

Financial Technology in Tanzania: Assessment of Growth Drivers

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Deogratias Philip Macha

and

Nangi Mosses Massawe

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By

Deogratias Philip Macha (PhD)
Bank of Tanzania

and

Nangi Mosses Massawe
Bank of Tanzania

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Content

List of tables.....	v
List of Figures.....	vi
Abbreviations and Acronyms.....	vii
Abstract.....	x
1.0 Introduction	1
2.0 Literature Review	4
3.0 Approach	8
4.0 Overview of Financial Sector in Tanzania	10
5.0 Fintechs Enabling Environment	15
6.0 Evolution of Digital Payment Systems in Tanzania	22
7.0 Have Fintechs Improved Financial Inclusion?	35
8.0 Opportunities for Up-scaling Fintech.....	45
9.0 Conclusion	49
References	51
Annex 1:	55

List of tables

Table 1: Fintech ecosystem focus areas	8
Table 2: Categories of banking institution supervised by Bank of Tanzania	11
Table 3: Key financial sector indicators	12
Table 4: Selected indicators in the financial sector (2021-2030).....	16
Table 5: Selected national financial inclusion targets.....	17
Table 6: Fintech regulatory environment in Tanzania.....	18
Table 7: Scope of mobile money network operators in Tanzania compared to other countries in East Africa region	25
Table 8: Mobile money performance indicator.....	26
Table 9: Selected fintechs interfaced with financial institutions	28
Table 10: Fintech rankings in selected African countries (2021)	33
Table 11: First and second fintech generations	34
Table 12: Use cases of GePG	38
Table 13: Government levy on mobile money transactions in Tanzania. . .	40
List of institutions interviewed	55

List of Figures

Figure 1: Landscape of Tanzania financial sector.....	11
Figure 2: Evolution of electronic payment in Tanzania.....	23
Figure 3: Mobile-cellular subscription and mobile money	24
Figure 4: Value of mobile money transactions	26
Figure 5: Mobile money interoperability	27
Figure 6: Number of fintech start-ups in Tanzania by product	30
Figure 7: Fintechs in Tanzania (core and enabling) by service provider ...	31
Figure 8: Uptake of financial services (% of adult population)	35
Figure 9: Gender and urban-rural divide in uptake of financial services ..	36
Figure 10: Mobile banking and Internet banking in Tanzania	37
Figure 11: Used a mobile phone or the internet.....	37
Figure 12: Reasons for not having a financial institution	38
Figure 13: Smartphone ownership	42
Figure 14: Access to national ID in Tanzania (2017)	43
Figure 15: Mobile cellular subscription in East Africa (per 100 people)....	45
Figure 16: Gross domestic product and GDP per capital (US\$, 2020)	47

Abbreviations and Acronyms

ATMs	Automated Teller Machines
B2C	Business-to-Customer
B2G	Business-to-Government
BoT	Bank of Tanzania
CBK	Central Bank of Kenya
CBR	Credit Reference Bureau
CMSA	Capital Markets and Securities Authority
COSTEC	Tanzania Science and Technology Commission
COVID	Coronavirus
DMA	Digital Mobile Africa
DSE	Dar es Salaam Stock Exchange
EAC	East African Community
EAPS	East African Payment System
eGA	e-Government Agency
ESRF	Economic and Social Research Foundation
FSD	Financial Sector Deepening
FSDT	Financial Sector Deepening Trust
G2P	Government-to-Person
GDP	Gross Domestic Product
GEPF	Government Employees Provident Fund
GePG	Government e-Payment Gateway
ICT	Information and Communication Technology
ID	Identification
IMF	International Monetary Fund
IPO	Initial Public Offer
KCB	Kenya Commercial Bank
Ksh	Kenyan Shilling
KYC	Know Your Customer
LAPF	Local Authority Pension Fund
MFIs	Microfinance Institutions
MNO	Mobile Network Operator
NFIF	National Financial Inclusion Framework

NICTBB	National Information and Communication Technology Broadband Backbone
NICTP	National Information and Communication Technology Policy
NIDA	National Identification Authority
NMB	National Microfinance Bank
NSSF	National Social Security Fund
P2G	Person-to-Government
P2P	Person-to-Person
PO-RALG	President's Office Regional Administration and Local Government
POS	Point of Sale Devices
PPF	Parastatal Pension Fund
PSPF	Public Service Pension Fund
RTGS	Real Time Gross System
SACCOS	Savings and Credit Cooperative Societies
SIM	Subscriber Identification Module
SMS	Short Message Service
TCB	Tanzania Commercial Bank
TCDC	Tanzania Cooperative Development Commission
TCRA	Tanzania Communication Regulatory Authority
TIPS	Tanzania Instant Payment System
TIRA	Tanzania Insurance Regulatory Authority
TTCL	Tanzania Telecommunication Company Ltd
TZS	Tanzanian Shilling
UGsh	Uganda Shilling
UNCDF	United Nations Capital Development Fund
US\$	United States Dollar
USSD	Unstructured Supplementary Service Data
VAS	Value Added Services
VICOBA	Village Community Bank
VSLAs	Village Savings and Lending Association

Abstract

This paper provides an in-depth insight of existing fintech environment in Tanzania, focusing on growth-driving and retarding factors and bringing up opportunities for scaling up fintech solutions to a broad range of the population. The analysis is descriptive, based on information gathered from various institutions, open data sources and interviews from key informants in the market. The analysis incorporates both fintech start-ups and incumbent fintech companies, including mobile money. The findings show that most of the fintech innovations in Tanzania are in payments and lending—driven by mobile money providers, of which most have integrated with banks and financial institutions to facilitate delivery of banking services. Gaps have been established in the legal framework governing nano-credit (mostly offered by mobile money operators) and the protection of fintech innovations in nascent stage. A ‘test and learn’ institutional set-up is also missing, making it challenging to nurture and/or support fintech innovations from the initial stages. Although there is improvement in support infrastructure, there is slow adoption and use of smartphones capable of supporting most digital transactions. Also observed from the analysis is absence of a coordination platform for fintech players. To address these challenges, the paper recommends a review of the legal framework to accommodate new fintech innovations and products from the market, including nano-credit; institutionalizing ‘test and learn’ approach to facilitate engagement with fintech innovators; and facilitate establishment of a platform for coordinating fintech ecosystem, including a fintech association for self-regulation and capacity building.

Keywords: Fintech, technology, digital financial services, innovations and electronic payment

1.0 Introduction

Since 2009, Tanzania like most other developing countries in Africa has witnessed significant transformation in access and delivery of financial services, with a growing proportion of the unbanked population financially included. The impact of financial technology (fintech) on this end is unprecedented in bringing on-board competing or complementing financial products and services offered by traditional financial service providers. The term “fintech” is narrowly and broadly defined. AFI (2016) narrowly defines fintech ‘as application of technology in finance’, while UNCDF (2021) broadly defines fintech as “technologically enabled financial innovation that could result in new business models, applications, processes or products with associated material effect on financial markets and institutions and the provision of financial services”. The latter definition is adopted in this paper.

Fintech facilitates digital finance around the globe, with the business models and services driven by artificial intelligence, big data, smart contracts, biometric identification, block chain technology and mobile Internet access (UNCDF, 2021 and AFI, 2016).

“Digital financial services comprise of a broad range of financial services accessed and delivered through digital channels including payments, credit, savings, remittances and insurance. It also includes mobile money (AFI, 2016)”

Fintech is thus an enabler to delivery of digital financial services and its application is not new in the financial sector. It has been used by banks for years to automate systems and back-end procedures. As pointed out by Gomber et al.(2018), there is increasing shift to more consumer-centric oriented services in financial institutions across the globe, with fintech companies offering automated financial products and services at a low price.

In a nutshell, fintech is important as it:¹

- i) Increases access of financial services to the public at low cost (see also AFI, 2020). With adoption of fintech, it is now possible for customers to operate multiple bank accounts and cards through a single interface, thus reduce payments and remittance costs across banks.

¹ <https://www.tatvasoft.com/outsourcing/2021/04/what-is-fintech.html>.

- ii) Improves transactions security. With technology, it becomes easier for banks and other financial institutions to enhance cybersecurity, thus reduce vulnerability of the financial system to cyber criminals.
- iii) Makes it easier to upgrade payment systems to suit market demand, competitiveness, and customer retention.
- iv) Improves efficiency in processing payments and loans, and by extension enhances economic growth. Payments are possible in remote places where financial institutions are not present, 24/7 and during holidays.
- v) Improves transparency of remittance customers in both sending and receiving payments.

Increasingly, fintech innovation connects mobile wallets with other digital payment platforms such as Visa, MasterCard and PayPal, and thus enhances exchange of goods within and across countries (Maganyi et al., 2022). The level of adoption and use cases, however, varies across countries, explained by social and economic environment, business environment, demographic characteristics, and advancement in digital infrastructure, among others. In essence, these factors differentiate levels of evolution of fintechs as discussed by Cracknell and Wilkinson (2021).²

There is a gradual development and shift through stages of evolution of fintech in Tanzania. Anecdotal evidence shows low uptake of opportunities for upscaling usage and adoption of digital technology from supply and demand side. Making use of opportunities and unlocking potential at each stage of the evolution of financial technology is necessary to ensure gains of digital financial services are maintained and financial market grow sustainably. This paper aims to:

- i) Evaluate the progress of fintech innovations focusing on growth-enhancing and retarding drivers.
- ii) Assess the implications of existing governance structures, the legal and regulatory framework, support functions and the fiscal regime, in scaling up fintech innovations and use by a broad range of the population.

Drawing from the objectives, the proposed research aims to respond to the following questions:

1. How have fintechs evolved in Tanzania?
2. What are deriving or deterring forces of adoption and acceptance of digital financial services in Tanzania?

² See Cracknell and Wilkinson, article in Regtech Africa magazine, July 2021, Second Edition. They posit five generations for Zambia: 1st Generation: Channels – Mobile Money and Agent Banking; 2nd Generation: extending the use case - Nano credit and merchant services; 3rd Generation: The emergence of fintech and use cases; 4th Generation: The emergence of fintech-enabled 'real world' services and 5th Generation: Fintech as a national asset.

3. Is there room to upscale digital financial services further in Tanzania to address financial needs of mass population, especially the youth, women, and rural poor?

The contribution of this paper is in two areas. First, it systematically illustrates the evolution of fintech in Tanzania and the contribution of the same in expanding digital financial services to various segments of the population, especially to the unbanked. Second, it gives insights of fintech and digital financial services operating landscape in Tanzania, including the legal and regulatory environment, supporting functions, infrastructure, and governance. Analysis in these areas not only reflects areas of strength and weakness, but also identifies challenges and opportunities in the market.

Next to the introductory section, section 2 focuses on literature review while section 3 gives brief highlights of the approach taken in this paper. Section 4 presents an overview of the financial sector in Tanzania. This is followed by section 5, which discusses the fintech-enabling environment. Section 6 gives highlights on the evolution of digital payments systems in Tanzania. Implication of fintechs in financial innovation is discussed in section 7, followed by a discussion on opportunities for upscaling fintechs in section 8. Finally, Section 9 concludes the paper.

2.0 Literature Review

2.1 Theoretical Literature

Globally, there is increasing awareness of the importance of fintech in transforming the functioning of the financial sector; that is, digitalization and datafication of financial services, markets and regulation. The magnitude of the impact is, however, a subject to factors that vary within and across countries (Reddy and Singh, 2015; Wibella et al., 2018; Marumba and Mutsikwa, 2013). Inherent characteristics of consumers including their level of formal education, financial literacy, income, age, location, gender and development of financial system, supporting functions and infrastructure, legal and regulatory environment come into play for effective absorption of fintech products and services. It is not only the presence of a suitable environment for fintech growth that matters; it is also a synergy between players in fintech ecosystem and innovative ways to accommodate innovations in the market that matter most. Most of the regulators allow fintechs to operate without strict financial regulation to offer them opportunity to experiment (Korynski, 2019). A good example is the regulatory approaches implemented by Kenya, Tanzania, and Philippines of ‘test and learn’—a precursor of the ‘regulatory sandbox’ (AFI, 2020; Schindler, 2017).

Fintech penetration in the market is also a function of other factors, including technology, changes to the macroeconomic or financial landscape (Schindler, 2017). Digitalization in payments and other financial services enables economies reap their optimal potentials in revenue collection, investment and realize dynamic economic growth (Pillai, 2016). Pillai (2016) argues that technology and functions to facilitate processing of government payments such as Government-to-Person (G2P), Person to Government (P2G) and Business to Government (B2G) are essential as efficiency and accuracy of such payments affects public trust in digital payments. Notwithstanding, demand factors are also important in driving innovation as insufficient demand drives financial innovations outside the market (Schindler, 2017).

Though fintechs improve access to financial services, they come with a number of risks and threats, ranging from data privacy practices or cybersecurity threats (AFI, 2020; Korynski, 2019). It is thus suggested that continuous monitoring and adoption of regulatory frameworks and supervisory practices is necessary to safeguard the

stability of the financial system (AFI, 2020; Schindler, 2019). A step towards this move entails assessment of the current market structures to ensure conformity with rapidly changing fintech innovations.

Fintech markets are of different nature. While others are more developed in terms of number of active fintechs, types of services they provide and market segments they operate, other markets are still under-developed, characterized by limited number of fintechs, low investments and fragmented ecosystem. Korynski (2019) conclusion is thus worth noting, that:

- i) There are differences of fintechs operating across countries with larger diversity observed in more mature countries than in less developed countries.
- ii) Fintechs operate in all segments of the financial market but mostly found in payment services, lending, and financial advisory services.
- iii) Some fintechs offer financial services to the unbanked individuals without including the same into the mainstream financial system.
- iv) Policy support on fintech differs across countries – while some countries have coherent approach, others do not.

Regarding fintech funding, analysis shows differences across countries. The factors explaining such diversity include structural features of the national economy, ranging from regulatory quality, depth of the financial markets and their innovation capacity (Cornelli et al., 2021). This is the reason why United States, United Kingdom, several European markets, and China rank high in fintech innovation (Cornelli et al., 2021). Considering competition and other barriers to new fintechs, 57 countries have already set regulatory sandboxes to allow innovators conduct pilot trials (World Bank, 2020). Other countries that have resorted to other regulatory approaches include those implemented by Kenya, Tanzania, and Philippines of ‘test and learn’, a precursor of the ‘regulatory sandbox’ (AFI, 2020).

2.2 Empirical Literature

Understanding market structures and people’s interest is critical in upscaling applications of fintechs. There is a growing volume of literature that correlates evolution of fintechs and improved digital transactions, and the role they play in reducing distress that banks and other financial institutions face in periods of prolonged economic recession (Pinshi, 2021; and Sahay et al. 2020). While some fintechs complement services offered by traditional financial institutions, others substitute. For instance, Fuster et al. (2019), using mortgage loan data in United States, found that fintech peer-to-peer (P2P) lenders processed applications 20% faster, suggesting increased competition to traditional finance. Another study by Tang (2019), using regulatory change as an exogenous shock to bank credit supply in the United States, established P2P lending platforms substitute rather than a complement

traditional banking services. Overall, the results of Fuster et al. (2019) and Tang (2019) suggest that P2P fintech lending target high-risk borrowers and expand credit to marginalized bank borrowers. As argued by Liao et al. (2017) and Hayvrylchyk et al. (2017), market structures matter on the outcome of Fintech innovations. In areas with low diversity of bank branch network and lower bank concentration, Fintech innovation products and services are likely to compete with banks (Hayvrylchyk et al., 2017).

Overall, therefore, fintechs are important to the economy as they enhance economic growth and by extension household welfare as they lower the cost of expanding financial services to new customers. This argument is consistent with Appiah-Otoo and Song (2021) who established a positive relationship between money transfer and payment applications on economic growth and per capita household consumption in China, respectively. The impact of fintech in other developing countries is also huge, proven by evidence from Africa, Asia, Latin and South America (Aron, 2018). Poor consumers in developing countries are now able to hold cash in their mobile wallets, thanks to cheap and/or recycled handsets and perform financial transfers easily and cost effectively (Ozili, 2018; Aron, 2018 and Africa Development Bank, 2012). They are also able to build savings and investment in productive activities and thus lower poverty levels (Arnold and Gammage, 2019; Schaner 2016; and Prina, 2015).

The role of fintech in financial inclusion is also notable. Tok and Heng (2022) using Global Findex data found a higher positive correlation between Fintech and digital financial inclusion compared to traditional measures of financial inclusion. The role of fintech in narrowing the income gap and rural-urban divide was observed, but no impact was noted on gender divide, suggesting a need of other interventions in addressing the gender gap. Digital payment is the most common instrument of digital payments, led by mobile money, one of the earliest fintech solutions (Sahay et al., 2020). Gradually though, expansion of user data that comes with mobile money has spurred digital lending, with digital lenders using alternative data from payment providers and other sources to identify borrowers credit worthiness (Sahay et al., 2020).

Several factors influence use and adoption of fintechs from the supply side and demand side. The influence of such factors varies across countries. Aurazo and Vega (2021), using Peru's (2015-2018) Household Budget Surveys data found that among other variables, Internet access accounted for higher usage of digital financial services and households in top quantiles of per capita income had higher likelihood of paying with digital instruments. Further, Lema (2017) assessed factors influencing the adoption of mobile financial services in the unbanked population in Chamwino District in Tanzania and established that perceived usefulness, perceived cost and social influence significantly influence adoption of mobile financial services. In India, Wibella et al. (2018) found perceived trustworthiness of digital financial services being the most influencing factor on the use of digital financial services.

Another empirical work includes that of Ogege and Boloupremo (2020) in Nigeria. Ogege and Boloupremo (2020) using ANOVA regression analysis on 303 respondents found a positive correlation between the increase in technological advancement and its usage by younger consumers. Ogege and Boloupremo (2020) concluded that rapid expansion of fintech innovations and the pressure they create on traditional financial institutions drive the latter to actively engage with fintechs in an attempt to improve their service and make their services more convenient.

Drawing from the literature are the following: First fintech growth is highly dependent on a number of factors (supply and demand side); one factor cannot drive fintech alone. Second, collaboration between players in the fintech ecosystem is important to ensure sustainable growth of fintechs. Third, is the importance of quality of the legal and regulatory framework, depth of the financial markets and innovation capacity of such markets in attracting fintech investments in a particular market. Forth, fintechs either complement or substitute services offered by traditional financial service providers, but the nature of the two depends on the level of development of the financial market.

3.0 Approach

Analysis in the paper is descriptive with qualitative method approach. It is based on review of various documents, analysis of secondary data and information gathered through interviews and discussions with key informants in financial institutions, aggregators, digital finance development facilitators and other relevant stakeholders. Annex 1 presents a list of interviewed stakeholders. The paper covers both new and incumbent fintechs, mobile money inclusive.

Based on the existing literature, conceptually this paper considers information technology (IT) and innovations allied with it as a key driver of fintech in Tanzania. Associated with this is the interaction between IT innovations, enabling business environment (legal and regulatory infrastructure), supporting infrastructure and financing. Borrowing from Imerman and Fabozzi (2020), Pazarbasioglu et al. (2020), and Pillai (2020), the fintech ecosystem is described in Table 1.

Table 1: Fintech ecosystem focus areas

Financial technologies	Areas impacted include but not limited to payments technology; digital wealth management, fintech lending, crowdfunding, insuretech, proptech, digital; banking (online and mobile banking).
Functional areas	Enabling business environment for incumbent and new players, financial regulations, risk management, consumer protection, funding and supervision/monitoring.
Market conditions	Market readiness (e.g., number of people subscribed to mobile money and/or with bank accounts); strength of financial sector (banks and non-financial institutions), number of aggregators, interoperability between payment systems and coordination platform for key players; financial literacy, financial technology literacy and consumers' redress and recourse mechanisms.
Supporting infrastructure	Digital identification, credit reference bureaus, payment gateways, credit systems, connectivity infrastructure.
Emerging technologies for financial services	Internet of things, blockchain, artificial intelligence, big data analytics, cybersecurity, biometrics, open-source computing and cloud computing. Banks and fintech companies have developed technologies based on these elements taking on board privacy, risk and other management issues to scale up their outreach at a convenient manner.

Source: Adopted and modified from Imerman and Fabozzi (2020), Pazarbasioglu et al. (2020), Pillai (2016)

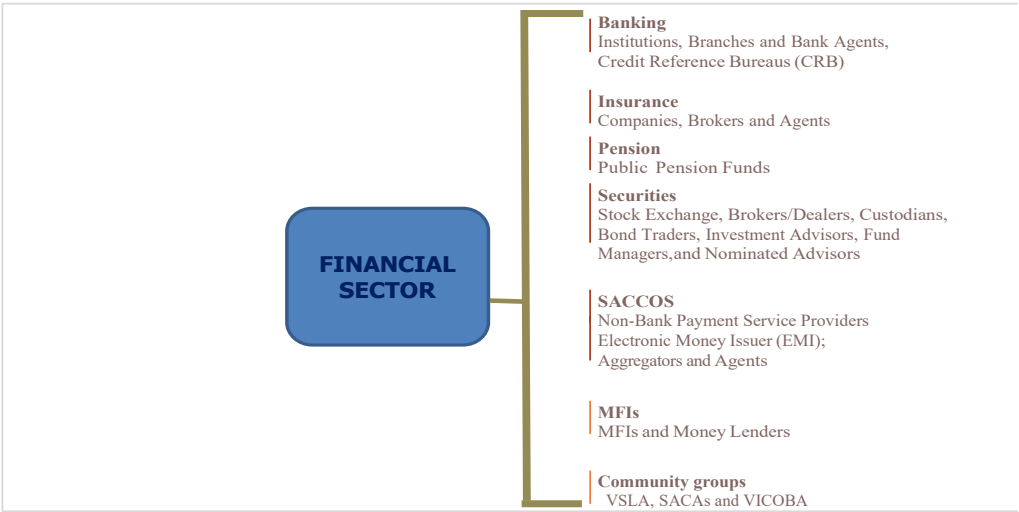
There are notable development/milestones in each of the areas illustrated in Table 1 as illustrated in the subsequent sections. The progress in the market is not past the second generation; that is, it is not beyond nano-credit and merchant payments. Notable progress is observed in the first generation, where the access level of mobile money and agent banking is huge, facilitated by, among others, digital identification and mass SIM card registration.

4.0 Overview of Financial Sector in Tanzania

Financial sector in Tanzania is comprised of banks, which account for about 70% of financial sector assets (NFIF, 2018); insurance, pension funds, Savings and Credit Cooperative Societies (SACCOs), credit companies and moneylenders, and community groups (Figure 1). The sector is wholly regulated after enactment of Microfinance Act, 2018.³ The Bank of Tanzania is vested with powers to regulate and supervise all deposit taking financial institutions and some non-deposit taking financial institutions as provided in the Bank of Tanzania Act, 2006; Banking and Financial Institutions Act, 2006; Foreign Exchange Act, 1992; National Payment Systems Act, 2015 and the Microfinance Act, 2018. Other regulated and supervised financial institutions include bureau de change, leasing companies, mortgage refinance company, microfinance service providers (Tier 1: Deposit-taking microfinance institutions and Tier 2: Non-deposit taking microfinance institutions including individuals and moneylenders), credit reference bureaus and payments systems. Tier 3 SACCOS and Tier 4 community groups supervision and regulation role is delegated to Tanzania Cooperative Development Commission (TCDC) and President's Office Regional Administration and Local Government (PO-RALG), respectively. The role of these two institutions is to ensure that the supervised institutions abide to the legal requirements.

³ Prior to 2019, non-deposit taking microfinance institutions and community groups were not regulated.

Figure 1: Landscape of Tanzania financial sector



Source: Adopted and modified from NFIF (2018)

As at 2020, banks’ branch network stood at 969, rising from 430 in 2009. The concentration of the branches was in five regions (Dar es Salaam, Mwanza, Arusha, Mbeya and Kilimanjaro), accounting for 52% of total operating branches (Bank of Tanzania, 2020^a)⁴. Table 2 shows the categories of banking institutions supervised by the Bank of Tanzania, while Table 3 presents key financial sector indicators.

Table 2: Categories of banking institution supervised by Bank of Tanzania

Category	2016	2017	2018	2019	2020
Commercial Banks	38	38	40	38	35
Development Banks	2	2	2	2	2
Microfinance Banks	4	5	5	5	4
Community Banks	12	11	6	6	5
Financial Institutions	3	3	0	0	0
Total	59	59	53	51	46

Source: Bank of Tanzania

⁴ Tanzania has 31 regions (26 in Mainland and 5 in Zanzibar)

Table 3: Key financial sector indicators

Indicator	Value
Licensed banks and financial institutions (2020)	46 (969 branches)
Bank assets (billion)	TZS 34,690
Deposits (Local)- billion	TZS 17,776
Deposits (Foreign)- billion	TZS 6,990
Where do people save (Adults: Finscope 2017)*	
Banks	3,901,002
Home	11,981,649
Mobile money	9,752,505
Where do people borrow (Adults: FinScope 2017)	
Family and friends	19,226,368
Savings groups	5,015,574
Mobile money	1,114,572
Banks	835,929
Licensed Microfinance Services Providers (Tier II: Microcredit companies: December 2021)	760
Licensed Microfinance Services Providers (Tier II: SACCOS: December 2021)	668
Licensed Microfinance Services Providers (Tier IV: Savings groups: December 2021)	28,054
Number of Bank Agents (2021)	40,410
Number of ATMs (2021)	2,041

Source: FinScope Tanzania (2017), and Bank of Tanzania.

*Estimates in 2017 (27,864,302).

Note: Exchange rate in 2020: 1US\$=TZS 2,300.

Digital payments have also gained space in the banking industry through various channels, including Automated Teller Machines (ATMs), Point of Sale Devices (POS), Internet banking and mobile (SMS). The number of ATMs reached 2,058 from 1,361 in a span of eight (8) years (2012-2020) while that of POS increased to 47,496 from 1,910 (BoT, 2020). The value of mobile banking and internet banking transactions have exhibited an upward trend, thanks to innovations leveraged in mobile phone technology. The value of Internet banking grew from TZS 17.8 trillion in 2012 to TZS 64.9 trillion in 2020, whereas that of mobile banking stood at TZS 25.0 trillion from TZS 302 million. These improvements could not have happened had it not been for the fintech innovations that were interfaces with banks' core functions.

Together with Bank of Tanzania, other regulators of financial sector include Tanzania Insurance Regulatory Authority (TIRA), Capital Markets and Securities Authority (CMSA), and Tanzania Communication Regulatory Authority (TCRA). These regulators collaborate to ensure the smooth functioning of the financial sector as a whole. The following is a snapshot of each of these regulators:

Tanzania Insurance Regulatory Authority (TIRA): Established by the Insurance Act No.10 of 2009 and is responsible for supervising and regulating players in insurance industry including insurers, insurance brokers, insurance agents, surveyors, loss assessors and adjusters. By 2017, there were 30 insurance companies, 158 insurance brokers, 51 insurance surveyors, loss assessors and adjusters and 640 insurance agents (Ogolla, 2017). Insurance industry is still underdeveloped, with the uptake of insurance services standing at 15 percent of adult population in 2017 (FinScope Tanzania, 2017). Increasingly, however, insurance companies are adopting financial technology solutions, including mobile money platforms in delivering various products and connecting with brokers and agents. Such products include Tigo-bima –health cover offered by MILVIK – a fintech⁵.

Capital Markets and Securities Authority (CMSA) was established in 1995 by the Capital Markets and Securities Act, 1994 (Amended in 2010) with a role to supervise capital markets related matters. Entities falling under this category include brokers/dealers, advisers, fund managers, collective investment schemes and bond traders. There is low public awareness in stock market trading. Noting this challenge, Dar es Salaam Stock Exchange in collaboration with Maxicom Africa (Maximalipo) launched DSE mobile trading in 2015 to enable individuals to register in the stock exchange and purchase shares. The platform is accessible through all major mobile networks (Tigo, Voda, Halotel, Airtel and Zantel). Another related platform is *DSE Hisa Kinjani* – a mobile trading platform developed by the e-Government Agency (eGA) and launched in 2020. Notably, CMSA Act, 1994 does not provide a room for fintechs to raise money on capital market unless the company fulfils a set of criteria—the criteria that are generic to all companies enlisting in Stock Market for purposes of raising funds.

Tanzania Communication Regulatory Authority (TCRA) has powers to regulate and supervise telecommunications, electronic technologies, and other information communication technologies, among others. Its powers are provided in the Tanzania Communications Regulatory Authority Act, 2003. One of the key roles of the Authority includes promoting competition, economic efficiency and safe services to low income and disadvantaged consumers. Vigorous licensing process of telecommunication service providers, with license conditions to fulfil (network facilities license, network service license, and application service license) has led to development of strong players and competition in the telecommunication industry. This, together with mass registration of SIM cards (KYC biometric SIM card registration) is increasing the confidence of service providers and consumers, and linkage to various services databases.

⁵ <https://www.tigo.co.tz/news/tigo>.

Social Security Regulatory Authority (SSRA) is vested with powers to regulate social security activities in the country provided under the Social Security (Regulatory Authority) Act, 2008. Prior to 2018, there were five mandatory pension fund schemes falling under the mandate of the Authority: Government Employees Provident Fund (GEPF), Parastatal Pension Fund (PPF), Local Authority Pension Fund (LAPF), Public Service Pension Fund (PSPF), and National Social Security Fund (NSSF). The number has had little effect on the uptake of pension services, with only 4.0% (1.1 million adult population) served (FinScope Tanzania 2017)⁶. So far, not much is observed in terms of innovations/startups in this area within Tanzania and across the East Africa region, though there are computer-based solutions in the back-end office, which have improved efficiency in service delivery.

⁶ Following the passing of the Act by the Government in 2018 (Act No. 2 of 2018) to consolidate social security schemes PPF, PSPF, LAPF and GEPF have been merged to one scheme known as Public Service Social Security Fund (PSSSF).

5.0 Fintechs Enabling Environment

5.1 Policies, Plans and Other Initiatives

A drive to digital systems in the financial sector appears in the national development policies and plans across the region. Growth of modern networks and technologies together with adequate human resource capacity are considered a means to achieve competitive, faster, equitable, sustainable, and inclusive growth. The recent national policies, plans and initiatives that promulgate adoption and use of digital technology in Tanzania include:

- i) National Information and Communication Technology Policy (NICTP) of 2016⁷. The policy focuses on, among others, enhancing human capital in information and communication technology (ICT), access and availability of affordable broadband services and establishing reliable, interoperable, and sustainable ICT infrastructure. In the implementation of the policy, several milestones have been achieved, especially on the development of digital physical infrastructure, where all regional headquarters are currently connected to the National ICT Broad Band Backbone. This, together with investment by telecoms in mobile phone infrastructure and growing competition in the telecommunication industry, have raised mobile tele-density from 13.1 subscribers per 100 people in 2008 to 82.2 in 2019 (World Bank, 2020). This has not only created a platform for digital revolution in finance, but also set an environment for introduction and growth of digital-based services in health, education, public administration, judicial and market information.
- ii) National Microfinance Policy, 2017:⁸ The policy articulates and promotes microfinance services and associated innovations for stable financial system and broad-based financial services. The policy also puts emphasis on developing systems, platforms, and distribution channels for digital microfinance services.
- iii) National Five-Year Development Plan 2021/22-2025/26⁹ that among others, aims to promote innovation and application of ICT for citizens to

7 <https://www.ega.go.tz/uploads/publications/sw-1574848612-SERA%202016.pdf>

8 [https://mof.go.tz/docs/Policy%20-%20Fedha%20English%203%20\(2\).pdf](https://mof.go.tz/docs/Policy%20-%20Fedha%20English%203%20(2).pdf)

9 <https://mof.go.tz/docs/news/FYDP%20III%20English.pdf>

benefit from digital revolution including digital-based services in finance, education, public administration and market information. The plan recognizes absence of the national digitalization strategy and appreciates the importance of flexible and dynamic legal and regulatory framework to guide digital innovation activities such as research and new tech-startups, fair competition, protection of patents, registration, cyber security and financing.

- iv) Financial Sector Development Master Plan 2020/21-2029/30 aims at creating a stable, sound, efficient and inclusive financial sector. The plan is developed in recognition of challenges facing financial sector including inadequate infrastructure to support fintech, low knowledge and protection of consumers of digital financial services and low literacy level of financial technology—all together acknowledged to have reduced users' confidence in electronic transactions. The Plan has several indicators, some of which are highlighted in Table 4.

Table 4: Selected indicators in the financial sector (2021-2030)

Indicator	Baseline (2018)	Target 2030
% adult population using bank services	17%	50%
% adult population covered by insurance services	15%	50%
%adult population covered by pensions	6%	30%
% population listed in the capital markets	0.04%	5%

Source: URT (2021)

Achieving the set targets entails definitive measures from the legal and regulations perspective to encourage investment in digital support infrastructure, skills development in ICT, financing, and financial education.

National Financial Inclusion Framework, 2018-2022:¹⁰ This is the second rolling Framework after the end of the first one that lasted for three years (2014 -2016). The Framework extends unrealized targets in the first Framework but focuses more on usage financial services focuses on application of technological solutions (Table 5). These are to be achieved through multiple initiatives including improvement of financial services providers' collaboration—to be achieved through harmonization of the national money grid (interoperability), expanding the test and learn approach using sandboxes and financial support to innovators. Since the Framework is a public-private stakeholder initiative, engagement and commitment of stakeholders' is always put a forefront through regular meetings and follow-ups.

¹⁰ <https://www.afi-global.org/wp-content/uploads/publications/2017-12/NFIF%202018-2022.pdf>

Table 5: Selected national financial inclusion targets

Dimension	Specific Outcomes	Measure	Baseline	Target
Addressability	Adults own mobile phones	% adults owning a mobile phone	63%	75%
	Adults have unique and verifiable identification	% adult population registered in the National Identification database	23%	90%
Uptake	All adults have a registered account which can transact	% adults with registered accounts that can transact	76%	85%
Usage	All adults save, borrow, transact and mitigate financial risks	% adults with formal savings	43%	60%
		% adults using digital payment services	60%	70%
		% adults with formal savings	43%	60%
		% adults using insurance services	15%	50%

Source: National Financial Inclusion Framework, 2018.

5.2 Fintech Regulatory Regime

From a regulatory perspective, fintech regulation is necessary to minimize risks that may emerge when operationalizing the innovative systems. It is, however, widely accepted that too much regulation at the onset of innovation may undermine expansion. The ‘test and learn’ approach was used when M-Pesa was introduced in 2008. The Payments Systems Act, 2015 and Payments Systems (Electronic Money) Regulations, 2015, together with other related regulations govern digital financial services in the country. All e-money products and services are approved/licensed by the Bank of Tanzania. The regulatory framework in place makes it mandatory for the financial service provider launching a fintech product or service to obtain approval from the Bank of Tanzania and keenly observe regulatory requirements. Table 6 summaries the key legislations governing fintechs in Tanzania.

Table 6: Fintech regulatory environment in Tanzania

Major legal Framework	Thrust	Implication
Bank of Tanzania Act, 2006	Provides for establishment of the Bank and its principal role of formulation and implementation of monetary policy, supervision of banks and other financial institutions, payments systems and related matters. Allows the Minister for Finance to make necessary legislation to smoothen the provision of financial services.	Sound and stable financial system. Credit to private sector increasing (averaging 11.7% between December 2021 and April 2022), stable and low inflation (below the medium-term target of 5%) over 2018-2021.
Banking and Financial Institutions Act, 2006	Provides for regulation of banks and financial institutions, regulation and supervision of savings and credit cooperative societies and schemes with the objective to ensure stability, safety and soundness of the financial system and risks to depositors.	Sound and stable banking sector in terms of capital adequacy, liquidity, asset and profitability levels. Core capital stood at 17.2% in 2020 while capital adequacy was 18.1% against threshold of 10% and 12%, respectively.
Microfinance Act, 2018	Sets for licensing, regulation and supervision of microfinance business and related matters including consumer protection—disclosure of relevant information, terms and conditions and financial education to customers, and transparency of credit costs.	Led to establishment of a defined framework for microfinance activities in the country—activities that were not regulated before. These included digital transfers and payment services.
Payments Systems Act, 2015	Gives the Bank of Tanzania powers to, among others, regulate, supervise, investigate and oversee the operations of payment systems; provide settlement services to payment systems; and own and operate real-time gross settlement system.	Improved e-cheque clearing system across banks, provided for electronic money issuance and circulation, including those issued by mobile payment systems.
Payments Systems (Electronic Money) Regulations, 2015	Provides for regulation of payment instruments, electronic money, and other related activities of payment service providers. It outlines approval procedures of issuer (bank or non-bank) of electronic money.	Made entities that were not banks or financial institutions (including mobile money operators) to establish separate legal entities for issuance of electronic money, opening of trust accounts and its management. Increased access to financial services to unbanked consumers.

Major legal Framework	Thrust	Implication
The Microfinance Non-Deposit Taking Microfinance Service Providers Regulations 2019	Provides for Bank of Tanzania to regulate microfinance service providers under tier 2; that is, credit companies. Process to license and conditions associated with authorization of the business, prohibited activities, preparation of books of accounts, lending policy, loan agreement and collateral are provided in the regulations.	Defined a licensing framework for microfinance activities in the country and set a mechanism to protect customers from usury pricing (interest rate) and other malpractices.
Bank of Tanzania (Financial Consumer Protection) Regulations, 2019	Targets all financial service providers and provides for responsibility of financial service providers in ensuring consumer rights are adhered to.	Different from before, brought a consumer redress and recourse mechanism encompassing uniform consumer complaints framework such as time to resolve various consumers' issues. Gradually, this is increasing banks and financial institutions customers' confidence in the country's financial system.
The Banking and Financial Institutions (Microfinance Activities) Regulations, 2014	Applicable to microfinance banks and financial institutions engaged in microfinance activities (accepting deposits from the public and use the same for on-lending).	Promoted microfinance activities and specifically enhanced provision of credit to individuals with non-traditional collateral.
The Banking and Financial Institutions (Disclosures) Regulations, 2014	Applies to banks and financial institutions and requires such institutions to ensure high level of transparency to enable bank customers and the public to make informed decisions. Issues such as language, content and frequency of disclosure are specified in the regulations.	Improved transparency in banks and financial institutions. Such institutions are inter alia publishing their financial statements on quarterly and annual basis in at least two newspapers in both Kiswahili and English languages. Such institutions have also established complaint redress mechanism.
The Anti-money Laundering (Electronic Funds Transfer and Cash Transactions Reporting) Regulations 2019	Provides for conditions and procedures for reporting currency transactions and electronic funds transfer.	Banks and financial institution have developed systems that prevent acts of anti-money laundering, risks of fraud and losses to customers. This involves adequate KYC assessment.

Source: Author's compilation

Post-December 2020, issuance of electronic money is restricted to mobile money operators (MMOs) and banks with a view to strengthening oversight of electronic money operators and safeguard the stability of the financial system. The restriction does not, however, apply to banks and non-MNO entities already issued with the license. Much as the move by the Bank was necessary, the interviewed stakeholders argued that the decision would stifle innovations and payment technologies from developing and expanding. It would also limit new e-payment technologies in the likes of PayPal and PayTM from penetrating the country's market.

The digital financial services regulatory framework in place applies to banks and non-bank financial institutions in general, and they are not product specific. Therefore, nano credit issued by MMOs is yet to be regulated, raising a concern on predatory practices, especially on high interest rates. Nano credit in other countries has special regulatory framework. A good example is Kenya where Digital Credit Providers Regulations were introduced in 2022 to bring all digital lenders who were previously unregulated into the orbit of the Central Bank of Kenya¹¹.

5.3 Digital Payment Infrastructure

The payment infrastructure in Tanzania has evolved in tandem with the technological advancement and needs of the market. New systems have been developed and others are upgrading, together with the rules governing them. The systems range from high value real time gross settlement systems to low value real time retail payment systems. These systems include Tanzania Automated Clearing House (TACH)¹², which facilitates interbank payment clearance including cheques and other e-payments (Tanzania Interbank Settlement System – TISS included). TACH has so far reduced transaction time from 3-7 days to one day. Other systems in place include East African Payment System (EAPS) that interfaces East African partner States real time payment systems to facilitate use of local currency in payment settlement; and Southern Africa Development Community – Real Time Gross Settlement systems (SADC-RTGS).¹³

Overall, there is significant improvement in volume and value of transactions passing through the systems. In TISS, for instance, the value of transactions grew from TZS 25.0 trillion in 2005 to TZS 174.3 trillion in 2021, while US\$ values grew from US\$ 2.5 billion in 2011 to US\$ 21.0 billion in 2021.

Another development by the Bank of Tanzania in collaboration with the Ministry of Finance and Planning is establishing a payment platform known as Tanzania Instance Payment System (TIPS). This multilateral interoperability system aims to enable real time payment exchange between different digital finance service providers–

11 <https://www.globallegalinsights.com/practice-areas/banking-and-finance-laws-and-regulations/kenya>

12 The system was introduced in 2015 leading, dissolving clearinghouses, which were in Bank of Tanzania Branches.

13 TISS was launched in 2005, while EAPS and SADC-RTGS were launched in 2013.

specifically between e-money issuers: between banks, banks and MMO and between MMOs— the setup does not provide for other payment systems/e-money providers. The system is developed by local experts, accommodates both USSD and application technologies and is housed and maintained by the Bank of Tanzania. Piloting of the system started in July 2021, involving two mobile network providers (Airtel and Tigo) and three banks (National Microfinance Bank, CRDB Bank and Exim Bank). Once rolled out, sending money will only involve searching the name of the registered sendee in the mobile network. Participating financial institutions will pay fees for transacting through the system, but such fees are expected to be low.

6.0 Evolution of Digital Payment Systems in Tanzania

6.1 Electronic Payments in Tanzania

Electronic payments gained stance in Tanzania from early 2001 when technology created platforms facilitated delivery of banking services (transfers and withdrawals). The fintech related devices and channels improved efficiency in the banking system but had no significant impact on the outreach of banking services to majority of the population. Formal banking penetration in 2006 was only 9.0% of the adult population (15 years+), with 37% relying in semi-formal and informal channels; and 54% total excluded (FinScope Tanzania, 2006).

The introduction of mobile money, the first fintech solution of its kind in the country, brought significant changes in the market. This innovation that leverages on mobile phones was introduced in Tanzania by two mobile network operators (Vodacom and Zantel) in 2008, though Zantel (Z-Pesa) left the market to Vodacom (M-Pesa)¹⁴ just after entry after failure to perform. Two years down the line, other operators flocked in the market, offering services and products like those of M-Pesa: airtime purchase, cash transfer and withdrawal. The first three years of this innovation were a learning period, with the Bank of Tanzania adopting ‘test and learn’ approach. MMOs were directed to collaborate with commercial banks by opening a trust account, such that amounts in trust accounts were at any time required to equal e-float in circulation. In a span of 7 years (2008-2017), MNOs were allowed to operate mobile money business in this fashion, with approvals based on ‘no objection letters’ from the Bank of Tanzania. The ‘no objection letter’ specified the oversight and regulatory requirement for the conduct of the business, including (see also GSMS, 2014). This included:

- Presentation to the BOT before approval.
- Having a license from TCRA for the provision of value-added services.
- Having a risk management plan.
- Opening trust account in commercial bank.
- The powers to prudentially regulate and oversee the conduct of the market

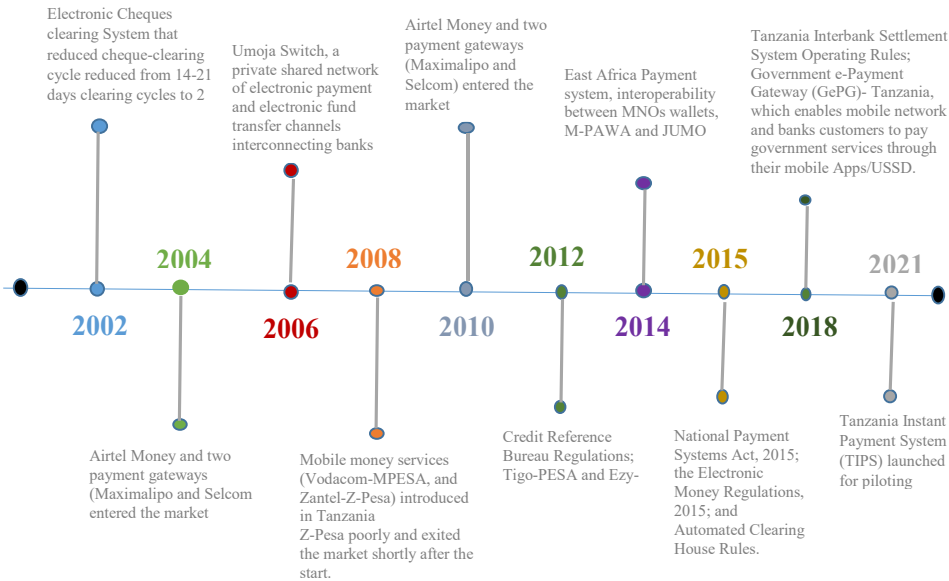
14 <https://www.asokoinsight.com/content/quick-insights/tanzania-fintech>

were provided by the enacted Payments System Act, 2015. Section 6(1) (c), (d) and (g) of the Act give the Bank powers to license and regulate activities and/or instruments related to:

- Funds transfer from one account to another using any electronic device.
- Transfer of electronic money from one electronic device to the other.
- Provision of electronic payment services to the unbanked and under-banked population.

Figure 2 illustrates the evolution of electronic payment in Tanzania prior to and after the launch of mobile money scheme (2002 to 2020).

Figure 2: Evolution of electronic payment in Tanzania

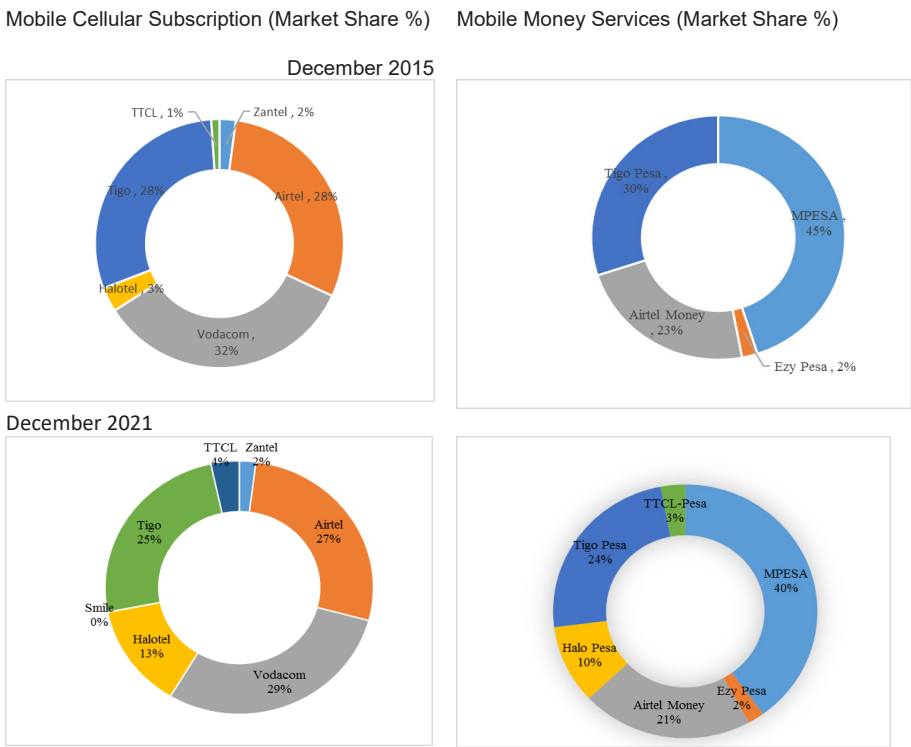


Source: Constructed by author

6.2 Telecom Fintech Platforms

As at December 2021, there were six mobile money telecoms in the market, of which three dominated the market; namely Vodacom (M-Pesa), Tigo (Tigo-Pesa) and Airtel (Airtel money) (Figure 3). The structure is somewhat different from other markets in the region as shown in Table 7. The registered mobile money accounts totaled 108.5 million, of which 33.1 million were active accounts transacting a total of US\$ 49 billion in 2020 (BoT, 2021b). Figure 3 shows the layout of the market both in terms of subscription of cellular phones and mobile money scheme, with Vodacom accounting for 40.0% of the market share, lower compared to the level in 2015, partly due to competition.

Figure 3: Mobile-cellular subscription and mobile money services (December 2021)



Source: TCRA (2015; 2021)

Analysis also shows the maturity of the Tanzania mobile money market characterized by different types of transactions, including transfers and withdrawals, P2P, B2G, C2B, G2P and P2G payments and deposits. The P2P and P2G transactions are common, facilitated by the stand-alone MNO mobile money platforms or platforms interfaced with banks and/or private and government electronic platforms. Markedly, is the transition from P2P to merchant payments (B2P), small volume payments to bulky payments, and emergence of fintechs that use mobile and bank systems to enable international transfers. Dominance in the market explain rapid evolution of products in the market. For instance, leaders in the market in the likes of Vodacom-Tanzania are willing to invest in products or services banking on its wider network coverage and customer base, with expectation of quick returns before adoption of similar technology by competitors.

Table 7: Scope of mobile money network operators in Tanzania compared to other countries in East Africa region

Country	Number	MNOs	Customers (Mil, 2020)	Stage of growth
Tanzania	6	M-Pesa (Vodacom), Tigo-Pesa, Airtel Money, Halopesa (Halotel), Ezy Pesa (Zantel) and TTCL-Pesa. Market Leader: M-Pesa (40%)	51	Close to maturity with many players. Most of the transactions take place outside the network (cash transaction is still high in the economy, about 70%). Interoperability of mobile money operators exist and fintech innovations are taking opportunity of the infrastructure.
Kenya	4	M-Pesa (Safaricom), Airtel Kenya (Airtel Money), (Orange) Orange money and Telkom Kenya (T-Cash). Market leader: M-Pesa (98.8%: March 2020)	61	Advanced. Innovations in the market are largely driven by M-Pesa with growing number of transactions taking place within the network (i.e. payments, savings and credit). Fintech start-ups are taking opportunity of the mobile phone infrastructure. Interoperability of mobile money operators exists.
Uganda	4	MTN Uganda (MTN Mobile money), Airtel Uganda (Airtel money), Afritell Uganda/Orange Uganda (Afritell Uganda Money) and Uganda Telecom (M-Sente): Market leader: MTN (54.7%)	28	Maturing. Most of the transactions take place outside the network (cash economy dominates) and emerging fintech start-ups take opportunity of the mobile infrastructure. Interoperability of mobile money operators exist.
Rwanda	3	MTN Rwanda (MTN Mobile Money), Airtel Rwanda (Airtel money) and Tigo Rwanda (Tigo-Pesa): Market leader: MTN Mobile money (34%)	7.6	Growing but with increasing adoption of services beyond cash-in/cash out (P2P and G2P. Most of the payments take place outside the network. Mobile money not interoperable.

Source: Compiled by Author

Observed are the growing values of mobile money transactions, similar to other countries in East African region (Figure 4). The transaction values reached US\$ 48.5 million in 2020 (about 78.0% of Gross Domestic Product), with significant improvements observed in 2019 and 2020 on account of measures taken by governments and financial institutions to encourage use of the digital financial services to circumvent

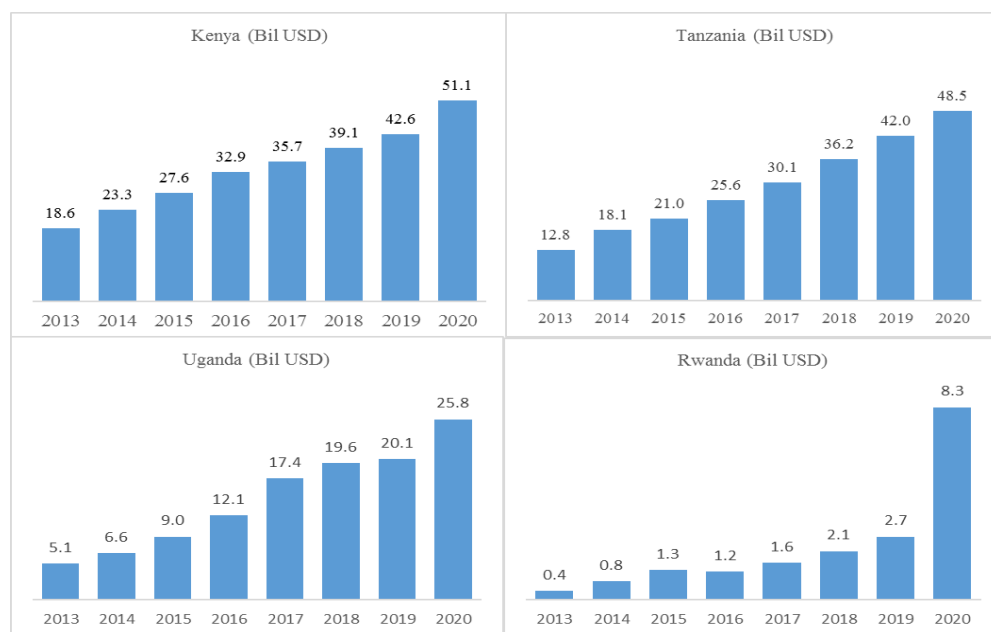
COVID-19 challenges. Growth is not only in volume of transactions, but also in growth of number of agents, users, and active accounts (Table 8).

Table 8: Mobile money performance indicator

Item	Jan-13	Dec-21
Mobile money accounts	27,430,274	108,481,990
Active users	8,078,452	33,142,118
Mobile money outlets (Agents)	98,412	838,759
Value in trust account (Billion, TZS)	195.4	1,184,155

Source: Bank of Tanzania

Figure 4: Value of mobile money transactions in selected East Africa countries



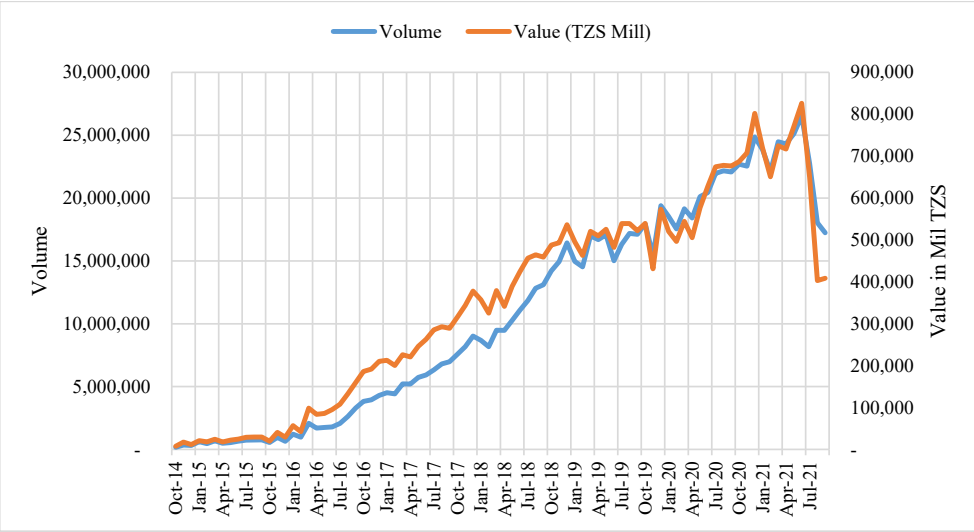
Source: East African Central Banks (Computation by the Author)

Note: Exchange rates per 1 US\$: Rwanda (Rwf: 864.5); Uganda (Ush 3,636.1); Kenya (Ksh 102) and Tanzania (TZS 2,250).

Related is improvement in mobile money interoperability—industry players led initiative, mainly MNOs. The system allows instant transfers of e-money between different mobile money providers—reducing transaction costs and improving access. The value of transactions stood at nearly TZS 700 billion a month in 2021 from TZS 12.2

billion a month in 2014 (Figure 5). A slump observed from July 2021 is partly explained by introduction of a mobile money transaction levy. Interoperability is also growing between MMOs and financial institutions, enabling customers to transfer money, make withdrawals, pay bills, check balances and access financial statements. Data on volume and value of transactions of such transactions was not accessible at the time of drafting this paper.

Figure 5: Mobile money interoperability



Source: Bank of Tanzania (2021)

6.3 Telecoms – Financial Institutions Partnered Fintechs

There are several financial products and services offered through fintech innovators in partnership with banks. These are enabling fintechs, which facilitate financial institutions, to deliver financial services to the end consumers. Financial products and services offered through this manner are based on the tripartite agreements between financial service providers, vendors, and MMOs. Products and services range from savings, credit, remittance, and insurance. Some of the products are as shown in Table 9.

Table 9: Selected fintechs interfaced with financial institutions

No.	Platform/ Fintech	Institution	Customer Aggregator	Nature Of The Solution
Saving				
1	Timiza Akiba	Letshego Bank Tanzania and technology provider –JUMO		A savings solution offering airtel customers a platform to save for a goal.
2	Halal Pesa	Amana Bank		A saving platform interfacing Amana Bank and M-PESA customers abiding to Sharia laws.
Saving and Lending				
1	M-Pawa	NCBA Bank	Vodacom	Savings and micro-loan product. It is a solution built on M-Pesa network, facilitating traditional banking services (lending and savings). Both savings and loans have interest component. A similar solution in Kenya is M-Shwari by NCBA Bank-M-Pesa; Kenya Commercial Bank (KCB) – M-Pesa; and Mokash and NCBA in Uganda and Rwanda.
2	M-Koba	Tanzania Commercial Bank	Vodacom	A platform that enables groups (friends and other savings accumulation groups) to save, lend to members and share earnings. Borrows Village Community Banks model, which are small savings groups established by members for a similar role. With this digital platform, members are provided with a room to contribute anywhere and at any time. The platform has improved transparency and simplicity—reducing the challenge of safekeeping cash collected from members.
3	Halo Yako	FINCA Microfinance Bank Limited	Halotel	Solution that enables FINCA customers to save and access small instant loans.
4	Timiza Vikoba	Maendeleo Bank	Airtel Tanzania	Facilitates savings and credit for groups of 5 to 50 persons. Loans are offered to members after 4 weekly savings—offered on rotational basis.
Lending				

No.	Platform/ Fintech	Institution	Customer Aggregator	Nature Of The Solution
1	Songesha	Tanzania Commercial Bank (Known as TPB)	Vodacom Vodacom	Overdraft facility that enables customers to proceed with M-Pesa transaction (e.g. send money, buy airtime and bundles, transfers float to another mobile wallet, pay merchants, pay bills such as electricity, water and TV subscriptions or purchase airtime and bundles) when they do not have enough float in their wallet.
2	Wakala- Songesha (Various banks)			Provides overdraft facility to M-PESA customer with insufficient float in the wallet when conducting a cash-in transaction at a mobile agent.
3	Tigo Nivushe	Jumo Tanzania services Company	Tigo	It is an instant loan facility to enable Tigo customers' complete transactions through their wallets in periods of cash constraints. The customer can be provided with a loan facility up to TZS 20,000 and if the repayment is made on time, the customer can qualify for additional loan. A good example in the region include Fuliza in Kenya—offered by Safaricom's M-Pesa and NCBA.
Insurance				
1.	Tigo-Bima Mkononi	Milvik Tanzania Limited—fintech for health	Tigo	Provides healthcare insurance cover to unbanked customers outside the mainstream of insurance system. The cover ranges from TZS 1.9 million to 12.9 million.
2.	VodaBima	Insurance companies operating in the country (10 as at March 2022)	Vodacom	Helps insurance clients to access variant insurance services without visiting insurance provider in person.
MERCHANT Payments				
1.	Lipa-kwa Tigo	Tigo		Mobile payment solution that facilitates customers to make payments through USSD (number codes), QR codes and In-App. It enables merchants to receive payments from their customers through mobile wallet.
2.	Lipa kwa M-Pesa	Vodacom		Merchant payment solution that enables merchants and retailers collect payments either through USSD (number codes), QR codes and In-App.

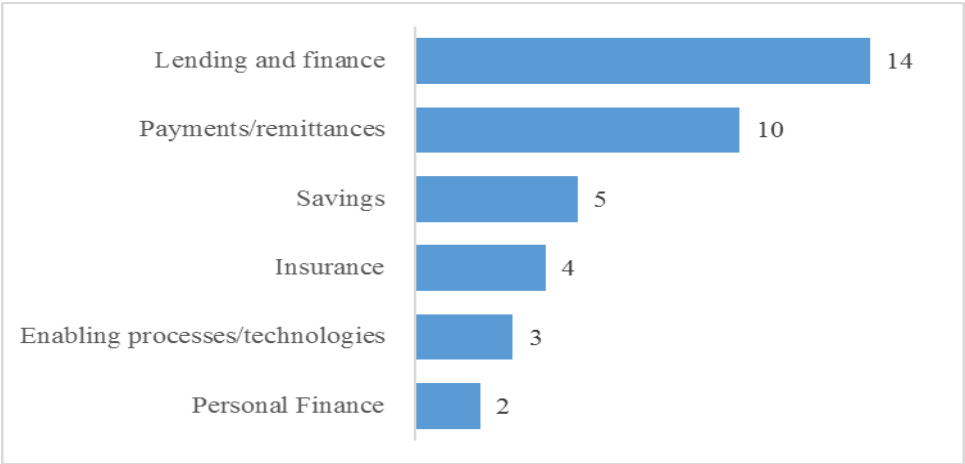
Source: Bank of Tanzania (2021)

Big banks such as NMB and CRDB had by 2012 developed their own gateways or aggregating platforms for e-banking services—small banks rely on private aggregators, such as Selcom and Maximalipo. The gateways have so far facilitated cashless payments through Point of Sales (POS), QR codes and other e-commerce solutions that enable merchants to accept credit/debit cards. Aggregators are licensed by the Bank of Tanzania and operate as per the provisions of the National Payment Systems Act, 2015 and its related regulations, mainly the Payments Systems (Electronic Money) Regulations, 2015.

6.4 Other Fintechs

There are other fintechs established and operated by players other than MNOs, but leverage on mobile phone technology, MNOs network and big data systems. They are either core fintechs focusing on payments/remittances, lending/financing, savings, insurance, and financial management) or enabling fintechs. Core fintechs account for a bigger proportion of fintech start-ups and incumbent fintechs operations in Tanzania. Assessment of fintech startups in Tanzania in 2020 indicated that ventures in core fintech start-ups accounted for 97%, with majority focusing on payments/lending and savings (UNCDF, 2021; Figure 6 and Figure 7). The picture is different from the rest of the region with bigger number and diversified fintechs. In Kenya, for instance, fintechs are broadly diversified, ranging from crowdfunding platforms, fintech facilitated platforms such as fintech for gig-workers, health fintechs (health-techs), energy-tech (M-solar), e-commerce, credit, agriculture, and payments to blockchain. Nairobi is ranked by Findexable at 37 with Dar es Salaam ranked at 262 globally.¹⁵

Figure 6: Number of fintech start-ups in Tanzania by product



Source: UNCDF (2021) Analysis

¹⁵ <https://gfi.findexable.com/>

Figure 7: Fintechs in Tanzania (core and enabling) by service provider



Source: Source: UNCDF (2021)

Analysis also shows that fintechs in crowdfunding are emerging but are few. Most of use cases are observed in funds mobilization for election campaigns, major football clubs fundraising programmes, and contributions in religious organizations. Likewise, insurance fintechs are also growing, but the services are yet to encompass bigger proportion of the rural population whose incomes are seasonal and vulnerable to poor weather. Example of such fintechs include Jamii and MyHi.

6.5 Fintech Nature, Ownership and Financing

Fintech innovations are of different nature depending on investors' objectives (short-term and long-term), targeting and the nature of customers. Wave Money in Uganda,¹⁶ for instance focuses on developing a customers' base by offering very low-cost wallet possibly with a long-term goal of building huge customer base for future value-added services (VAS) through the platforms. Analysis based on UNCDF (2021) findings show that most fintech startups and innovations in East Africa are business to business (B2B), followed by business to customer (B2C). B2B and B2C fintech start-ups in Tanzania accounted for 52.0% and 30.0%, respectively, of total fintech startups (UNCDF, 2021).

In relation to ownership, most of the fintech companies and start-ups in Africa, and in particular Tanzania are foreign-owned and funded. This is partly explained by challenges inherent in locally established fintech start-ups, including lack of collateral for securing enough capital, appropriate support networks (hubs, incubators and mentorship connections) and prerequisite skills (UNCDF, 2019). Analysis from the market further shows that companies with a proportionate mix of public and private ownership are more vibrant on innovations than wholly state owned, the case for Vodacom Tanzania and Airtel-Tanzania versus Tanzania Telecommunication Company (TTCL). Investment in market research, choice of technology, fee structure, branding, risk management and customer management are important elements for greater acceptance and growth of any fintech, regardless of ownership. Safaricom, for instance, was able to capture the market in Kenya right from its launch largely due to focusing on these attributes the approach that was not deployed by the rest of MNOs in the region (Cracknell, 2015 and Argent et al., 2013).

Apparently, fintech start-ups in Africa are increasingly benefiting from external investment flows, growing to US\$ 1.0 billion in 2021 from US\$ 160.3 million in 2020, with investment averaging at US\$ 5.6 million from US\$ 1.6 million in 2020^{17,18}. In a span of the first seven weeks of 2022, fintechs in Africa were able to raise US\$ 1 billion, beating the record of raising the same amount in 2021 (21 weeks).¹⁹ Most of the deals in Africa are in lending, payments, and remittances, with Kenya, South Africa and Nigeria being the top recipients.²⁰ Tanzania-based fintech companies

16 It is a mobile money platform in Uganda offering mobile wallet at zero withdrawal and deposit fees to account holders (a person using the platform), but at 1% for someone helping account holder depositing/sending money through an agent.

<https://bit.ly/3CTSXAZ>

18 https://thebigdeal.substack.com/p/-1-billion-usd-in-7-yes-seven-weeks?utm_source=url&s=r

19 https://thebigdeal.substack.com/p/-1-billion-usd-in-7-yes-seven-weeks?utm_source=url&s=r

20 <https://member.fintech.global/2022/01/19/fintech-investment-in-africa-nearly-quadrupled-in-2021-driven-by-paytech-and-lending-deals/>

(NALA) and Ramani²¹ secured US\$ 10 million²² and US\$ 150,000, respectively, in 2021. Opportunities offered by big players in other markets, as is the case for Safaricom and Equity Bank in Kenya, explain differences in flow of external funding (Table 10). These two entities are well linked with innovators and investors, making it easy to test and scale-up innovations. Other than telecoms, other fintechs in Tanzania are too small and immature to compete with foreign entrants in the market or cross borders to extend outreach.

Table 10: Fintech rankings in selected African countries (2021)

Country	Rank	Score	City(ies) with highest penetration	Number of Fintech Companies/Startups
Tanzania	na	na	Dar es Salaam	33 ²³
Kenya	31	4.475	Nairobi	344
Uganda	64	0.885	Kampala	78
Rwanda	61	1.065	Kigali	44 (2019)
Nigeria	57	2.983	Lagos	144 ²⁴
South Africa	44	3.126	Johannesburg and Cape Town	93 ²⁵

Source: Compiled by the Author from various sources^{26,27,28}

The well-established fintechs, particularly those that have bolstered capacity in terms of skills and financing, are extending services to other countries. A good example is NALA-Tanzania, a payment platform established in 2017 aiming at enabling payments from United Kingdom. At its onset, the platform operated in Tanzania, then extended to Kenya and Uganda, and further to Ghana, with plans to advance to other 12 countries, including Nigeria.

6.6 At What Level is Tanzania in Fintech Growth?

As noted earlier, Tanzania is largely in the second generation of fintech growth, trying to scale-usage. The first generation, which is more about promoting access and usage of basic digital services, is largely attained. A significant proportion of the population is accessing basic financial services through mobile money, and fintech enablers are in

21 This is a sales platform that helps salespeople to track their inventories, register their customers and record their sales transactions. It was founded in 2020.

22 <https://member.fintech.global/2022/01/19/>

23 UNCDF (2021)

24 Statistica.com

25 <https://www.fintechtimes.com/country-reports/>
<https://gfi.findexable.com/fintechs>

27 <https://tracxn.com/explore/FinTech-Startups>

28 UNDF Analysis for Rwanda (2019)

advanced levels of growth, creating an opportunity for upscaling fintech innovations and products. Detailed analysis of opportunities in place is in section 6. The attributes of the two-fintech generations are illustrated in (Table 11):

Table 11: First and second fintech generations

1st generation: Channels – Mobile Money and Agent Banking	High number of the population with basic services. Mobile money services are the most featuring product including person-to-person (P2P), transfers, cash-in-cash out and bill payment. Fintech enablers, ranging from widespread MNOs network infrastructure, agents interoperability, financial education, digital identity and electronic know your customer (e-KYC), agent banking, countrywide cell signal coverage and addressing liquidity constraints of mobile money agents and customers.
2nd Generation: Extending the use case – Nano credit and merchant services	Growing number of nano-credit by mobile money providers. Developing merchant services.

Source: Cracknell and Wilkson (2021)

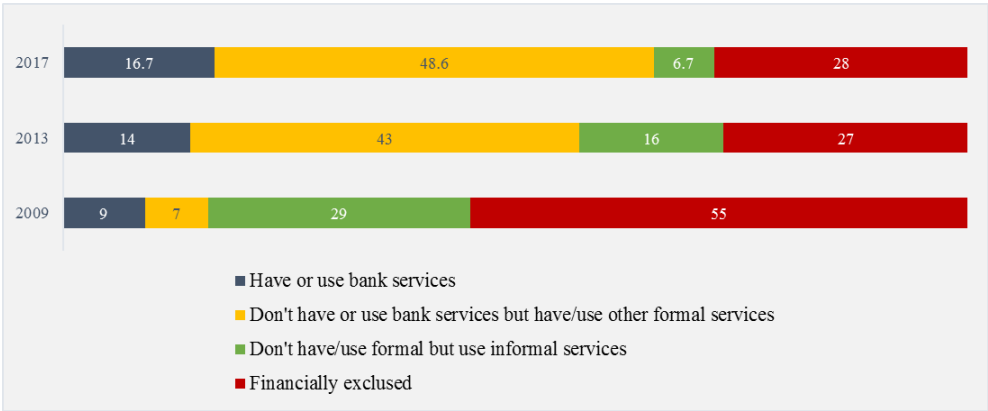
Overall, there are several nano credit providers (as highlighted in Section 6.3) and merchant payment services are growing. The analysis based on discussion with some key players in the market shows, however, that users of these services are still few. Only 4.0% of adults accessed credit through mobile phone in 2017 (FinScope Tanzania, 2017).

7.0 Have Fintechs Improved Financial Inclusion?

7.1 Role of Fintechs in Financial Inclusion

Fintech innovations, albeit not in volume and capacity comparable to developed countries, have improved financial inclusion, mainly access and usage of financial services in the country. The uptake and use of formal financial services other than banks rose more than six-fold in the period 2009 to 2017. The use of informal channels (informal savings groups and individuals) by adult population 15-plus narrowed from 29.0% in 2009 to 6.7% in 2017, while financially excluded adult population dropped from 55% to 28% (Figure 8).

Figure 8: Uptake of financial services (% of adult population)



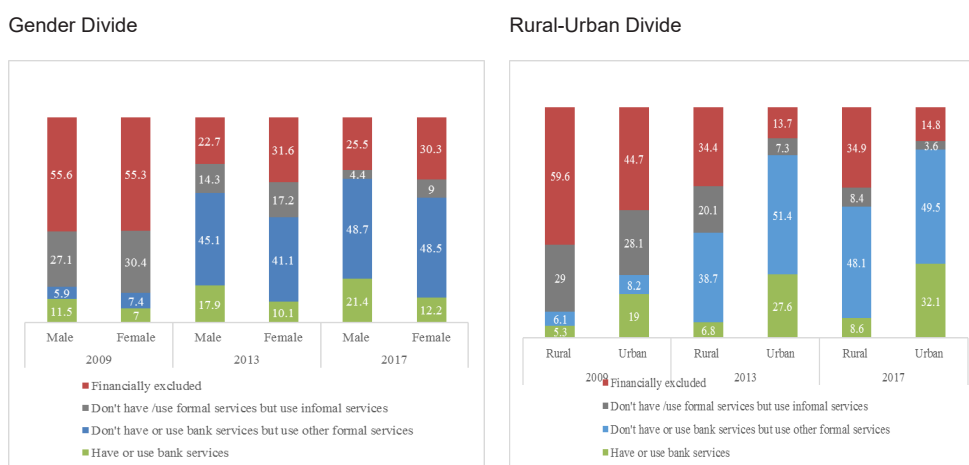
Source: FinScope Tanzania (2017)

The improved level of access is largely driven by access to mobile phone devices with major marks observed across multiple fronts (Finscope Tanzania, 2017).

Adults owning mobile phone	→ 63%
Adults accessing mobile money services	→60%
Adults accessing mobile phone	→93%
Adults living in household with mobile phone	→80%
Adults saving through mobile money	→35%

Notwithstanding improvements in uptake of financial services, exclusion levels are remarkably high in rural areas and for females. Rural accounted for 79% of the exclusion, while female accounted for 47% of the first two quantiles (FinScope Tanzania, 2017). Figure 9 illustrates the gender and rural-urban divide in financial uptake. Several factors are associated with this phenomenon, including low-income (poverty), affordability of fintech products and services, inappropriate fintech solutions, low financial and digital literacy, lack of necessary documentation, low uptake of smartphones and inadequate legal framework (Finscope Tanzania, 2017 and World Bank, 2017).

Figure 9: Gender and urban-rural divide in uptake of financial services



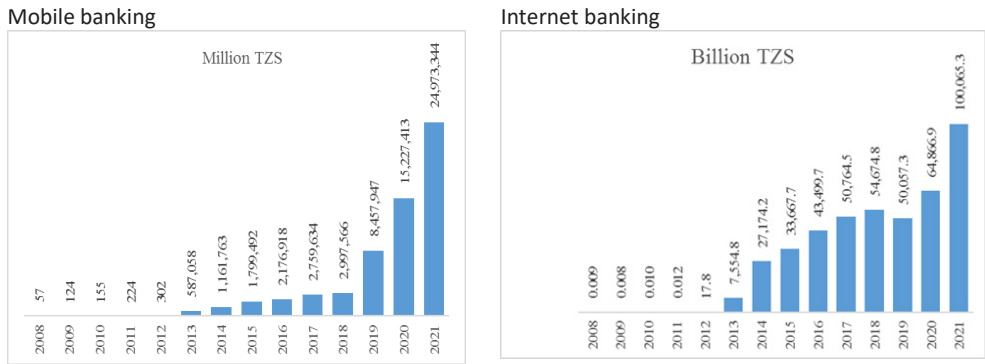
Source: Finscope Tanzania (2017)

7.2 The Influence of Mobile Phone in Other Areas

7.2.1 Banks

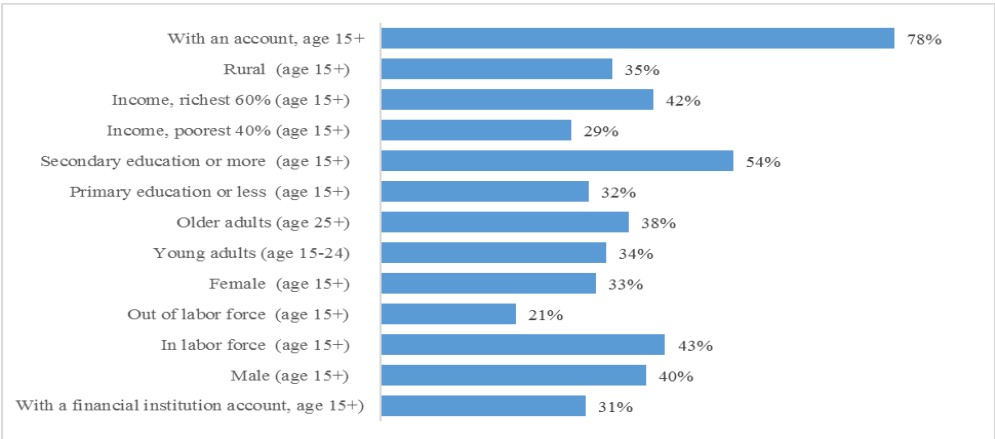
The use of mobile phones in facilitating transactions in traditional financial institutions, in particular banks is growing with majority of banks interfacing their core banking systems with mobile network operators systems (aggregators of mobile customers information), National Identification database (a recent move) and credit reference systems. In this endeavor, as stated earlier, there are banks with their own fintech solutions and others collaborating with fintech companies, either mobile phone or any other. Improvement so far is observed in growth of mobile banking transactions, which grew from TZS 57 million in 2008 to TZS 24,973.3 billion in 2021 (Figure 10). The use of both mobile and Internet banking is, however, skewed on individuals with bank accounts, employed and having education higher than primary, male and the rich (Figure 11).

Figure 10: Mobile banking and Internet banking in Tanzania



Source: Bank of Tanzania

Figure 11: Used a mobile phone or the internet to access a financial institution services in 2017



Source: World Bank (2017)

7.2.2 Government e-payment

Government e-payments, especially the mandatory ones have also bolstered the use of fintech solutions. The well-known Government Electronic Payment Gateway (GePG), launched in 2018, for instance, has improved revenue collection efficiency and minimized fraud by enabling customers to pay for public services using cards, Internet banking and mobile money. Some of the use cases of the system are as illustrated in Table 12.

Table 12: Use cases of GePG

Nature of Payment	Payment Category	Examples
P2G	Mandatory Payments	Payment stipulated by law including tax, fees (motor vehicle, parking fees, registration fees in government universities/colleges) and penalties.
	Payment of services	Payment for services such a power, water, licenses, vehicle registration, work permit, Visa and passport.
G2P	Payment of Government benefits	Government benefits provided by the Government through Tanzania Social Action Fund (TASAF) - beneficiaries receive payments through their mobile phones.

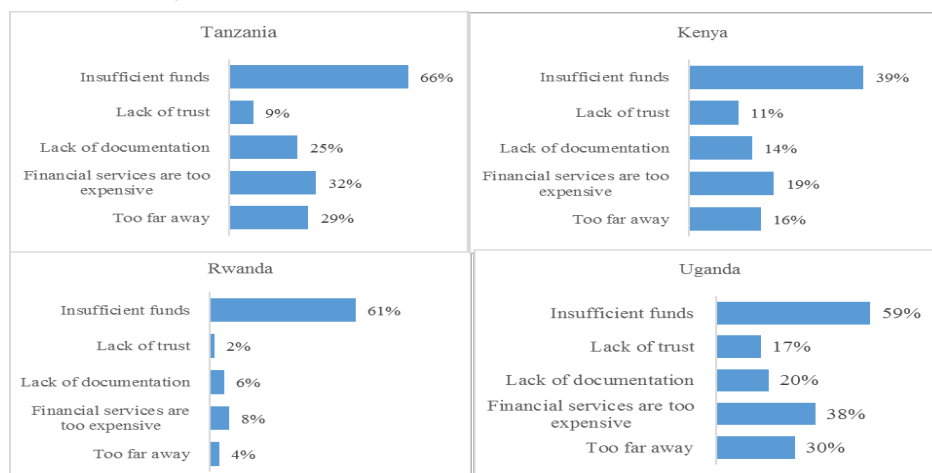
Source: Adopted and modified from Pillai (2016)

7.3 Challenges

As highlighted by key fintech players, several factors affect the use of fintech services and products in Tanzania. An in-depth analysis of these factors is as follows:

Low income: As noted earlier, low income firmly characterizes the first two quantiles, comprising women and rural residents, with 66% of the respondents indicating shortage of funds for the reason of not opening account in a financial institution (World Bank, 2017). The rate was the highest in the region (World Bank, 2017, Figure 12). This implies that fintech solutions interfaced with bank account holders have had limited outreach to the poor.

Figure 12: Reasons for not having a financial institution account (% of population 15+)



Source: World Bank (2017), Global Findex data

Affordability of fintech products and services: Much as fintech solutions aim at increasing outreach and reducing transaction costs of accessing financial services, the services are considered expensive. For instance, sending a mobile transfer amounting to TZS 100,000 (equivalent to US\$ 44) costs TZS 2,771 (equal to US\$ 1.2) while in other countries such as Kenya, transferring equal amount costs about Ksh 55 (equivalent to US\$ 50 cents)²⁹. The costs are also high in accessing banking services through customer's mobile wallets (Figure 12). Charges inbuilt in network interfaces with bank data and other data providers, commissions and other charges, taxes and levies put by the Government account for overall charges.

The introduction of a levy on mobile money transactions (sending and withdrawal) in July 2021 upto TZS 7,000 (Table 13)³⁰ is one of the challenges considered to affect the unbanked poor. The value of transactions reduced by 31.2% between July and September 2021. Following challenges on implementation of the levy, the levy rates have been reduced by 43% to a maximum of TZS 4,000 effective from July 2022 and the levy has been extended to all electronic transactions, including those by banks, which were not in the loop. Electronic money levy is also gradually being introduced in other countries in Africa, though in a different fashion. Ghana, for instance, launched electronic money levy in May 2022, targeting mobile money and bank transactions within Ghana, at a rate of 1.5% for transactions exceeding GHS 100.³¹ The levy does not apply to foreign transactions and persons making transfers to their person accounts.

²⁹ <https://www.safaricom.co.ke/personal/m-pesa/m-pesa-rates>

³⁰ The initial rates were TZS 10 and TZS 10,000 before this review

³¹ <https://www.worldremit.com/en/blog/money-transfer/what-is-the-new-ghanaian-electronic-transaction-tax/#:~:text=On%20the%201st%20May%202022,and%20bank%20transfers%20within%20Ghana.>

Table 13: Government levy on mobile money transactions in Tanzania

Electronic mobile Money transfer and withdraw amount in TZS	Levy in TZS
1,000 - 1,999	10
2,000 - 2,999	11
3,000 - 3,999	29
4,000 - 4,999	39
5,000 - 6,999	70
7,000 - 9,999	88
10,000 - 14,999	224
15,000 - 19,999	427
20,000 - 29,999	672
30,000 - 39,999	770
40,000 - 49,999	1,050
50,000 - 99,999	1,435
100,000 - 199,999	1,771
200,000 - 299,999	2,058
300,000 - 399,999	2,450
400,000 - 499,999	2,870
500,000 - 599,999	3,640
600,000 - 699,999	4,480
700,000 - 799,999	4,970
800,000 - 899,999	5,264
900,000 - 1,000,000	6,230
1,000,001 - 3,000,000	6,580
3,000,001 and above	7,000

Source: Ministry of Finance and Planning

Taxes and other charges on fintech products and services reduce the incentive to innovate (UNDF, 2021). The argument here is not taxing innovations or digital financial services, but rather tax rates/levies should be reasonable not to distort innovations and the market (See also Ndung'u, 2019).

Inappropriate fintech solutions in marketplaces: Interviewed informants indicate that most fintech innovations in the marketplace are generic or picked from other markets with conditions not suitable for Tanzania environment. This challenge is compounded by limited research to customize the solution in the local environment. A good example is when Tanzania Vodacom was introduced in Tanzania market. Different from Kenya's Safaricom,³² Vodacom-Tanzania chose USSD system technology versus SIM application employed by Safaricom-Kenya³³ and invested little

³² Tested the technology for 10 months.

³³ Safaricom used SIM Application Toolkit, which is easier for customers to use as the programme is installed in SIM Card while Vodacom used USSD system, which requires a user to follow a series of instructions (Argent et al., 2013).

in market research and consumers education, leading to low uptake and penetration in the market (Cracknell, 2015; Argent et al., 2013). Relatedly, other fintech products including M-Pawa have fared poorly due to this challenge. There are, however, cases where innovations have been adopted from other markets and performed well—largely due to similar conditions. A good example is M-Mkoba: M-Pesa –Tanzania Commercial Bank (TCB) group savings platform. The performance of the solution is impressive, bolstering the bank savings from micro clients,³⁴ to a level never attained before in a span of a year.

Conversely, some emerging fintech innovations have developed solutions that better suit market needs, a good example being DMA – BizyTech initiative in Tanzania. The initiative looks at the whole fintech spectrum and financial sector and challenges and needs, including financial institution systems/data, mobile agents, agriculture marketplace and groups capacity to absorb credit and capacity building, among others, in developing a platform for farmers' group savings. Understanding customers' needs, building capacity of key players, close monitoring of the initiative and evaluating the outcomes are key for a successful performance of any fintech innovation.

Low financial and digital literacy: Low financial literacy translates into lower usage of financial services and adoption of solutions used in delivering financial services. This, coupled with low literacy and mathematical skills, obstruct people's ability to select suitable product mix, write correct figures, manage their finances, assess costs of loans (fees and charges) and adopt and use financial technological solutions. Though majority of adults in Tanzania can read and write Kiswahili (72%), add (71%) and subtract (59%); the population with no literacy and numeracy skills is worth attention (Finscope Tanzania, 2017). During interviews, there was incidence of customers sharing their pin codes or passwords when performing mobile wallet transactions due to low ability to do so by their own, and in the process losing money to unfaithful individuals.³⁴ In addressing the illiteracy and numeracy challenge, some microfinance institutions have programmes to create awareness to their customers on regular basis to enable them handle mobile money transactions (credit withdrawals and loan repayments). Similar initiatives such as My Oral Village is also worth replicating. My Oral Village has created financial tools including banking, mobile money and other financial tools for illiterate and innumerate people to enable them access and use financial services.³⁵ The organization integrates savings groups and mobile wallets and currently operates in several developing countries, including Kenya.

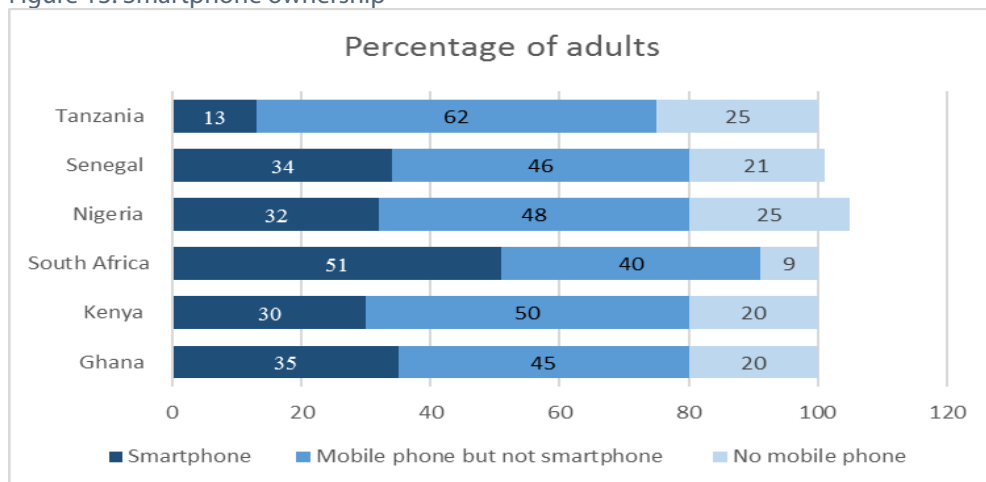
Low adoption and use of smartphones: Overall, there is low adoption and use of smartphones in Tanzania. Smartphones extend electronic services beyond voice and messaging communication. Out of 75% of adults owning mobile phones in Tanzania in 2018, only 13% out of which had smartphones and the remaining 62%

³⁴ Observed in Yetu Microfinance Bank PLC.

³⁵ <https://myoralvillage.org/>

owned basic mobile phones (Figure 13)³⁶. Elliot (2020) relates the outturn with low education, and affordability.

Figure 13: Smartphone ownership



Source: Pew Research Centre (2018)

Growing usage of smartphones is envisaged to increase fintech and delivery of financial services, leading to a range of personal and commercial finance, particularly Internet banking and mobile banking. Internet usage as a percentage of total population stood at 20% in Tanzania in 2019, lower compared to other countries in the region (World Bank, 2019).³⁷ In effort to improve Internet usage and by extension data usage amongst the population in a view to achieve a target of 80% by 2025, the Government of Tanzania waived Value Added Tax (VAT) in 2021 on smartphones, tablets, and modems³⁸. The effectiveness of the change was, however, low, hence the waiver was abolished in June 2022 with a view to establishing other mechanisms to promote adoption and use of the devices.

Inadequate access to required KYC documentation and associated costs: The National ID is one of the main financial inclusion enablers in the National Financial Inclusion Framework of 2012-2016 and the follow-up one of 2018-2022. As at 2017, only 9.0% of adult population had a National ID, which is the recognized documentation for KYC process in financial institutions (Figure 14). Significant improvements have been made over the last four years, with adults having National ID card or number reaching 22 million in September 2021, about 70% of the adult population.³⁹ Despite this progress, low access to physical ID cards and low awareness of alternative usage of National ID numbers in opening and operating a bank account make use of banks and financial institutions services and products, including digital ones, low.

³⁶ <https://www.pewresearch.org/global/2018/06/19/2-smartphone-ownership-on-the-rise-in-emerging-economies>.

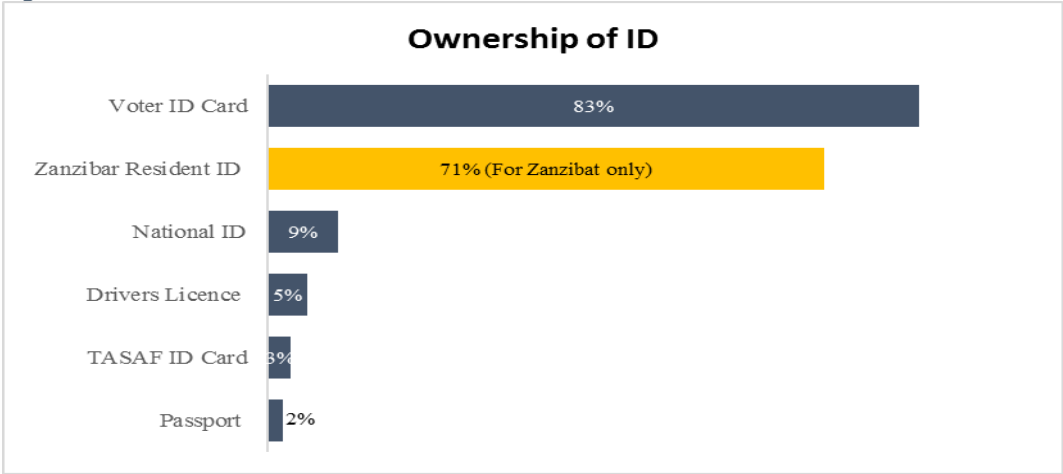
³⁷ World Bank (2019) World Development Indicators.

³⁸ <https://www.thecitizen.co.tz/tanzania/news>.

³⁹ Majority of adults have ID number.

Banks and financial institutions that have integrated their systems with the National Identification Authority (NIDA) revealed to have performed better in increasing customer base, savings, and building customers’ credit scores. This development is, however, constrained by conditions and costs on interfacing with the National ID system. The cost is considered high, especially for financial institutions with huge numbers of daily enquiries. A single enquiry of a personal ID information costs TZS 500 (equal US\$. 22 cents). In other markets (such as Kenya), the interface to the national population registry is free⁴⁰. Argument in this area is a need to lower the cost of interfacing with the National ID System in view of increasing usage of data systems to facilitate, inter alia, customers’ assessments or credit rating recover operational costs of management of the database through other sources in the business ecosystem, e.g., a minimal percentage on a certain threshold of financial institutions’ transactions a month.

Figure 14: Access to national ID in Tanzania (2017)



Source: FinScope Tanzania (2017)

Inadequate legal and regulatory framework for fintech startups: Much as the legal and regulatory environment in Tanzania has so far facilitated delivery of digital financial services and innovations, they are silent on the transaction and opportunity costs due to customers in delayed transaction or loss caused by the negligence of the issuer. A provision for refund of charges of a failed transaction is also missing.

The legal framework for protecting patent rights of the innovations is nascent and inadequate. There are several legislations in this area, including Patents Act 1987, The Business Names (Registration) Act, Cap 213), Copyrights and Neighboring Act Rights Act, 1999 and Trade and Service Mark Act, 1986. Nascent innovators mostly rely on trust, leading to loss of commercial benefits when the entity to whom the innovation is shared decides to scale-up and commercialize. Relatedly is the fees

⁴⁰ <https://www.icao.int/Meetings/mrtd-symposium-2014/Documents/>

and other taxes and multiple steps of approvals that fintech must undergo before receiving clearance to operate. For MNOs fintech products, for instance, both Tanzania Telecommunication Regulatory Authority and Bank of Tanzania approvals must be in place before operation. Much as authentication of systems is crucial, the costs and procedures involved are considered to suppress innovations.

Absence of sandbox framework: Sandboxes are developed to facilitate and test financial products, services and business models in a live controlled environment set in line with the agreed strategy and plan to inform financial policies and regulations. Tanzania is yet to develop a framework for sandboxes for fintech start-ups. The operating approach is “test and learn”, which enables financial sector players develop and test products and services and at the same time provide space for regulation development. However, this approach is not yet institutionalized in the country and given this situation, players in the market argue that there is a low level of trust of innovations from the private sector, especially the ones outside banks and MMOs.

Notwithstanding, several financial institutions are setting up innovation labs to bolster and support innovations in their areas of interest. A good example so far is the National Microfinance Bank (NMB) that launched an innovation lab for local investors in late 2021 with a seed fund of TZS 1 billion (US\$ 435,000), mostly targeting local innovators.⁴¹ Successful fintechs are given opportunity to connect to NMB Bank platform to test their products.

Absence of fintech association: Fintech advocacy bodies, which besides protecting interest of members, provide a platform for information sharing, networking, education, and raising resources; they are important platforms for self-regulation and for advocating for policy change. In Tanzania, there is no fintech association to address these issues. Fintech associations in the region include the Kenyan Fintech Association (FINTAK), the Financial Technologies Service Providers Association (FITSPA) and Rwanda Fintech Association. The absence of a fintech association in the country not only deprives fintech companies and start-ups from participating in policy and legal reforms, but also in protecting the interest of new and small entrants in the market.⁴²

41 <https://africaheroes.com/2021/10/nmb-bank-launches-new-seed-fund-for-sandbox-fintech-startups-in-Tanzania/>

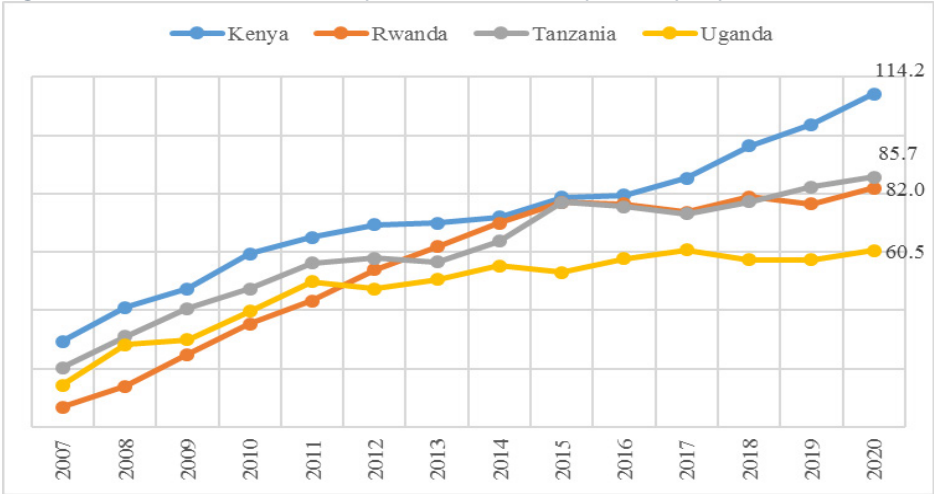
42 Tanzania Mobile Network Operators Association (TAMNOA) protects interest of MNOs and not the entire Fintech market.

8.0 Opportunities for Up-scaling Fintech

The opportunities for fintech growth are quite evident in Tanzania and the rest of the region given a number of factors ranging from customer base, income growth, existing infrastructure and support functions, evolving legal framework and knowledge and technical skills. The following is a summary of each of these areas.

Large customer base with access to mobile phones: 93% of adult population in Tanzania had access to mobile phones in 2017 where 63% own their mobile phone (FinScope Tanzania, 2017). In terms of mobile cellular subscription (per 100 people), growth is impressive, with the levels converging across the region (Figure 15). The rate was 85.7% in 2020 while for Kenya, Uganda, and Rwanda it was 114.2%, 60.5%, and 82.0%, respectively.⁴³ This coupled with an active labour force (15-64 years), averaging 55.4% of the total population in the region, provides a good customer base for fintech innovations.⁴⁴

Figure 15: Mobile cellular subscription in East Africa (per 100 people)



Source: World Bank (2020), World Development Indicators

⁴³ <https://data.worldbank.org/indicator/IT.CEL.SETS.P2>

⁴⁴ World Bank Development Indicators

Weakness: Slow uptake of smartphones and low digital technologies skills.

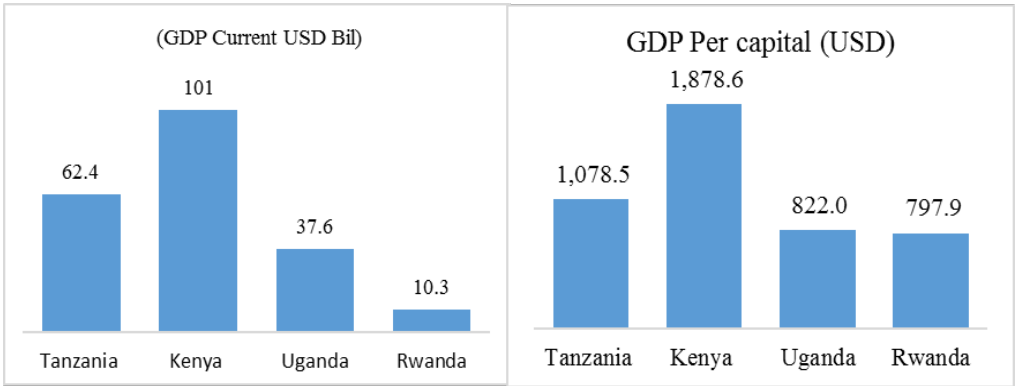
Digital infrastructure and supportive technology: Digital infrastructure is a key driver in fintech innovation and development. Investment in the national fiber optic network (National Information and Communication Technology Broadband Backbone NICTBB), which connects hinterland with a submersed cable increases Internet connectivity and speed. Faster connectivity is expected to increase adoption of more advanced fintech solutions. Studies elsewhere show that greater connectivity increases outreach of banking services and adoption of fintech innovations. D'Andrea and Limodio (2020), for instance, established a positive relationship between high-speed Internet on real time gross system (RTGS) adoption, leading banks to increase interbank transactions and private sector lending. The aggregate effect of the submarine cable increased RTGS adoption by 14%, private sector lending by 17% and interbank loans by 15% and deposits by 50%.

Weakness: The submarine cable (fiber optic) is laid mostly up to regional headquarters, leaving most of the rural areas, where majority of the population live not connected. Low access and adoption of smartphones able to process faster high volume of data remains a challenge. Analysis from the market indicates that most of the smartphones in Tanzania's market, and so in the rest of the region are of 2G capacity, which are slower in data processing compared to 3G, 4G and 5G.

Growing GDP and per capital incomes: As indicated earlier, low income/poverty is one of the attributes that characterizes low adoption and use of fintech solutions and related services. Analysis, however, shows regional economies, which are between 30% and 50% informal are growing. Informal economy is considered to account for 34% of Tanzania's economy (Becker, 2004; and Economic, Social Research Foundation - ESRF, 2011; and Aikaeli and Mkenda, 2014). For Kenya, the informal economy accounts for 34.4%,⁴⁵ while for Rwanda it is 46% and Uganda, 43% of GDP (Lloyd-Jones and Redin, 2017 and Rukundo, 2015). The size of GDP is also remarkable to totaling US\$ 211.3 billion in 2020 (Figure 16). Given the nature the economies in the region, solutions targeting the informal sector are likely to benefit more.

⁴⁵ <https://pesacheck.org/does-the-informal-sector-contribute-70-of-kenyas-gdp-be9c1411d28>

Figure 16: Gross domestic product and GDP per capital (US\$, 2020)



Source: World Bank (2020)

Weakness: Gender inequality, poverty and unpredictable incomes, mostly generated from informal/subsistent activities. Literacy rate is also low.

Supporting Functions: These are the national ID systems and platforms that enhance interoperability of the payment systems. In respect to National ID, the region is converging to total coverage, making it possible for fintechs innovations to integrate with financial or payment systems at ease, abiding to KYC requirements. Full integration of the National ID systems, Credit Reference Bureaus (CRB), banking and other financial and non-financial institutions would not only facilitate developing credit scores for extending credit to entrepreneurs in informal sector but also build savings and repayment culture by customers.

There is also improved spread of agent banking across the country, though these are concentrated in urban and peri-urban centres, partly due to low volume of business in rural areas. The number of bank agents grew from 10,689 in 2017 to 48,923 in 2021. The volume and value of transactions (deposits, withdrawals, transfers, and payments) have also grown. Deposit transactions rose to TZS 752,633 in 2021 from TZS 467,987 in 2017, suggesting that banking agents are mainly used by higher end customers as alternative to visiting bank branches.

Connected to the foregoing is the growing interoperability of payment systems, some developed by the private sector and others by public institutions, mainly central banks. These platforms facilitate customers, channels, and payment aggregation, thus reduce both operation and transaction costs. Interconnected systems already in the country include Automated Teller Machines (ATMs) namely Umoja Switch⁴⁶ and that of mobile money operators (MMOs), all enabling customers to perform transactions with convenience across bank branches and MMOs.

46 There are however challenges on using these systems arising from untimely clearing balances between banks in Umoja Switch.

Weakness: One of the weaknesses is argued to be high costs including charges, fees and commissions associated with system connectivity/interfacing. The charges include those of accessing MNOs network (USSD codes) and National Identification Data System, adding up to investment costs of fintech start-ups and scaling up costs of incumbent companies, thus making market outreach slow.

9.0 Conclusion

This paper aimed to provide insights on existing fintech environment – focusing on growth and retarding drivers, and assessing opportunities for scaling up fintech products and services to the broad range of the population. The analysis was descriptive, based on information gathered from reports and datasets obtained from various sources, coupled with information gathered from key informants in the market. The analysis revealed that Tanzania is largely in the second generation of fintech growth that is extending use cases of nano credit and merchant payments.

Further, the analysis shows that most of the fintech innovations in Tanzania are in payments and lending, driven by MMOs, of which majority are integrated with banks and financial institutions to facilitate delivery of banking services. The gap established in the legal framework is in governing nano-credit (mostly offered by mobile network operators) and protection of fintech innovations in nascent stage. A ‘test and learn’ institutional set-up is also missing, making it challenging to nurture and/or support fintech innovations from initial stages. Although there is improvement in support infrastructure, there is slow adoption and use of smartphones capable of supporting most digital transactions. Observed from the analysis is also absence of a coordination platform for fintech players. Improved digital infrastructure (the submarine cables); growth of customer base with access to mobile phones and growing incomes are some of the opportunities for future fintech value added services. To be able to take advantage of these opportunities, however, there is a need to:

Further support for the fintech market. This entails review of the legal system to adequately protect fintech intellectual patent rights. Since the existing intellectual patent rights protection framework in Tanzania is general, not dealing with start-ups’ initial ideas, there is need for a framework to protect such ideas from being captured by big corporates. This would entail institutionalizing the “test and learn’ approach.

Institute a framework to accommodate and regulate innovations, including nano-credit: This is necessary to adequately safeguard the financial system from disruptive effects of the technology and further protect consumers from usury interest rates and other malpractices.

Establish a platform to coordinate players in the fintech ecosystem as is for Mauritius. Mauritius has developed a fintech hub (Mauritius Africa Fintech Hub), which brings together all players in fintech ecosystem to collaborate in building cutting-edge solutions for the market within and outside the country.⁴⁷

Encourage fintech market players to establish an association: This body is instrumental for advocacy, capacity building, and advisory services, industry self-regulation and policy changes.

Attract more funding to fintech innovations: Funding is a prerequisite for growth and sustainability of fintech start-ups and fintech companies. Setting up a fintech innovation fund may be one of the options as is the case for Egypt. Three state banks in Egypt (Banque Misr, National Bank of Egypt and Banque du Caire) have already set up an investment fund of US\$ 85 million with expectation of attracting other regional and international investors in future.⁴⁸ Banque Misr is an anchor investor in the programme and the other two are strategic investors. Establishing such a fund may go together with encouraging banks and non-bank financial institutions to establish fintech innovation labs.

Improve fintech-supporting infrastructure, including adoption and use of smartphones, and fintech transactions monitoring systems: This would entail fiscal measures to reduce the price of smartphones together with building capacity in usage of the phones. It also entails developing a system to capture and monitor fintech transactions. Absence of a vigorous system leads to difficulties in distinguishing the overall performance of the financial service provider and that of fintech solutions.

Review taxes and fees on fintech financial services: The impact of taxes and fees on mobile money and other fintech products have had negative impact on the use of digital financial services. There is thus need to carry out a thorough review of the market to establish consumers' behaviour and establish optimal tax rates.

47 <https://mauritiustech.org/blog/mauritus-africa-fintech-hub-hosted-the-africa-fintech-festival-2021/>

48 <https://www.reuters.com/world/middle-east/egypt-state-banks-setting-up-85-million-fintech-innovation-fund-2022-03-20/>

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Annex 1:

List of institutions interviewed

S/N	Institution	Name	Position
1	Bank of Tanzania	Victor Tarimu	Manager, Microfinance and Bureau De Change
		William Mng'ong'ose	
		Fabian Kasole	Principal Bank Officer, National Payments System
		George Sije	Assistant Manager, Legal Services
		Emmanuel Mungongo	Senior Principal Economist, National Payment System
2	Vodacom- Tanzania	Nguvu Kamando	Director of Digital Services
3	Maxcom Africa (Maximalipo)	Jameson Kassati	Director General
4	Warioba Ventures ⁴⁹	Martin Warioba	Founder and Managing Partner
5	Selcom	Sameer Hirji	Executive Director
6	Tanzania Bankers Association (TBA)	Tuse Joune	Executive Director
7	Financial Sector Deepening Trust	Irene Mlola	Ag. Executive Director
8	CRDB Bank	Boma Raballa	Director of Retail Banking
9	NMB Bank PLC	Aloyce Maro	Head, Retail Products and Channels
10	FINCA Microfinance Bank	Edward Talawa	Chief Executive Officer
		Jalal ul Hag	Deputy Chief Executive Officer
11	Tanzania Commercial Bank PLC	Moses Manyatta	Head of Risk Management and Compliance
12	Equity Bank (Tanzania) Ltd	Isabela Maganga	Head of Commercial
13	Tanzania Association of Microfinance Institutions (TAMFI)	Winnie Terry	Chief Executive Officer

⁴⁹ Africa-focused investment and advisory firm providing pre-seed and seed investment funding for fintech and other technology related start-ups.



Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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Consortium pour la Recherche Economique en Afrique
Middle East Bank Towers,
3rd Floor, Jakaya Kikwete Road
Nairobi 00200, Kenya
Tel: +254 (0) 20 273 4150
communications@ercafrica.org