mastercard foundation

*Partnership for* **FINANCE** *in a* **DIGITAL AFRICA**

# Which attitudes, behaviors, experiences, and beliefs influence digital finance adoption?

Caribou Digital

*Client*

Learning Themes 2

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## NOTES

The views presented in this paper are those of the author(s) and the Partnership, and do not necessarily represent the views of the Mastercard Foundation or Caribou Digital.

For questions or comments please contact us at ideas@financedigitalafrica.org.

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## ABOUT THE PARTNERSHIP

The Mastercard Foundation Partnership for Finance in a Digital Africa (the "Partnership"), an initiative of the Foundation's Financial Inclusion Program, catalyzes knowledge and insights to promote meaningful financial inclusion in an increasingly digital world. Led and hosted by Caribou Digital, the Partnership works closely with leading organizations and companies across the digital finance space. By aggregating and synthesizing knowledge, conducting research to address key gaps, and identifying implications for the diverse actors working in the space, the Partnership strives to inform decisions with facts, and to accelerate meaningful financial inclusion for people across sub-Saharan Africa.

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# What we know

It is one of the most durable challenges in the global economy: converting a prospect into a customer. This stems from the challenge of identifying and understanding unique needs and behaviors within a social system. While **Snapshot 1** focused on understanding needs, this Snapshot focuses on attitudes and behaviours that influence the adoption and ongoing use of digital financial services (DFS).

Roger's 1962 "Diffusion of Innovation" theory outlined how variations in attitudes, behaviors, and relationships within a society impact the spread of new ideas and technologies.[1] Roger's paradigm influenced both popular literature, such as Moore's "Crossing the Chasm,"[2] as well as development practice from the field of agricultural extension to models such as TAM[3] (Technology Acceptance Model[4]). The challenge of identifying behaviors that influence the adoption of a technology is not new.

A comprehensive review of the different ways that attitudes, social norms, and behaviors have influenced the acceptance of technology over time is unfortunately beyond the scope of our study. In this Snapshot we focus on studies specific to digital finance, and discuss the challenges and opportunities in understanding unique behaviors, and the state of the art in connecting with customers.

## Understanding Unique Behaviors

Understanding behaviors and what drives customers to use (or not use) a financial service is a critical step in the journey towards digital financial inclusion. Digital finance providers have engaged with this challenge by seeking insights into the economic, psychological, and cultural factors that prompt people to learn about products, try them out, and use them over time. While **Snapshot 1** discussed the nuanced, often complex financial needs of the poor, this Snapshot will delve into the multifaceted, context specific, and often unexpected behaviors that influence the adoption of digital finance. With new customers come new understandings. Breaking down preconceptions to understand the behaviors of distinct target markets supports the design and delivery of digital finance services, and leads to improvements in adoption, satisfaction, and regular use.

Many providers are using human-centered design (HCD) research techniques to better understand the unexpected attitudes and behaviors of their low-income clients, and design appropriate products around these insights.[5] CGAP's "Insights into Action,"[6] an examination into the use of HCD in financial inclusion, unearthed a number of unique behavioral insights around low-income individuals' financial practices. These included: nuanced and surprising savings habits (such as the physical division of money

1 Rogers, *Diffusion of Innovations*.

2 Moore, *Crossing the Chasm*.

3 Lules, Omwansa Kerage, and Waema Mwolol, "Application of Technology Acceptance Model (TAM) in M-Banking Adoption in Kenya"; Tobbin, "Modeling Adoption of Mobile Money Transfer: A Consumer Behaviour Analysis"; Abdulkadir, Galoji, and Abd Razak, "An Investigation into the Adoption of Mobile Banking in Malaysia"; Gamal Aboelmaged and Gebba, "Mobile Banking Adoption: An Examination of Technology Acceptance Model and Theory of Planned Behavior"; Chitungo and Munongo, "Extending the Technology Acceptance Model to Mobile Banking Adoption in Rural Zimbabwe"; Jeong and Yoon, "An Empirical Investigation on Consumer Acceptance of Mobile Banking Services"; Chauhan, "Evaluating Acceptance of Mobile Money by Poor Citizens in India: An Empirical Study."

4 TAM is a theory of how users come to accept and use a technology, influenced by a number of factors most notably the technology's "Perceived Usefulness" and "Perceived Ease of Use."

5 Stimolo and Toombs, "Enhancing Customer Engagement and Experience of Microinsurance in Africa"; Mattern, "Can HCD Lead to Digital Financial Solutions for Smallholders?"; McKay and Ester Seltzer, "Designing Customer-Centric Branchless Banking Offerings"; Hariharesswara, "From Skeptic to a Believer: HCD & Silicon Valley Tools to Improve DFS"; McKay and Seltzer, "So…What Does HCD Mean for Financial Inclusion?"

6 CGAP, "Insights into Action: What Human Centered Design Means for Financial Inclusion."

into different bags, assigned for different expenses), superior trust in people rather than organizations, prevalent distrust of banks, lack of comfort with or (at worst) fear of new technology, and the importance of social networks in driving financial and technological awareness.

A vast array of attitudes, behaviors, experiences, and beliefs influence adoption of and satisfaction with digital finance. We have provided an illustrative list of some of the major threads within this complex matrix. Many of the following examples focus on the impact of social networks and relationships embedded in both financial and non-financial practices that consequently play a significant role in digital finance adoption and use.

## — *Social Norms*

Social norms are *rules of behavior* deemed acceptable among a certain societal group. Influenced by beliefs, culture, and values, social norms can influence adoption and use of digital financial services. UNCDF's Mobile Money for the Poor (MM4P) carried out a quantitative household survey in Uganda to understand savings and lending behavior patterns to inform the development of a digital savings and loan product.[7] Research revealed that *"saving and borrowing behaviors were deeply influenced by cultural and religious beliefs and values so deeply entrenched that they are difficult to change."* [8]

A recent CGAP study partially attributes the fact that 42% of women and girls do not participate in the formal financial sector to restrictive social norms within their communities.[9] These social norms include limited mobility beyond the home, responsibility for childcare, and perceived incompetence when it comes to digital financial services. In Pakistan, 67% of women who live with their husbands reported no knowledge of digital finance due to their limited interactions outside of the home.[10] Even women who earn and save their own money do not always have control over how their income is spent. Research from Kenya showed that intra-household pressures to share savings resulted in women seeking financial instruments with higher barriers to withdrawing funds, even when alternatives with lower transaction costs (such as, in this case, ATM cards) were available.[11] Women sought such financial products because of the pressure to share the money they earned with their spouses. It is no surprise then that women and men often cite different challenges[12] and needs[13] with regards to digital finance.

## — *Social Proof*

Social proof is the tendency to adopt behaviors based on activities or cues within a social network. Initial research conducted by Juntos in collaboration with Tigo Pesa in Tanzania showed that merchants were initially hesitant to accept Tigo merchant payments due to the perceived risks of digital finance services. This was in part because of a lack of positive social proof from peers around the safety of accepting digital payments. Based on an understanding of the power of social networks, Juntos leveraged their interactive two way SMS service to digitize the concept of social proof. Juntos collected merchant payment use cases and shared the stories among merchants and users through their SMS platform. As a result of sharing these positive stories, Juntos saw a 26% higher number of customers making merchant payments when compared to those who did not receive the SMS usage stories.[14] This research project highlights the success of digitizing social interactions to build confidence in a digital finance technology.

With the launch of any new product or service certain social groups, or individuals within them, will play the role of testing out the new innovation for future customers. In doing so they provide "social proof" of its potential use to society. As outlined in Moore's concept of the *Adoption Lifecycle*,[15] early adopters test the value of a product for more risk-adverse social groups.[16] Once a products' value is proven by early adopters, use tends to filter down to other more conservative, risk-adverse sectors of society. In an impact evaluation built on data collected between 2009 and 2011 in Kenya, researchers found that although wealthier and better educated households were among the first to adopt mobile money, within only a few years more than 90% of all households in the sample were using the service.[17] Based on varying success stories, the International Finance Corporation (IFC) argues that, as per the

7 Learch and Mensah, "Senegalese Agents Building Comprehension And Driving Usage Of Digital Finance Services."
8 Ibid.
9 Bin-Humam and Ayes, "How Social Norms Affect Women's Financial Inclusion."
10 Ibid.
11 Schaner, "The Cost of Convenience?"
12 Grameen Foundation, "Use of Mobile Financial Services among Poor Women in Rural India and the Philippines."
13 Elisa Minischetti and Salima Fazal Karim, "Case Study Orange Mali: Reaching Women Customers with Mobile Savings and Insurance."
14 Huntzinger, "Leveraging Social Cues to Encourage Digital Payments."
15 Moore, *Crossing the Chasm*.
16 IFC, "Mobile Money Product Adoption Life Cycle."
17 Kikulwe, Fischer, and Qaim, "Mobile Money, Smallholder Farmers, and Household Welfare in Kenya."

standard product adoption curve, digital finance providers should begin by targeting early adopters.[18] A number of providers, from Zaad[19] in Somaliland to M-PESA[20] in Kenya, have successfully employed this strategy. Even with niche, tailored products designed for smaller customer segments, providers can employ this strategy by looking for, and initially targeting, "influencers" within the group.

### — *Social Networks*

Social interactions and connections clearly play a key role in driving financial and technological awareness.[21] Analysis of mobile operator data by CGAP found that, among the more than 180 variables in the model, the number of mobile money connections that a user has is *"by far the most important factor for mobile money adoption in each country."*[22] Another study from Uganda found that most users decided to register for a mobile money account because another person recommended it.[23] Similarly, a 2013 survey of 4,000+ households in Pakistan found that friends and family play an important role in raising awareness of mobile money services and stimulating registration.[24] The study also found that social networks may help providers struggling to push customers to adopt a mobile money wallet after over-the-counter DFS use.[25]

Social networks and relationships are a major factor in the choice of a formal or informal financial service.[26] Mas observes that the financially disadvantaged build social capital within their communities in order to create avenues for garnering extra money in times of need.[27] Referred to as "liquidity farming," this entails nurturing potential future sources of liquidity by shopping at the same store regularly, spending money at a village festival, or saving with people in the community. These relationships can then be "harvested" in times of need by requesting credit from a regularly visited store or asking for an informal loan from a trusted friend in the community.

Maintaining the complexity of these social relationships across a digital platform can be a significant challenge. The social element embedded in many informal financial practices is often lost in the shift from analog to digital. A research study in the Philippines, in which mobile banking was introduced into group microfinance, demonstrates the negative impact of disrupting social relations and behaviors through digitization.[28] In the shift to mobile banking, transactions were individualized and group cohesion weakened, affecting the peer-enforcing effects of group banking. The breakdown in social connections, which previously helped motivate members to save, negatively affected savings habits. Research revealed that in areas that converted to mobile banking, the average daily balance and frequency of deposits declined by 20% over two years.[29]

## Positive experiences build trust, negative experiences erode it

Moving from behaviors to experience, evidence suggests that positive experiences with digital finance help to build trust and confidence in these services. Data from an analysis of mobile money transactions in Tanzania showed that a significant number of mobile money users were willing to accept a 7% fee for simply cashing-in and cashing-out over short distances within a short time span.[30] This suggests that mobile money had effectively disrupted existing remittance habits in the country. Relieving pain points and developing superior solutions to existing alternatives helps to build trust in these digital services.

Low-income households, however, often come to digital finance with pre-existing distrust of formal financial institutions. In Afghanistan, an analysis of salaries paid via mobile money showed that those who think future violence is likely, exhibited less mobile money usage and higher cash savings, than those who do not. Rather than viewing their mobile wallet as a safe place to store money, individuals with greater expectations of future violence chose to keep their cash on hand.[31] This attitude was attributed to *"low levels of trust in formal institutions."*

Beyond negative encounters with formal financial institutions, poor experiences with digital finance

18 IFC, "Mobile Money Product Adoption Life Cycle."
19 Claire Pénicaud and Fionán McGrath, "Innovative Inclusion: How Telesom ZAAD Brought Mobile Money to Somaliland."
20 Jack and Suri, "Mobile Money"; Ngugi, Pelowski, and Ogembo, "M-Pesa."; FSD Africa, "The Growth of M-Shwari in Kenya – A Market Development Story."
21 Ngugi, Pelowski, and Ogembo, "M-Pesa."
22 CGAP, "The Power of Social Networks to Drive Mobile Money Adoption."
23 Mirzoyants, "Mobile Money in Uganda The Financial Inclusion Tracker Surveys Project – Use, Barriers and Opportunities."
24 Mirzoyants, "Mobile Money in Pakistan – The Financial Inclusion Tracker Surveys Project – Use, Barriers and Opportunities."
25 Ibid.
26 Iazzolino and Wasike, "The Unbearable Lightness of Digital Money."
27 Mas and Gitau, "Liquidity Farming: How the Poor Cultivate Relationships to Create Sources of Future Cash."
28 Harigaya, "Effects of Digitization on Financial Behaviors."
29 Ibid.
30 Economides and Jeziorski, "Mobile Money in Tanzania."
31 Blumenstock, Callen, and Ghani, Tarek, "Violence and Financial Decisions: Experimental Evidence from Mobile Money in Afghanistan."

itself can also deter future adoption and use. Research lists an array of triggers that weaken trust, confidence, and satisfaction in using DFS.[32] Such triggers include: complex user interfaces,[33] poor customer service,[34] issues of network downtime,[35] cost,[36] evidence of fraud,[37] and privacy and security concerns.[38] CGAP's report on "Doing Digital Finance Right" highlights common problems encountered across DFS platforms that can open people up to risks and financial harm.[39] These include the inability to transact due to network downtime, insufficient agent liquidity or float, confusing user interfaces and poor customer recourse, non-transparent fees and terms, fraud that targets customers, and inadequate data privacy and protection. CGAP has responded to these issues with the development of best practices and guidelines around customer service and recourse systems.[40]

The slow evolution of trust in digital finance has been observed within mobile money transaction data. Transactional insights from an East African deployment demonstrates that it takes the average customer three months to conduct their second P2P transaction. More frequent use only came after the fifth transaction had taken place, on average 216 days after first using the service.[41] In sum, it takes the better part of a year to familiarize a user with simple P2P transactions, let alone other use-cases.



32 Bankable Frontier Associates, "Emerging Risks to Consumer Protection in Branchless Banking: Key Findings from Colombia Case Study"; Alliance for Financial Inclusion, "Mobile Financial Services – Consumer Protection in Mobile Financial Services."

33 Morawczynski and Pickens, "Poor People Using Mobile Financial Services"; Zimmerman and Baur, "Understanding How Consumer Risks in Digital Social Payments Can Erode Their Financial Inclusion Potential."

34 Zimmerman and Baur, "Understanding How Consumer Risks in Digital Social Payments Can Erode Their Financial Inclusion Potential"; Aker and Wilson, "Can Mobile Money Be Used to Promote Savings?"; Alliance for Financial Inclusion, "Mobile Financial Services – Consumer Protection in Mobile Financial Services"; Bankable Frontier Associates, "Emerging Risks to Consumer Protection in Branchless Banking: Key Findings from Colombia Case Study."

35 Zimmerman and Baur, "Understanding How Consumer Risks in Digital Social Payments Can Erode Their Financial Inclusion Potential."

36 Finau et al., "Perceptions of Digital Financial Services in Rural Fiji"; Hwang and Tellez-Merchan, "The Proliferation of Digital Credit Deployments."

37 Mudiri, "Fraud in Mobile Financial Services"; Ogwal, "Survival of the Fittest: The Evolution of Frauds in Uganda's Mobile Money Market (Part-I)."

38 Ogwal, "Survival of the Fittest: The Evolution of Frauds in Uganda's Mobile Money Market (Part-I)"; Costa, Deb, and Kubzansky, "Big Data, Small Credit: Digital Revolution and Its Impact on Emerging Market Consumers"; Simanowitz, Banerjee, and Koning, "Customer Views on Customer Empowerment"; Alliance for Financial Inclusion, "Mobile Financial Services – Consumer Protection in Mobile Financial Services."

39 McKee, Kaffenberger, and Zimmerman, "Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks."

40 Mazer and Garg, "Recourse in Digital Financial Services: Opportunities for Innovation"; CGAP, "Customer Experience Toolkit."

41 Levin, "Getting the Most Out of Your Data Segmenting Your Mobile Money Customer Base to Drive Usage."

# Notable new learnings

## Understanding digital behaviors

This Snapshot has so far illustrated a few research trends focused on critical themes within the theory of "Technology Acceptance Models" and "Diffusions of Innovations." As such it has focused on analyzing and understanding behaviors in the analog world. While this understanding is tremendously important for the design of DFS solutions—as more and more people use mobile phones (or other digital technologies) in their daily lives—digital finance programs will benefit from analyzing behaviors in the "online" world as well.

Research into the behaviors of developing market customers is beginning to uncover not only how people get online but what they do when they get there. From streaming music and movies to gaming and social networking, a deeper look into the digital lives of low-income customers highlights how digital practices are increasingly woven into the fabric of everyday life.

Recent research into "Digital Lives in Ghana, Kenya and Uganda" illustrates the ways in which online, digital practices are embedded in daily life.[42] Learnings from these three countries revealed the tendency for online users to mix social, non-instrumental consumption, such as WhatsApp and Facebook, with functional tasks, such as finding jobs and increasing income. This interaction of social and functional behaviors provides potential opportunities for driving development interventions and engagement through these digital social networks.

The "red envelope" gifting behavior in the Chinese digital finance market is illustrative of how users have mixed social messaging with traditional monetary behaviors and practices. The introduction of "Red Envelopes" on China's WeChat social messaging platform enabled users to exchange electronic money based on the age-old Chinese custom of giving red envelopes filled with money at weddings, holidays, and special occasions.[43] By blending social networking with this tradition of monetary exchange, users were encouraged to send money electronically, and embrace other digital financial services on offer across the WeChat platform.

Whether from sub-Saharan Africa or China, it is clear that digital transactions do not exist in a vacuum. These are just illustrative examples of a general global trend. However, there is great potential for DFS when coupled with chat, voice, or social to do more and be more effective simply by being receptive to and supportive of the sociality of money.

## The changing role of social: from face-to-face interactions to chatbots

As low-income individuals' financial and non-financial practices increasingly move online, the dynamics of social interactions are changing. While in some sense the shift to digital makes leveraging social networks easier than ever, digitally replicating the power of analog, face-to-face social interactions, and customer engagement is an evolving and complex process. Interactive SMS services, such as those delivered through **Juntos** and **Arifu**, are part of the current experimentation around replicating business-to-consumer interactions in the development space. The next shift in customer engagement is likely to fall within the chatbots space.

Gartner predicted that by 2020, 85% of customer interactions will be managed without a human.[44] While an ambitious prediction, there is no doubt that

42 Bailur et al., "Digital Lives in Ghana, Kenya and Uganda."

43 Chan, "Money as Message – How WeChat Got Users to Adopt Payments as a Way to Grow Its Network."

44 GSMA, "Messaging as a Platform The Operator Opportunity."

more sophisticated, real-time interaction presents an incredible opportunity for providers to interact with and engage their customers, and drive financial inclusion.[45] In less developed markets, innovators are beginning to scratch the surface in terms of experimenting with chatbots. **FarmInk**, a chatbot that helps farmers in Kenya find each other and share information, and **Mr. Finance Bot**, which provides interactive finance education in Myanmar, are two examples. Other finance-related innovations in the chatbots space include **Kudi.ai** enabling seamless payments in Nigeria, ABSA Chatbanking authorizing instant transactions through Facebook and Twitter in South Africa, and **Susu.ai** helping customers save in Nigeria. More experimentation and evaluation is hopefully on the horizon.



45 http://partners.wsj.com/metlife/multipliers/articles/talking-the-talk/

# Implications

## Ensure consumer protection keeps abreast of technological developments

Consumer protection is essential to ensuring users are fairly treated and feel confident using the digital financial services on offer. Exposure to risks can damage potential (and existing) customers' trust in the service. While integrating needs and behaviors into product design is an important component in order to mitigate risks, consumer protection must remain a primary focus. While organizations such as CGAP[46] and Smart Campaign[47] have laid out some of the potential risks facing digital finance customers, responsible digital finance practices must keep abreast of technological developments. With the expansion of smartphones, introduction of apps, and increasing use of digital attributes (from chatbots to big data), it would be prudent for the digital finance community to identify, monitor, and mitigate emerging customer risks. The Mozilla Foundation's research identified potential risks facing first time, low-income smartphone users in Kenya.[48] These included limited understanding of how to control access to their data and digital identity. Additional research to identify these new risks and experimentation around risk mitigation strategies are essential to enabling the ultimate goal of meaningful financial inclusion.

## Move customers gently along the journey to "full digital"

CGAP's HCD work revealed that many low-income individuals are at best uncomfortable with new technology and, at worst, fearful of it.[49] Mozilla's research highlighted how unprepared many underserved, tech illiterate individuals are for this emerging shift to "full digital."[50] Insights around the digitization of social interactions similarly highlighted the potential challenges of digitizing face-to-face interactions.[51] While digital addresses many roadblocks to accessing and using financial services, in order to drive adoption and satisfaction, providers must gently move customers along this digital journey.

Although many social interactions are being digitized as customers sign-up to digital financial services, this is often counterbalanced by the use of brand ambassadors, agent networks, and customer call centers that provide real, human interactions. Maintaining human touch points in digital finance can offer many benefits, such as helping connect clients with new products and services.[52]

Providers may want to consider blending digital with the non-digital in their product design. This approach mitigates issues surrounding the intangibility of digital finance. As Chipchase et al. argue, *"people want physical things—physical money and physical evidence of transactions."*[53] Similarly, Mas observes that the *"sensory experience with cash brings concreteness,"*[54] while digitizing cash removes its physical support. One example of how providers can blend the digital

46 McKee, Kaffenberger, and Zimmerman, "Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks."
47 Arenaza, "Potential Risks to Clients When Using Digital Financial Services: An Analysis Report to Inform the Evolution of the Client Protection Standards."
48 de Reynal and Richter, "Stepping into Digital Life."
49 CGAP, "Insights into Action: What Human Centered Design Means for Financial Inclusion."
50 de Reynal and Richter, "Stepping into Digital Life."
51 Harigaya, "Effects of Digitization on Financial Behaviors."
52 Duflos and Tyler, "Voice of the Customers: A Two-Way Dialogue in Digital Finance."
53 Chipchase, Lee, and others, "Mobile Money."
54 Mas, "Strains of Digital Money."

with the non-digital in their services comes from an agricultural retailer that sells farm inputs on layaway in Mali and Senegal. The retailer allows farmers to gradually pay by purchasing scratch cards that function similarly to airtime top-ups.[55] While the scratch card has no use after the code has been submitted, providers have found that farmers hold onto the cards as tangible proof of the electronic value now in their layaway accounts. [56] This type of tangible evidence of a transaction may help build trust and confidence as low-income clients become accustomed to these new services.

## Conclusion

This Snapshot has provided a brief overview of some of the behaviors and attitudes influencing digital finance adoption and ongoing satisfaction. Everything from trust issues to social networking behaviors is in play. We expect to see more blending of the financial with the non-financial and of the transactional with the social in the years ahead. We also expect new opportunities and challenges to arise as more interactions move "online", and consumers increasingly connect with digital finance services across smartphones, apps and social messaging platforms.



55 Mattern and Tarazi, "Designing Digital Financial Services for Smallholder Families."
56 Ibid.

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"How Social Norms Affect Women's Financial Inclusion."
CGAP, August 3, 2017.

2 Rogers, Everett M.
Diffusion of Innovations.
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"Insights into Action: What Human Centered Design Means for Financial Inclusion,"
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"The Power of Social Networks to Drive Mobile Money Adoption,"
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5 Chao, Eveline.
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Fast Company, January 2, 2017.

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"Effects of Digitization on Financial Behaviors: Experimental Evidence from the Philippines,"
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7 Mattern, Max.
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# 10 Must Reads in this Space

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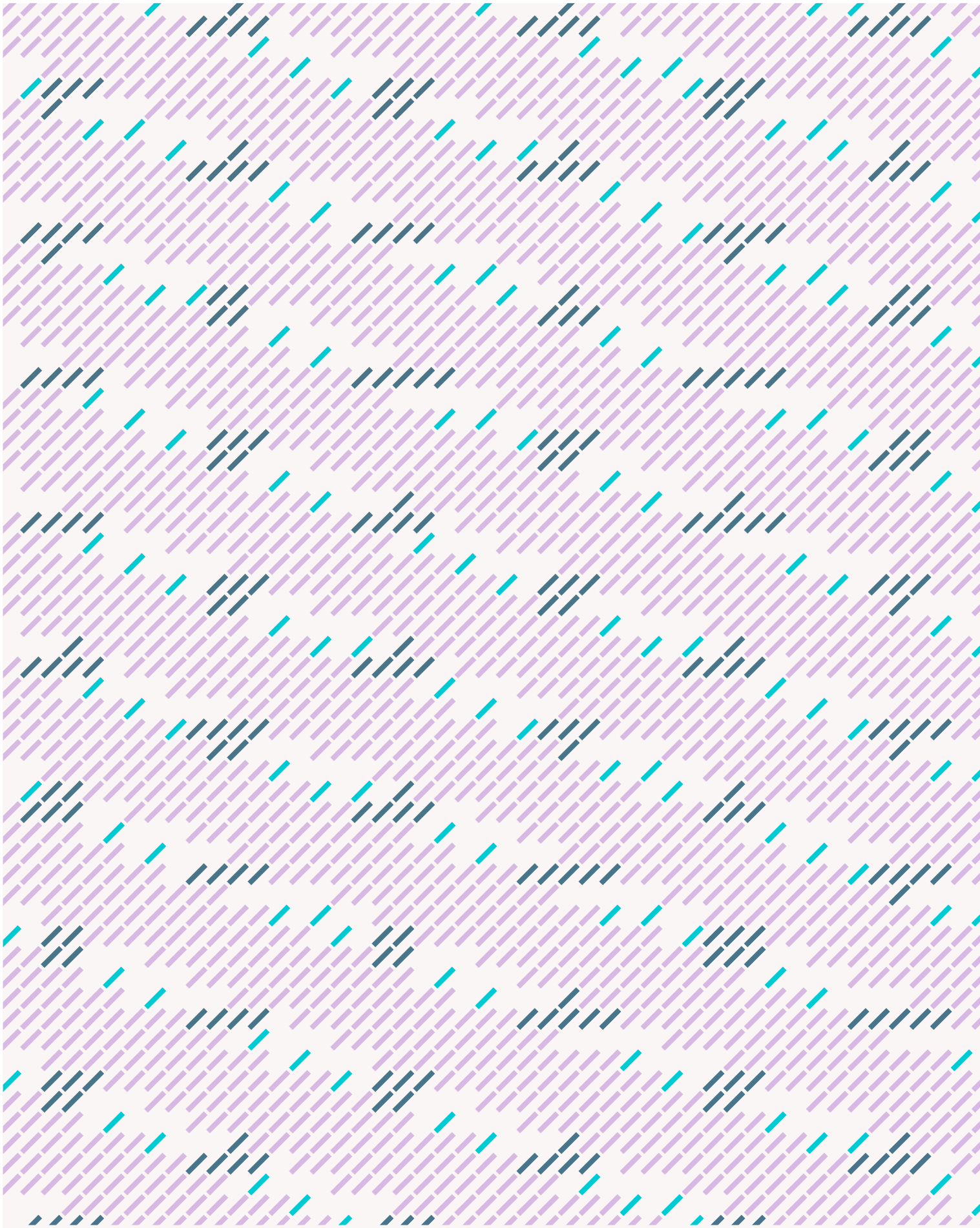

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