

FinTech as a Means to Alleviate Poverty in Colombia

From Microfinance to FinTech enabled Financial Inclusion

The author holds a M.A. in Accounting & Finance from the University of St. Gallen. The article represents an executive summary of his master thesis "FinTech as a Means to Alleviate Poverty in Colombia: From Microfinance to FinTech enabled Financial Inclusion".

by
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FinTech is the number one buzzword in the financial services industry of the 21st century. Crowdfunding in the lending sector, Robo-Advisors in wealth management or Cryptocurrencies in the international monetary system are innovating traditional industries by leveraging the benefits of technological advancements. But does FinTech also take hold at the bottom of the pyramid and innovate financial services for the poor and unbanked? The following analysis takes a closer look at this questions in the context of Colombia and tries to trace positive impacts on poverty alleviation.

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The author holds a M.A. in Accounting & Finance from the University of St. Gallen. The article represents an executive summary of his master thesis “FinTech as a Means to Alleviate Poverty in Colombia: From Microfinance to FinTech enabled Financial Inclusion”. Insights are based on interviews with various industry representatives, ranging from FinTech start-ups to banks and microfinance institutions. Special assistance came from Juan E. Saldarriaga, President of FinTech Colombia, Kai Buhofer, Founding Partner of Andes Horizon Capital as well as Angélica Rotondaro, Director of the HSG Hub in Sao Pãulo.

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■ From Microfinance to FinTech

High monitoring costs, low and volatile volumes as well as a lack of credit histories are just to name a few reasons why the poor have been widely neglected by the big banks. Microfinance has long been the unique financial service provided to them. Through the provision of productive microloans, it aims to promote entrepreneurship and self-employment among the poor. Originally the idea of a Bangladeshi economist, who believed he had found an innovative way to resolve poverty in his home town, the concept soon became popular. By the late 1980s, the international development community had widely accepted the microfinance practice. Subsidy-free models were introduced and soon, self-sustainability became the officially accepted norm for a large part of microfinance institutions (MFI). The same can be traced in Colombia. Mainly supported through US government bodies and NGOs, microfinance came to Colombia in the early 1980s and by the 1990s, Colombia already had a reasonably well-developed microfinance sector. With new regulations favoring the expansion of microfinance and allowing for quite high interest rates, international lenders made further funding for NGO-operated MFIs conditional on self-sustainability. Over the last 10 years, this led to the privatization and transformation of all large Colombian MFIs into commercial banks.

Today, microfinance represents a 3.5 billion dollar industry in Colombia, having grown on average 30 percent annually for the past 15 years. Despite its significant growth, direct impacts on poverty reduction are still largely unresearched. While academic studies found it to promote microenterprise expansion in the form of increased business activities or investments, impacts on the well-being of microentrepreneurs remain unstudied in Colombia. Renown academic institutions, such as the MIT, first published reliable impact studies in 2009, when they used randomized samples that could reasonably rule out statistical errors such as reverse causation¹. Triggering a widely positive reception in the academic world, these studies all questioned the popular perception of microloans as an effective tool against poverty. In fact, the studies also found impacts on enterprise expansion, while impacts on well-being, measured as levels of consumption or income, were insignificant or ambiguous at best. It seems that the idea to make microentrepreneurs out of poor individuals is fundamentally flawed. Studies show that credits are mainly used for expansion of simple trading or manufacturing activities. This means that microbusinesses are generally not made more profitable, employment is not created and overall, microentrepreneurs remain kept in subsistence

¹ That is, “if people who use microcredit are better off, perhaps that is not because the microcredit helped them but because being more affluent made them more able to borrow” in Roodman, D. (2013). Armageddon or Adolescence? Making

Sense of Microfinance’s Recent Travails. In “*Microfinance 3.0 – Reconciling Sustainability with Social Outreach and Responsible Delivery*”. Heidelberg: Springer.

activities. Furthermore, there is evidence that microcredits even lead to an inflation of the small business segment and drive down prices.

To leverage their full potential, this article argues that financial services need to divide the perspective into individuals and companies. This is where digitalization comes into play. While microfinance only provides productive loans, digitalization enables holistic offerings ranging from mobile bank accounts to loan services and much more. On the other hand, there is significant evidence that financial services should rather focus on SMEs than individual entrepreneurship. The Inter-American Development Bank (IDB) claims chronic low productivity to be one of the main reasons for Latin America's persisting high levels of poverty and find that too many resources had been allocated to too many small low-productivity companies, and a dearth of middle-level and high-productivity firms². In fact, micro, small and medium-enterprises (MSME) account for over 99 percent of Colombian enterprises, but only for 28 percent of GDP. Their productivity is so low because almost 90 percent of MSMEs represent microenterprises³. Colombian SMEs did historically not have easy access to liquidity and credit, because their risk-profit profile is unattractive for traditional banks – in 2015, not even 8 percent of SMEs had access to commercial credit and less than 3 percent to credit cards⁴. Digital business models are rapidly changing this situation.

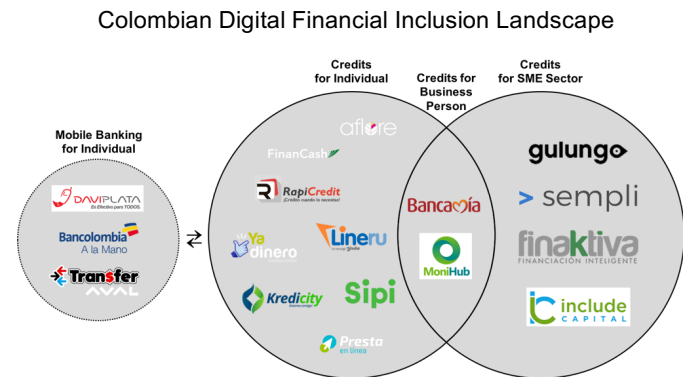
Based on these insights, there need to be tackled two interdependent questions. First, does FinTech aim at financially including poor individuals and the SME sector in Colombia? Second, what are its direct impacts on poverty alleviation?

■ Does FinTech financially include poor individuals and the SME sector in Colombia?

Digitalization enabled the emergence of different financial services targeted at Colombians with low incomes. The left part of the figure beside depicts these services.

RapiCredit, Lineru and the likes in this cluster represent FinTech start-ups offering short term liquidity loans. They all feature simple and fully online application processes (web and mobile). The loans are typically between 5 to 30 days to maturity, within the range of 50 to 300 dollars and disbursement is within less than 24 hours. While not contingent on a specific purpose, they are most often used to bridge unexpected shortfalls of

liquidity in emergency situations or to pay debt or school expenditures. When applying for a loan, the client only needs a bank account, telephone number and an e-mail address. The bank account is key not only because it



Note: Own illustration, in dependency on FinTech Radar (Oct. 2016) of Colombia FinTech.

makes disbursement save and easy, it also decreases fraud risk since banks require official documents for account opening. However, the vast majority of the poor lack access to formal bank accounts and the ones that do will most likely get turned down because of low income. As a result, short term credits are accessible only to Colombia's middle classes, while the bottom of the pyramid is left out.

Moving on, DaviPlata is the mobile banking solution of the bank Davivienda. It was introduced in 2011 and represents Colombia's first and largest provider of mobile bank accounts. Mobile accounts allow the poor to save, make transactions, airtime top-ups and more and is completely free of costs. As the underlying technology is located on the SIM card, every operation can be done via text message and the service works on literally every mobile phone.

i DaviPlata – How does it work?

To open an account, the client simply provides his full name and date and place of ID issuance via an application on the SIM card. DaviPlata has an agreement with all mobile network operators which enables it to include the application in every Colombian SIM card. Every operation is executed via text message, which means the user only has to know the mobile phone number of the counterpart in order to make a transaction. Consignments (cash to mobile money) can be made at correspondent banks (CB), which are small businesses (e.g. shops) located in remote areas providing basic financial services on behalf of Davivienda, or regular bank branches. Withdrawals (mobile money to cash) can also be done at Davivienda ATMs through one-time passwords.

² Inter-American Development Bank (IDB) (2010). *The Age of Productivity: Transforming Economies from the Bottom Up*. Washington DC: IDB.

³ Registro Único Empresarial (RUES) (2016). Trimestre-I 2016, Indicadores Nacionales.

⁴ CIFIN (2015). Acceso a créditos comerciales: PYMES.

Even though the service works as promised, a number of reasons hindered the broader diffusion of mobile banking in Colombia. As mentioned, the largest service is free of costs for users. To still ensure self-sustainability, DaviPlata decided to aim its service at the government, which could use it for executing subsidy payments, and companies, which could carry out payrolls. Obviously, these transactions yield commissions. In just two years after DaviPlata started operation, a significant part of payments for one of Colombia's largest subsidy programs was already executed via DaviPlata. On the other hand, DaviPlata also constantly strived to on-board companies which would pay wages on the accounts. The result is that the service has exclusively been promoted as a mechanism for access to cash. This is why the average amount of mobile transactions grew from 10 dollars in 2011, when DaviPlata was first introduced, to 31 dollars in 2015, when it had already taken over large-scale payment contracts⁵. Because after having received money from an institution, it is quickly converted into cash, the number of inactive mobile accounts has been constantly increasing, reaching almost 50 percent⁶. Other mobile banking services never took off (e.g. the second largest competitor has five times less users than DaviPlata), since they require fees and lack large-scale subsidy programs. On top of all, it seems that a general lack of trust in financial products and related to it, very low levels of financial literacy equally hindered adoption of mobile banking in Colombia. The outcome is that only between 2.2 to 10 percent of Colombians used mobile accounts in 2015⁷.

Looking at the right side of the figure, FinTech services for financial inclusion of SMEs are depicted. While competitors have a slightly different focus, they all want to increase credit accessibility for SMEs and bring down disbursement times and bureaucratic hurdles, with which SMEs are still confronted at traditional banks. As SMEs have limited possibilities to portray their true financial situation and lack assets adequate for collateralization, FinTech start-ups try to amend traditional credit models. For instance, some competitors put a strong focus on cash flows and cash projections, while they completely reject balance sheets and past financials. Others also try to expand the spectrum of input factors for the credit assessment. The idea is to expand financial data with non-traditional qualitative inputs. As the start-ups are all still in an early stage, they are quite reserved with disclosing such critical information. Nevertheless, potential inputs range from psychometric analyses to digital footprints and APIs to client-specific software. To further speed-up

disbursal times and make application processes simpler, automation is key. Some competitors state that they have already fully automated credit assessments, while others admit they still heavily rely on risk officers. In fact, credit bureau, social security and tax payment checks can easily be done automatic, since responsible institutions in Colombia have already implemented online queries. Some competitors go a step further and even pull out financial information directly from the clients' bank accounts with the help of a dedicated software. This means the client does no longer need to upload PDF files, which are cumbersome to process, as software-generated presentations of transactions allow to automatically render cash projections.

Overall, FinTech start-ups leverage technological advancements in order to increase financial inclusion among Colombian SMEs. They make application processes simpler and bring down disbursal times. While an average bank takes 10 to 12 weeks from the loan application to disbursal, FinTechs bring this number down to 48 hours. However, FinTechs are still in a very early stage (e.g. only one competitor started operation until August 2017), thus their reach is still quite limited.

Lastly, looking at the interception area in the figure, these are the only FinTech approaches which focus on the microentrepreneur ("business person"). MoniHub is a spin-off from a large MFI in Cali (Fundafast), which has developed an automated online lending software for microcredits and microinsurance. While their original intention was to create a platform where investors could find microentrepreneurs as an investment opportunity, it seems that today, MoniHub intends to commercialize its software. It should allow MFIs to administer loans more efficiently while also helping disburse and manage loans with more flexible conditions. When it comes to traditional MFIs, they also start digitizing their processes. The forerunner is Bancamia, the largest commercial MFI in Colombia. In 2015, they launched their mobile banking solution which allows its clients to check balances and movements and the date and amount of their next repayment installment. In the same year, they also launched a technical solution used by their executives that make on-site visits to rural clients. With the help of tablets, this tool enables the officer to record income and expenses and to analyze farming credit transactions quickly on site. The system then generates an amortization plan with flexible payments suited to the flow of the clients' income. The mobile banking application goes hand in hand, as it helps the farmer keeping track of the date and amount of the next

⁵ Bancoldex (2016). Financial Inclusion Report 2015, p. 69-70; 72.

⁶ Bancoldex (2016). Financial Inclusion Report 2015, p. 96.

⁷ 2.2% from World Bank: World Bank (2014). Global Findex Data: Colombia. 10% from domestic report: Bancoldex (2016). Financial Inclusion Report 2015, p. 45.

installment and allows to execute payments digitally. What is more, the application also allows to save, purchase air-time and make peer transactions, but as MFIs still strongly focus on lending products, these operations are not expected to become very popular.

To conclude, the vast majority of FinTech approaches make a separation between individual and company, thereby getting away from microentrepreneurship and self-employment, to promote broader financial inclusion. However, while a number of reasons hindered the diffusion of mobile banking among Colombia's poor, liquidity services are designed just for the middle classes. On the other hand, financial services for SME inclusion seem very promising, but as they are only beginning to start operation, their reach is still limited.

■ What is the impact of FinTech on poverty alleviation in Colombia?

So far, no studies about the impacts of digital financial services on well-being and poverty alleviation are available in Colombia. Therefore, it is appropriate to look at the benchmark in Southeast Africa, where a number of impact studies have already been conducted. Social impacts of mobile banking have been identified to mainly come from mobile remittances at low transaction costs and to some extent, from liquidity credits provided through these mobile bank accounts. M-PESA is the predominant mobile banking solution in Kenya, enabling users to send and receive money via mobile text messages at very low transaction costs. This has been investigated to generate various positive impacts on the poor population. Mobile remittances received from a social network of family, friends and sometimes even strangers, achieve to decrease vulnerability in emergency situations. As money is sent via text message, spatial and temporal restrictions are overcome and recipients can immediately use remittances for shortfalls of liquidity or other emergencies like sudden illnesses. Further, mobile money's low transaction fees were also found to increase household incomes, as costs of cash are really high. Cash transfer services are not exhaustive and expensive and bus and taxi drivers usually charge large fees. There is even evidence that mobile banking promotes more business oriented activities among smallholder farmers. Mobile money users were found to sell a larger proportion of their harvest as processed goods to buyers in high-value markets, instead of selling to local traders immediately after harvest. This is because mobile money lowers cash restrictions and

enables digital transactions with merchants from outside local markets.

Looking at Colombia, a number of business-, and culture-related reasons hindered greater adoption of mobile banking (cf. above). It is used by the minority of the poor population and the number of inactive mobile accounts is almost 50 percent and increasing. Further, it was shown that mobile banking is predominantly used as a mechanism for access to cash. Government subsidy programs and company payrolls make up the bulk of mobile transactions, which are usually immediately converted into cash. Therefore, the discussed impacts from Southeast Africa, which were identified to mainly stem from mobile remittances, are likely to be much less pronounced in Colombia. Since DaviPlata introduced mobile banking in 2011, it has been drastically expanding and financially including a growing number of the poor. However, it mainly achieves at connecting them to the formal sector, while direct impacts on well-being remain limited.

Looking at liquidity credits, providers like RapiCredit and Lineru help the Colombian middle class shift borrowing from the informal lending sector. In fact, credit depth is only high for the upper class, thus Colombia still features an extensive informal lending market. For instance, in Colombia emerged the so called "gota a gota" loans, which are informal credits usually given by illegal underground organizations. These credits are dangerous as debtors are often violently put under pressure to repay. According to the Concejo de Medellín, average monthly interest rates are about 20 percent and in Medellín alone, it is estimated that 126 million dollars are generated annually by this loan system⁸. According to the World Bank, 16 percent of Colombians borrowed from family and friends in 2015, and 8 percent from private informal lenders⁹. While FinTech start-ups formalize the provision of immediate liquidity, they also help their clients build a reliable credit history which enables them to borrow at an incumbent financial institution in the future. This might be interesting because online lenders do not disburse beyond 300 dollars and are quite expensive. In fact, depending on maturity and amount, the average cost of an online loan is equivalent to or even higher than the average 20 percent monthly rate of a "gota a gota" loan. However, online lenders have to manage and develop their platform, come up for credit losses, pay taxes and charge 19 percent IVA in Colombia. In contrast, informal lenders do not pay taxes and neither do they come up for losses because clients are forced to repay, if necessary also violently. The issue with online lenders

⁸ El Tiempo (2016). La millonaria cifra que deja el 'pagadiario' en Medellín.

(<http://www.eltiempo.com/archivo/documento/CMS-16638677>)

⁹ World Bank (2014). Global Findex Data: Colombia.

is that they do not serve the poor, but exclusively focus on the middle class.

Probably the only realistic way to offer short term liquidity to the poor is through mobile banking, because past balances and transactions can serve as input factors for the credit assessment. Based on this insight, M-PESA in Kenya launched liquidity credits around five years after its introduction in 2007. M-Shwari is a combined savings and loan product linked to M-PESA. All deposits and withdrawals into and out of M-Shwari are free, but must come from the M-PESA account. In contrast to M-PESA, balances on M-Shwari get interest between 2 to 5 percent. Once a client has opened an M-Shwari account, the credit limit can be checked. A credit can be requested via text message up to the credit limit and if it is approved, the client receives the funds directly into the M-PESA account and is informed that a 7.5 percent facilitation fee is to be paid when the loan comes due by day 30. The credit-scoring algorithm consists of a set of telecommunication variables related to airtime (amount and frequency of top-ups, airtime credits etc.), M-PESA usage (amount and frequency of transactions, average balance etc.) and length of time as a customer. Over time, actual customer behavior on M-Shwari also flows into the credit model (e.g. average savings balance, repayment history). Eventually, interest rates are much lower than of online lenders, because usage data achieves to portray the financial behavior of the applicant. To conclude, liquidity loans for the poor are dependent on a holistic mobile banking service, which achieves to depict actual financial behavior of a poor individual.

In Colombia, similar to M-Shwari, DaviPlata is going to offer its users access to emergency liquidity by the end of this year. This might trigger some positive impacts on its usage. Since DaviPlata relies on data generated through the usage of the service, they are required to promote it for other operations than merely access to cash. On the one hand, users are also incentivized to keep money in the platform, because high average balances positively influence credit assessments. Overall, the utilization intensity of mobile banking might increase and liquidity loans will also help a number of poor Colombians in emergency situations, but they are unlikely to change the overall picture. Mobile banking in Colombia is simply not enough diffused in order to have large-scale impacts.

Maybe digital banking represents Colombia's new hope for financial inclusion. Already 40.2 percent of Colombians were using smartphones in 2016 and this figure is expected to increase to over 50 percent by

2019¹⁰. Without SIM cards and mobile network operator integration restrictions, digital applications can develop and diffuse much quicker than mobile banking. A first approach comes from Bancolombia with Nequi, their digital banking application. Nequi offers similar functionality like mobile banking. That is, P2P transactions, savings, consignments and withdrawals in branches and ATMs and increasingly also payments. However, it focuses on the younger generation of Colombians (with smartphones and data plans) and is marketed in a completely different way. Less than a "financial enabler" for the unbanked, Nequi is promoted as an ecosystem, linking users not only to other users but to various Points of Sale, such as food corners and shops in universities or shopping malls. As the account is virtual and completely free of costs for users, Nequi should represent an alternative to regular bank accounts and encourage confidence among the many Colombians which lack trust in banks. Nequi is still in an early stage and the poor do not yet have access to smartphones and data plans, but a digital financial ecosystem nevertheless exhibits enormous potential for financial inclusion. Mobile banking was specifically designed for the poor, but with the appearance of digital banking, a financial ecosystem is going to develop which is inclusive for everyone and might eventually even make traditional banking products redundant. The abundance of data generated by such a system not only paves the way to cheap emergency liquidity, such as the example of Kenya has demonstrated (cf. M-Shwari above), it enables other services like insurance products and much more, which can be specifically tailored to the poor's needs.

Lastly, turning to digital approaches for the SME sector, direct impacts on the Colombian society are very hard to predict, as FinTech companies are still in an early stage. However, SME sector data suggests that they point towards the right direction. While MSMEs account for over 99 percent of Colombian enterprises, they only account for 28 percent of GDP, thus their productivity is really low. This is because almost 90 percent of MSMEs represent microenterprises. In this regard, the IDB finds that too many resources had been allocated to too many small low-productivity companies, and a dearth of middle-level and high-productivity firms. By channeling resources into at least middle-level productivity SMEs, it can be argued that FinTech companies not only spur job creation, but help the country increase worker productivity. ■

¹⁰ eMarketer (2016). eMarketer Report: Mobile Colombia 2016, Updated Forecasts and Key Growth Trends.