, and backend Third-party service providers, such as debt collection firms could be included in the mix as well 	 A FinTech manages the frontend and backend 	 A FinTech offers a platform for merchants to access invoice discounting and supply chain financing. In some cases, FinTechs partner with third-party providers, mobile network operators, and debt collection firms 	 A FinTech offers a digital lending infrastructure and marketplace to connect borrowers and lenders The marketplace has firms providing digital credit scoring facilities as well
Frontend	• The bank manages the frontend and onboards or serves the customers	 The MNO manages the frontend and onboards or serves the customers 	 The FinTech manages the frontend and onboards or serves the customers 	 The FinTech manages the frontend, backend, and onboarding of the borrowers 	 The FinTech manages the frontend and backend for borrowers and lenders
Risk share	• The bank shares the entire risk and revenues	 The bank bears the credit risk The MNO and the bank do not share revenue 	• The FinTech shares the entire risk and revenues	• The FinTech bears the credit risk, but the revenue is shared with mobile network operators and other partners	 Lenders who could be high-net- worth individuals, digital investors, the general public, and institutions bear the risk
User interface	• USSD • App • Internet banking portal	 Mostly USSD and SIM toolkit (STK) App 	• Mostly app	• App • Internet portal	• App • Internet portal
Typical interest rates (APR)	 13-75% per annum Higher than the average lending rate Lower than MNO-facilitated and FinTech digital credit 	 13-300% per annum Higher than the average lending rate Lower than FinTech digital credit 	13-300% per annumHighest in the market	• 10-100% per annum	• 8-25% per annum
Source of capital	Bank	Bank	Investors	Investors	Individuals and institutions participating in P2P lending
Examples	 Eazzy Loan by Equity Bank, Stawi by a consortium of banks in Kenya ICICI Bank, IDFC First Bank, Bank of Baroda, and 811 by Kotak Mahindra Bank in India Ceria (BRI), Mandiri-Shopee Credit Cards (Bank Mandiri) in Indonesia 	 M-Shwari and Fuliza by Safaricom and NCBA in Kenya Loans facilitated by BCNMs for various banks in India 	 Branch in Kenya Lendingkart in India 	 Kopo Kopo, Asante, Imfact, and Digifarm in Kenya Capital Float, Shubhloans, and PayU in India 	 Pezesha Marketplace and DigiFarm in Kenya Faircent, PaisaDukan, and Lendbox in India

Source: MSC analysis

3. Key market segments and their personas



Our three personas have diverse social, economic, and financial lives coupled with vastly different needs, aspirations, and behaviors

Non-farm rural entrepreneur

- Earns less than USD 5 on average per day
- Independently owns a microbusiness or contributes actively to managing business operations together with the spouse or another family member
- Has access to a basic bank account but has limited digital skills
- Uses a combination of formal and informal channels for financial services

Non-farm urban entrepreneur

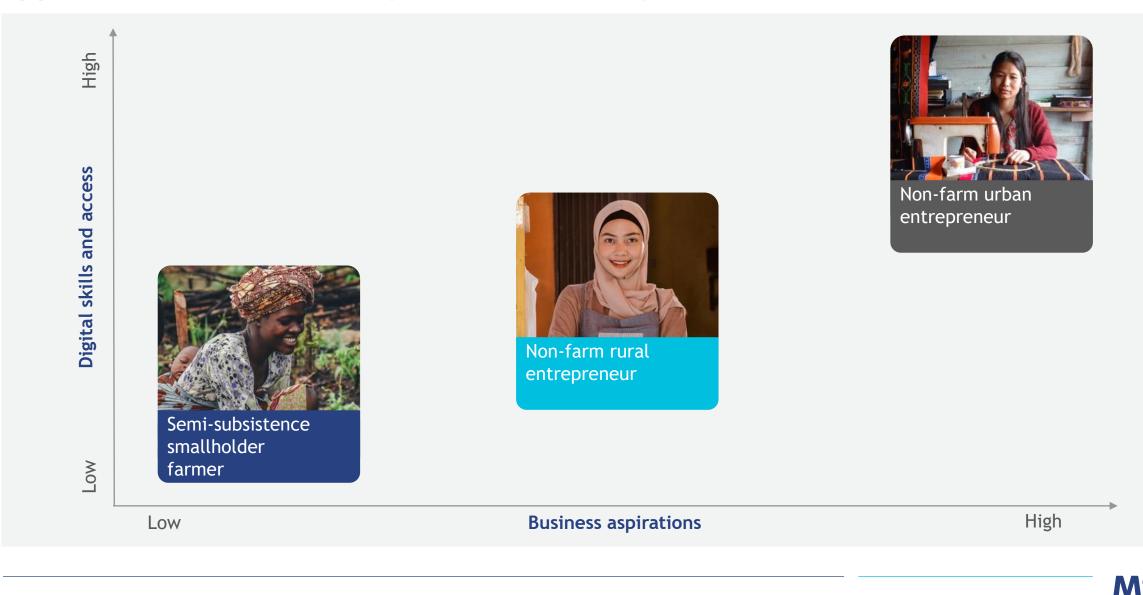
- Earns an average income of less than or equal to USD 5 per day
- Independently owns a micro, informal business
- Aspires to be more competitive in their business and is willing to try new products and processes
- Has access to basic banking services that they use and is comfortable with digital interfaces
- Prefers formal channels for credit

Semi-subsistence smallholder farmer

- Generates a small surplus that is sold in local markets
- Grows subsistence crops (staples paddy, wheat, and maize) primarily
- Has limited access to markets
- Uses informal debt sources in the value chain, such as traders and middlemen
- Has relatively lower digital access and skills
- Has access to semi-formal financial services that they use—savings groups and cooperatives



Comparing digital skills and access with business aspirations highlights opportunities and challenges that these segments face



Persona map: Non-farm rural microentrepreneurs—an example from Indonesia



Meet Kiki, a non-farm rural entrepreneur from Indonesia

Profile	Prominent personality traits	Business aspirations	Financial life and needs	Financial avenues used
 Kiki, a mother of two, owns a food stall in a traditional market in Lembang. She sells Indonesian cuisine from her food cart and doubles as a homemaker. She uses social media to promote her stall and targets nearby locations. She is 40 years old, has a high-school certificate, lives in a rural area, owns a smartphone, and makes about USD 250 per month. 	 Between household chores and her food business, Kiki spends almost 14-16 hours trying to balance her role as a mother and businesswoman. She uses her business income to support her family, especially her children's education and other family lifecycle goals. Kiki has limited capacities to use digital tools and platforms and often depends on other family members (husband and children) for more complex tasks. She is relatively empowered within her household, and her husband supports her in most financial and business decisions. 	 She aspires to convert her existing skills into a formal business to contribute more to her family's income. She wants to grow her business to process more orders and build a local brand that she could operate from her home instead of going to the market every day. She wants to employ 1-2 helpers. 	 Kiki has a rich and diverse financial life to manage her needs. She has multiple financial goals on both personal and business fronts and uses several avenues to achieve these goals. Her key financial needs are payment for children's education, festive celebrations, renovations of her business premises, emergency expenses, working capital for business expansion, enhancements to the product line, and purchase of raw material in bulk to reduce costs, and home extension. 	 She uses multiple financial avenues, such as savings box, cash-athome, ROSCAs, informal borrowing from friends and family, borrowing from banks, MFIs, and FinTechs, subsidized credit from public sector banks. Her exposure to formal sources of credit is limited. She finds digital credit and payments somewhat intimidating. Her options for traditional and digital credit are limited and do not entirely meet her business requirements and hence tend to be inadequate for her needs.
Please see <u>Annex 2 for more details abou</u>		s reserved. This document is proprietar		MSC

Persona map: Non-farm urban microentrepreneurs—an example from India



Meet Shalini, a non-farm urban entrepreneur from India

Profile	Prominent personality traits	Business aspirations	Financial life and needs	Financial avenues used
 Shalini, mother to two children, lives in Bengaluru. Her husband is in a low-paying government job while she manufactures and sells home decoration and handicraft items. She has an entrepreneurial spirit and dreams of making it big with her business. She is 32 years old, has a high-school certificate, lives in an urban area, owns a smartphone, and makes about USD 300 per month. 	 She is well aware of her competition and wants to invest in anything that could help her scale up her business. She uses her business income to support the family's daily expenses; she maximizes savings for her children's higher education. Second on the list is the dream of owning a house. Shalini's digital use is limited to accepting digital payments and using social media and messaging apps to advertise goods. She is an independent businesswoman and is relatively confident about her personal and business finances. 	 She aspires to scale up her business to secure her family's financial future. She wants to employ paid workers so she gets more time for her family without compromising her business performance. 	 She has big dreams but wants to reduce her borrowing. She wants to reduce her dependency on loans for her multiple financial goals. Her key financial needs are to pay monthly rent and utility bills for her house and shop, set aside a lump sum for the annual visit to her mother, save up to take advantage of opportunities during the festive season, address medical emergencies for her immediate family and dependent parents, buy an advanced sewing machine, a laptop for designing and online sales, and furniture for her shop, and buy her dream home in the city 	 Shalini uses multiple financial avenues. She uses her persona and business account, occasionally borrows from friends and family, borrows from suppliers by negotiating longer payment terms, uses digital credit, invests small amounts in gold ornaments, borrows informally from friends and family, borrows through FinTechs and banks that can help her to buy now and pay later, uses ROSCAs, and uses fixed deposits in a bank to help her build a lump sum for the down payment. Shalini has many options for formal credit and knows about them, but most are suboptimal. Like her friends, she too wants to try digital credit.

Persona map: Semi-subsistence rural farmer—an example from Kenya



Meet Veronica, a semi-subsistence rural farmer from Kenya

Profile		Prominent personality traits	Business aspirations	Financial life and needs	Financial avenues used
 Veronica is a 36- year-old female semi-subsistence farmer. She is in the dairy farming business along with her husband and sells surplus milk in the local markets. She is 36 years old, has a senior high-school certificate, lives in a rural area, owns a feature phone, and makes about USD 350 per month. 	*	She is young and ambitious. She wants the best for her children. Her husband takes care of major expenses. She uses her income from the farm to buy inputs, such as animal feed, and for family expenses. She owns a feature phone. However, she understands how her husband uses his smartphone to conduct digital transactions. She feels she still has a lot to learn before she can start managing her farm independently. She depends on her husband in most aspects of business and for household financial management.	 She wants to move from semi- subsistence to semi- commercial farming to contribute more to her family's income. She wants to employ one or two farm workers and set up a small processing unit to manufacture dairy products like cheese and butter and sell them locally. 	 Her financial goals are diverse and cut across personal and farm needs. She uses several avenues to try to achieve such goals. Her key financial needs are to build a buffer to deal with household emergencies, such as disease outbreaks in livestock and medical emergencies, routine payment for animal feed and artificial insemination, purchase additional livestock to scale up the dairy business, invest in equipment, such as chaff cutters and milking machines to increase efficiency, and invest in milk processing equipment and a processing plant to capture more value and market. 	 She uses several financial avenues, such as borrowing from family and friends, cooperative loans, savings groups, FinTech loans, commercial bank agri-business loans, and asset finance loans from commercial banks. She is a member of a cooperative. She has started to sell some of her surplus milk to the cooperative and has access to milk advance loans—short-term loans to dairy farmers. These loans are affordable and quick. She knows about traditional forms of credit from banks and other financial service providers. She has accessed a group loan from a microfinance institution. She knows about formal digital credit and can access these products. She only tried the "mobile loan" once but found it too expensive.
Annex 2 for more details about	ie une pe				MSC





Attributes preferred: Non-farm rural microentrepreneurs—an example from Indonesia



In an ideal state, Kiki needs access to affordable, flexible, and easy-tounderstand credit products

Renovate business premise

Working capital for business expansion

Unsecured:

Kiki lacks collateral to take loans apart from some jewelry, which may not be enough.

Simplified eligibility criteria:

In the past, when Kiki has approached banks, she has been asked to register her business formally and maintain books of accounts—a requirement she struggles to meet.

Affordable interest rates:

Kiki pays 7% to 9% on loans taken from cooperatives. She expects similar pricing on credit products. A tad higher interest rate may work, but anything exceeding 12%-14% is not feasible.

Quality of communication:

Kiki wants the service provider to address all her queries patiently.

Quick turnaround time:

Usually, Kiki needs additional working capital during the festive season to process bulk orders and expand the menu. Time is precious for her; she prefers to avoid elaborate paperwork.

Non-financial support:

Kiki values business development support (capacity-building, bookkeeping, networking etc.) as it could help expand her business.

Adequacy of amount:

Kiki does not want to go to many institutions to meet her credit needs for a particular business use-case.

Home extension

Smaller down payment:

While Kiki and her husband have saved some money to buy a house, they cannot afford a 10% down payment.

The flexibility to buy land or a house: Simplified eligibility criteria:

Kiki and her husband have not yet decided if they would purchase land and construct their own home or buy a ready-to-move-in option. They want flexibility for either choice.

Longer tenure:

Since it is a long-term commitment, Kiki wants the loan term to be longer, so she can meet installment obligations comfortably.

Availability of government subsidy:

Kiki wants to avail of lower interest rates offered by the government on affordable housing finance.



While individual products have some variations*, the overarching design and delivery processes are similar across product clusters

Product features	Government programs	Traditional microfinance loans	Digital working capital loans	Crowdfunding P2P loans
Typical loan amount	USD 500-3,000, unsecured	USD 200-1,750, unsecured	USD 200-2,000, unsecured	USD 150-3,000, unsecured
Loan tenure	One to five years	One to two years	Three to 12 months	Three to 18 months
Interest rates	6-11% p.a.	20-50% p.a.	16-36% p.a.	8-18% p.a.
Credit assessment	Manual cash flow analysis based on consultation with the borrower and credit bureau checks	Manual cash flow analysis based on consultation with the borrower and credit bureau checks	AI and ML-based credit scoring coupled with social and digital profiling	Platform mediated risk assessment, primarily cash- flow based
Channels of delivery	Public sector banks or designated private sector entities	Field branches and doorstep delivery through field officers	Self-service (mobile applications)	Offline (at least for the rural segment) registration and risk assessment and self- service model for funding
Loan delivery process	Non-digital	Non-digital, except for frontend data collection and entry process that may be digital for more mature and large MFIs.	Digital process from sourcing and disbursements to repayments; some providers may also do physical verification	Offline sourcing, digital process for funding and disbursements, online or offline payments

* While the overall loan Tenure or amount or pricing limits vary considerably between different products under a product category, we have considered typical ranges to compare products, especially for the segment under consideration



The different options available to Kiki fall short of her expectations

Attributes that matter		Product fitment index					
to Kiki	Government programs	Traditional microfinance loans	Digital working capital loans	Crowdfunded P2P loans			
Accessibility							
Affordability							
Eligibility criteria and documentation							
Adequacy of amount							
Turnaround time and ease of processes							
Business development support							
Desired state for Kiki	Kiki can get customized offers based on her context, while the documentation and approval processes are quick.	Kiki can get loans at an affordable rate and on a cycle that suits her, unlike group loans.	Kiki needs someone to subdue her fears about digital credit and help her understand and apply for digital loans.	Kiki needs someone to help her understand and apply for digital loans, and she expects a fast turnaround time.			
Product fit	Suboptimal	Suboptimal	Detrimental	Suboptimal			
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Attributes preferred: Non-farm urban microentrepreneurs—an example from India



Shalini wants easy access to credit and flexible solutions to meet her needs

Advances for short-term liquidity

Ease of process:

Time is crucial for Shalini's business. Any loan process that takes more than a day or two is unlikely to help her cause.

An assurance of safety:

Shalini has heard many negative stories about online lending. She wants to feel assured of safety before she applies for digital loans.

Flexible repayments:

Shalini wants the flexibility to repay her loans. Most lenders levy penal charges for pre-payment and partpayment of EMIs, which are detrimental to her financial health. She wants to be able to repay more during high-income months and vice-versa. Investment capital for business

Transparent credit assessment process:

Lenders should be able to ascertain their credit limit adequately and create a partnership with relevant online and offline stores from where Shalini buys furniture or electronics, or appliances.

Flexible repayment:

Shalini seeks an extended warranty with the financing option. This will make her secure, and she can use the assets more intensively for her business.

Unsecured:

Shalini wants access to loans without having to pledge any collateral as she does not own a home, a vehicle, or any other asset (except for a small amount of gold).

Buy home

Affordable:

Shalini saves regularly to reduce dependency on larger loans. She feels that banks, especially the public sector, are the best option as they are the most affordable, reliable, and transparent for home loans.

Process simplicity:

Since her business is informal, Shalini lacks income proof documents that banks ask for. Instead, she wants banks to assess her repayment capacity from her savings and credit history.

Avail government subsidy:

Shalini has heard of housing finance subsidies from the government, on housing loans, especially for middle-income groups. She wants information on access to such schemes.



Though multiple providers offer credit to this segment—most products are either too standardized, or the loan size is inadequate for Shalini—or both

Product features	Government programs	Traditional microenterprise (individual) loans	Digital working capital and crowdfunded P2P loans	Buy now pay later (BNPL)
Typical loan amount	USD 500-3,000, unsecured	USD 650-4,000, unsecured	USD 200-2,000, unsecured	Up to USD 1,000, unsecured
Loan Tenor	One to five years	One to three years	Three to twelve months	Up to 12 months
Interest rates	6-11% p.a.	18%-35% p.a.	16-36% p.a.	6%-36% p.a.
Credit assessment	Manual cash flow analysis based on consultation with the borrower and credit bureau checks	Largely based on credit bureau checks and quick cash flow analysis, followed by informal checks	AI and ML-based credit scoring engines coupled with social and digital profiling	Alternative data for credit scoring, including digital payments, social networks, social media activity
Channels of delivery	Public sector banks or designated private sector entities	Branches and doorstep delivery through field officers	Self-service (mobile applications)	E-commerce platforms and retailer outlets of retail commodities.
Loan delivery process	Non-digital	Semi-digital; except for sourcing (in some cases), most other processes are non-digital	Digital processes from sourcing and disbursements to repayments. Some providers conduct a physical verification	Mostly digital from sourcing till disbursement, repayment via automated cheque clearance mandates, which are sometimes signed manually

* While the overall loan tenure or amount or pricing limits vary a lot between different products under a specific product category, typical ranges have been considered for comparing products, especially for the segment under consideration



The different options available to Shalini fall short of her expectations

Attributes that matter to		Product f	ïtment index	
Shalini	Government-subsidized loan initiatives	Traditional microenterprise loans	Digital working capital and crowdfunded P2P loans	BNPL
Collateral requirements				
Affordability				
Turnaround time and ease of process				
Repayment flexibility				
Protection against fraud and malpractices				
Desired state for Shalini	Shalini gets a loan with easy documentation, terms and conditions are communicated. However, it takes time to access these loans.	Shalini can get an adequate loan and top- up amounts and repay them flexibly when needed.	Shalini trusts the providers and believes she will not be defrauded; the lender helps her complete the process.	Shalini wants to be able to buy electronic items and sewing machines for her business and have flexible repayment terms.
Product fit	Suboptimal	Suboptimal	Detrimental	Suboptimal



Attributes preferred: Semi-subsistence rural farmer—an example from Kenya



Since Veronica is a smallholder farmer, she prefers affordable loan products and repayments that match her income cycle

Purchase of additional livestock

Invest in small machinery

Affordable:

Veronica prefers highly affordable products she can comfortably pay for from her dairy farm income.

Value-added services:

Veronica prefers value-added services, such as farm advisory services, insurance, and veterinary services, which the providers can offer alongside the loan.

Long loan tenure:

Veronica prefers a long loan tenure of more than 12 months to realize the value and repay the loan from the dairy farm income.

Flexible repayment options:

Veronica wants flexible repayment options so she can repay loans as per her cash flows. She finds fixed monthly payments burdensome.

100% financing:

Financial service providers usually finance between 50% to 70% of the asset cost. She prefers a product that will give her 100% financing.

Minimal collateral requirements:

Veronica prefers assets to be used as collateral.

Simplified terms and transparency:

Veronica feels that the terms and conditions are often unclear, and the total costs are not shared upfront.

Dealing with emergencies

Quick disbursement:

Veronica needs quick disbursement for dealing with personal emergencies, such as children's medical bills.

Affordable:

Veronica prefers highly affordable products she can manage comfortably with her income from the dairy farm.

Accessibility:

Veronica prefers loan products that she can access conveniently from her mobile device without having to deal with volumes of paperwork.

Collection mechanism:

Veronica prefers loan products from providers that do not use coercive methods to collect the loan when it is due but rather those who can understand her situation.



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Veronica has access to a wide range of loans, but none meet her requirements

Attributes that matter to		Product fitr	ment index	
Veronica	Generic digital loans	Farm input loans	Dairy and livestock loans	Farm assets loans
Accessibility				
Affordability				
Eligibility criteria and documentation				
Repayment flexibility				
Turnaround time and ease of processes				
Value-added services				
Loan tenure				
Desired state for Veronica	While Veronica appreciates the accessibility of digital credit, she seeks longer tenures, affordability, and value-added services.	Veronica desires affordability and flexible repayment terms.	Veronica desires easy eligibility criteria and value-added services.	Veronica desires easy eligibility criteria, flexible repayments, and longer loan tenures.
Product fit	Detrimental	Suboptimal	Suboptimal	Suboptimal

Credit products have different features that affect the access and usage by smallholder farmers, such as Veronica

Product features	Digital loans	Farm input loans	Dairy and livestock loans	Farm assets loans
Typical loan amount	USD 50-300, unsecured	USD 50-1,000, secured	USD 50-2,500, secured	USD 500-50,000, secured
Loan Tenor	Average of 30 days	6 months	1 to 2 years	1 to 2 years
Interest rates	13-300% p.a	20-50% p.a.	16-36% p.a.	10-30% p.a.
Credit assessment	Primarily based on credit scores generated by financial transaction history	Primarily based on milk yield as the loan is for inputs purchase for her dairy business	Based on milk yield and financial transaction history	Based on transaction history and collateral valuation
Channels of delivery	Mobile phone and Internet banking	Mobile phone and field branches	Field branches	Field branches
Loan delivery process	Digital application and disbursement	Digital application and disbursement, manual verification	Digital application and disbursement, manual verification	Manual application, verification, and disbursement

* While the overall loan tenure or amount or pricing limits vary considerably between different products under a specific product category, typical ranges have been considered for comparing products, especially for the segment under consideration



5. Constraints in delivering digital credit



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Constraints providers face as they deliver on urban non-farm entrepreneurs' expectations

Available products	Constraints in delivering loans that would meet urban non-farm entrepreneurs' requirements			
	Macro	Meso	Micro	
Subsidized microenterprise loans under government programs	 Inadequate amounts and ineffective channels (India) Policy restrictions on the use of the private sector (Indonesia) 	Delivery is done via banks and NBFCs that do not want to serve the microenterprises segment (India)	 Lack of effective credit assessment methods (India) Lack of innovation in delivery processes and reliance on traditional channels for delivery (common to all geographies) 	
Traditional microenterprise loans through NBFCs and banks	 Hesitation on the part of banks and mainstream NBFCs to serve informal microenterprises (India) Regulatory restrictions for MFIs and SFBs on non-qualifying portfolios (India) 	 Difficulties of lenders to assess first- time borrowers; because most businesses are informal, they lack verifiable records of business transactions (common to all geographies) 	 High cost of doorstep servicing for individual microenterprises (India) Low digital uptake by customers, preference for cash (Indonesia, India) 	
Digital working capital and crowdfunded P2P loans	 Inadequate regulatory and administrative push to eliminate fraudulent players (India) Most microenterprises are informal (common to all geographies) 	 Limited ability to translate digital trails or data to assess borrowers meaningfully (common to all geographies) Inability to use social commerce data (common to all geographies) 	 Negative perception due to illegal and unethical practices (common to all geographies) Lack of tailored products (common to all geographies) 	
Buy-now-pay-later (BNPL)	 Lack of regulations to define pricing limits on BNPL (India) 	 Inadequate sharing of credit information (Indonesia, India) Inadequate digital identity infrastructure (Indonesia, Kenya) 	 Low digital uptake and digital footprints of customers (India) 	



Constraints that providers face to deliver on rural non-farm entrepreneurs' expectations

Available products	Constraints in delivering	Constraints in delivering loans that would meet rural non-farm entrepreneur's requirements			
	Macro	Meso	Micro		
Subsidized microenterprise loans under government programs	 Policy restrictions on channeling loans through the private sector (Indonesia) 	 Underutilization of agent networks for loan delivery (Indonesia, Kenya) 	 Lack of innovation in delivery processes and reliance on traditional channels for delivery (common to all geographies) 		
Traditional microfinance loans (group-based)	 Regulatory restrictions on product mix and collateral requirements (Indonesia) 	 Inadequate credit information sharing (Indonesia) Inadequate CICO infrastructure in rural areas (Indonesia, India) 	 Resource constraints for digital transformation (common to all geographies) High cost of capital (Indonesia, Kenya) High operational costs (Indonesia, Kenya) 		
Digital working capital loans	 Lack of policy incentive and push to serve the underserved segments (common to all geographies) 	 Inadequate credit info sharing (Indonesia) Poor digital identity infrastructure (Indonesia, Kenya) Limited digital trails and data (common to all geographies) 	 Investor push dissuades providers from serving rural segments (Indonesia) Lack of appropriate products (Kenya) High cost of capital (common to all geographies) 		
Crowdfunding P2P loans	 Lack of regulations to define rules of the game and hence drive innovations (Kenya) 	 Inadequate credit info sharing (Indonesia) Digital identity infrastructure (Indonesia, Kenya) 	 Lack of awareness of such platforms (common to all geographies) Inadequate field resources for sourcing, risk assessment, and repayments monitoring (common to all geographies) 		



Constraints that providers face to deliver on smallholder farmers' expectations

Available products	Constraints in delivering loans that would meet smallholder farmers' requirements			
	Macro	Meso	Micro	
Digital loans	 Restrictions on access to CRB for non-regulated credit-only MFIs (Kenya) 	 Low portfolio and credit quality as loans are based on credit scores built on incomplete financial transaction history (common to all geographies) High cost of capital (common to all geographies) 	 Lack of incentives by providers because of a perception among lenders that rural farmers are a risky segment to lend to (common to all geographies) Inadequate credit information sharing (common to all geographies) 	
Farm input loans	 Lack of policy incentives and push to serve rural farmers because of high income volatility (common to all geographies) 	 High non-performing loans due to weather-related and other risks (common to all geographies) Absence of risk-mitigation products, such as weather insurance (common to all geographies) 	Low appetite to serve rural clients because of high administrative costs for low-value input loans (common to all geographies)	
Dairy and livestock loans	 Lack of standard definition and categorization of farm- level assets to determine what can be charged as collateral (Kenya) 	Lack of credible value chains that could provide necessary support and data in loan sourcing and credit decision making (common to all geographies)	 Low appetite to serve rural clients because of high administrative costs (common to all geographies) 	
Farm assets loans	 Lack of policy incentives and push to serve rural farmers because of high income volatility (common to all geographies) 	 Deterioration in quality of encumbered asset charged as collateral due to wear and tear (common to all geographies) 	Low appetite and perceived risk to serve rural smallholder farmers because of high administrative costs (common to all geographies)	



6. Opportunities to deepen digital credit for the key segments



Opportunities to deepen digital credit for the key segments and personas

		Set up an innovat challenge fund to encourage new b models for digita for agriculture	usiness	Digital transformat to high-potential m institutions and bar serve the mass mar	icrofinance hks that	Policy support FinTechs that I excluded segm	lend to	
Low Kesource requirements	Support UI and UX innovations on existing digital agriculture lending platforms through research, pilots, and scaled interventions Support data analytics providers to partner with financial institutions to design solutions for entrepreneurs and farmer		consumer protection		Policy support and pilots to efficiently deliver existing government lending programs on agriculture through digital channels		Research and support for pilots to test social commerce data for digital lending	
	Pilot catalytic online to offline models for digital credit		Product development support to expand the range of financing solutions available to meet different use-cases			Policy and imp support to test programs deliv	government	
		Enable catalytic partnerships between				catalytic partn FinTechs		
	Back marketplace models to scale to enable price discovery	AgTech firms and financial service providers for an integrated solution		Research, knowledge dissemination, and adoption of best practices on gender-neutral credit scoring platforms		reluctar agricult with pro FinTechs	Assess the reasons for the reluctance of lenders to lend to the agriculture sector. Share lessons with providers, such as banks, FinTechs, AgTech, nonbank entities, and MFIs	
	Low et of common opportunities acros		Potent: and rural pe	ial impact ersonas ■ Smallhold			5	High

Annex 1: Funding support for the study



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This study has been generously funded by the Bill & Melinda Gates Foundation, AFD, SPTF, and the Smart Campaign, a project of the Center for Financial Inclusion at Accion. MSC also cofunded portions of the work.

BILL& MELINDA GATES foundation	The Bill & Melinda Gates Foundation is a private philanthropic foundation established in 2000 by Microsoft cofounders Bill Gates and Melinda French Gates. It focuses its grantmaking and advocacy efforts on eliminating global inequities and increasing opportunities for those in need through programs that address, for example, global agricultural and economic development, medical research and public health initiatives in developing countries, and the improvement of education and access to information in the United States.
AGENCE FRANÇAISE	AFD funds, supports, and accelerates the transitions to a fairer and more sustainable world. Focusing on climate, biodiversity, peace, education, urban development, health, and governance, AFD's teams carry out more than 4,000 projects in France's overseas departments and territories and another 115 countries. In this way, AFD contributes to the commitment of France and French people to support the sustainable development goals.
SPTF Surviva Standard & Date Street Brenzigiaachde inclusive filiance	SPTF is a nonprofit membership organization with more than 3,000 members from all over the world. Our members come from every stakeholder group in inclusive finance. SPTF engages with these stakeholders to develop and promote standards and good practices for responsible inclusive finance to make financial services safer and more beneficial for clients.
the signart campaign Keeping clients first in financial inclusion	Accion is a global nonprofit committed to creating a financially inclusive world, with a pioneering legacy in microfinance and fintech impact investing. The Smart Campaign is a global effort to unite financial leaders around a common goal: to keep clients as the driving force of the industry. It works with financial leaders from around the world to provide institutions with the tools and resources they need to deliver transparent, respectful, and prudent financial services to all clients.
MSC	MSC (MicroSave Consulting) is a boutique consulting firm that has, for 20 years, pushed the world towards meaningful financial, social, and economic inclusion. With 11 offices around the globe and about 190 staff of different nationalities and varied expertise, we are proud to be working in over 50 developing countries. We partner with participants in financial services ecosystems to achieve sustainable performance improvements and unlock enduring value. Our clients include governments, donors, private-sector corporations, and local businesses.

Recommended citation: MSC (2022). Customer-centric and responsible digital credit solutions for urban and rural non-farm entrepreneurs and smallholder farmers: Analysis report from research on digital credit users in Indonesia, India, and Kenya Authors: Anup Singh, Abhishek Anand, Juliet Ongwae, Raunak Kapoor, Rajarshi Dutta Barua, Thomas Murayi Maina, Caleb Joab



Annex 2: Details of the personas



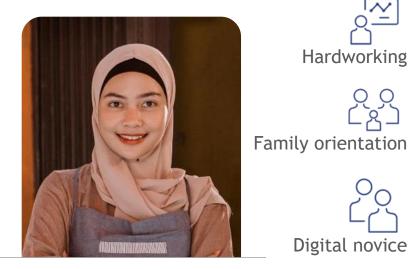


Persona map: Non-farm rural microentrepreneurs example from Indonesia



Kiki aspires to convert her existing skills into a formal business so she can contribute more to her family's income

Kiki, a mother of two kids, owns a food stall in a traditional market in Lembang. She sells Indonesian cuisine from her food cart and doubles up as a homemaker. She uses social media to promote her stall and targets nearby locations



Prominent personality traits

Hardworking

Digital novice

Between household chores and her food business, Kiki spends almost 14-16 hours trying to balance her role as a mother and businesswoman.

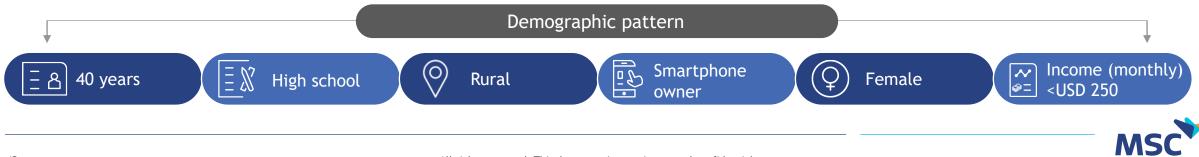
The income earned from business supports her family, especially her children's education and other lifecycle goals of the family.

Kiki has limited capacities to use digital tools and platforms and often depends on other family members (husband and children) for more complex tasks.

Aspirations

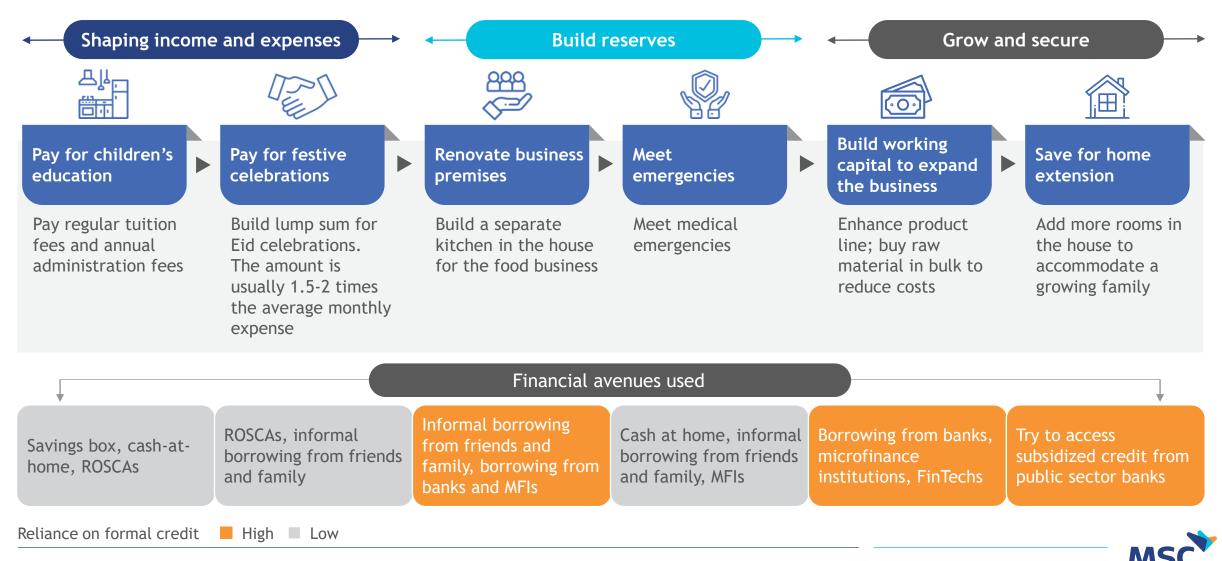


Kiki wants to grow her business to process more orders and build a local brand that allows her to operate from her home instead of going to the market every day. She wants to employ one or two helpers.

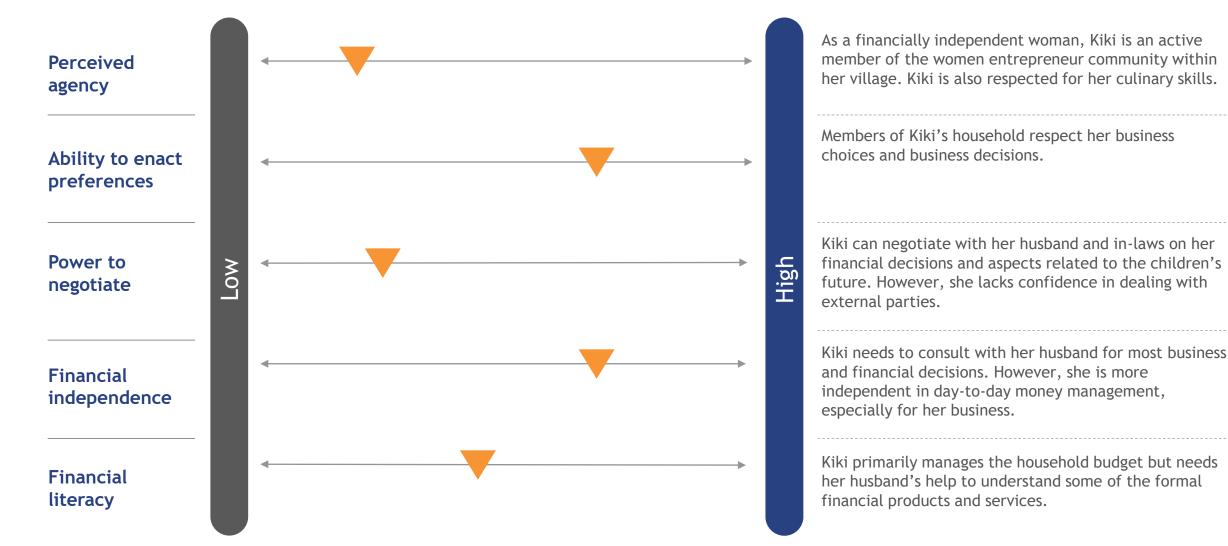


Kiki has a rich and diverse financial life to manage her needs

Kiki has multiple financial goals on both personal and business fronts and uses a variety of avenues to achieve these goals



Kiki is relatively empowered within her household, and her husband supports her in most financial and business decisions







Kiki's exposure to formal credit sources is limited; she feels slightly intimidated when it comes to digital credit and payments

Credit	Knowledge	Access	Usage*	
Semi-formal (credit unions, cooperatives)				Kiki is a regular member of the local savings and loan cooperative. She can borrow a small amount from the cooperative from time to time at affordable interest rates. However, the cooperative lacks funds for more significant loan amounts.
Formal - Traditional (Bank, NBFCs)				Kiki knows about state-owned banks' subsidized credit for microenterprises, but her past few applications were rejected as she did not meet loan requirements. She has, however, borrowed from a nonbank finance company (NBFC) once by pledging her gold jewelry.
Formal - Digital (FinTechs, digital banks)				Kiki has seen promotional content on digital credit on her social media accounts. She has also heard about it from her friends. However, she is a bit intimidated by negative media on the practices adopted by digital credit providers. Also, she is not confident about her digital skills and fears something might go wrong in the process.
Digital payments				
Digital payments (e-wallet, mobile banking, ATMs, Agents)				She has an ATM card she can use herself, although her children and husband had to initially support her. She has also registered for a GoPay e-wallet but has never used it.

Kiki's options for traditional and digital credit are limited; they do not meet her business requirements entirely and hence tend to be suboptimal to her needs

under government programs The state budget typi

Subsidized

Renovate business premise

Working capital for business expansion The state budget typically funds these loan programs. The government usually assigns a set of institutions to distribute these loans. The program targets microenterprises that may not be able to afford credit at commercial terms.

microenterprise loans

- Kredit Usaha Rakyat and PNM Mekaar (Indonesia)
- Mudra loans (India)
- Women Enterprise <u>Fund</u> (Kenya)

Traditional microfinance loans (group-based)

Registered microfinance institutions give loans through their branches in a group setting. Some MFIs may attempt to digitize some parts of the loan delivery process (repayments, origination).

- <u>Mitra Bisnis Keluarga</u> (Indonesia)
- <u>Sonata Microfinance</u> (India)
- ✤ <u>KWFT</u>, <u>Musoni</u> (Kenya)

Digital working capital loans

Nonbank finance companies or mainstream banks offer this product. Microenterprises can apply for such loans digitally through the provider's mobile application.

- <u>BFI Selfi</u>, <u>BRI KECE</u> (Indonesia)
- ★ <u>Sub-K</u>, <u>Arth</u> (India)
- <u>Stawi</u> and <u>Jaza Duka</u> (Kenya)

Crowdfunded P2P loans

These products work on peer-to-peer or crowdfunding principles and help microenterprises to raise debt capital by providing a digital platform that connects borrowers with lenders or investors.

- ✤ Modalku (Indonesia)
- <u>Rangde</u>, <u>Faircent</u> (India)
- ✤ <u>Pezesha</u> (Kenya)



Persona map: Non-farm urban microentrepreneurs example from India



Shalini aspires to scale up her business to help her secure her family's financial future

Shalini, mother to two children, lives in Bengaluru. Her husband is in a low-paying government job while she manufactures and sells home decoration and handicraft items. She has an entrepreneurial spirit and dreams of making it big with her business



Prominent personality traits



Goal oriented

Digital early

invest in a way that will help her scale up her business.

The income from her business supports the family's daily expenses; she maximizes savings for her children's higher education. She also aspires to own a house.

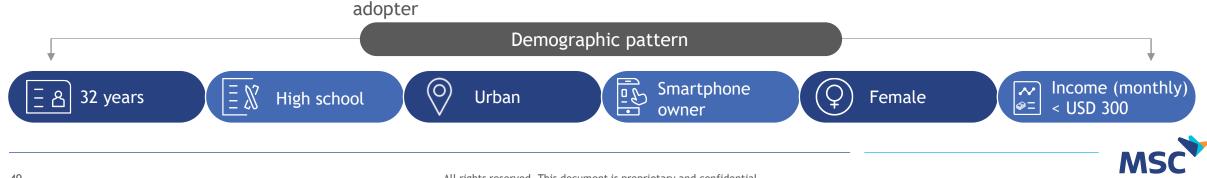
Shalini is well aware of her competition and wants to

Shalini's digital use is limited to accepting digital payments and using social media and messaging apps to advertise goods.

Aspirations

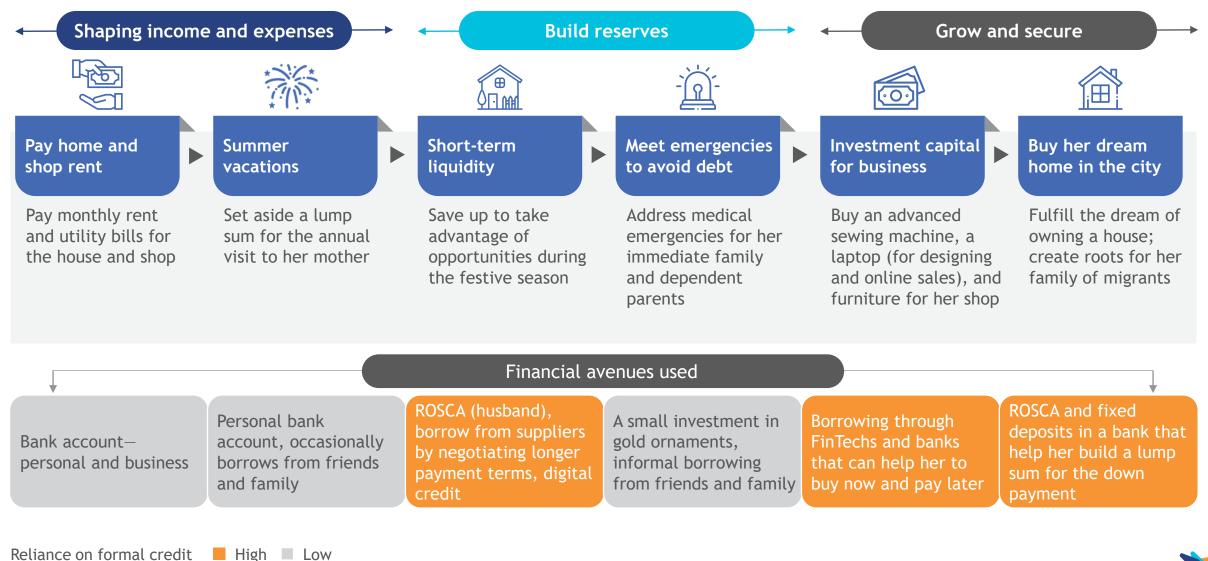


Shalini wants to scale up her business (both online and offline). She wants to employ paid workers, so she gets more time for her family without compromising her business performance.



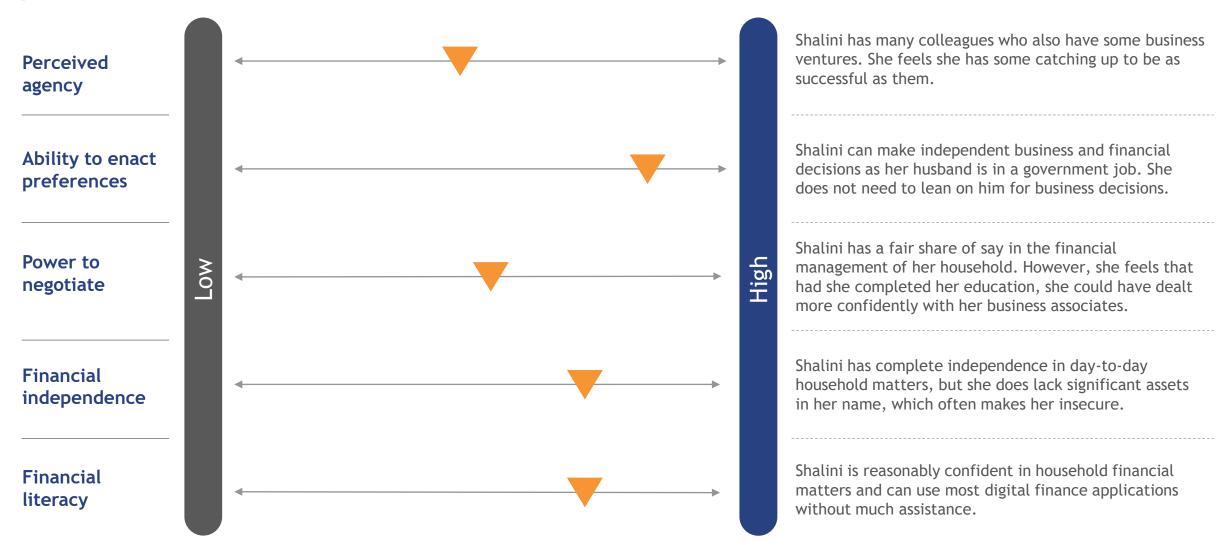
Shalini has big dreams but wants to reduce her borrowing

For her multiple financial goals, Shalini would like to reduce her dependency on loans





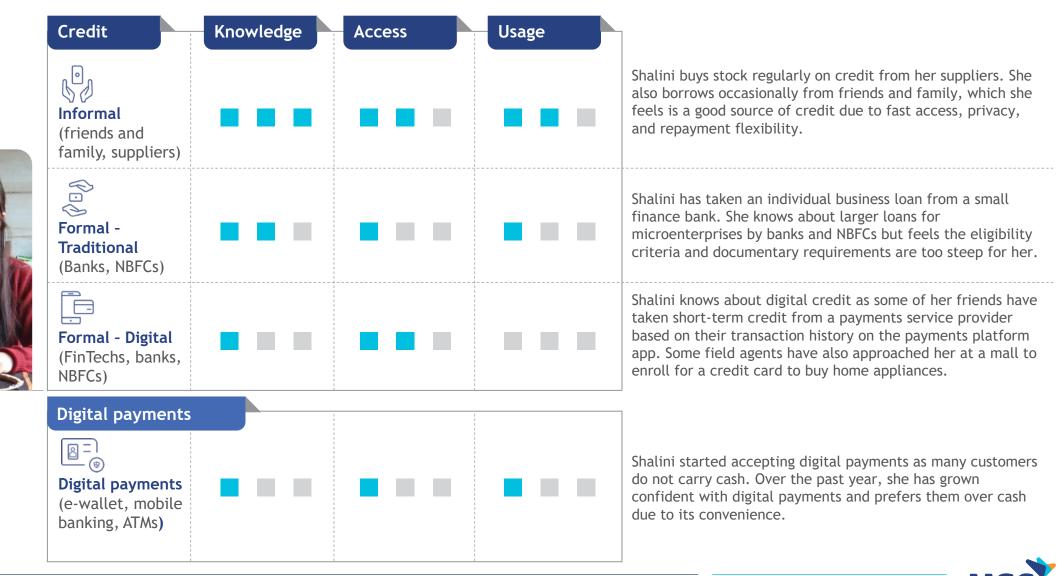
Shalini is an independent businesswoman and is relatively confident about her personal and business finances



* Adapted from Women's World Banking framework on women empowerment



Shalini knows about most formal sources of credit; like her friends, she wants to try digital credit



Shalini's has many options when it comes to formal credit, but most are suboptimal

Advances for short-term liquidity

Investment capital for business

Subsidized microenterprise loans under government programs

These loan programs are usually sponsored by the central government and rolled out via mainstream financial service providers: banks, NBFIs, and MFIs. Such loans offer substantial subsidies in interest rates that target microenterprises and lowincome households.

- <u>Kredit Usaha Rakyat</u> and <u>Ultra Mikro loans</u> (Indonesia)
- <u>Mudra loans (India)</u>
- <u>Women Enterprise Fund</u> (Kenya)

Traditional microenterprise loans through NBFCs and banks

MFIs, NBFCs, SFBs, and banks provide such loans through physical branches with doorstep services in the case of MFIs and SFBs. Credit assessment happens via credit bureau check and cash flow assessments of the business and the household. Collateral requirements are mandated beyond a certain threshold limit.

- <u>Bank BJB</u>, <u>Bank Mandiri</u> (Indonesia)
- <u>Ujjivan</u> (India)
- <u>KCB</u> (Kenya)

Digital working capital loans*

Non-bank finance companies or mainstream banks usually implement these. Microenterprises can apply for such loans digitally through the provider's mobile app.

- <u>BFI Selfi</u>, <u>BRI KECE</u> (Indonesia)
- <u>Sub-K</u>, <u>Arth</u> (India)
- <u>Stawi</u> and <u>Jaza Duka</u> (Kenya

Buy now, pay later (BNPL) loans*

Microenterprises avail of both formal and informal BNPL offerings regularly. Supplier credit is a dominant arrangement, and BNPL schemes for buying appliances and household goods are also increasingly used, as are BNPL schemes over ecommerce and payments platforms.

- <u>Kredivo</u> (Indonesia)
- <u>Amazon Pay, Paytm,</u> <u>Zest</u> (India)
- Lipa Later (Kenya)



* For analysis, we restrict our scope to productive use-cases alone. However, we can do a similar analysis for credit needed for consumption purposes

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Persona map: Semi-subsistence rural farmer—example from Kenya



Veronica wants to move from semi-subsistence to semi-commercial farming to contribute more to her family's income

Veronica is a 36-year-old female semi-subsistence farmer. She is in the dairy farming business along with her husband. Veronica sells surplus milk in the local markets.



Prominent personality traits

Veronica is young and ambitious. She wants the best for her children.

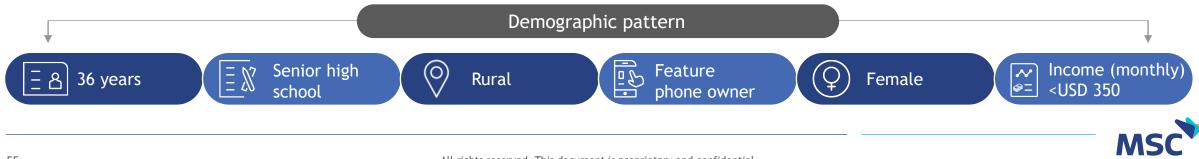
Her husband takes care of major expenses. They use the income from the farm to buy inputs, such as animal feed and handle family expenses.

She owns a feature phone. However, she understands how her husband uses his smartphone to conduct digital transactions.

Aspirations

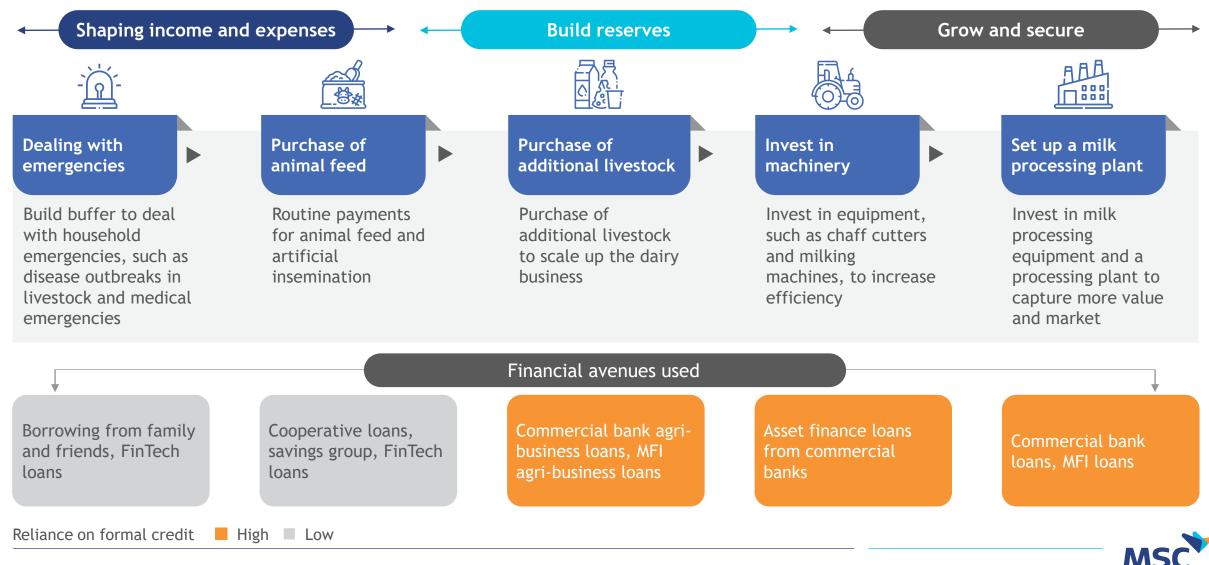


Veronica wants to grow her business to semicommercial farming. She wants to employ one or two farm workers and set up a small processing unit to manufacture dairy products like cheese and butter and sell them locally.

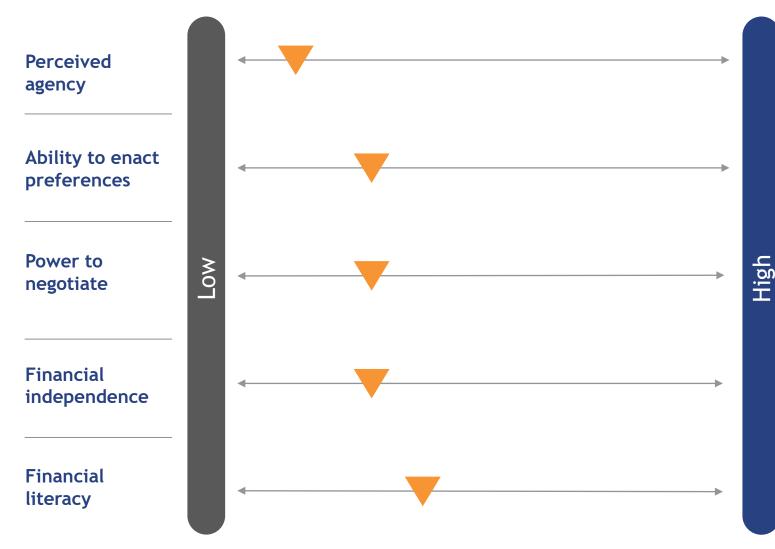


Veronica's financial goals are diverse and cut across personal and farm needs

Veronica has financial goals on both personal and farming fronts, and she uses a variety of avenues to try to achieve them.



Veronica depends on her husband in most aspects of business and for household financial management



* Adapted from the framework on women empowerment by Women's World Banking

Veronica feels she still has a lot to learn before she manages her farm independently.

Veronica depends on her husband for most business decisions. She feels that her husband is more experienced and has a broader network in and outside the village.

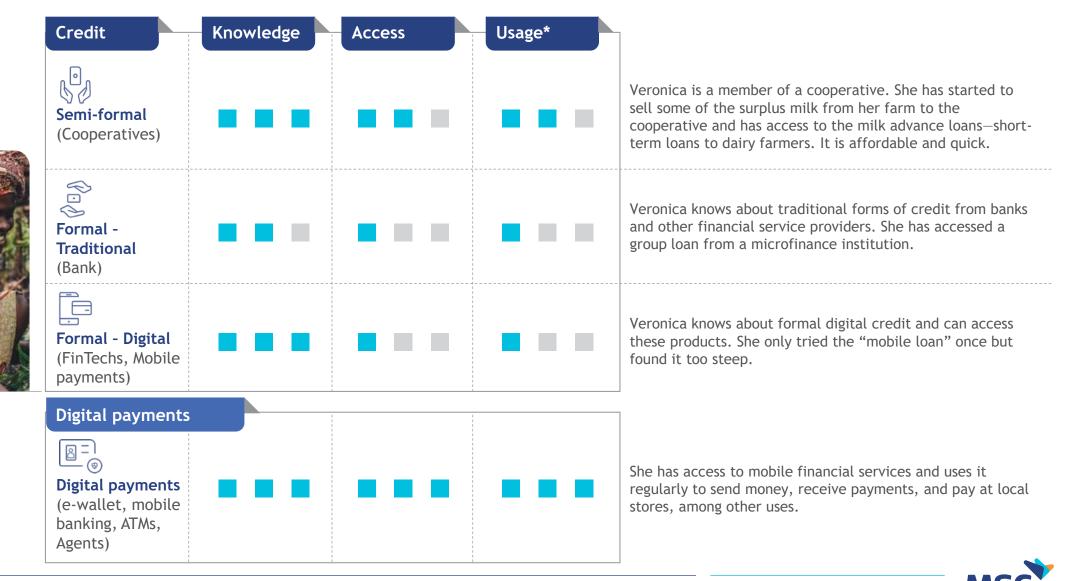
Veronica has limited exposure and hence finds it difficult to assess available financing options. She lets her husband take the lead in most financial decisions and negotiations.

Veronica lacks a separate income but tries to save privately from business revenues to provide for her children's routine expenses.

Veronica can use digital payments but feels underconfident in interacting with banks and other financial institutions for her financial needs.



Veronica has some exposure to digital financial services and is curious about other use-cases for DFS





Veronica has several options in terms of formal credit, but the available options tend to be suboptimal



MSC

* For analysis, we restrict our scope to productive credit alone. However, we can do a similar analysis for credit needed for consumption purposes.

Sectors we work in

Providing impact-oriented business consulting services

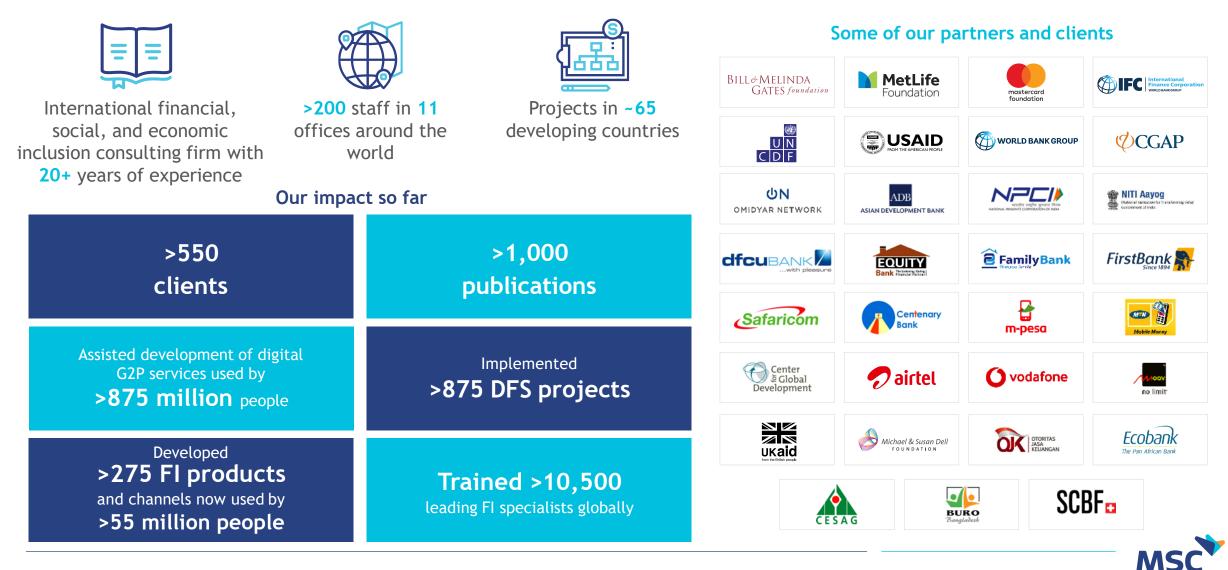


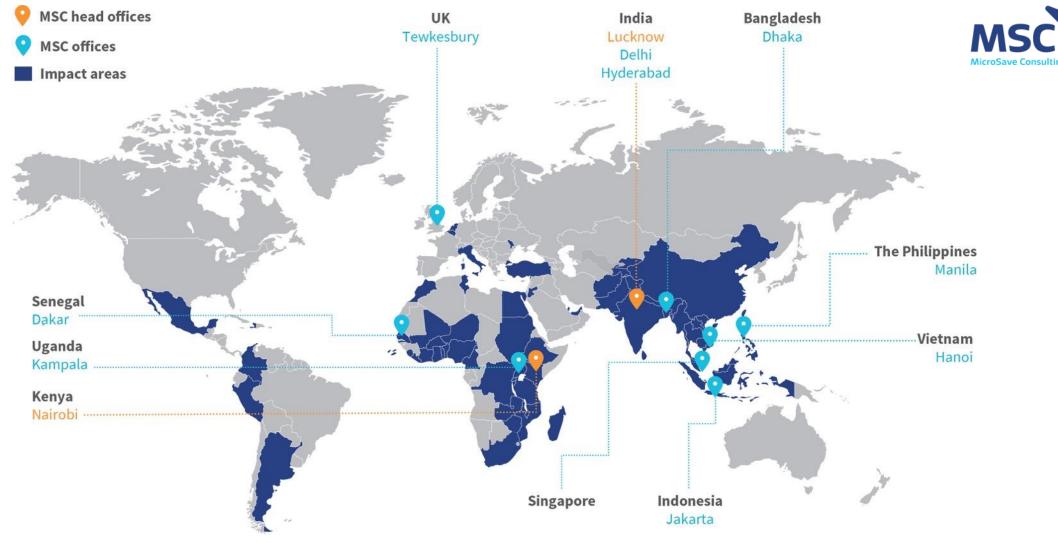
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