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COULD AI UNTANGLE THE PUZZLE OF ENTERPRISE LENDING IN FRAGILE STATES?

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Emerging developments in data science, especially those in algorithm-driven artificial intelligence (AI),[1] are opening previously unimagined opportunities. Demonstrating these changes, global data volumes are projected to reach an unprecedented 163 zettabytes (equivalent to a trillion gigabytes) by 2025. The processes built around these amounts could make this non-physical asset one of the most valuable global commodities.

In Africa, where garnering robust support for incentives and young developers remains a challenge,[2] AI could provide solutions to many problems. Specifically, AI could help enterprises in parts of Africa and other fragile and conflict-affected states (FSC) leverage the benefits of the technology to confront prevailing obstacles to accessing credit.[3] The situation just described is particularly apt for the FCS where the penetration of brick-and-mortar financial institutions remains low.

Mobile banking has moved into this vacuum on the strength of rapid developments in the telecommunications sector within these jurisdictions. However, even on this platform, credit access is still limited for FCS enterprises.[4] This fact sheet provides a summary of opportunities–based on AI and related technologies—that could provide ways of credit-scoring for FCS enterprises as they seek rewarding mobile loans.[5]

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CREDIT SCORING

Predicting Future Behavior[6] of Credit Seekers in FCS

Models that amalgamate data originating from social science and historical behavior—together with computational algorithms and machine learning—have found business applications in South African financial institutions.[7] The "Global Technology As A Service" (TAAS)[8] company Genii[9] AI[10] primarily focuses on using predictive analytics as a means to forecast the future behavior of customers. The ability of this technology to identify and anticipate current and future customer needs and interactions provides a useful framework for adaptation by mobile-lending institutions targeting FCS enterprises.[11]

Assessing Credit[12]

For enterprises in FCS that lack formal credit histories, using AI to capture unconventional data points that can become reliable predictors of creditworthiness could be a viable alternative. The Singapore-based fintech company LenddoEFL[13] is an example of an AI and advanced analytics startup that uses nontraditional data points for credit scoring. Data comes from many sources,[14] such as psychometric assessments, smartphone data, digital profiles, mobile data, social data, and transactional data, to name a few. The system is in use on lending platforms such as Tala that are now available in some African countries, such as Kenya.[15] When data is nonexistent,[16] users can present themselves using other sources of data that would normally emerge in a credit report. Consistency, conscientiousness, compulsiveness, honesty, reliability, stability, and attention to detail are some of the examined characteristics. LenddoEFL[17] has created ways to analyze characteristics, examining over 20,000 characteristics in the last six years.[18]

Evaluating Credit Applications

Headquartered in Lagos, Nigeria, Carbon[19] is a mobile-lending platform that uses machine learning to assist in the evaluation of credit applications.[20] As a remarkably simple and user-friendly platform, Carbon also supports users with personal finance management tools, investment opportunities of a high-yield nature, and easy payment solutions.[21] A similar platform—and one that could be readily adapted to FCS conditions—is the recently patented application created by Rodney Williams that uses AI to analyze a potential borrower's social media accounts as a way of determining credit fit.[22]

ASSESSING PRODUCT UTILITY

Determining Product Fit

AI can aid in the process of determining the most beneficial credit products[23] for prospective FCS enterprises. In addition, AI could assist in figuring out the best moments in time for enterprises in FCS to use credit lending based upon the specific needs and circumstances of the firm. DataProphet,[24] a South African company specializing in machine learning, uses AI to help an insurance company[25] identify and interpret defining characteristics of its clientele in order to discover which of its clients engages with which of its products.[26] In another circumstance, DataProphet's predictive capabilities have helped an unsecured lending company[27] identify users of high priority.[28] These kinds of applications may be transferable to other jurisdictions where FCS enterprises seek credit access.

Lowering Interest Rates for Unsecured Loans[29]

KiaKia,[30] a virtual peer-to-peer and direct-lending–licensed platform catering primarily to the average Nigerian micro, small, and medium enterprise (MSME),[31] uses AI and machine learning to lower the interest rates for unsecured loans.[32] In turn, borrowers are able to engage in alternative credit scoring that offers real-time assistance and service, more loan repayment options, and secured lending.

MANAGING FINANCES

Cash Flow Management and Loan Performance Monitoring[33]

Assessing a borrower's crop activity[34] by combining AI and satellite technology to scan small farms[35] for crop type, size, harvest progress, and weather factors[36] could be particularly valuable for agricultural enterprises seeking a loan.[37] Harvesting[38] represents an example of an AgriFin[39] company that uses AI and remote sensing satellites to provide farm-level information[40] to interested lenders[41] in an efficient and operationally cost-effective manner—and hence enabling credit access for the deserving.[42]

Overcoming Connectivity Constraints

Lack of internet accessibility and mobile data availability, coupled with high operational costs, are challenges for many credit seekers in FCS. The robotic chat advisor Atura[43] is an example of a digital financial services assistant[44] that allows users to manage their finances in a data-light and transparent manner. The ability for enterprises in FCS to quickly gain access to the right information using a mechanism that smoothly merges with existing systems could be particularly useful in helping enterprises in FCS better understand and navigate their financial journeys when seeking credit lending.[45]

ADDRESSING AML RISKS

Promoting Anti-Money–Laundering (AML) While Reducing Risk

A variety of financial institutions approach their AML[46] compliance manually, and many remain hesitant to lend to enterprises in FCS as they are perceived as being high-risk. Applications like Tookitaki,[47] an end-to-end machine learning–driven platform that oversees and discovers suspicious transactions, could be used to provide an additional layer of lending reassurance between lenders and enterprises in FCS.

CONCLUSION

Enterprises in FCS continue to face numerous barriers to credit entry and attainment. However, fintech startups likes the ones vigorously sprouting throughout Africa—where most FCS sit—are not shying away from finding particularly fertile ground for AI innovations. These innovations have the potential to provide real and timely solutions to the un-banked, and/or to under-banked enterprises. This fact sheet has provided a non-exhaustive list of applications of AI that can improve the financial health of enterprises in fragile and conflict-affected states while rewarding loan origination. The innovations and resulting applications will be adopted by FCS enterprises and financial institutions depending on their complexity, usefulness, and compatibility.

ENDNOTES

1   We define AI as intelligence demonstrated by machines, in contrast to human intelligence. Machine intelligence is interpreted as "a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation." See Andreas Kaplan and Michael Haenlein, "Siri, Siri, in My Hand: Who's the Fairest in the Land? On the Interpretations, Illustrations, and Implications of Artificial Intelligence," Business Horizons 62, no. 1 (1 January 2019): 15–25.

2   See Africa News and Reuters, "Ethiopia Aims To Become Africa's Artificial Intelligence (AI) Giant," Africa News, May 9, 2018, https://www.africanews.com/2018/09/05/ethiopia-aims-to-become-africa-s-artificial-intelligence-ai-giant/.

3   See "Government Artificial Intelligence Readiness Index 2019," Oxford Insights, 2019, https://www.oxfordinsights.com/ai-readiness2019.

4   Mobile-lending platforms in FCS suffer from the lack of recognized credit bureaus. See Victor Odundo Owuor, "Mobile-based Lending is Huge in Kenya: But There's a Downside Too," The Conversation, October 4, 2019.

5   Mobile lending is defined here as the process of using a mobile phone to apply for and get approval of a loan from a financial institution.

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7   See "Founder and CEO Of Genii AI, Kobus Van Der Westhuizen, on the Rise Of Artificial Intelligence and its Application in SA Businesses," Genii Analytics & Artificial Intelligence, 2019, https://www.geniianalytics.com/qa-genii-ai/.

8   See Synapse Magazine: The Voice Of Artificial Intelligence In Africa, Q4 2019, https://issuu.com/aimediasynapse/docs/synapse_-_issue_6-opt.

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15 See Odundo Owuor, "Mobile-based Lending is Huge in Kenya."

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22 See United States Patent Application Publication US 2017/0061535 AI, Rodney Williams, March 2, 2017, https://patentimages.storage.googleapis.com/f1/ce/c9/71bb0a92933996/US20170061535A1.pdf.

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27 See "Customer Segmentation: Case Study," DataProphet, October 2018, https://dataprophet.com/wp-content/uploads/2018/10/InSight_Customer_Case_Study_B.pdf.

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