

Case study: Branch

Exploring the potential of alternative
data for creating new markets



Learn about your
loan offers

Welcome to Branch

Your loan has
been approved



Advancing Financial Inclusion

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Acknowledgements

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About insight2impact

Insight2impact | i2i is a resource centre that aims to catalyse the provision and use of data by private and public-sector actors to improve financial inclusion through evidence-based, data-driven policies and client-centric product design.

i2i is funded by the Bill & Melinda Gates Foundation in partnership with The MasterCard Foundation.

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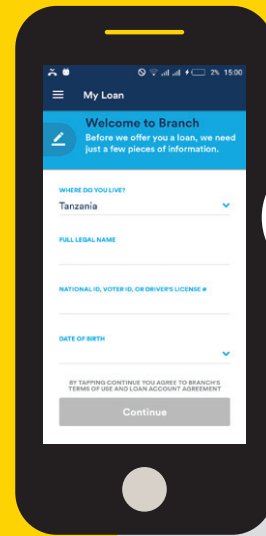
Terminology

ASCA:	Accumulated savings and credit association
FSP:	Financial service provider
Ksh:	Kenyan shilling
MMO:	Mobile money operator
MNO:	Mobile network operator
MFI:	Microfinance institution
SACCO:	Savings and credit cooperative
ROSCA:	Rotating savings and credit association
Tsh:	Tanzanian shilling
Vicoba:	Village community bank

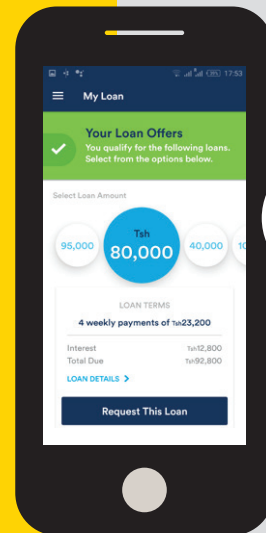
1. Introduction

Financial service providers are increasingly adopting alternative data to understand and viably serve new segments of the market. Two main trends give rise to this: There is an increase in the amount of alternative data available, and analytical capabilities are improving to more accurately predict future financial behaviour, based on alternative data.

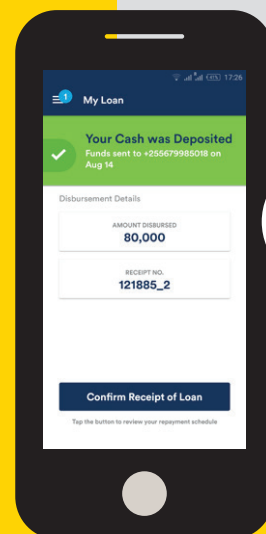
Adoption of alternative data to create new markets is, to date, mostly seen among mobile-application-based credit providers. As the products of such providers gain momentum, a critical question remains: Are they deepening financial inclusion? To explore the potential that smartphone-based, alternative, credit-scoring models could have on extending credit to unserved or underserved individuals, insight2impact (i2i) conducted research in partnership with Branch.



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2



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Box 1. About Branch

As an innovative digital financial service provider (headquartered in San Francisco and with a regional office in Nairobi), Branch aims to leverage technology to deliver world-class financial services to the mobile generation in emerging markets.

Its first product is in credit, with delivery being through a mobile-based application in partnership with Vodacom M-Pesa. The credit product is an Android-based mobile application that asks users for permission to access and analyse stored data on their phones to credit-score them. From analysing this data, Branch uses artificial intelligence to make automatic credit decisions on applicants. From learning and predicting who is likely to be a good borrower, they can extend collateral-free credit (from US\$2.50 to US\$500 at interest rates ranging between 2% and 14% monthly). Leveraging the smartphone allows Branch to detect subtle patterns of behaviour that correlate with repayment or default.

New borrowers begin at the “bottom of the ladder”, receiving smaller loan offers with higher fees. As users build their credit history with Branch and positive repayment behaviour is observed, they can “move up the ladder” and unlock higher loan amounts, at better terms. Branch is currently operating in Kenya (as of March 2015), Tanzania (as of April 2016) and Nigeria (as of March 2017), with plans to rapidly expand into new markets. In total, Branch has ~250,000 customers, with over US\$30m in originated loans and a default rate of ~7%.

Branch’s mobile-based application process consists of three steps. First, the loan applicant downloads the application from the Google Play store and grants Branch permission to access his/her handset details, SMS and call logs, social network data, GPS data and contact lists. As part of this step, the applicant then provides his/her country of residence, name, national ID, date of birth and mobile money account details. Second, eligible loan offerings (with transparent amounts and interest rates) are displayed, and the applicant can choose which loan to request. Lastly, the approved borrower instantly receives the cash deposit in his/her linked mobile money account. The entire application and dispersal process can take as little as 10 seconds.

Source: Authors’ own

2. Methodology

This study specifically focuses on credit products that leverage alternative data and Branch's operations in Tanzania. To understand the potential impact that alternative data-based, digital credit products could have on deepening financial inclusion, four key research questions were identified:

- 1** Does the use of alternative data in client selection lead to the inclusion of unbanked and underbanked customers?
- 2** Does the Branch model help to address the financial needs of the unbanked and underbanked and create client value?
- 3** How does the credit-scoring model compare against traditional credit bureau scoring models?
- 4** Is this a sustainable business model for lending to the underbanked client?

To address these research questions, a combination of research approaches was used, namely desktop research, together with quantitative and qualitative research methods. Desktop research was used to provide an overview of these types of credit-scoring models, how they differ from traditional models and to understand the credit provision landscape in Tanzania. Interviews were conducted with key informants to further understand the Tanzanian credit landscape and with Branch to understand the origins, business model and potential for sustainability and scalability. For the demand-side methodologies, both semi-structured, one-on-one, qualitative interviews and a quantitative survey were conducted. The quantitative survey was an electronic, standardised questionnaire facilitated by Branch and sent to all customers in Tanzania. Participation was voluntary, and there were just under 1,000 responses.

The purpose of the survey was to understand customers' income level, source of income, previous use of formal and informal financial services and the reason for opting for Branch services. The qualitative interviews were used to contextualise the findings from the quantitative survey. A representative sample of 36 individuals were interviewed from the quantitative survey respondents. The guiding questions for the qualitative interviews can be found in the Appendix.

**The quantitative survey had just under 1,000 respondents.
Qualitative interviews were conducted with a representative
sample of 36 of the respondents.**

3. Key findings

The key findings for this study have been categorised consistently with the four key research questions identified above.

Does the use of alternative data in client selection lead to the inclusion of unbanked and underbanked customers?

Of the adult population in Tanzania, 5% use formal credit products¹, 26% use informal credit products² and 62% do not borrow (FinScope, 2013)³. One reason for this is that credit providers who try to serve unbanked customers do not have enough traditional data on this segment to adequately assess risk, which leads to them not being able to viably serve these customers. Branch is overcoming this information asymmetry by leveraging alternative data in client selection. To understand the potential impact of alternative, data-based, credit-scoring models on extending credit to underserved markets, the first question becomes *“Who are Branch customers? Are they reaching unbanked and underbanked consumers?”*.

Branch’s customers are mostly urban, middle-income class. Branch’s customers are mainly from urban areas within Tanzania, self-classifying as either living in main cities or towns. Over one in three are from Dar es Salaam, and just over one in ten are from Arusha. Most customers (89%) are salaried or self-employed. The average income of customers is Tsh 800,000, with a standard deviation of Tsh 950,000 (the equivalent of US\$360, with a standard deviation of US\$425). The average Branch customer is within the average middle-class income in Tanzania, which is defined as consumption of US\$30 to US\$600 per month (World Bank, AfDB). These numbers imply that while on average Branch is serving the middle-income market, they are still reaching into the low-income market, as can be seen in Box 2 on the next page. The infographic in Box 2 depicts where customers live, their average monthly income and their source of income.

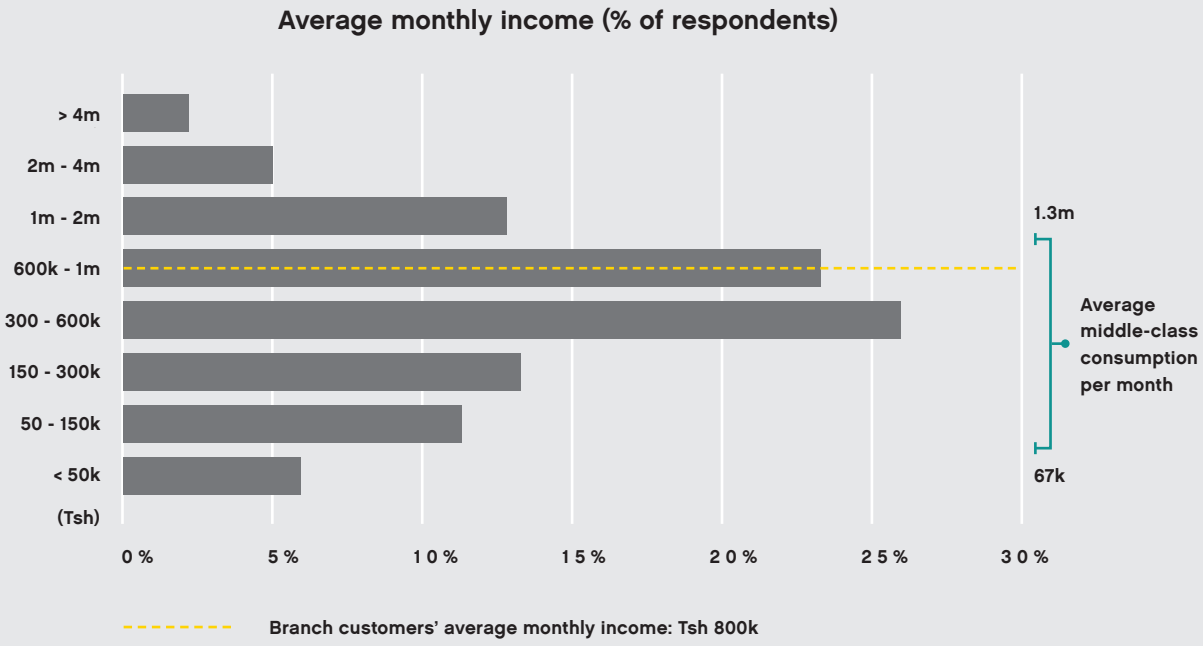
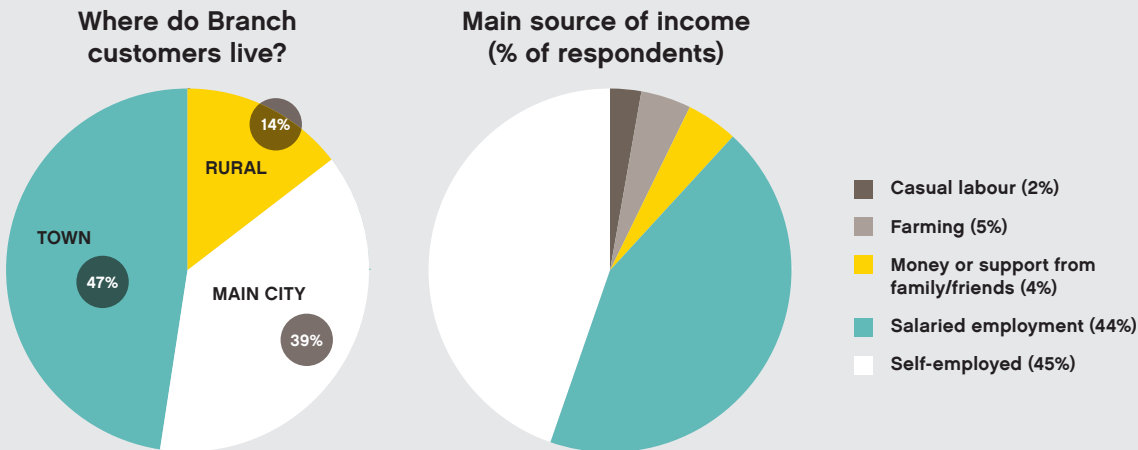
Over 40% of Branch customers do not access formal credit. Of the 44% of Branch customers who do not access formal credit, half are using informal credit and half are using no other credit sources beyond Branch. This means nearly half of Branch customers are only exposed to informal credit and would not have a formal credit history. Branch can reach some of these consumers, by leveraging their alternative data from their smartphone as credit data.

¹ Formal credit products are defined as products that are formally regulated.

² Informal credit products are defined as products that are not formally regulated.

³ 2013 is the most recent FinScope survey in Tanzania and does not include Branch as it was not yet operational.

Box 2. Infographic summarising where customers live, their main source of income and their average monthly income



Source: Authors' own

Does the Branch model help to address the financial needs of the unbanked and underbanked and create client value?

Financial needs⁴ are a driver of usage, but initial uptake is triggered by curiosity.

Usage triggers are factors that lead to a change in existing behaviour, whereas usage drivers are those factors that encourage consumers to continue with existing behaviour.⁵ Interviews with Branch customers revealed that usage of Branch's mobile application is largely triggered by curiosity and not a financial need. Customers are curious to see whether Branch is a real service. However, continued use is largely driven by financial needs, the opportunity to build financial options for needs that may arise in the future and Branch's ability to create a product of greater comparative value for its customers.

“

“I downloaded it... just like a joke, and they gave me Tsh 20,000 instantly! (Smiling) I was like wow! What is this?” – FEMALE, 29

“Thanks to the app, the money I got was right on time. I was at the market purchasing stuff for my business and I was short on cash. I was expecting to wait longer for my loan, but it was like a miracle when it came in, and with that money I managed to buy three pairs of shoes for Tsh 4,000 each – I got 36,000 from the sale of those shoes! I can't forget how much Branch saved my day.” – FEMALE, 25

”

Financial needs met are limited to consumption smoothing due to low loan limits.

Customers are currently using the loans mainly for cashflow management and specifically for small purchases such as airtime, petrol and groceries. Many clients mention that the current loan amounts are quite small. This is in part because Branch has been operational in Tanzania for 10 months, so customers have not had a chance to unlock larger loan limits. Most respondents did, however, describe concrete plans for business purchases in the future and related investments for once they arrive at higher loan amounts.

“

“It helps in small issues, like school fees, house rent... but limits are very low... 20,000... 30,000... [I want] to borrow a huge amount. Because my plan is to buy a popcorn machine... so that I can set it at a bus stand and run a popcorn business. The machine costs Tsh 400,000 (\$179 USD)” – FEMALE, 28

“[I use the loan] for home use. But later, if they increase the amounts, I want to take a loan and start a shop where I live. I see the [limits] keep increasing.” – MALE, 40

”

Branch creates client value. From the findings of the qualitative interviews, customers value the following aspects of the product:

- **Ease of accessibility** – Customers can apply for the loan from from wherever there is broadband connectivity.
- **Speed of the entire process** – Customers can complete the entire application process and receive the funds in as little as 10 seconds.
- **Perceived privacy** – Customers do not have to publicly defend the reason for needing credit to their family and friends.
- **Ability to meet the eligibility requirements** – Customers only need a national ID, Facebook account and Vodacom SIM card – no proof of income or collateral required.
- **Transparency of the interest rates and available loan limits** – Customers see a clear overview of available loan offers with their associated interest rates.
- **Perceived fairness of the product** – Customers feel the credit-scoring mechanism is fair.
- **Trust they perceive through the platform** – Customers feel Branch is trusting them with collateral-free credit, and they therefore trust Branch.

In addition, customers feel in direct control of the product. They realise and appreciate that changing their behaviour and actions has a direct impact on their credit score and therefore available loan offers.

“

“This one [Branch] gives me joy. I apply for a loan and within a minute I obtain it. It does not waste my time of moving from here [his house outside the city centre] to Kariakoo or the City Centre [to request a loan]. There is extra time that I lost, which now I can use to do other things.” – MALE, 37

“But the most interesting thing to me was, when I clicked 5,000, it didn’t take even ten seconds. In the very same minute the money was already entered.” – Male, 37

“Other lenders, they ask about many things, such as attachment of pictures... When I came across Branch – [smiling] I thought, this is very good! There is no disturbance.” – Female, 52

“[The mobile application] is built on trust. Branch managed to trust a person they do not know at all; [and] if you trust a person, they will start to trust you as well.” – MALE, 33

”

How does the model compare with traditional models?

There is a wide variety of sources of credit in Tanzania, ranging from informal to formal. Main sources of credit are family and friends, shopkeepers, money lenders (known as Ribas in Tanzania), ROSCAs (Upatus), ASCAs (Vicobas), SACCOs, mobile-application-based credit providers, mobile money loans administered by MNOs, microfinance and traditional bank loans (FinScope 2013)⁶. Table 1 below compares categories of credit providers that are further explored in the following section.

Type of provider	Eligibility requirements	Target market
Traditional bank	National ID and proof of income or registered assets or property	Middle to high
Microfinance institution	National ID and proof of income or registered assets or property or social capital	Middle
MNO and bank partnership	National ID and mobile money account and transaction history in mobile money account	Low to middle
Branch	National ID and mobile money account and smartphone	Low to middle

Table 1: Comparison of traditional banks, microfinance institutions, MNO and bank partnership credit models and Branch in Tanzania

Source: Authors' own

⁶Credit sources in Tanzania confirmed with qualitative interviewees.

Traditional credit-scoring models exclude the 94% of Tanzanians for whom there is no credit bureau data. In traditional models, credit bureau data is used to assess individuals' credit worthiness. If an applicant does not have a credit history, he/she cannot meet the minimum requirements of traditional lending models and is therefore excluded. This creates a catch-22 situation for "invisible" customers: To access credit, they need to demonstrate that they can manage credit, but to demonstrate that they can manage credit, they need to have access to credit. In Tanzania, credit bureaus only cover 6% of the population (World Bank, 2016), which leaves 94% of the population excluded from access to formal credit.

Traditional microfinance models rely on community engagement and manual data collection, hindering ability to scale. In microfinance and microcredit models, which gained momentum in the 1970s, loan officers were responsible for knowing the community members and being able to assess the risk of the lending to individuals and groups. In the case of individual loans, the loan officers were responsible for collecting collateral; while, in the case of group loans, peer pressure was used to replace the need for collateral. While this model has shown potential for rural, low-income customers, it has also received a fair share of criticism, and the nature of the business model (high operational costs) makes it challenging for providers to scale.

MNO and bank partnership models base credit decisions on feature phone data, expanding access to credit for millions, but they require prior transactions and savings on platform. In the past five years, MNOs have begun partnering with traditional banks to extend credit to their subscribers. The MNO credit-scoring model does not require any traditional collateral, payslips or credit information from a credit bureau to assess risk. Instead, it analyses the applicant's transactional flows (value and volume) through his/her mobile money wallet as well as monthly expenditure on airtime and data. The entire application and dispersal process is automated, which reduces the cost of serving and extending credit to these customers. These partnerships have seen some of financial inclusion's biggest success stories, including M-Shwari in Kenya and EcoCash Loans in Zimbabwe. Eligibility for these models is generally based on a required period of savings in a mobile money account and transaction history on the MNO platform, meaning customers have some level of existing financial inclusion.

Branch’s model relies on smartphone data and machine learning, allowing for a holistic view of the applicant and a tailored experience. In smartphone-based, digital, credit-scoring methodologies, data that can be scanned from a smartphone is used to assess the creditworthiness of an individual. This data includes phone make and model, call, text and data usage logs, contents of text messages, phone contacts, location and movement patterns, contents of phone storage, age and social media data. Branch uses over 2,000 data points to make the credit-scoring decision. Answers to questions like the following are used as key indicators for creditworthiness: *“What portion of an applicant’s phone contacts is stored with first and last names?”*, *“Does the applicant have outstanding credit at other financial institutions?”*, *“Are there fraudulent individuals in the applicant’s Facebook network?”* Once the data has been scanned, a machine-learning algorithm automatically and immediately calculates the creditworthiness of the applicant. Smartphone data from new customers is compared with that of previous borrowers to assess the probability of repayment and expected lifetime value, and existing borrowers are rescored each time they apply for a new loan. The machine-learning algorithm continuously learns to improve its ability to assess risk. The use of big data and machine learning allows for Branch to have a detailed view of its customers and for customers to have a personalised engagement and product offering. Branch is indeed reaching many people who have previously been unserved by formal providers. However, it is important to note that Branch is only reaching those people for whom it can collect smartphone data.

To assess an applicant’s creditworthiness, Branch develops indicators based on questions such as: “Does the applicant have outstanding credit at other financial institutions?” and “Are there fraudulent individuals in the applicant’s Facebook network?”

Is this a sustainable model for lending to the underbanked client?

For credit providers that operate in the low-income space, there are two critical components of developing a sustainable model: They must be able to overcome the information asymmetry caused by a lack of traditional data on low-income customers, and they must be able to do so at a low cost.

Branch has a unique set of scalability challenges. Branch has averaged a default rate of ~7%, on a dollar-weighted basis, over the past two years in Kenya. Their machine-learning model constantly learns how to better predict risk as more customers move through the system, contributing to lower default rates with time. It takes ~6 months on average for the algorithm to reach a stable point. The risk assessment model is highly scalable, as the same base machine-learning algorithm can be used in new markets. It will simply learn the appropriate indicators for risk in that new market with time, through exposure to data. It is important to note that while the risk assessment model is highly scalable, the smartphone data that is required for the model is not. Potential barriers to scale are explored further at the end of this section.

Repeat usage is achieved through gamification. The nature of Branch's product creates the perception of a challenge and the sense of achievement when an applicant applies for a loan and unlocks a new, higher loan offer. Customers are focused on constantly unlocking a higher loan limit. This retains customers to the Branch platform and drives sustained usage, which is a criterion for the sustainability of such models. Customers are also drawn to continued usage on the platform as it creates an available option for them, should they need credit in the future.

“

“[I've borrowed] six times. You know, with Branch, the more you take the loans the more you qualify for a bigger loan, so most times I take a loan... because I know it makes me qualify for more.” – MALE, 23

“So for me, what I do so my limit can grow faster: I pay weekly but in full. For example, this one (pointing) I borrowed Tsh 225,000. I was to pay it back in six weeks, but I paid back the full amount the next week.” – FEMALE, 29

”

The Branch model mitigates some of the risks of over-indebtedness for clients with formal products. A criticism towards digital credit products is that in some markets they are leading to a cycle of over-indebtedness and negative credit ratings, sometimes from missing a payment as small as \$2, and therefore decreased welfare for underbanked and low-income individuals⁷. In the Branch model, through the alternative data scanned on an applicant's phone, Branch can assess the applicant's exposure to other formal credit products and in the case of over-exposure not extend credit. However, there is limited insight into informal credit exposure, which is a major part of the market.

Strategic partnerships help to expand customer base and to reach scale.

Through strategic partnerships with other digital platforms, Branch is growing its customer base. Through these partnerships, Branch is working with other data aggregators that have customers with smartphones. They can then use this data in their credit-scoring model and extend credit to the partner's customer base. For example, in Kenya, Branch has partnered with Uber and Jumia. Based on a driver's records on Uber, the driver can access Branch loans of up to Ksh 30,000 (US\$290), which is intended to contribute towards the driver growing his/her business⁸. For Jumia (an e-commerce platform), retailers can similarly use their sales records on the platform to qualify for Branch loans of up to Ksh 30,000 (US\$290), intended to aid in purchasing inventory⁹. Further partnerships are being discussed with other data aggregators, and this could prove to be a highly effective mechanism for expanding Branch's customer base.

What are the potential barriers to scale? There are three potential barriers to scale. Firstly, due to reliance of the model on alternative data, Branch is limited to smartphone users, which limits Branch from reaching a substantial portion of the market in developing countries. However, smartphone ownership is set to increase from 160 million to 540 million between 2015 and 2020, with 55% of all mobile connections in sub-Saharan Africa to be made through these devices by 2020 (GSMA, 2015). Secondly there is uncertainty around forthcoming regulation. Regulators might not know how to best respond and regulate the industry to protect consumers while still fostering innovation. Lastly, as with most start-ups, Branch needs access to reasonably priced local currency debt in markets where it is active or into which it is looking to expand, because they do not have deposits.

⁷ MicroSave study on digital credit found that 2.7 million Kenyans have been negatively listed on CRB over the last three years, 400,000 of whom were listed for an amount less than \$2.

⁸ <https://drive.uber.com/kemarketplace/partner/branch/>

⁹ <http://techmoran.com/mobile-lender-branch-partners-ecommerce-site-jumia-market-loans-small-scale-sellers/>

4. Conclusion

The purpose of this research project was to explore the potential that alternative, data-based, credit-scoring models could have on extending credit to unserved or underserved individuals. To explore this topic, a variety of research methodologies were applied to understand whether these models are including unbanked and underbanked individuals, whether these models meet financial needs and create client value, how they compare with traditional models and whether they are sustainable for lending to underbanked customers.

In summary, Branch is an example of how alternative data can be leveraged to create innovative financial service products and to expand access in developing markets. Branch is reaching some of the previously unserved and underserved. However, it is important to note that barriers to scale with alternative data do exist; and even though some of the concerns over indebtedness have been mitigated, they do still exist. An overview of the key takeaways can be found below, in Box 3.

Box 3. Key takeaways

- 1 For development partners and donors** – Alternative, data-based, digital credit models are promising and could pose to be a scalable and sustainable way to include and create value for the unserved and underserved; however, it requires more time and funding before impact can be explored.
- 2 For FSPs** – Alternative data in client selection poses a mechanism to overcome traditional information asymmetries seen in the low-income credit space.
- 3 For researchers** – A variety of questions around alternative, data-based credit models remain to be explored in the areas of client indebtedness, client trust and client protection and privacy.

Source: Authors' own

Appendix

Qualitative research questions

This appendix provides a brief outline of the semi-structured, one-on-one interviews that were conducted with Branch customers.

Demographic information

For each interviewee, the following table was completed:

Respondent name:	
Classification:	Branch customer/Declined Branch/Friend of Branch customer
Demographic:	
Age	
Gender	
Geographic:	
Rural/urban	
Region	
Socio-economic:	
Marital status	
Family size	
Occupation	
Industry	
Education level	
Financial behaviour:	
Has a bank account	Yes/No
Guestimate of income	

Table 2: Basic information captured for each interviewee

Appendix

Qualitative research questions

Guiding questions

Four broad topics were covered in the interviews. The topics, objective of the topic and example questions are below in Table 3.

Topic	Objective	Example questions
Who are you?	Establish rapport with respondent; obtain information about respondent's demographics and context.	<ul style="list-style-type: none">• Tell me about yourself?• Tell me about your home, your kids, your life.• What are your dreams/ambitions?• How will you go about realising these dreams?
How do you balance your income and expenses?	Introduce the concept of liquidity and resilience (and thus the need for credit) and ask the respondent about financial coping mechanisms used in those instances.	<p>In our other studies, we've seen that sometimes people have less income than what they need to spend. And sometimes, something big goes wrong and people need a lot more money than they've earned at that moment.</p> <ul style="list-style-type: none">• Do you sometimes experience this?• In which instances do you experience this? (What goes wrong?)• What do you do when this happens? <p><i>Interviewers probed in detail about various financial tools used and the reasons for using them.</i></p>
The credit landscape in Tanzania	Plot the competitive landscape of credit providers (terms and conditions, perceived target market, perceived advantages and disadvantages)	<ul style="list-style-type: none">• You mentioned a few ways in which people can get more money when they need it. Are there any others? <p>Tell me about these options:</p> <ul style="list-style-type: none">• How much can you borrow?• Are there certain terms and conditions?• What is the interest rate like?• What happens when you cannot pay back, or when you miss, a payment?• Who are the clients?• What are the advantages and disadvantages?• In which instances would people use the different options?
Experience with Branch	Explore awareness of, exposure to and attitudes towards Branch.	<ul style="list-style-type: none">• How did you first hear about Branch? What was your initial reaction?• Why did you decide to apply for a Branch loan?• What amount did you first borrow?• How did you experience the loan process?• What have you used your Branch loans for?• Do you plan to continue using Branch in the future? Why?

Table 3: Conversation topics and example questions

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