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Impact of Generative AI on FINTECH in Africa

Üretken Yapay Zekanın Afrika'da FINTECH Üzerindeki Etkisi

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ABSTRACT

The financial technology (Fintech) industry in Africa is expanding and growing quickly. Despite several regulatory contexts, political, economic, and regulatory obstacles, Fintech is booming throughout the continent. Over the past few years, the information technology industry has grown dramatically, and a large number of these new businesses are focused on upending the financial technology industry. Because it can understand customer preferences, spending habits, and financial goals, generative AI has a lot of promise to provide personalized financial recommendations or solutions to any individual. With the new paradigm of generative AI playing a more critical role, it may have significant impact on fostering the growth of Fintech within Africa. The article provides a comprehensive review of the current state of Fintech within Africa and the impact of generative AI on fostering the growth of it.

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ÖZ

Afrika'daki finansal teknoloji (Fintech) endüstrisi hızla genişliyor ve büyüyor. Çeşitli düzenleyici bağlamlara, siyasi, ekonomik ve düzenleyici engellere rağmen, Fintech kıta genelinde patlama yaşıyor. Son birkaç yılda, bilgi teknolojisi endüstrisi önemli ölçüde büyüdü ve bu yeni işletmelerin büyük bir kısmı finansal teknoloji endüstrisini değiştirmeye odaklandı. Müşteri

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tercihlerini, harcama alışkanlıklarını ve finansal hedeflerini anlayabildiği için, üretken yapay zeka, herhangi bir bireye kişiselleştirilmiş finansal öneriler veya çözümler sunma konusunda çok şey vaat ediyor. Üretken yapay zekanın yeni paradigmasının daha kritik bir rol oynamasıyla birlikte, Afrika'da Fintech'in büyümesini teşvik etme konusunda önemli bir etkisi olabilir. Bu çalışma, Afrika'daki Fintech'in mevcut durumu ve üretken yapay zekanın büyümeyi teşvik etme üzerindeki etkisi hakkında kapsamlı bir inceleme sunmaktadır.

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1. INTRODUCTION

Africa's financial technology (Fintech) sector is maturing and developing rapidly. Fintech is exploding on the continent despite political, economic, and regulatory challenges as well as the large number of different regulatory environments. The information technology space has expanded significantly within the last several years, and many of these new enterprises focus on disrupting the financial technology sector (Didenko, Regulating FinTech: Lessons from Africa, 2017).

With average deal sizes rising and the percentage of fintech funding in Africa rising over the past year, African Fintech is becoming a hub for investment, boosting the continent's economies and creating jobs. Financial services on the continent are at a turning point as Fintech develops, and a number of African nations have a big chance to seize the momentum of the last few years to unleash even more potential in the industry.

The fintech sector on the continent is predicted to experience substantial development and value creation in the future, even though investment has slowed down in line with worldwide trends. In Africa, almost 90% of transactions still involve cash. Therefore, there is a lot of room for growth in fintech revenue. The projection is that African fintech revenues might reach eight times their 2020 value by 2025 if the entire sector can achieve penetration levels comparable to those observed in Kenya, a nation with one of the highest levels of fintech adoption in the world. As an entire nation, Africa experiences a significant disparity in development and financial technology availability (Langley & Leyshon, 2022).

The financial services sector in Africa is expected to expand at a rate of roughly ten percent annually, with revenues expected to reach over $230 billion by 2025, with South Africa representing more than 30 % of the overall revenues. The young and rapidly urbanizing population, in addition to the expansion of network coverage, has led to an increase in smartphone ownership. Furthermore, the absence of large established banks and bank systems represents a massive opportunity for these companies to leverage smaller establishments and enhance banking access for the population (Didenko, Regulatory challenges underlying FinTech in Kenya and South Africa, 2017).

Fintech companies may deliver significant value, where the remittance costs are generally up to six times lower than other providers. Furthermore, the solutions can be up to 80 % less expensive, and interest rates may be more than three times higher than traditional banks.

The expectation is that with the increased funding and regulatory enablements, the African fintech market will increase significantly within the coming years. The current fintech environment between the 54 African countries is experiencing significant discrepancies, with the South African banking system being the most developed. South Africa is expected to remain the major player in the fintech market, with francophone West Africa and Ghana experiencing significant growth rates of 15 % and higher until 2025. Nigeria and Egypt experience similar growth rates, although lower. The expectation is that the 11 major markets on the African continent that make up 70 % of the continent's GDP will be the focus of fintech growth (Chinoda & Mashamba, 2021).

Because these nations differ in their degrees of digital development, there will be various opportunities in each market. Countries like South Africa and Nigeria, which have more developed financial systems and digital infrastructure, will probably witness more innovation in sophisticated financial services, such as B2B liquidity and regulatory technologies like know-your-customer (KYC) compliance and anti-money laundering (AML). Financial services like underwriting, servicing, claims, and assessments in insurance; banking-as-service (BaaS) and embedded finance in operations and infrastructure; and buy-now-pay-later services in retail and small- and medium-sized enterprise (SME) lending are likely to advance in markets where financial systems and infrastructure are still growing, like Egypt (Makina, 2019).

Africa is becoming a digital native, laying the groundwork for the next stage of fintech development. Fintech companies in Africa, along with other relevant parties such as investors and governments, have a chance to think about how the industry might attain long-term viability. Even with all of the activity on the continent, Africa has only produced a small number of unicorns, or companies valued at $1 billion or more, and the viability of many of these businesses is questionable. This implies that there is still a lot of

work to be done to provide the prerequisites for realizing the sector's potential (Mazambani & Mutambara, 2020).

Although the fintech ecosystem is still in its infancy, the African fintech market is expanding rapidly. Fintechs have gained a lot of traction in Africa, particularly in the areas of wallets, payments, and distribution, but there is enormous potential for growth. In nearly every financial services sector, distinct areas where opportunities for new services and products arise are becoming more and more apparent as the market develops. However, there are four major obstacles that African fintech businesses must overcome before they can become sustainable. The first is about achieving profitability and scalability. Secondly, the unpredictable regulatory environment represents a significant challenge for negotiating contracts. Thirdly, scarcity in terms of resources as well as infrastructure is a bottleneck that has to be controlled and dealt with. Finally, a robust corporate governance framework has to be established for each of the enterprises (Hammerschlag, Bick, & Luiz, 2020).

Although there is a significant potential for fintech expansion throughout the African continent, infrastructure limitations in some areas limit the total addressable market or the relevant group of potential clients. These usually include low internet and mobile penetration in certain areas, a lack of identity protection, and restricted payment rails, which are the foundation of all electronic money transfers. Only three nations in Africa have both the required payment rail infrastructure and real-time payment systems in place.

Fintech companies seeking to expand over the continent could have to consider this geographic variety and customize their strategy for each nation according to its unique features, infrastructure, legal systems, and consumer preferences.

2. FINTECH DEVELOPMENT IN AFRICA

Reaching a certain level of success in expansion involves more than just scaling up. Finding strategies to reduce client acquisition costs is essential since FinTechs in Africa have a tougher time, even with a sizable customer base, developing sustainable and prosperous business models through consumer monetization due to lower disposable income and poorer customer loyalty. Generally, challenges arise in achieving profitability, which is more complex than in Latin America or other developed markets.

FinTechs in Africa face challenges, including a disjointed financial regulatory environment in addition to inconsistent infrastructure across markets. Different nations are developing at varying speeds. Fintechs may find it challenging to maintain business continuity and compliance across markets due to complex and variable regulations, including license approval processes. However, regulatory bodies in some countries are beginning to support the development of an enabling environment, for instance, by establishing fintech sandboxes, updating licensing requirements, and implementing digital KYC regulations.

In other markets, FinTechs can discover that they are unable to adjust quickly enough to stay up with regulations, which, along with the level of enforcement, might occasionally change rapidly. Fintechs may discover that in other sectors, they are outpacing regulators in terms of speed, posing a completely different set of difficulties. Furthermore, it can be challenging for business owners and investors to maintain consistency due to the possibility of volatile exchange rates and stringent foreign exchange regulations in different countries.

Another challenge is the limitation of resources of many Fintech companies in Africa. Enterprises do not function with boundless resources. Effective management of people, money, and time is necessary to start and maintain growth. Fintech investment broke records in 2021, and while funding is already slowing down, particularly for later-stage businesses, incumbents are beginning to catch up with disruptors, so these Fintechs face ever more significant competition (Tatar, 2023).

This implies that in order to adapt to a new venture capital reality, African fintechs will probably need to be more financially efficient. As a result, there is less rivalry across funds for deals, which drives down the size of the deals, valuations, and the number of completed deals. Therefore, increasing local involvement in venture capital is essential, given that more than 70% of fintech startup agreements are now funded by investors with headquarters located outside of Africa, primarily in North America. Furthermore, the majority of locally funded transactions involve early-stage firms (Koffi, 2016).

Additionally, maintaining talent represents a cornerstone for the successful development of these enterprises. There are various estimates that more than half of the software developers in Africa are located in five countries being South Africa, Nigeria, Morocco, Kenya, and Egypt, and the demand for these skilled professionals is not only limited to Africa but also the entire world. According to World Bank estimates, there is a considerable annual brain drain of ICT workers from low- and middle-income nations to countries with more developed digital sectors in search of better employment opportunities and higher earnings. In order to succeed in the future, fintech companies will need to overcome the shortage of funding and growing competition for talent (Romdhane, Loukil, & Kammoun, 2020).

Maintaining strong corporate governance is another critical area in which Fintech companies have to strive. This is essential to manage scarcity, enhance negotiation under uncertainty, and increase both scale and profitability. Hence, a solid corporate culture with clear consistency and clarity is quintessential (Delioglu & Beynaz-Uysal, 2022).

The main components of corporate governance are effective stakeholder involvement, a well-defined personnel strategy to enhance the organization's capabilities, and a vital culture development component. While aligning

a fintech's value offer to the appropriate market may be a crucial initial step in creating a successful startup, routines, norms, and processes that are shared and understood by all members of the business must be defined in order to sustain momentum. Fintechs must also have a robust compliance foundation in order to actively manage regulatory change and avoid running afoul of authorities. This has become a challenge with several new Fintech companies that have encountered administrative penalties for not adhering to regulatory requirements. Fintech companies working in Africa are aware that the region does not offer instant success and that there are various challenges that have to be overcome. There are multiple features that may be beneficial (Etudaiye-Muhtar, Johan, Lawal, & Sakariyahu, 2024).

First, given the diversity of African markets, fintechs should make sure their value proposition is appropriate for the market they are entering. Fintechs have evolved globally to reach scale through three main avenues. While some begin with a specialized financial B2C or B2B product and develop into a digital bank, others begin as distributors of distinctive non-financial consumer goods and become fintechs. Starting with a payment infrastructure solution and working your way up to a nationwide digital platform is the third alternative. Due to infrastructure limitations, the oldest fintech companies on the continent—such as Interswitch in Nigeria, M-Pesa in Kenya, and Fawry in Egypt—entered markets by developing infrastructure unique to their own nations and are currently leading their respective industries (Banna, Mia, Nourani, & Yarovaya, 2022).

Second, businesses with a lengthy history of operations on the continent have relied heavily on quick client acquisition to achieve sustainable growth. Africa's population of over 1.3 billion people is expanding quickly, creating a sizable potential market for fintechs. However, due to low customer purchasing power and infrastructure limitations, actually gaining customers can be demanding. To get over these limitations, market leaders have had to take action. Some of these actions include using pre-existing physical networks or implementing aggressive pricing strategies to offer lower fees and charges than rivals.

Third, top fintech companies have figured out how to convert their customer acquisition into sustainable revenue streams. These strategies share one of two characteristics: either they have multiple monetization strategies, like having a B2C arm for a B2B company or vice versa, or they have a consistent and healthy revenue stream from core activities like card switching for Interswitch or providing point-of-sale (POS) services to merchants for Yoco. For instance, Paga has expanded into merchant acquisition by using its strong position in wallets, while M-Pesa and MTN both have robust lending components in addition to their wallets.

Fourth, the capacity to adjust to the realities of low average revenue per user (ARPU) in the consumer and micro, small, and medium-sized firm sectors has been a crucial success factor in Africa. Africa has the lowest GDP per capita of any continent. In response, fintech companies have changed their business models to accommodate businesses that cannot afford advance payments, like Yoco, or they have used scale to lower customer service costs, like M-Pesa.

Fifth, successful fintechs in Africa have had to create ways to engage customers offline because ninety percent of transactions in the region are still made with cash. Creating agent networks or utilizing already-existing infrastructure, such as physical stores, to supply financial services have been essential tactics in this case. For instance, TymeBank, the first digital bank in South Africa, overcame infrastructure obstacles by forming a strategic partnership with significant retailers. As a result, the bank no longer needs a physical branch network and can install account-opening kiosks at retail locations around the nation (Hammerschlag, Bick, & Luiz, 2020).

Finally, fintechs must be aware of and abide by regulations as authorities become more active in Africa. Numerous prosperous fintech companies, including OPay, M-Pesa, and Fawry, have opted to initiate proactive communication with regulatory bodies once attaining substantial size in order to facilitate mutual progress.

The first phase of African fintech development appears to be coming to an end. Fintechs have grown to be significant actors in the African financial services industry, sometimes even surpassing traditional banks in terms of size and value. They are also generating value and receiving more capital. In actuality, there are an exponentially growing number of high-value fintech companies. Furthermore, customer accessibility is at an all-time high.

Across the continent, a developing fintech sector has the potential to provide money, opportunities, skills, and jobs. According to an IFC analysis, by 2030, over 230 million jobs in sub-Saharan Africa will require digital capabilities, opening up chances for those in related industries, particularly training (Etudaiye-Muhtar, Johan, Lawal, & Sakariyahu, 2024).

The fintech revolution in Africa is launching an ecosystem that may provide several social advantages as well, such as expanding access to loans in essential industries like agriculture and enhancing healthcare and insurance availability on a large scale. Also, the newcomers are shown to be crucial in promoting financial inclusion, especially for women.

Governments, investors, the traditional financial services industry, and fintechs are among the stakeholders who must play a crucial role in fostering sustainable growth and innovation in order to scale up these benefits.

For example, regulators might think about formalizing data systems, encouraging consistent regulation, and keeping up with changes in the fintech scene. Investors, on the other hand, might try to increase local opportunities, inform African investors about potential opportunities on the continent, and concentrate on the actual value that

startups add rather than just the amount they fetch when they are sold.

Both incumbents and fintechs have to concentrate on developing future talent and training, as well as forming alliances with regulators and one another to create the ecosystems required to sustain fintech expansion in tandem with national development goals.

The industry's leaders of today have constructed the payment rails, essentially creating the groundwork for future growth. However, as the market becomes more competitive, fintechs may need to change their course in order to formalize and consolidate in order to succeed over the long term. However, if interested parties collaborate to build on the momentum garnered in recent years, African Fintech has a bright future, and the next African unicorn is poised to rise to fame.

In addition to attempting to form alliances with regulators and one another to construct the ecosystems required to sustain fintech growth alongside national development agendas, incumbents and fintechs should concentrate on developing talent and providing training for the future (Cambaza, 2023).

The industry can now flourish because today's leaders have established the payment rails and laid the groundwork for future growth. However, given the current state of the market, fintechs may need to change their focus in order to formalize and consolidate in order to succeed over the long term. However, the future of African Fintech seems bright, and the next African unicorn is poised to rise, provided that all parties involved can collaborate to build on the momentum that has been established in previous years.

All indications point to the fintech industry in Africa maturing. Africa's participation in traditional finance has been restricted for many years, with many of the continent's nations lacking access to banking, insurance, and credit services. Because of this, only around 10% of transactions on the continent are completed digitally, making cash the dominant method of payment.

But there's now a noticeable structural change in motion. Technology advancements, lower data costs, and better regulatory frameworks are driving the fintech sector's unprecedented expansion, which is transforming how people bank, shop, conduct business, and live on the continent. Both social and economic gains could result from these changes. The fastest-growing startup sector in Africa is Fintech, which is expected to get 54% of all startup investment in 2021. Startups in agile technology are bringing new ideas to the table to satisfy broad and varied market demands. Despite having a population of 1.3 billion and a GDP of roughly $2.4 trillion, almost 65% of Africans lack or have insufficient access to banking services (Coetzee, 2018).

There has been significant progress, with several new Fintech startups raising more than $1.6 billion from investors, with the majority being based in South Africa, Nigeria, Egypt, and Kenya. Four of these companies, such as OPay, Flutterwave, Chipper Cash, and Wave, have attained "unicorn" status, a designation granted to firms with a $1 billion or higher valuation. Additionally, African fintechs have raised the same amount in the first five months of 2022 as they did in the entire year 2021, despite a dramatic decline in worldwide funding in recent months.

With many African authorities taking action to level the playing field for fintech innovation and create an ecosystem that enables innovation, shifting regulation is also contributing to and maintaining the growth of Fintech on the continent. In the last three years, a number of nations have established comprehensive data protection norms to reduce regulatory risk, provide clarity for new players, and foster risk-free innovation in the fintech sector by setting up regulatory sandboxes. For example, Nigeria, Ghana, and Uganda have implemented initiatives to promote financial inclusion and decrease cash transactions, while other countries are utilizing innovative approaches to accelerate the adoption of digital technology.

While Ghana and Nigeria are putting planned central bank digital currencies (the e-Cedi and e-Naira) into effect, the Johannesburg Stock Exchange (JSE) in South Africa is issuing debentures, a medium- to long-term loan instrument used by significant firms to borrow money at a predetermined rate of interest, under a digital ledger.

Favorable regulatory policy agreements may also create new growth opportunities for fintechs by boosting cross-border trade and payments. Two examples of these agreements are the African Continental Free Trade Area (AfCFTA), which will establish the largest free trade area globally, and the Pan-African Payment and Settlement System (PAPSS), which is scheduled to be implemented. Fintechs are in an excellent position to offer digital solutions that address problems with cross-border payments and set the stage for the continent's transition from cash to digital platforms for transactions (Mothobi & Kebotsamang, 2024).

When combined, these digital transformation tendencies have put African markets on the verge of an exponential development trajectory. This implies that if they continue along the route taken by more developed nations like Vietnam, Indonesia, and India, which are already well ahead of them.

There is room for fintech development in Africa, as several regions are seeing the emergence of excellent fintech hubs. Questions about lasting value and profitability, however, remain unanswered. Africa is lagging behind other areas in terms of the number of unicorns it is producing in relation to financing received, even with the continent experiencing a fintech funding boom. Based on our data, Africa has created just ten unicorns (including embedded telco fintechs) compared to Asia's 138 (excluding China). Brazil leads the world with 84 unicorns per billion people when the unicorn population is compared to the total population. South-East Asia generated 49 unicorns per billion inhabitants, while Latin America, with the exception

of Brazil, produced 54. In comparison, out of every billion individuals, only eight defined unicorns have been generated in Africa.

But when it comes to the evolution of Fintech, Africa is catching up to Southeast Asia and Latin America, which are both a few years ahead of the continent. According to our data, between 2019 and 2021, African fintech firms were able to receive investment equivalent to that of both areas, and the number of deals in Africa increased more quickly than in the other two regions. Comparing the financial services market's $150 billion in revenue to Africa's $4.5 billion to $6 billion, the continent's fintech penetration is less than that of other nations, at 2 to 3 percent as opposed to 3 to 5 percent worldwide. Fintech penetration in Africa, however, is comparable to global markets when South Africa is taken out of the equation because the majority of fintech disruption occurs outside of the continent. Additionally, it might be up to twice as high as global benchmarks in significant markets like Ghana and Kenya (Tamasiga, Onyeaka, & Ouassou, 2022).

An entity's ability to adjust to its particular qualities is a significant factor in success in any given context, and in Africa, where there are many different playing fields, this is not always the case. Even if there seems to be a lot of potential for fintechs throughout Africa, in some areas, infrastructural and market limitations limit the overall addressable market or the relevant group of potential clients. For instance, about 40% of people live in Côte d'Ivoire, Cameroon, Tanzania, Uganda, and Nigeria but do not possess official identification.

The fact that incumbents and telcos in some markets account for the majority of fintech income presents another difficulty for fintech startups. Nearly all of Kenya's mobile money customer revenues are generated by Safaricom alone. Because mobile phone penetration in Africa is significantly higher than bank accessibility, telcos are already making substantial profits from their fintech activities. In addition, telcos gain from having abundant customer data and low-cost operational models that allow them to evaluate risk when granting loans or providing other services. This is a distinct advantage on a continent where credit bureaus are rare in most markets.

This disparity among African regions emphasizes the significance of customizing distinct strategies to distinct areas based on their innate traits. Fintechs might search for opportunities in particular sectors, mainly B2B, like South Africa and Morocco, countries with reasonably developed traditional banking systems but low penetration rates for mobile payments. In markets that are focused on mobile money, such as Kenya, Uganda, Tanzania, and Ghana, where the use of digital wallets and other payment services is widespread and mobile money services are highly prevalent, fintechs are more likely to thrive by providing creative solutions than traditional financial services. Conversely, markets primed for disruption include Nigeria and Egypt. For instance, a sizable portion of the populace in Egypt lacks access to banking, and the country's current banking systems are frequently cumbersome and time-consuming, needing numerous in-person meetings in order to approve loans (Danladi, Prasad, Modibbo, Ahmadi, & Ghasemi, 2023). Fintechs with simplified onboarding and digital processes are in an excellent position to take advantage of these markets, upend the current financial services landscape, and expand their reach and offerings. In countries like Côte d'Ivoire, Cameroon, and Senegal, where mobile money is still in its infancy as a payment method, a significant percentage of transactions still involve cash and typically involve an agent. As a result, they provide fintechs the chance to provide more affordable, quicker, and practical financial service solutions. However, in order to understand how to encourage client uptake, investors entering these sectors will require in-depth local knowledge. Discovering strategies to lower the cost of acquiring new customers is essential in this context. Reaching client monetization in Africa is nearly four times more difficult than in Latin America and thirteen times more difficult than in the European Union, assuming identical expenditure levels per user. There is no reason why people in Africa wouldn't switch to a less expensive product because the majority of them have more time than money.

Even though some African nations are making efforts to foster the growth of fintechs, the rate at which individual businesses can expand internationally may be impacted by an uneven regulatory framework. This refers to the fact that laws and regulations are dispersed among various regions, raising the possibility of exposure to fluctuations in exchange rates and stringent foreign exchange controls. Regulatory agencies play a complicated role in defending consumer rights and fostering an atmosphere that encourages the expansion and success of businesses. So that fintechs can serve consumers and companies. For instance, the infrastructure and procedures for open banking are still being established in Egypt and Tanzania. In contrast, this area is either unrestricted or not controlled in other nations, like South Africa, Morocco, Nigeria, and Ghana.

Operating a fintech business across several geographic locations can be challenging because of the wide variations in regulatory developments and approaches. In the end, the ambiguous regulatory environment raises a number of compliance issues for fintechs operating throughout Africa and shows an imbalance between the way a firm should function and the most effective way for it to do so (Danladi, Prasad, Modibbo, Ahmadi, & Ghasemi, 2023).

The rapid advancement of digital innovation spearheaded by fintechs may be the root cause of this imbalance, surpassing any rational timeline for the development of regulations. Regulators, on the other hand, can take swift action, amending laws that affect how businesses operate, giving fintechs little time to adjust. Depending on how the regulatory landscape changes, fintech companies might need to change course or even commit whole teams to interacting with authorities in order to maintain

compliance. Licensing is a major regulatory obstacle for fintechs as it establishes a company's ability to operate in a particular country. The acceleration and expansion of Fintech might be greatly aided by the standardization and simplification of licensing procedures, possibly even across national borders.

Fintech companies seeking regional expansion run the risk of being exposed to unstable currency rates and onerous exchange regulations. Currency volatility increases the cost of operating in local currencies for African businesses by exposing them to exchange rate risks when converting sales from other countries to local currencies and fulfilling loan obligations based on US dollars. Hedging tactics, which balance these risks through cash management, may also be constrained by the stringent foreign exchange controls maintained by many African central banks to prohibit the flow of funds out of a nation.

Although currency stability is not just an African issue, these concerns have a disproportionately negative operational impact on African entrepreneurs and firms and hinder their capacity to draw in outside capital. Investors in venture capital and private equity can face high currency risk. Managing risk exposure is a difficult process that requires balancing illiquid assets with multi-year investment horizons (Mothobi & Kebotsamang, 2024).

Africa continues to lag behind the rest of the globe in luring enough investment to support scale-up growth, even with recent improvements. Furthermore, because there aren't as many exit options as in other markets, African businesses are still seen as illiquid assets despite recent successful exit tales. Only eight initial public offers (IPOs) occurred throughout all of Africa in 2021, compared to over 126 on the London Stock Exchange and over 55 in Latin America (Romdhane, Loukil, & Kammoun, 2020).

Fintech businesses can target particular investors based on the relevant investment stage, which would allow them to position themselves optimally to obtain money throughout the funding cycle. Since more than 36% of seed investment rounds include African investors, seed fundraising rounds, which are often smaller, riskier investments, can be raised locally. International fundraising is probably going to be easier for later-stage funding that needs to scale up efficiently after providing growth.

The encouraging thing to know is that Africa gets proportionately more investment than both the US and Europe put together for female-led businesses. Nevertheless, there is still a significant disparity in the distribution of capital between men and women, even though the trend is improving.

Ensuring they can draw and keep the best talent will put further strain on costs as African fintechs struggle to make ends meet in the face of a slower funding climate, but it may also set them apart. One of the top ten dangers that businesses worldwide face is a lack of qualified talent. Furthermore, this problem is made worse in Africa, where the majority of the continent's software engineers are concentrated in just five nations: South Africa, Nigeria, Morocco, Kenya, and Egypt. Emerging fintech players in such nations may find great potential as a result of this skill concentration. There is a risk, though. In a globalized world, these nations are in competition not only with one another but also with the rest of the globe for talent.

Furthermore, despite accounting for almost 17% of the world's population, Africa's scientific, technological, engineering, and mathematical (STEM) capabilities are not on the same level as those of the rest of the globe. Many graduates with STEM skills are looking for opportunities overseas. According to the World Bank, a mismatch between the demand and supply for ICT specialists in low- and middle-income economies drives people to migrate abroad in search of better job possibilities in nations with more developed digital industries.

Salary disparities may be a factor in migration, even in cases when there are opportunities for talented data professionals in low- and middle-income nations. From 2015 to 2019, there was a net outflow of talent from low- and middle-income nations of about 70,000 workers annually. A top-notch corporate governance framework is essential for a fintech company to have as it grows older in order to foster a strong, supportive organizational culture that offers direction, stability, and clarity even during trying times.

There is a growing need for tech companies to scale up in order to manage risk and compliance successfully for a number of reasons, but three stand out as being especially crucial. First, unpredictable market circumstances and risk assessments may result from growing interest rates and potentially erratic macroeconomic and geopolitical contexts. Secondly, regulatory and customer expectations have increased, leading to a rise in the amount of due diligence that must be completed before a customer can purchase goods or services. Third, risk management becomes a bigger regulatory obligation when businesses grow into larger organizations. Thus, Fintech can no longer rely just on its seasoned management teams to minimize risk (Banna, Mia, Nourani, & Yarovaya, 2022).

Scaling and achieving profitability for fintechs that balance managing scarcity with navigating unstable conditions will probably require some dexterity and careful planning. African fintech companies may need to look for new avenues to add value in the future in order to obtain the capital and resources required to carve out a path for long-term growth. They can draw inspiration for this from the market leaders of today.

Promising fintech businesses in Africa are setting the standard for others to follow. In addition, the fintech industry is expected to expand further as digital adoption quickens across Africa. In order to leverage the momentum gained over the last few years, every stakeholder is essential to the process. The regulatory environment has a significant impact on the growth of Fintech and financial inclusion. Therefore, it is likely in the best interests of consumers, policymakers, and the industry as a whole to collaborate

with fintechs and incumbents in the financial services sector to promote predictability and keep up with the rapidly evolving flow of information about emerging technologies. Additionally, uniform regulatory policies should be established across the continent to facilitate seamless cross-border transactions and spur economic growth. By promoting digital reporting and data mastering and creating formal, centralized, and secure data systems, regulators can also contribute to the flexibility and scalability of FinTech services and infrastructure. Both incumbents and fintechs are essential to the long-term development of the industry, especially when it comes to fostering interactions with regulators that foster alignment and reduce operational risk. In order to facilitate a shared economy, partnerships may be essential for long-term success. In addition to incumbents' broad range of products and capabilities, better brand awareness and consumer trust, and experience navigating regulatory environments, fintechs may be able to respond more quickly to market demands and excel in product development and rapid innovation (Danladi, Prasad, Modibbo, Ahmadi, & Ghasemi, 2023).

3. GENERATIVE AI FOR FINTECH

Generative artificial intelligence has been at the center of a revolution in permitting technologies to interact with humans at a level previously considered unprecedented.

Since the financial services industry is heavily regulated, there are differences between short-term and long-term effects. Short-term impacts of generative artificial intelligence will be on the enhancement of customer support and expediting onboarding of clients for financial products and services. In the long term, the Fintech industry is expected to undergo a revolution that will significantly alter the services provided and may be an essential technology for African countries to catch up and provide efficient financial services for the population (Shabsigh & Boukherouaa, 2023).

Transaction costs have been well studied to be a major impediment to economies. Friction-ridden economies are typically less innovative, based on informal trust mechanisms such as family, and concentrated around huge, vertically structured enterprises. On the other hand, economies with lower friction typically reward smaller, more agile businesses that rely on extensive supplier networks and are generally more inventive.

Three key developments in Fintech have led to a significant decrease in transaction friction. The first is the adoption of real-time payments. The second is open banking, and the third development is the acceleration of digital financial products.

The use of digital tools, including online notarization with DocuSign or online meetings, has removed a lot of the need for physical presence when processing legal paperwork, opening bank accounts, or purchasing homes. A new generation of instruments to further automate financial life processes has been made possible by the increased acceptability of online products; this trend is likely to intensify with the development of artificial intelligence. Changing money across accounts, for instance, might optimize investment accounts for taxation, increase interest payments, and identify financial crime. Furthermore, people who currently lack access to financial advice will benefit greatly from removing the barriers to getting it, notably the elderly and people living in rural areas who often have unique financial needs.

By making financial data more widely available, the second significant trend, which is Open Banking, increases the ability to have personalized financial products and services. With the global adoption of Europe's PSD2 open banking efforts, which gave individuals greater control over their personal financial data and pushed financial institutions to innovate, open banking projects have gained momentum. Financial institutions all around the world are now compelled to provide APIs in order to allow fintech startups to expand on their data. The fintech ecosystem's foundational infrastructure has seen significant investment as a result of the spread of open-banking regulations. This is essential for use cases involving Generative AI, particularly in consumer applications, as it makes it easier to share permissioned data that may be utilized to create customized products.

There is a big potential to bridge the gap between the financial opportunities of the new and old economies via the integration of open-banking infrastructure and generative AI. As outlined by economies outside the African continent, the spread of government-backed real-time payment networks is lowering the cost and speed of money transfer friction. Early adoption of emerging economies like Brazil (PIX), India (UPI), and others has spurred innovation in domestic account-to-account payments, hence decreasing the requirement for traditional banking institutions to handle money transfers and storage (Chen, Wu, & Zhao, 2023).

Globally, there has been a major trend towards more efficient transactions that are performed in almost real-time and with significantly lower costs. Enabling AI to function at a speed and scale that is presently unthinkable requires freeing up payments and drastically cutting interchange fees. Quick and effective payment networks will be especially helpful to those in developing economies or with smaller savings. This is especially essential for the African continent, which may benefit tremendously from this trend.

The current financial system has, to a significant extent, excluded over half of the world's population, leaving them underbanked or unbanked. Fintech's biggest contemporary opportunity to unlock human potential is to build on progressively lower financial friction to provide these populations with access to new and superior financial services. One of the best ways for generative AI to live up to its potential and transform the financial industry is probably to swiftly and cheaply provide automated, tailored digital financial solutions. Fintech companies are in a good position to spearhead this change, particularly those who

support SMBs and the underbanked. This is especially the case in African nations that have an increasing smartphone penetration, but a sizeable part of the population does not have access to bank accounts.

Generative AI holds great potential as it can comprehend consumer preferences, spending patterns, and financial objectives, enabling it to offer tailored financial solutions or suggestions to any individual. Using this paradigm, there are three critical opportunities.

The first is the utilization of enhanced technology for wealth management. There is an increase in demand for individualized guidance and enhanced customer care as wealth management products become more mainstream. In the near future, financial data may be used to support corporate training, broaden financial education, and distinguish services through the application of generative AI. Additionally, it will raise the earning potential of individual advisers and improve the productivity of current teams. Given the discrepancy in wealth in Africa and with a growing middle class, the cost-efficient provisioning of these services will be critical (Remolina, 2023).

CFOs are pursuing profitability in the current economic environment by improving cost efficiency and implementing more sustainable balance sheet management. These back-office and middle-office financial departments, however, still rely on fragmented workflows and outdated platforms. In order to improve employee productivity, generative AI can help with data interoperability, automation, and user experience. We also anticipate that this technology will be used outside of cost-cutting initiatives as revenue-generating teams use Generative AI to interact with important partners, understand customers better, and maximize engagement.

Generative AI will also enhance data collection and analysis during compliance audits and client onboarding. The system may be used to extract information from a lot of documents, including emails, reports, and contracts. Fintechs will be able to manage risk exposure while minimizing unfavorable client experiences due to false positives thanks to improved data and models. Given that financial institutions have a high reputational risk and a low tolerance for error when it comes to KYC/AML monitoring, we anticipate that these applications will be restricted to data entry and onboarding automation in the near future.

Using consumer data, the initial set of applications developed on open-banking rails sought to increase credit boxes and improve consumer risk underwriting. Fintechs, for instance, sought to better assess payback risk for customers with little or no credit history by using cash flow data. The consumer's cash flow data might be examined with a thorough understanding of cash inflows and outflows both historically and in real-time, as opposed to depending just on a FICO score.

Organizing, cleaning, and analyzing the underlying financial data is exceedingly difficult. Many of these activities can be made more complex by generative AI since it can identify patterns in language and adjust based on the inputs of its models.

For instance, banks can now reliably classify and label customer transactions from free-text descriptions, even in multiple languages, thanks to Temenos' most recent Generative AI technology. With the adoption of open-banking infrastructure, these kinds of applications will grow and generate large-scale efficiency.

Numerous generative AI developments in the payments industry promise to drastically lower transaction friction and give consumers a seamless, safe experience. A number of new payment trends that are dependent on digital technology are well-positioned to benefit from these advancements in AI. Digital wallets, mobile payments, contactless and biometric payments, and other cutting-edge methods of transmitting and protecting value are some examples of these trends. They might potentially bring in a new era of quick and easy payment by doing this (Cao, Yang, & Yu, 2021).

For instance, Visa recently unveiled RTP Prevent, a technology that uses artificial intelligence (AI) to quickly identify possible hazards for financial institutions processing real-time payments by analyzing transaction data in real-time. Financial institutions can make more informed decisions about whether to authorize transactions thanks to improved risk analytics, which also helps to identify and stop fraud before it starts. Consequently, it improves real-time payment networks' overall security and safety.

Financial authorities are urged to improve institutional capabilities and oversight and monitoring of the development of generative artificial intelligence (AI). There are various challenges, such as embedded bias. Decisions made during algorithm construction can codify historical biases or repeat them in training datasets. User-entered prompts for generative AI applications may get embedded with this kind of bias, and the resulting outputs may be influenced by the input data. Generative AI, in contrast to predictive AI, is prompted by the user and generates responses based on likelihood.

The second challenge is the rise of hallucinations. Generative AI can produce wrong but plausible-sounding answers or output and then defend those responses confidently. Whether generative AI is used for risk assessments, customer profiling, market research, or any other purpose, errors or "hallucinations" in its results have the potential to seriously undermine the stability of financial institutions and lower the degree of consumer protection they offer to customers. The employment of synthetic data carries inherent hazards despite its potential benefits in enhancing data privacy and expediting the acquisition of fresh data sets. Interestingly, these datasets can reproduce large-scale errors, data gaps, and biases found in the actual world (Chinoda & Mashamba, 2021).

Another critical challenge is explainability. The explainability problem is being exacerbated by generative AI. It is challenging to guarantee "the explainability of decisions

and actions taken as an outcome of AI algorithms" since not all of the generated output from generative AI can be precisely traced to specific decisions of algorithmic design or training data selections. This is particularly troublesome in the financial services industry, as explainability is necessary for model risk management systems.

Finally, data privacy is another concern. Generative AI systems can make deductions even in situations where the training dataset is no longer accessible or has been removed from system usage, provided they have access to large language models (LLMs). As such, even after the data has been used and discarded, personal information from the training dataset may still be "retained."

4. CONCLUSION

Both incumbents and fintechs might actively assist in building the talent pool that is skilled and necessary for large-scale growth and innovation. Although there aren't currently enough skilled local personnel in Africa to expand the business, the continent's youthful, digitally native population presents a big opportunity. Fintechs and incumbents can attract and retain talent with strong IT and data capabilities by focusing on recruiting and rewarding talent with these capabilities. This will help local populations provide the skills and expertise needed to support growth. Training and skill development can be supported through informal technological education programs and training opportunities. It's also probably crucial to concentrate on lowering costs and boosting accessibility. Whereas fintechs, with their tech-led models and lower operating costs, are well positioned to reach SMEs in particular, incumbents can expand their service offerings to reach underserved populations by leveraging their existing infrastructure and networks, including branches, ATMs, and agents. However, in order to acquire SMEs, incumbents may need to consider going offline. Financial services continue to have an open opportunity to support underserved SMEs. Over 90% of small and medium-sized firms (SMEs) in South Africa have fewer than ten employees, and over 80% of these are unregistered or informal businesses. Investors play an equally important role, especially when it comes to seeing chances for more growth and expansion. Investors can make a difference by concentrating on the local market for the upcoming wave of opportunities and informing African investors about those that they find. Investing in portfolio ecosystems rather than big one-off bets, identifying sustainable investments, and helping to generate positive unit economics would allow investors to shift their attention from market valuation to the real value delivered by companies.

Fintechs that succeed in the next stage and attain sustainability are probably well-managed, disciplined, and have a distinct value proposition. African fintech companies have a lot to be optimistic about. The beginning of the industry is now over. Solid groundwork has been done; value is being created, infrastructure is in place, financing is increasing, and individuals are connecting online more quickly than ever. It's time to get stronger and make more progress.

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