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**FinTech in Developing Countries: Charting New Customer Journeys**

Ross P. Buckley, Sarah Webster

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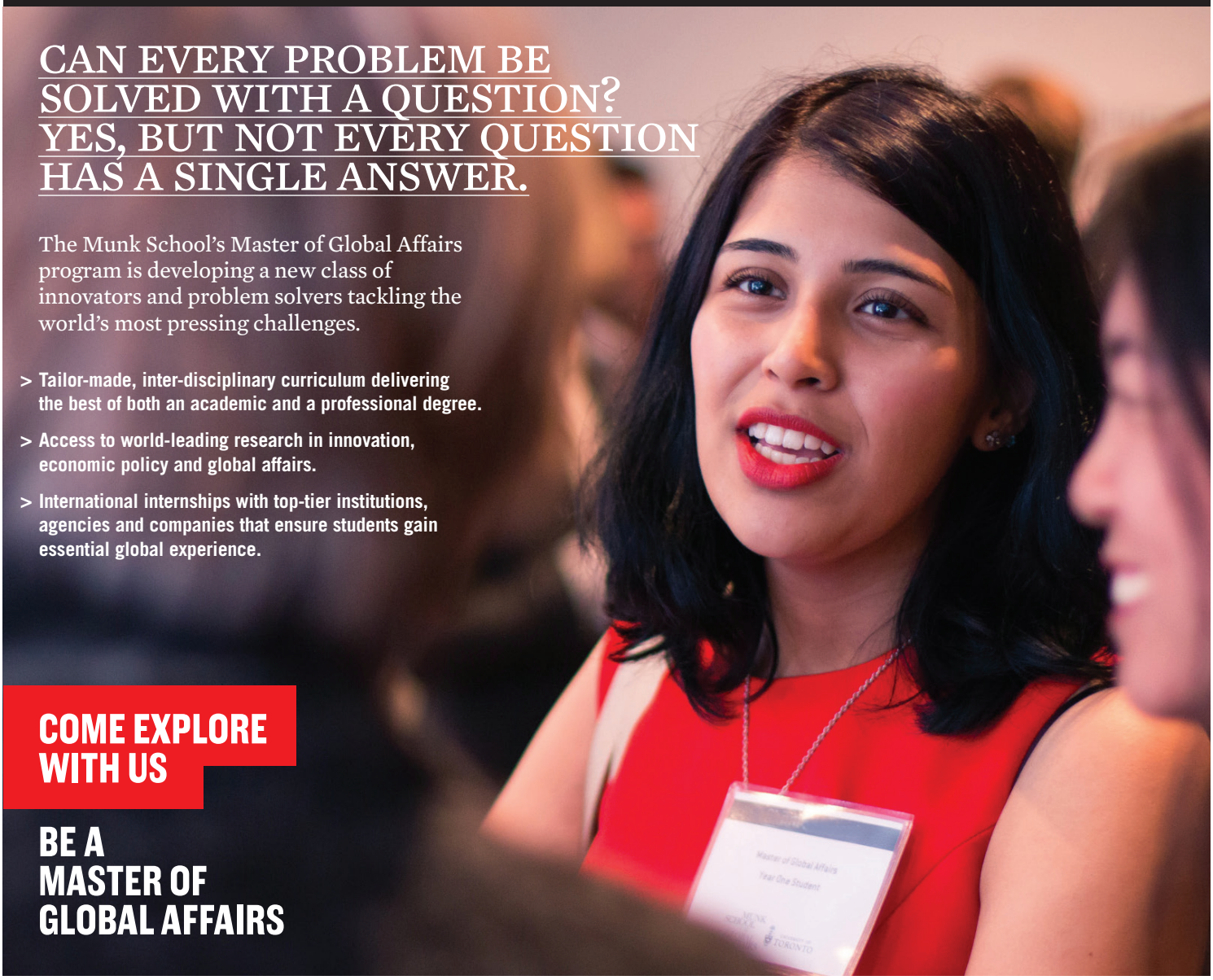

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# Financial Technology

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# FinTech in Developing Countries: Charting New Customer Journeys

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**Abstract**

A customer's journey is the path the customer travels to satisfy their needs and wants and will typically consist of several separate processes. FinTech product and service developers in advanced economies often understand how difficult many customers find their journey with banks and have been able the make the journey more pleasant and seamless. They are aided in this by their personal similarities to their customers in terms of background, education, and technological literacy. However, these similarities do not exist when products and services are being designed for customers in developing countries. In these markets, product designers need to rely on an evidence-based assessment of customer needs and wants, which will usually have to be specially commissioned, coupled, ideally, with visiting local villages and speaking to the local people who will be the potential customers for the products and services. The failure to appreciate the nuances of local customer journeys underlies many of the FinTech failures in the developing world.

1 The authors gratefully acknowledge the financial support of the Australian Research Council Linkage Grant Scheme (Regulating a revolution: a new regulatory model for digital finance), and the research assistance of Jessica Chapman. All responsibility remains with the authors.

## INTRODUCTION

Since the 1990s, customer relationship management (CRM) has been increasingly integrated into businesses worldwide. CRM has at its heart a sense of cross-functionality. It is a multifaceted organizational process of value creation,[2] aimed at developing and strengthening relationships with customers.[3] While many firms have implemented CRM systems, there is a mounting pile of literature indicating they now need to become acquainted with the concept of the customer journey or "experience."[4] The growing need to adopt a journey mindset is particularly apparent in the financial services sector, where CRM strategies adopted by established financial institutions have fallen short of embracing the customer journey. FinTech firms have stepped into this breach, by leveraging their understanding of the customer journey and providing superior, streamlined experiences. However, their efforts have largely focused on the journey of customers in the developed world. Most FinTech firms are yet to comprehend fully the markedly different journey faced by customers in developing economies. This matters for two reasons: first, there is real potential for FinTech firms to drive financial inclusion in developing economies and secondly, pioneering firms have demonstrated it can be a profitable enterprise. This chapter will accordingly seek to explore how FinTech firms have harnessed the concept of the customer journey and the scalability of existing strategies moving into the future, and out of the developed world.

## CANVASSING THE CUSTOMER JOURNEY

It has been suggested that CRM aims to enhance "customer satisfaction before, during, and after a particular sale or service'[5] and that the technology supporting CRM has "moved toward covering the entire customer journey."[6] Whether this is the case demands greater scrutiny. Arguably, in the financial services sector, existing CRM strategies have failed in at least one of two ways: either they have failed to grasp adequately the distinction between a journey and a process;[7] or they have failed to reflect tangibly that understanding in the way they do business.

The first failure can result from an inadequate understanding of the customer journey. Similar to CRM, the notion of the customer journey has been subjected to various iterations.[8] As Zomerdijk and Voss explain, the customer experience can be conceptualized as the amalgamation of a series of "cues" that customers perceive throughout the pre-purchase, purchase, and post-purchase stages, and that can also flow on to new transactions.[9] In other words, such sensations can have a cumulative effect, influencing customers' subsequent interactions with the business. The customer embarks on a sensory experience, comprised of physiological, cognitive, and emotional responses, and accordingly such cues are heavily influenced by the surrounding physical environment. Regelman et al., explain the concept of the customer journey by contrasting the "journey" mindset with the "process" mindset.[10] Processes, such as credit review or loan approval, are to be distinguished from journeys, which are the paths customers take to satisfy their needs and wants. In this sense the customer journey may be comprised of several separate processes. Regelman et al. go on to explain: "Journeys embrace the full suite of interactions for a given activity and work to make the entire end-to-end chain streamlined, efficient, consistent, and personalized from the vantage point of the consumer."

The customer experience or journey is holistic and includes all of a customer's interactions with a product or service and,[11] importantly, is to be viewed from the subjective perspective of the customer as opposed to the company.[12]

In the wake of the digital revolution the customer journey has changed. For this reason, traditional marketing models have been criticized for failing to reflect the complexities of the modern customer experience.[13] The purchase funnel model, for instance,

2 Kotarba, M., 2016, "New factors inducing changes in the retail banking customer relationship management (CRM) and their exploration by the FinTech industry," 8 Foundations of Management 69, 70.
3 Wang, Y., and H. Feng, 2012, "Customer relationship management capabilities: measurement, antecedents and consequences," (50)1 Management Decision 115, 117.
4 For the purposes of this article, the terms "experience" and "journey" will be used interchangeably. See, e.g., Gentile, C., N. Spiller, and G. Noci, 2007, "How to sustain the customer experience: an overview of experience components that co-create value with the customer," (25)5 European Management Journal 395; Regelman, R., D. Hayes, O. Morbe, J. Lingel, and M. Reshef, 2016, "How digitized customer journeys can help banks win hearts, minds and profits," BCG Perspectives, June 2, http://on.bcg.com/1UjfPL8; Klaus, P., 2014, "Towards practical relevance - delivering superior firm performance through digital customer experience strategies," 15(4) Journal of Direct, Data and Digital Marketing Practice 306; Teixeira, J., L. Patrício, N. J. Nunes, L. Nóbrega, R. P. Fisk, and L. Constantine, 2012, "Customer experience modeling: from customer experience to service design," 23(3) Journal of Service Management 362.
5 Kincaid, J. W., 2002, Customer relationship management: getting it right!, Prentice-Hall, cited in Vella, J., and A. Caruana, 2012, "Encouraging CRM systems usage: a study among bank managers," 35(2) Management Research Review 121, 122.
6 Kotarba (2016), 69, 72.
7 Regelman et al. (2016).
8 For a useful summary of the various definitions of customer experience, see Garg, R., and Z. Rahman, 2014, "Measuring customer experience in banks: scale development and validation," (2014) 9(1) Journal of Modelling in Management 87, 89.
9 Zomerdijk, L. G., and C. A. Voss, 2010, "Service design for experience-centric services," 13(1) Journal of Service Research 67, 68.
10 Regelman et al. (2016).
11 See Harris, R., K. Harris, and S. Baron, 2003, "Theatrical service experiences dramatic script development with employees," 14(2) International Journal of Service Industry Management 84.
12 See Meyer, C., and A. Schwager, 2007, "Understanding customer experience," (85) Harvard Business Review 117, 118.
13 See, e.g., Court, D., D. Elzinga, S. Mulder, and O. Jørgen Vetvik, 2009, "The consumer decision journey," McKinsey Quarterly, June, http://bit.ly/20WHo5X.

conceived the customer journey as being segmented into a series of stages: namely awareness, opinion, consideration, preference, and purchase.[14] Its name derives from a metaphor for the process by which customers start by considering a variety of potential brands and filter those down to the one final brand they purchase. However, today's digital reality brings with it greater information richness:[15] customers now have access to unprecedented information by which they can research and compare products. This has significantly changed customer purchasing behavior, by exposing customers to more touchpoints and challenging the linearity of the purchase funnel process.[16] Russell Wager,[17] speaking with regard to the U.S. automobile industry, noted that the model is now more akin to a "funnel cake, where everything is twisting, turning, and inside out."[18] In the midst of all this change, it is clear that the modern customer experience remains a fertile ground for research.[19] One particular area of interest, which we seek to explore, is the changing treatment of the customer experience in the financial services sector.

## THE FINTECH REVOLUTION

The FinTech phenomenon is the delivery of financial products and services via the marriage of technological platforms and innovative business models.[20] With its origins often traced to Silicon Valley, FinTech has expanded its reach to New York, London, Singapore, Hong Kong, and most global cities. The FinTech 100 – a list enumerating the top 50 established FinTech companies and 50 most promising startups – has been established to celebrate this success.[21] According to the FinTech 100, success stories include the likes of: ZhongAn (a joint venture between Alibaba Group Holding, Tencent Holdings, and Ping An Insurance, which harnesses big data to provide online property insurance); Wealthfront (which delivers affordable but sophisticated investment management services); and Kreditech (which provides tailored financial services with a particular focus on access to credit, or as Kreditech calls it, "financial freedom for the underbanked").[22]

FinTech continues to grow globally. According to one survey, a weighted average of 15.5% of digitally active customers across six markets had used more than one FinTech product. In Hong Kong, the take-up was found to be significantly higher than average, with almost a third of digitally active customers using FinTech.[23] In the urban centers of highly developed nations, FinTech is building a momentum that has the capacity to disrupt the banking sector significantly. As it stands, small pockets of traditional banking are being penetrated by leaner, nimbler firms honing in on a limited set of superior online offerings with a "laser-like specific customer proposition."[24] According to a recent report by KPMG, 39% of executives polled consider FinTech to "pose a significant threat to the industry."[25]

FinTech services often provide greater ease of access, more attractive interest rates or lower fees, and "better online experience and functionality."[26] The focus of many FinTech firms on a select number of offerings mean they are better able to streamline business processes, allowing customers to satisfy their financial needs and wants predominantly, if not solely, through user-friendly online channels. When it comes to taking out a loan for instance, FinTech firms have a lot to offer customers who, perhaps due to low credit scores or geographical barriers, face difficulties accessing traditional sources of credit.

Consider, for example, Avant.com, which allows customers to take out an unsecured, personal loan and customize their payment plan online;[27] or Prosper, the first company to establish a peer-to-peer lending marketplace in the U.S.[28] Prosper has worked to increase individuals' willingness to invest in their peers by pooling funds and enabling investors to reduce their exposure by lending as little as U.S.$25. An individual seeking a loan can check their rate online, review and select from options, receive funds (once individual investors have agreed to fund their loan), and track their credit balance using the mobile application, Prosper Daily. Prosper loans are unsecured and online processes of credit review are based on credit history. By combining the concept of crowdfunding with the ease of online accessibility, Prosper has provided greater access to funds as well as opportunities for individual investors. It is a FinTech company weaving a series of processes into one coherent customer journey by staging customer interactions with the service on a digital platform.

14 Humphreys, A., 2015, Social media: enduring principles, Oxford University Press, 193.
15 Yen, Y.S., 2014, "The interaction effect on customer purchase intention in e-commerce," 26(3) Asia Pacific Journal of Marketing and Logistics 472, 475.
16 Bonchek, M., and C. France, 2014, "Marketing can no longer rely on the funnel," Harvard Business Review, May 7.
17 Marketing Vice President for Mazda's North American Operations.
18 Rechtin, M., 2014, "Marketers: auto purchase funnel is dead," 88(6621) Automative News 12.
19 Teixeria et al. (2012), 362, 363.
20 Chuen, D. L. K., and E. G. S. Teo, 2015, "Emergence of FinTech and the LASIC principles," 2, http://bit.ly/2dwKnwG.
21 H2 Ventures, 2016, "Leading global FinTech innovators 2015, FinTech 100, http://bit.ly/1sRaM7K
22 Kreditech Holding SSL GmbH, 2016, Kreditech, https://www.kreditech.com/.
23 Gulamhuseinwala, I., T. Bull, and S. Lewis, 2015, "FinTech is gaining traction and young, high-income users are the early adopters," 3(3) Journal of Financial Perspectives 16, 19.
24 Gulamhuseinwala et al. (2015), 16, 18.
25 KPMG, 2016, "Banks focus on digital platforms to enhance customer experience and keep pace with FinTech leaders," May 4, http://bit.ly/2d2PaHf.
26 Gulamhuseinwala et al. (2015), 16, 20.
27 Avant, 2016, "Personal loans," http://bit.ly/2dse1ov.
28 Prosper, 2016, "Borrow," https://www.prosper.com/.

In contrast, traditional banks have exhibited a tendency to digitize business processes piecemeal. While one process may be able to be completed online, the journey the customer takes to meet their specific need frequently traverses a series of processes, some online, some offline.[29] At the end of the day, the customer may still need to visit a physical branch and provide online and offline data to the "system." Perhaps the glacial pace at which banks have streamlined their processes is attributable to the considerable cultural shift that the move to digital represents. As Kotarba says, "[t]he traditional service of a financial institution in the 20th century was heavily based on personal interactions of advisors...and clients, primarily in the physical channels."[30] The familiar sight of complimentary mints in front of a smiling teller serves as a reminder that to some extent, the traditional notion that personal service is the best service may still linger. One would expect, however, that in an increasingly competitive landscape, the impact that enhancing the customer experience can have on the bottom line will catalyze the streamlining of processes into consistent customer journeys. Indeed, the pressure on banks to enhance the customer experience by integrating FinTech solutions is reflected in a recent KPMG report: of the executives polled, 51% indicated their bank had formed some kind of alliance with lenders operating in the peer-to-peer marketplace.[31]

### The FinTech developer and customer profile: a mirror mage?

The Economist has attributed the success of FinTech to the "magical combination of geeks in T-shirts and venture capital."[32] This gives rise to a few questions. In particular, who are these "geeks" and has their background (as opposed to their fashion sense) impacted the products they create? A brief search reveals that the majority of the founders of FinTech start-ups share some characteristics. Ilya Kondrashov is a former Goldman Sachs analyst who graduated with a Bachelors in Economics degree from the University of Cambridge only four years before becoming the Chief Operating Officer at MarketInvoice. His co-founder, Anil Stocker, has the same degree (plus honors) and a finance-heavy background in private equity. James Dear, co-founder of iwoca, graduated with a PhD in stochastic calculus and theoretical physics from King's College London and worked at Deutsche Bank. Renaud Laplanche, founder and former CEO of LendingClub Corp. has (inter alia) a postgraduate degree in Tax and Corporate Law from Université de Montpellier, and an MBA from London Business School with work experience at Oracle Corporation. Nick Hungerford started his career at Barclays before graduating with an MBA from Stanford University and founding Nutmeg, a start-up in investment management services. So the list continues. The resumes of FinTech founders consistently bear degrees from some of the world's most prestigious universities and stints at leading financial services (or technology) institutions. This admittedly small sample suggests that FinTech is often developed by urban, well-educated and financially literate people of means.

Are these characteristics then a prerequisite for customers to effectively use FinTech products? It is tempting to hypothesize that the language of FinTech is only spoken by people with a base level of material wealth capable of supporting an education and familiarity with technology. A recent study sheds light on this issue.[33] FinTech use does indeed appear skewed towards "younger, higher-income groups," with higher use reported among respondents below 44 years of age, and below-average use by respondents aged over 44 years.[34] Only 6% of respondents earning less than U.S.$30,000 had used at least two FinTech products, whereas, among those earning more than U.S.$150,000, 44% were FinTech users. Urban dwellers were also far more likely to use these products and services, especially in New York where individuals were "twice as likely to take advantage" of FinTech. In summary, this study has been interpreted to confirm that "the stereotype of FinTech users being young, urban and higher-income would be on target."[35]

It seems that FinTech solutions have largely been targeted at customers who are like the developers themselves: living a tech-savvy, metropolitan existence with an above average income. Yet when it comes to the potential criteria of education and financial literacy, the answer is murkier, and reliable data is scarce. While financial literacy has been shown to be associated with higher incomes and levels of education,[36] financial literacy worldwide is surprisingly low. While several Nordic countries lead with scores of 71% in Standard & Poor's Global Financial Literacy Survey,[37] countries in which FinTech use is high are unremarkable in this respect. The U.K. ranks 6th with a score of 67%; Australia ranks 9th with 64%; Singapore (another FinTech centre)[38] is 12th on 59%; and the U.S. is 14th with 57%. And while FinTech may target the financially literate, it may also have a role to play in improving financial literacy. In a joint note on this topic, the World Bank and OECD (among others) observed that low levels of financial literacy are frequently "tied to lack of access to financial

29 Regelman et al. (2016)
30 Kotarba (2016), 69, 71.
31 KPMG (2016).
32 Economist, 2015, "The FinTech revolution," May 9, http://econ.st/1H2hwbP.
33 Gulamhuseinwala et al. (2015), 16.
34 Gulamhuseinwala et al. (2015), 16, 21.
35 Marous, J., 2016, "FinTech growth poised to disrupt banking industry," LinkedIn, January 7, http://bit.ly/2duTjDj.
36 Xu, L., and B. Zia, 2012, "Financial literacy around the world: an overview of the evidence with practical suggestions for the way forward," working paper no. 6107, World Bank Development Research Group, 12, http://bit.ly/2dJKJUF.
37 S&P Global, 2016, "Standard & Poor's ratings services global financial literacy survey," http://bit.ly/28NMCtA.
38 International Trade Administration, 2016, "ITA FinTech top markets report," U.S. Department of Commerce, http://bit.ly/2dR9Owi.

products."[39] In providing easy-to-use financial products and services, which focus on a single value proposition and are frequently accompanied by the ability for the customer to monitor their use of the product or service, FinTech may expose more customers to basic financial concepts. These observations become important when we consider the potential of FinTech to provide new solutions to enduring problems in developing economies.

## Understanding the customer journey in developing countries

From the cityscapes of Hong Kong to the buzz of Silicon Valley, FinTech has emerged from the world's most urbanized centers. In these places, FinTech developers can safely assume that their target customer demands (and is already familiar with) technological solutions to life's inconveniences and can proceed to develop a product on this basis. Yet developing economies present a far more challenging terrain. For customers in these economies, the experience of obtaining financial services is vastly different and these differences need to be accommodated for FinTech to thrive in new markets.

Each economy presents a unique landscape of customer demand. The importance of understanding local context has been emphasized by Buckley and Malady by contrasting two markets: the Philippines and South Africa. Mobile money payments have flourished in the Philippines, where there is high demand for the international transfer of funds, as well as between urban and rural areas, but have not flourished in South Africa, where customers have "little incentive… to replace their existing methods of accessing funds."[40] The need for FinTech developers to understand local customer demand cannot be understated but the brevity of this analysis precludes detailed consideration of the nuances of each developing economy. Instead, we will proceed to canvas the more general challenges faced by FinTech developers in emerging economies and potential responses to them. The challenges typically include an unaccommodating suite of services provided by formal financial institutions, low institutional quality, low financial literacy, and extensive financial exclusion.

### Common barriers to financial access in developing countries

The nature of the banks themselves raises barriers to financial access. In particular, physical distance between borrowers and lenders inhibits the availability of financial services.[41] For most banks, it is not feasible to absorb the fixed costs of setting up branches in rural communities, where demand and population density are low (and where security may be an additional concern). Pedrosa and Do helpfully deconstruct the impact of distance on credit markets, using Niger as a case study.[42] Geographic distance is said to impose a direct transaction cost (that is, the transportation costs associated with providing the financial services), as well as an increase in monitoring costs; and both tend to translate into higher interest rates for credit.[43] Further, for many customers in remote, rural areas where subsistence farming is common,[44] fluctuating weather patterns make it difficult to know precisely when they can afford to start making loan repayments. This serves to increase risk in the eyes of the lender and again translates into higher interest rates. Low competition between financial institutions reinforces the relatively high costs of opening and maintaining a bank account, which can include requirements as to a minimum account balance. Customers who live in remote, financially underserviced areas are, therefore, at risk of being "excluded from the semi-formal credit market" and those who can overcome this obstacle bear the brunt of higher costs.[45]

These obstacles also stand against a background of low institutional quality, which is determined (among other factors) by a country's level of development.[46] Institutional quality encompasses the extent of adherence to the rule of law, the level of protection for investors, the strength of contract enforcement, and the quality of property rights.[47] Rojas-Suarez has measured institutional quality using the World Bank's governance indicators and observed a "clear positive relationship between adherence to the rule of law and financial access."[48] In developed countries, high levels of institutional quality accompany greater access to financial products and services, whereas the opposite is true in emerging economies. Explanations include the view that microfinance institutions (MFI) concerned with their bottom line interpret a weak rule of law as reflecting the presence of a largely informal economy.[49] This in turn may indicate an environment in which loans will be smaller in size, local demands

39 The World Bank, U.K. Department for International Development, Organisation for Economic Co-operation and Development, and Consultative Group to Assist the Poorest, 2009, "The case for financial literacy in developing countries: prompting access to finance by empowering consumers," joint note, 4, http://bit.ly/2dRU8VX.

40 Buckley, R. P., and L. Malady, 2015, "The new regulatory frontier: building consumer demand for digital financial services," 132(1) The Banking Law Journal 35.

41 Gibson, E., F. Lupo-Pasini, and R. P Buckley, 2015, "Regulating digital financial services agents in developing countries to promote financial inclusion," Singapore Journal of Legal Studies 26.

42 Pedrosa, J., and Q-T. Do, 2011, "Geographic distance and credit market access in Niger," 23(3) African Development Review 289.

43 Pedrosa and Do (2011), 289.

44 Blades, D., F. H. G. Ferreira, and M. A. Lugo, 2011, "The informal economy in developing countries: an introduction," 57(1) Review of Income and Wealth S1.

45 Pedrosa and Do (2011), 289, 298.

46 Alonso, J. A., and C. Garcimartín, 2013, "The determinants of institutional quality: more on the debate," 25(2) Journal of International Development 206, 217.

47 Levchenko, A. A., 2004, "Institutional quality and international trade," working paper no. 04/231, International Monetary Fund, December, 2; Chong, A., and C. Calderón, 2000, "Institutional quality and income distribution," 48(4) Economic Development and Cultural Change 761, 761.

48 Rojas-Suarez, L., and V. Gonzales, 2010, "Access to financial services in emerging powers: facts, obstacles and policy implications," background paper for the Perspectives on Global Development 2010 Shifting Wealth, OECD Development Centre, 21.

49 Quintin, E., 2008, "Contract enforcement and the size of the informal economy," 37(3) Economic Theory 395.

difficult to accommodate, and profitable opportunities scarce. In a unique study on the impact of institutional quality on MFI outreach, Barry and Tacneng conclude that shareholder-owned MFIs (particularly banks) tend to engage in credit rationing and other financially exclusive behaviors in countries where the rule of law is shaky and contract enforcement poor.[50] This in turn means that many customers in developing economies are the victims of a self-perpetuating cycle: where a sizeable informal economy limits lending from shareholder-owned banks and forces many customers to use informal loans.

Financial literacy is also particularly low in developing countries,[51] such as Pakistan, where of those aged above 25, a mere 13% have a bank account.[52] This is significant because high levels of financial literacy can benefit quality financial products and services, as they enable better-informed customers to compare options and place competitive pressure on providers.[53] On an individual level, financial literacy can also empower people to take control of their financial position, protect themselves against fraudulent schemes, and boost their overall wellbeing.[54] As Kefela summarizes, the inverse of this is that "those who are less financially literate are more likely to have problems with debt, are less likely to save, are more likely to engage in high-cost mortgages, and are less likely to plan for retirement."[55] The challenge for FinTech developers in emerging economies is that financial solutions must be developed for individuals with a limited understanding of basic financial concepts or who have only been exposed to them in the context of informal loans. In essence, FinTech products and services must aspire to a new level of accessibility and ease of use.

### Much ado about microfinance

For all these reasons, financial illiteracy and exclusion matters, particularly as they often lead to a broader social exclusion.[56] In an attempt to improve access to financial services for the unbanked, microfinancing has become increasingly available. Togba explains that microcredit plays a vital role in promoting entrepreneurialism and investment in "poor rural and urban economies where it is difficult to save."[57] In recognition of these benefits, the Asian Development Bank continues to provide multi-million dollar loans to fund microfinance operations in countries such as China, Papua New Guinea, and Uzbekistan. Nonetheless, microfinance is not without its critics.[58] A core concern with microfinancing relates to its long-term implications, taking into consideration the high failure rate of microenterprises. Business failure followed by an inability to repay microloans can potentially "lead to irretrievable poverty."[59] However, Solomon helpfully reminds us that "[t]he poor are not irrational. They are aware of the high failure rates of informal microenterprises funded by borrowing."[60] With this in mind, Solomon suggests that the rigid repayment plans and relatively high interest rates charged by existing microfinance institutions drive borrowers (especially those who are uncertain of precisely when they can begin repayments) to use informal credit sourced from friends and relatives.

It would appear that microfinance has opened up new opportunities for some, but certainly not all, potential borrowers. For many of the poorest households and smallest enterprises, the costs of obtaining microcredit remain too high. There is a considerable segment of the population in developing regions that have "viable investment opportunities [but] persist…in poverty for lack of access to credit at reasonable costs."[61] According to the World Bank Global Findex database, less than half of the adults "in the poorest 40% of households in developing countries" have bank accounts.[62] Low-income households and small enterprises continue to face particular challenges in obtaining access to credit: chief among them is information asymmetry and the transaction costs which arise from it.[63] Small enterprises frequently pose greater risks as they lack collateral, lack diversification when it comes to their sources of income, and lack transparency when it comes to their financial statements.[64] Small transactions attract high costs for formal banks. Certain fixed costs must be borne by the bank irrespective of loan size, rendering monitoring costs for small loans relatively high. Given the high risk associated with the lack of information on the borrower's creditworthiness

50 Barry, T. A., and R. Tacneng, 2014, "The impact of governance and institutional quality on MFI outreach and financial performance in sub-Saharan Africa," 58 World Development 1.

51 The World Bank et al. (2009), 4; Klapper, L., A. Lusardi, and P. van Oudheusden, 2015, "Financial literacy around the world: insights from the Standard & Poor's Ratings Services global financial literacy survey," 1, 7, http://bit.ly/2dsjcVB.

52 Shankar, S., 2016, "Bridging the "missing middle" between microfinance and small and medium-sized enterprise finance in South Asia," working paper no. 587, Asian Development Bank Institute, July, 17.

53 Kefela, G., 2010, "Promoting access to finance by empowering consumers – financial literacy in developing countries," 5(5) Educational Research and Reviews 205.

54 See, e.g., Calderone, M., 2014, "The role of financial literacy and of financial education interventions in developing countries," IDEAS Working Paper Series from RePEc.

55 Kefela, G., 2011, "Implications of financial literacy in developing countries," 5(9) African Journal of Business Management 3699.

56 Claessens, S., 2006, "Universal access to financial services: a review of the issues and public policy objectives," in OECD and the World Bank, "OECD trade policy studies liberalisation and universal access to basic services: telecommunications, financial services and electricity," OECD Publishing, 175, 180.

57 Togba, E. L., 2012, "Microfinance and households access to credit: evidence from Côte d'Ivoire," 23(4) Structural Change and Economic Dynamics 473.

58 Barry and Tacneng (2014), 1.

59 Bateman, M., 2011, "Microfinance as a development and poverty reduction policy: is it everything it's cracked up to be?" Overseas Development Institute, March, http://bit.ly/2dwTSMB.

60 Solomon, L. D., 2014, "Alleviating global poverty," Xlibris Corporation, 93.

61 Asian Development Bank, 2000, "Finance for the poor: microfinance development strategy," http://bit.ly/2cSQ45H.

62 The World Bank Group, 2016, "Overview," http://bit.ly/1PWkuDJ.

63 Behr, P., A. Entzian, and A. Güttler, 2011, "How do lending relationships affect access to credit and loan conditions in microlending?" 35(8) Journal of Banking and Finance 2169.

64 Rojas-Suarez and Gonzales (2010), 20.

and the absence of physical collateral, such transactions are frequently perceived to be not worthwhile.[65] If credit is provided, the increased costs tend to be passed on to the borrower, in the form of higher interest rates or greater security requirements than the banks would otherwise require. Given their preference for smaller loans, low-income households "face disproportionately high transaction costs in the formal financial sector."[66] Formal financial institutions may additionally require individuals to provide considerable documentation to open an account. This requirement is difficult to meet for those who work in informal employment markets and lack formal documentation to support their claims as to income.[67]

While microlending in developed economies suffers from similar ailments of moral hazard and adverse selection, Behr et al. (2011) observe that "weaker or non-existent accounting standards" as well as poor legal enforcement measures serve to exacerbate the problem in developing countries. Through empirical analysis, the authors suggest that relationship building between lenders and borrowers can reduce information asymmetry and improve access to credit over time. Their Mozambique-based study indicates that the greater the strength of the relationship, the greater the chances (and timeliness) of loan approval. Loan conditions also appear to improve, as the development of greater trust between borrower and lender encourages lenders to reduce the level of collateral required for that same borrower's subsequent loans. Until solutions such as these can be implemented, despite microfinance, a significant proportion of the developing world lives beyond the reach of the financial services sector.

It is not only low-income households and the smallest of enterprises that have fallen through the cracks. Among the underbanked are those who fall into the "missing middle": the enterprises that require funding beyond the limits of microcredit, but whose credit needs fall beyond those which commercial banks are typically willing to satisfy for small and medium-sized enterprises.[68] The missing middle is "an entrepreneurial desert": a financing gap that persists in contributing to financial exclusion.[69] This is particularly apparent in African regions with lower levels of economic activity.[70]

### Pioneering FinTech companies should map out a new customer journey

In developing economies, FinTech has the capacity to be profitable and pave the way for a more inclusive financial system: one where financial products and services cater to the needs of individuals and enterprises across all income levels.[71] FinTech could play a vital role in reducing financial exclusion in countries such as the Republic of Azerbaijan. Only 29.2% of Azerbaijanis above 15 years of age have a bank account; and, of those, approximately half use traditional savings passbooks rather than debit cards facilitating electronic payments.[71] It should be noted that Azerbaijan has had a recent currency devaluation engendering customer mistrust and a reluctance to save money at banks. Mobile banking is in its infancy and currently limited in both accessibility and functionality. Yet, despite these obstacles, Azerbaijanis have demonstrated a willingness to use innovative financial technologies. The usage of self-service kiosks is steadily increasing as "customers have begun to trust the machines with bill payments and loan repayments alike…[demonstrating that] low-income customers can quickly warm to technology-enabled channels, if well designed."[73] The stance adopted by the Central Bank of Azerbaijan appears to be encouraging innovation as it makes room for new innovators to operate alongside banks in providing financial services.

In countries that have exhibited a willingness to experiment with innovative new products, there are myriad ways in which FinTech can flourish. To provide superior experiences, however, FinTech companies must develop and refine their understanding of customers (and their needs) in the specific developing country and their current experiences with accessing financial products and services. By way of example, by understanding existing pain points in the customer journey, FinTech can provide the avenues by which microlenders can become better acquainted with their customers, which Behr et al. (2011) suggested would reduce information asymmetry and the increased costs that come with it.

Digital payments are another promising field for FinTech companies. These can reduce many of the risks associated with cash-based transfers. They can enhance security and transparency of payments, lower costs, and for many can constitute an important "first entry point into the formal financial system.'[74] This is particularly evident in sub-Saharan Africa, where mobile money accounts have

65 Kalmykova, E., and A. Ryabova, 2016, "FinTech market development perspectives," SHS Web of Conferences, http://bit.ly/2cS8CIc.

66 Togba, E. L., 2012, "Microfinance and households access to credit: evidence from Côte d'Ivoire," 23 Structural Change and Economic Dynamics 473, 483.

67 Rojas-Suarez and Gonzales (2010) 20.

68 Shankar (2016).

69 Anderson-Macdonald, S., 2013, "Transforming the missing middle," 24(1) Business Strategy Review 59.

70 See Fafchamps, M., 1994, "Industrial structure and microenterprises in Africa," 29(1) Journal of Developing Areas 1; Grimm, M., P. Knorringa, and J. Lay, 2012, "Constrained Gazelles: high potentials in West Africa's informal economy," 40(7) World Development 1352, 1352.

71 Buckley and Malady (2015) suggest that regulators have a role to play in facilitating innovation and more generally in encouraging greater provision of financial services in developing countries.

72 Saxena, A., 2015, "Republic of Azerbaijan: electronic payments and financial inclusion," ADB technical assistance consultant's report, September, 8.

73 Saxena (2015), 5.

74 World Bank Development Research Group, Better Than Cash Alliance, and Bill & Melinda Gates Foundation, 2014, "The opportunities of digitizing payments," The World Bank Group, August 28, http://bit.ly/2d2WNxf.

already demonstrated their ability to drive financial inclusion. Mobile money accounts are held by 12% of adults – a high proportion relative to the global average of 2%. In fact, nearly half of those with an account reported it was their only financial account.[75] Mobile money platform, M-Pesa, has clearly been a key driver of this movement. M-Pesa enables individuals to transfer funds and pay bills by using text messages as a vessel to carry digital currency. This service has demonstrated an acute understanding of the nature of the customer experience, particularly from the perspective of those who work in the city and seek to provide financial support to family members in rural communities. These customers were previously constrained by the high cost of transferring money, security concerns associated with carrying cash, and sheer distance from brick-and-mortar financial institutions. By harnessing this understanding of key pain points in the customer journey, M-Pesa has enabled customers to surmount these obstacles through using their existing mobile phones. Customers sign up with M-Pesa and credit money to their M-Pesa account by depositing cash in local corner shops that also serve as Safaricom agents. To send funds to others (who do not have to be registered with the service), customers use a menu on their phone to simply enter the recipient's phone number and the amount to be transferred. Once the text message is received, the recipient can then either deal with the money on the mobile platform (if registered) or can make their own visit to a local Safaricom agent and physically withdraw cash.

By requiring only that customers have a simple, SMS-enabled phone and are able to deposit some cash into an account, M-Pesa leverages existing infrastructure to deliver the simplicity and accessibility required of FinTech offerings in developing countries[76] As one commentator noted: "[p]aying for a taxi ride using your mobile phone is [now] easier in Nairobi than it is in New York."[77] M-Pesa successfully facilitated 4.1 billion transactions by Kenyans in 2015, almost double that facilitated in 2014.[78] M-Pesa has also recently extended its offerings to the provision of credit. It has combined forces with Kenya Commercial Bank to provide small loans to loan applicants previously not considered creditworthy. KCB M-Pesa loans utilize default interest rates with options including 30-day loans at 6% per month and 180 day loans at 4% per month. With approximately 80% of loan applications accepted,[79] the KCB M-Pesa collaboration has demonstrated a high level of accessibility.

Another example of FinTech transforming the financial services landscape is First Access, a data analytics company that has used a combination of weather, market pricing, and agricultural input data to develop unique credit scoring algorithms. These algorithms are specifically designed for borrowers in the agricultural sector of sub-Saharan Africa. Following a pilot study in Tanzania, microfinance organization FINCA has partnered with First Access to provide uncollateralized loans across east Africa. The latter leverages its data analytics capabilities to form credit scores from local mobile phone usage of FINCA's existing client database. In doing so, individuals in countries such as Zambia, Uganda, and Nigeria who lack a formal credit history, but possess mobile phones, can obtain loans more easily. This collaboration was underpinned by a clear understanding of the challenges experienced by its target customers, including low levels of financial literacy, geographical barriers, unpredictability of crop yields inhibiting the development of realistic repayment schedules, and information asymmetry exacerbating loan conditions for borrowers. As CEO of First Access, Nicole Van Der Tuin has explained, the collaboration enables FINCA "to make more reliable, real-time predictions about the creditworthiness of people who have never been a part of the formal financial system."[80] The FINCA and First Access collaboration reinforces: (i) the utility of market research and pilot programs in understanding local context, and (ii) the capacity of FinTech companies to leverage knowledge of customers' current experience and design products that increase access to, and streamline the provision of, financial products and services in developing countries.

## CONCLUSION

FinTech has exhibited great promise in developed economies by providing customers with a highly accessible and streamlined path to fulfilling their financial needs and wants. While FinTech remains strongest in developed countries, [81] investment is growing in developing countries and with some exceptional results. Expanding FinTech services into developing countries and tapping into unbanked markets remains attractive. However, as many can attest, failure usually awaits those who simply transfer their existing products and services to different markets. Ultimately, for FinTech to succeed in most developing economies, its developers and providers must begin to familiarize themselves with some different and unique customer journeys.

75 The World Bank Group, 2014, "Sub-Saharan Africa," http://bit.ly/1jwiSAe.

76 See The World Bank, 2013, "Mobile payments go viral: M-PESA in Kenya," http://bit.ly/1lPsYdT.

77 Economist, 2013, "Why does Kenya lead the world in mobile money?" May 27, http://econ.st/1zPLhD.

78 Ondieki, E., 2016, "M-Pesa transactions rise to Sh15bn daily after systems upgrade," May 8, http://bit.ly/2dsorEM.

79 Aglionby, J., 2016, "FinTech takes off in Africa as lenders tap mobile technology," Financial Times, May 17, http://on.ft.com/2d2Z0Jg.

80 FINCA, 2016, "FINCA and First Access announce world's largest microfinance FinTech collaboration," http://bit.ly/2dx0pXu.

81 The U.S. invested U.S.$7.6 bln in FinTech in 2015: KPMG, 2016, "FinTech funding hits all-time high in 2015, despite pullback in Q4" KPMG and CB Insights, March 9, http://bit.ly/1sGpKny.

FinTech product and service designers cannot, in developing countries, rely upon their intuitive understanding of what customers may need. The gulf between the backgrounds and life experiences of designers and customers ensures this is impossible. The designers need to rely on an evidence-based assessment of customer needs and demands. In most markets this will have to be especially commissioned as these markets are typically data-poor environments; and, if broadly relevant data exists, it is likely to be a typical demand-side survey commissioned by the local central bank that is highly unlikely to provide the precise sort of information required. Indeed, we would recommend the product and service designers go beyond commissioning a sanitized survey (necessary as this step is) and actually visit some of the rural villages where the greatest needs for their products and services will exist, and talk to the local people about the difficulties in their financial lives and how technology could assist with relieving them. Local knowledge and understanding of the problems potential customers face and their financial literacy levels is the key to the successful design and implementation of FinTech products and services in developing economies.

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