Financial Access for All: How Digital financial Services Are Expanding financial Inclusion in Egypt

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Abstract :
The digital revolution has significantly transformed the landscape of financial inclusion, leading to substantial advancements in this field .This study aims to analyse Egypt's endeavours in leveraging digital financial services as a catalyst for enhancing financial inclusion, utilizing a descriptive analytical approach to scrutinize secondary data from the Central Bank of Egypt, the global data findex concerning financial inclusion rates and the growth of digital financial inclusion in Egypt from 2011 to 2022. It provides an overview of the current state of financial inclusion, the impact of digital financial products, and Egypt's initiatives toward financial inclusivity.
Findings indicate significant progress in financial inclusion over the years facilitated by digital financial services, marked by an increase in account ownership and the proliferation of cashless payment systems such as InstaPay and Fawry. However, The implementation of targeted strategies are critical to address knowledge gaps and build trust in digital financial services among the underserved populations.
Key Words: Financial Inclusion ,Digital Financial Services, ,Cashless Payments, Digital products , Egypt.

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Introduction :

The world of finance is undergoing a remarkable transformation with the rapid growth of digital financial services (DFS). This revolutionary development is playing a pivotal role in bridging the gap between the financially excluded and the formal financial system. By tapping into the widespread use of mobile phones and digital technologies, DFS is empowering individuals who have long been overlooked by traditional banking institutions. And Egypt is emerging as a shining example of how DFS can pave the way for unprecedented levels of financial inclusion.
In recent years, Egypt has made significant strides towards digitizing its financial sector and bringing banking services to all segments of society. The impact has been nothing short of monumental.
This paper delves into a thorough examination of Egypt's endeavors to utilize DFS as a catalyst for accelerating formal financial participation. Drawing from a comprehensive review of scholarly literature examining the connection between DFS and financial inclusion, it analyzes the current state of Egypt in promoting financial access through digital channels. The evaluation of crucial aspects such as

account ownership, usage patterns, and adoption rates forms the bedrock of assessing the impact of recent policy interventions and regulatory reforms.
Furthermore, this study delves into the investigation of key initiatives from both the public and private sectors that drive Egypt's digital financial transformation. These initiatives range from utilizing technology for government disbursements to innovative solutions specifically targeting underserved segments of the population. By shedding light on collaborative efforts such as the establishment of the National Payments Council, this research illustrates the significance of multi-stakeholder coordination in creating an enabling ecosystem for DFS.
In light of the above, the study addresses the following research problem:
What is the role of digital financial services in enhancing financial inclusion in egypt ?
The aim of the study : The aim of this study is to provide a comprehensive analysis of Egypt's efforts in leveraging digital financial services (DFS) as a key driver for enhancing financial inclusion in the country.
Study methodology: A descriptive analytical method was chosen to answer to the question posed by the research
Structure of the study: The research is divided into three parts as follows:

- Theorical framework on financial inclusion Digital financial services .
- Literature Review on the Impact of Digital Financial Services on Financial Inclusion.
- Advancing Financial Inclusion in Egypt: The Vital Role of Digital Financial Services.

I. Theorical framework on financial inclusion and Digital financial services

1. The concept of digital financial services :

1.1. Understanding digital financial services:

Before diving, into digital financial services (DFS) ,we’re going to establish an understanding of digital finance (DF) .
•To begin the term "digital" encompasses any form of captured and expressed data, including numbers, text, images and sounds. If it can be sent via text message or email then it falls under the category. On the hand "finance" encompasses both the industry (banking, investing, insurance, real estate) and any financial functions within a company (such as accounting, budgeting, acquisitions, cash and capital management). (beaumont, 2019).
• According to a report from McKinsey digital finance refers to services that are delivered through infrastructure, like mobile devices and the internet. It involves use of cash and traditional bank branches. Transactions are facilitated through phones or computers using bank cards connected to point of sale devices. This seamlessly connects individuals and businesses to the national payments infrastructure in a manner. (James Manyika, 2016) .
Now , what are digital financial services?
• Digital Financial Services (DFS) refer to a platform that offers various financial services online, eliminating the need for physical visits to a bank branch. According to Ozili (2018), while there is no universally agreed upon definition of digital finance, it generally encompasses any technology, service, product or infrastructure that enables individuals and businesses to access payment, savings and credit

facilities through the Internet without direct contact with a financial service provider or visiting a bank branch . (Arora, 2020)

• DFS includes any type of financial services or products provided through any digital device and digital transaction platform and by any type of bank or non-bank institution (e.g. mobile phone, electronic debit or credit card, Internet) (Staschen, 2017), and it include methods of storing and investing; and managing personal or corporate finances. (Kamana, 2018)

1.2. Digital financial services Products:

Various tools provided by official banking and financial institutions can be used in the electronic payment process. Electronic payment methods take many forms, and each of them has its own advantages and roles. These include: (mahfoud, 2022)

- **Credit Cards**: These are issued by banks within certain limits and enable the holder to obtain actual credit. For Example: visa , MasterCard and American Express.
- **ATM card**: This non-credit electronic payment card is an internal device consisting of a plastic card containing a magnetic strip on which all current account details are recorded. It also contains the password used when operating the ATM. This card is only for people with a bank balance, and the discount is applied immediately after use.
- **Debit Cards:** These cards depend on the presence of the customer's physical funds in the bank, in the form of checking accounts, to cover the cardholder's expected withdrawals. It allows the holder to pay for purchases and the payment is made directly to the bank, unlike a credit card.
- **Electronic check**: It is one of the best-known forms of electronic money and the most important means of electronic payment that corresponds to the characteristic features of electronic transactions. It achieves speed of implementation and trust among customers, and is also consistent with its universality, as it is traded via the Internet.

1.3. Digital financial services delivery channels :

Electronic channels provide a comprehensive financial service, beginning with the customer's choice of service, proceeding through the completion processes, and concluding with its electronic execution. The specific information about these channels is as follows: (djazia, 2020)

- **ATM:** An ATM is a self-operating gadget that assists consumers without the need for human involvement. It functions using specifically tailored software to cater to a wide range of banking requirements 24/7. Customers utilize an ATM card, a bank-issued plastic card, to avail themselves of diverse services offered by the ATM, such as cash withdrawal and balance inquiries.
- **Phone banking** : it is a service that utilizes a network connecting all branches of a bank. This allows the employee delivering the telephone service to immediately access the customer's data from any branch. The consumer dials a unified number to acquire a particular service, and the employee who replies may access the customer’s data and ask specific questions to authenticate their identity. Major banks have discovered that building customer service contact centers saves time and decreases expenses
- **Internet banking**: Internet banking refers to banking activities where the internet is the channel of communication between the bank and the consumer. With the aid of other technologies, consumers may access services and financial products

supplied by the bank using a personal computer or any other device, remotely, without the need for direct interaction with the bank's personnel.

• **Mobile Banking**: As the worldwide trend towards mobile phone use develops, the functionality of mobile phones has increased to include access to the internet and associated apps.

1.4. The advantages and the risks of digital financial services :

In the realm of modern finance, digital financial services (DFS) have catalyzed a paradigm shift, heralding a new era of economic interaction. These services, characterized by their electronic infrastructure, have democratized financial access, offering a panoply of benefits that extend beyond traditional banking confines. However, it is essential to recognize the associated risks that come hand in hand with these services. In the following table, we will explore the advantages and the risks of digital financial services:

Table 01 : «The advantages and the risks of digital financial services»

The advantages of digital financial services	**Risks and challenges of digital financial services**
-Digital financial services (DFS) enhance access and affordability of financial services, It promotes the shift from cash-based transactions to formal digital financial transactions on secured platforms. -DFS assist governments in limiting the growth in overall expenditures created by the expansion of financial transactions. -it greatly minimize the circulation of counterfeit money, speed up financial decision-making and enable financial operations in just a few seconds. -DFS contribute to increasing GDP by providing access to a variety of credit facilities for individuals, SMEs and large-sized companies. -DFS helps achieve financial and economic stability and increase financial intermediation services as well as having long-term favorable implications on banking performance. (Khaled Sobeih Al, 2022)	-**Data management and privacy:** DFS involves the collection, storage, processing and exchange of consumer data, exposing consumers to unauthorized disclosure and use of personal data. **-Cybersecurity and operational risk**: DFS may rely on sensitive data infrastructure, compromising business continuity and financial stability. **-Financial Integrity:** DFS such as crowdfunding platforms, e-money, prepaid cards and crypto assets can enable rapid and remote financial transactions, allowing users to bypass controls and engage in illicit activities. **-Regulatory arbitrage:** DFS offered by unregulated entities may lead to risk building up outside the regulated system, weakening competition and innovation. **-Fair competition:** Large DFS platforms and big technology can reduce competition and increase risk concentration in the financial sector due to economies of scale, reputation and capital. (Ceyla Pazarbasioglu, April 2020, p. 7)

Source: prepared by the authors

Digital financial services (DFS) offer a dual-edged impact on the financial landscape. On the one hand, they provide enhanced access to financial services, promoting efficiency and reducing the prevalence of counterfeit currency Moreover, DFS are instrumental in achieving financial and economic stability, with long-term benefits for banking performance. On the other hand, the rise of DFS introduces significant risks and challenges. The handling of consumer data raises concerns over privacy and data management, while the reliance on digital infrastructure heightens cybersecurity risks. Additionally, the potential for financial integrity issues arises as DFS can be used to circumvent controls, leading to illicit activities. The presence of unregulated entities offering DFS can result in regulatory arbitrage, undermining the regulated system. Lastly, the dominance of large DFS platforms may stifle fair competition, concentrating risk and impacting innovation in the sector. Overall, while DFS present substantial benefits, they also necessitate careful consideration of the associated risks to ensure a secure and equitable financial environment.

2. The concept of financial inclusion

2.1. Understanding financial inclusion :

According to the Organization of Economic Cooperation and Development (OECD) and the International Financial Education Network, financial inclusion refers to the promotion of access to a range of financial services and products. This should be done in an affordable manner with the aim of expanding usage among segments of society. The goal is to enhance well being and achieve economic inclusion. (abderrahman nadjm al mashhadani, 2020, p. 19)

Similarly as defined by both the Group of Twenty (G20) and the Global Alliance for Financial Inclusion (Avi) financial inclusion aims to ensure that all sections of society including marginalized and low income groups have access to services and products. These services should be provided in a affordable manner. (Arab Monetary Fund, 2015, p. 02)

Based on these definitions we can understand that financial inclusion entails strategies aimed at extending services to reach as many people as possible, within a country. This involves offering banking services that enable individuals to take advantage of their benefits.

2.2. The importance and objectives of financial inclusion:

Financial inclusion aims to: (Arab Monetary Fund, 2017, p. 06)

-Reduce the percentage of residents or businesses lacking formal financial services and engaging in illegal channels.

-Increase competition among financial institutions by developing and diversifying their products and improving their quality in order to attract more customers and transactions.

-Pay attention to low-income groups and target groups such as women and youth and supporting them with appropriate financial services.

-Support small, medium and micro enterprises and integrating them into the formal financial sector and providing them with appropriate financial services.

-Create new employment opportunities, achieving economic and social growth, reducing unemployment and poverty, improving income distribution and raising living standards.

3. The role of digital financial services in enhancing financial inclusion :

3.1. Expanding financial inclusion through digital financial services :

The link between financial services and financial inclusion is based on the idea that many people and small business owners who are excluded from the formal financial system own mobile phones. By providing services through mobile phones and related devices we can improve access to financial services for those who are unbanked or underbanked. The widespread use of phones regardless of income level has allowed organizations to reach and serve these individuals more efficiently effectively and at a lower cost than before.

- Digital services have led to the development of numerous new financial products not only for traditional institutions but also for fintech companies, telecom providers, microfinance institutions and governments. These innovations promote inclusion in several ways:
- Improving access to financing for low income bank customers who do not have easy access to formal banking channels.
- Offering convenient platforms for individuals to carry out basic financial transactions such as bill payments, utilities and remittances.
- Expanding the reach of services beyond the traditional finance sector.
- Providing affordable banking services that encourage adoption.
- Boosting GDP growth in economies by enabling direct access to a wide range of financial services and credit options for individuals and small businesses.
- Creating term positive impacts, on banking performance through service innovations. (touhami, 2022)

In conclusion , Financial services are pivotal for enhancing global financial inclusivity. Collaborative efforts among key sectors can foster tax revenue growth, encourage market competition, and mitigate liquidity and inflation challenges in developing nations. The overarching aim is to bolster business welfare through platforms that ensure accessible funds and secure, efficient transactions, thereby transitioning economies from cash-based to digital systems and combating corruption.

3.2. Examples of digital financial services models proven to advance financial inclusion:

- **Mobile Money Platforms** : Platforms like M Pesa utilize the mobile phone infrastructure to offer essential financial services to those without access to traditional banking. By partnering with both telecom companies and financial institutions mobile money enables storage and transfer of funds as well as cash transactions through retail agents. Sub Saharan Africa has been at the forefront of this adoption with 21% of adults having mobile money accounts.
- **Digital Platform Ecosystems :** digital platforms designed for e commerce ride sharing and social networking have harnessed their extensive user networks to provide integrated financial services. For instance Alipay leverages Alibaba's dominance in e commerce to offer payment solutions and serves over a billion users. Similarly Gojek offers financing options based on ride patterns. These digital ecosystems leverage customer insights regarding transactions, fulfilment and engagement to provide credit facilities, savings opportunities and insurance products for communities.
- **Open Banking API Infrastructure :** Standardized APIs facilitate the exchange of financial transaction data and instructions between institutions. This promotes

competition and coordination within the industry while enhancing accessibility, for individuals seeking solutions. India’s Unified Payments Interface and Aadhaar digital ID system showcase the power of APIs in facilitating seamless account opening without the need for paperwork enabling access to credit, by utilizing bank records and ensuring secure customer verification. (Ceyla Pazarbasioglu, April 2020, p. 2)

3.3. Digital Financial services Risks on financial Inclusion

• **Discrimination**: DFS-related decision-making tools may not fully remove bias, leading to unfair segmentation and inappropriate pricing.

• **Exclusion**: Unequal access to infrastructure and technology widens the digital divide, especially for women and the poor.

• **Over-indebtedness:** Digital lending has led to repayment delays and insolvencies in Kenya and Tanzania, calling for a closer look at digital lending practices.

• **Unfair practices:** DFS may be provided with limited electronic disclosure, agent liability, effective redress mechanisms and security of funds, exposing consumers to abuse, fraud and operational failures.

• **Data protection risks**: Traditionally excluded customers may be more susceptible to data privacy, identity theft and fraud, especially when consumers have low financial capacity. (Ceyla Pazarbasioglu, April 2020, p. 7).

II. Literature Review on the Impact of Digital Financial Services on Financial Inclusion:

The advent of digital financial services (DFS) has significantly impacted financial inclusion, particularly in developing countries. Various studies have explored this relationship, shedding light on how DFS can enhance financial inclusion and contribute to economic growth.

1. (FatimaAznan, 2021)This study focused on financial inclusion in Indonesia and the efforts made to enhance it amidst the digital transformation of financial and banking services. The study highlighted the potential of financial technology in expanding financial inclusion and found that digital financial and banking products are essential for enhancing financial inclusion.
2. (Amoah A, 2020) This research examined the relationship between digital financial services and the development of financial inclusion. The study concluded that the diversity of digital financial services contributes to the development of financial inclusion. Furthermore, the use of financial services via mobile phones can enhance financial inclusion, financial empowerment, and the general well-being of community members.
3. (Siddik, 2020)This study aimed to understand the role of digital financial services in enhancing financial inclusion. The research found that digital financial services have many benefits for financial inclusion, as they increase financing opportunities to all segments of society, especially those excluded from financing.
4. (Atina, 2019) This study aimed to reach the role of digital financial services in achieving financial inclusion for small and medium enterprises. The study found that most small and medium enterprises cannot obtain capital and financing for the purpose of operation, investment, and desired growth, but digital financial services can enhance financial inclusion to access those organizations.
5. (Yan Shen1, 2018) This study aimed to reach the relationship between digital financial services and financial inclusion. That study found that the use of digital

financial products increases the ability to provide financial services to a large group of organizations, customers, which enhances financial inclusion and the ability to afford the costs of financial services or provides the digital financial product a new way to expand financial inclusion.

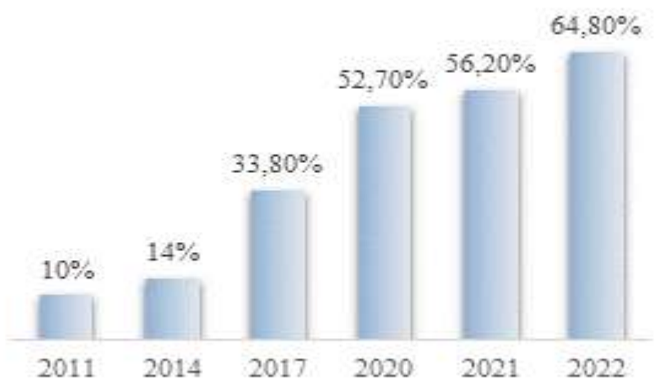
In conclusion, the studies collectively highlight the significant role of digital financial services in enhancing financial inclusion. They underscore the potential of financial technology in expanding access to financial services, particularly for marginalized segments of society.

III. Advancing Financial Inclusion in Egypt: The Vital Role of Digital Financial Services:

In order to achieve the goals of inclusion as set out in Egypt's Vision 2030 development strategy the country has made significant progress in developing a more digital and innovative banking and financial services sector. This part examines the advancements made far in expanding access to digital financial services (DFS) and explores the potential for further enhancing financial inclusion. With support from regulations and collaboration between fintech startups, banks, infrastructure providers and other stakeholders Egypt has established a thriving environment for DFS innovation. In the year the adoption of fintech solutions in areas such as payments, lending and asset management has resulted in notable efficiency improvements for both consumers and businesses. However there is still room, for policy reforms that encourage technology adoption among existing institutions and promote coordination among regulators. As fintech continues to integrate into commerce gig platforms and everyday transactions Egypt is well positioned to transition towards becoming a cashless society that includes everyone by 2030. Nevertheless it is crucial for regulators and industry players to work diligently to address remaining challenges related to financial literacy and trust while undergoing operational transformations.

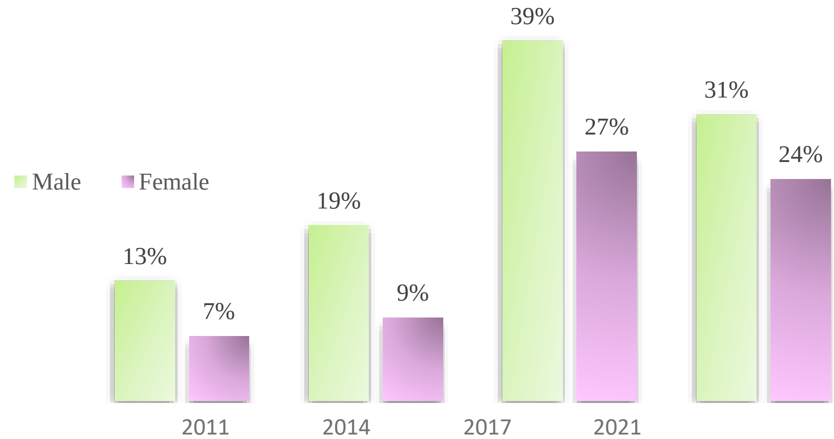
1. Egypt's financial inclusion status (CBE, 2023)

Figure 01 : «account ownership in Egypt »



Source: Global Findex Database

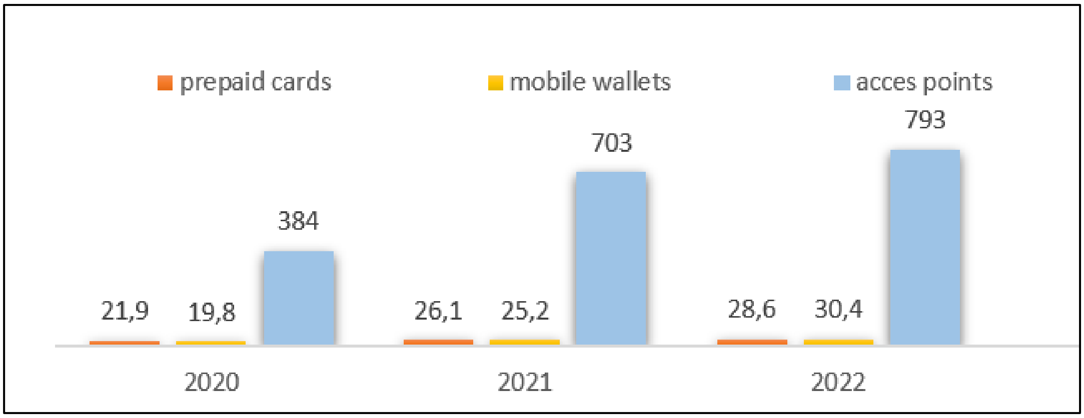
Figure 02 : «the gender gap in account ownership in Egypt »



Source: Global Findex Database

- The total ownership of transactional accounts (bank accounts, Egypt Post accounts, mobile wallets, and prepaid cards) reached 42.3 million citizens, representing 64.8% of the total 65.4 million eligible adults,This indicates an increase
- of more than 50 percentage points since 2011. The data shows two periods of particularly significant growth acceleration: Between 2014 and 2017where financial inclusion rate jumped from 14% to 33%. and between 2021 and 2022.
- This substantial growth aligns with Egypt's National Financial Inclusion Strategy launched in 2019. Initiatives under the strategy include facilitating account opening, enabling government cash transfers through accounts, expanding credit reporting systems, supporting fintech innovation, financial literacy programs, and more.
- However despite these developments there is still a noticeable gender gap between men and women when it comes to owning bank accounts. In 2011 there was a difference of 6% between males and females with males having a 13% ownership rate compared to females at 7%. This gap widened to 12% by 2017 with males 39% having an account compared females at 27% . later on , efforts have been made to fill this gap ,including the SEEP Network's FinTech for Women project, which aims to scale up the financial inclusion pyramid in Egypt by leveraging FinTech and digital financial services solutions that address women's special requirements and preferences. by the end of 2022The gap has decreased by 5%, with 18.3 million women having transaction accounts.

Figure 03 : «growth rate of casheless payments in Egypt. »



Source : central bank of Egypt (Financial Inclusion Indicators for 2022, 2022)

- The increase in the rate of inclusion was a result of the banks efforts to target different groups of customer segments .
- the total number of Prepaid Cards per 100,000 citizens rose to an average of 43.8 thousand cards with a growth rate of 31% between 2020 and 2022.

Similarly the number of Mobile Wallets reached 46.5 thousand wallets per 100,000 adults showing a 54% increase during the period.

Furthermore there has been expansion in financial access points such as banks branches, Egypt Post, Microfinance Institutions, ATMs, POSs (Point of Sale) and Payment Service Providers. The number of these access points has risen to 1,214 per 100,000 citizens, between 2020 and 2022. A growth rate of 107%.

Table 02 : «The use of financial services in Egypt.»

Use of financial services in 2021	%
Saved any money in the past year (% age 15+)	21%
Borrowed any money in the past year (% age 15+)	46%
Coming up with emergency funds in 30 daysall (% age 15+)	11
Has an inactive account (% with an account, age 15+)	11%
Made or received digital payments in the past year (% age 15+)	20%

Source : global Findex data base.

According to the data presented on the table , it appears that 21% of Egyptians have been able to save money in 2021. This indicates that a small portion of the population shows habits by setting aside some of their income. However it is concerning that 80% did not save, which highlights the importance of promoting a savings culture among a range of people that can be achieved through financial literacy programs and accessible savings options designed for income levels.

In terms of emergency preparedness 11% of Egyptians have access to funds in case of emergencies within 30 days. This lack of resilience highlights how vulnerable most households are when faced with events like unemployment or health crises. To strengthen crisis preparedness it would be beneficial to encourage people to take up microinsurance options and make it easier for individuals with balances in their savings accounts to withdraw funds when needed during emergencies.

Patterns of Account Usage: 11% of account holders have inactive accounts, implying potential barriers like trust or financial literacy gaps or people's preference for cash transactions funds to save, fees or inadequate product offerings. therefore simplifying the process of opening accounts providing accounts enabling digital payment interoperability and enhancing customer engagement could be a solution for this issue.

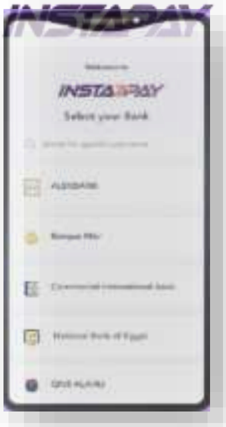
Adoption of Digital Financial Services : 20% of adults in Egypt have already embraced payments as a positive initial step towards digitizing financial transactions.

2. Key Digital Financial Services that are Expanding Financial Inclusion in Egypt:

Egypt is currently experiencing a remarkable shift towards digitalization, with Digital Financial Services (DFS) emerging as a vital catalyst for fostering financial inclusion in the country. Embracing an ambitious mission outlined in its ICT 2030 vision, Egypt aims to construct a formidable digital economy, where every individual has equitable access to digital tools. A major component of this grand envisioning entails the establishment of robust digital payment systems that prioritize both security and efficiency. By championing these transformative systems, Egypt propels its economic progression forward and establishes a solid foundation for a more inclusive financial landscape. In this part we delve into the state of DFS in Egypt and its impact on financial inclusion.

Table 03 : «examples of digital Financial Services that are Expanding Financial Inclusion in Egypt.»

Service	Overview – Impact
Master card 	Mastercard is a global leader in developing payment network infrastructure and technological solutions that aim to connect individuals who are unbanked or underserved to the digital economy. In Egypt, Mastercard collaborates with both public and private sector partners to drive financial inclusion. **Significant Growth in Digital Payments** Mastercard has witnessed a rapid increase in the adoption of contactless payments throughout its acceptance network in Egypt, even amidst the pandemic. Between 2019 and 2021, the total number of contactless transactions tripled, surpassing 162 million. Additionally, contactless payments as a percentage of face to face transactions doubled from 13% to 6% (Mastercard, 2022) This data suggests that there is greater access to convenient digital payment methods. **Innovation for Inclusion** In 2021, Mastercard partnered with Egypt's HDB to launch EzCash, an on demand mobile wallet service targeting financially excluded individuals residing in remote areas. Within just six months, over 180,000 wallets were opened, with wallet to wallet domestic transfers being one of the key drivers for early usage (mastercard, 2021)Cash facilitates digitization by enabling cash loading and bill payments. The introduction of such innovative services specifically targeting excluded groups has been made possible through Mastercard's extensive experience in emerging markets. In order to achieve this goal, the collaboration between Mastercard and Fawry has played a crucial role in establishing an inclusive infrastructure. It's worth noting that a significant portion, approximately 70%, of the $700 million distributed monthly to 3 million beneficiaries through the Takaful & Karama welfare program is facilitated using Fawry's point of sale locations (USAID, 2020)As more assistance programs transition to electronic distribution powered by payment technology, this partnership ensures the integrity of welfare support and encourages recipients to make use of formal services. With Egypt targeting 20% increase in financial inclusion by 2024 (A.Moneim, 2022), Mastercard's expertise, network, and collaborative strategy position it strongly to effectuate digital financial service adoption at the base income pyramid levels. Its continued engagement across public and private sector will be integral for reinforcing inclusion policy.

Insta pay 	InstaPay was launched in 2019 as the first Payment Service Provider (PSP) licensed by the Central Bank of Egypt (CBE), The emergence of instant payment systems, such as the revolutionary InstaPay, holds immense potential for promoting financial inclusion within Egypt. InstaPay operates by enabling swift, account-to-account transfers on a continuous, round-the-clock basis, utilizing recipients' phone numbers or national ID numbers for secure transactions. Since its launch , an astounding 13 million Egyptians have already registered for InstaPay, demonstrating the increasing demand and interest . What sets InstaPay apart is its ability to remove numerous barriers that have previously hindered the adoption of broad financial services, particularly among rural communities, by offering widespread digital transactions that are both convenient and user-friendly. This revolutionary platform addresses various obstacles such as limited access to financial services, sluggish transaction speeds, authentication procedures, and even user experience. -InstaPay lies in its compelling ability to digitize not only domestic remittances but also recurrent bill payments, thus providing a tangible opportunity for the formalization of financial channels for the estimated 50-60% of Egyptians currently lacking access to regulated systems. By bridging this substantial gap, InstaPay serves as a catalyst for economic participation, empowering individuals from various socioeconomic backgrounds and ultimately fostering self-efficacy and resilience throughout the entirety of Egypt. (egypt, payment Systems Report, 2021-2022)
Automated teller machines 	ATMs are considered one of the most important accepted channels for customers in the entire banking industry in Egypt. It acts as a significant alternative to bank branches by performing financial and non-financial services. ATMs currently offer new and innovative financial and non-financial services. In addition to providing withdrawal and deposit services, it also relies on the company to carry out various payment services and relies on the development of banking financial infrastructure in recent years. The Bank of Egypt provides services through ATM machines 24 hours a day, which is very efficient, and more ATM machines are being deployed. More than 6,000 machines were used from 2019 to 2022 (FINANCIAL STABILITY REPORT 2022, 2022, p. 76)

Fawry 	Fawry is an Egyptian electronic bill payments platform launched in 2009 that allows users to pay bills and transfer money via retail points across the country. With over 100,000 payment locations, Fawry reaches deep into local communities to serve financially excluded groups through technology. ((FAWRY.CA), 2022) **Scale of Adoption** As of 2021, Fawry facilitated 606 million transactions worth EGP 601 billion, reflecting remarkable adoption ((FAWRY.CA), 2022), Over 30 million Egyptians have registered accounts, including the banked, unbanked, and underbanked segments. The unbanked constitute 38% of Fawry users, indicating its effectiveness in providing formal financial access (USAID, 2020) **Contributions to Financial Inclusion:** By leveraging retail outlets like pharmacies and supermarkets with long hours, Fawry overcomes accessibility challenges. Furthermore, 64% of the unbanked cite lack of enough money as a reason for not having a bank account. By enabling affordable payments in small-ticket sizes, Fawry grants this segment utility from formal services. Fawry is also driving financial inclusion by digitizing government assistance cash-outs and public sector employee payroll. Disbursing social welfare program Sakan Karim via Fawry cuts administrative costs by 80% compared to cash Digitized payment channels hence allow scaling inclusive growth initiatives. (USAID, 2020)
Mobile payment services	(FINANCIAL STABILITY REPORT 2022, 2022, p. 75) Mobile payment services is one of the most advanced digital financial services in the financial ecosystem as it provides various safe and simple payment options that assist to attaining financial inclusion and stability. Following the publication of the third version of the "Mobile Payment Regulations" in 2021, which aimed to increase transaction limits, strengthen consumer protection and service quality, and create an environment conducive to innovation and competition, there has been a significant increase in the number of transactions in mobile payment data. This is seen in the rise in the number of accounts and the volume and value of transactions, demonstrating people' rising dependency on digital financial services. CBE has created various use cases, including:

	-P2P pricing between mobile wallets: Special pricing has been introduced for transfers between mobile wallets to cover all sectors. This amounted into a 143% rise in the number of yearly transactions and a 178% increase in the value of annual transfers between mobile wallets in 2022 compared to 2021. -Interoperability of deposits and withdrawals via agents: Regulations have been created to exploit the ubiquitous infrastructure of acceptance points to enable cash deposit and withdrawal services for mobile wallets. This has made it simpler and quicker for individuals to undertake fundamental financial activities. - QR Code with Request to Pay (R2P) Promotion: Efforts to promote these features have resulted to the distribution and activation of around 700,000. QR/R2P codes by the end of 2022 - Mobile wallet account growth: The number of mobile wallet accounts climbed to about 30.4 million by the end of 2022, showing an annual growth rate of 20% compared to 2021. - Portfolio transaction value: By the end of 2022, the portfolio transaction value reached around 613 billion transactions, a growth rate of 129% compared to 2021.These accomplishments demonstrate the substantial progress achieved in digital financial services in Egypt.

Source: prepared by the authors

3. Revolutionizing Financial Services to enhance financial inclusion : Egypt's National Digital Financial Inclusion Effort ("Financial stability report, 2022, p. 77):

The Central Bank of Egypt (CBE) in collaboration with the National Social Security Organization and the National Telecommunications Regulatory Authority (NTRA) has taken a step towards digitizing financial services. They are currently. Updating existing pension cards, known as "Meeza" cards and mobile wallets with a national payment scheme. The main goal of this initiative is to facilitate secure and convenient donation transfers for retirees while providing them access to various payment methods and acceptance channels. As part of this transition over 6.5 million pension cards and 4.3 million government salary cards have been migrated to the Meeza" system.

Furthermore CBE has implemented important initiatives related to payment systems and services. One notable measure is the extension of fee and commission exemptions for banking services until December 31 2023. This means customers will not be charged any fees or commissions when making electronic bank transfers, in pounds using digital channels , authorized banks that facilitate transactions must waive any charges for small and medium sized enterprises (MSMEs) and private merchants who activate electronic payment services for the first time before December 31 2023. These banks should also enable the use of QR codes. Accept the national payment card "Meeza" through their mobile apps and websites.

Regarding mobile payment services customers will not be charged any fees for peer to peer transfers up to EGP 2,000 within the month starting from January 1 2023. Additionally the maximum monthly fee will be EGP . Transfers between wallets of the same service provider will be considered a single transaction while transfers between different service providers will incur a fee of 0.5% of the transaction amount (with a maximum fee of EGP 15, for Egyptian pounds).
From March 9 2023 the Central Bank of Egypt (CBE) has also increased transaction limits through its instant payments network "InstaPay" to accommodate market segments and emerging use cases. These initiatives exemplify CBEs dedication to promoting financial services and enhancing financial inclusivity.

3.1. National Payment Council;

the establishment of the National Payments Council (NPC) was authorized by the President of the Arab Republic of Egypt through Article 50 of the Central Bank and Banking Law No. 194/2020. Its primary objective is to promote digitalization and reduce cash reliance in banking while also encouraging alternative payment methods and channels to enhance inclusion. The National Peoples Congress, led by the President along with the Prime Minister, Governor of the Central Bank of Egypt and representatives from the Government and Central Bank have made strides towards achieving these objectives.
During the ceremony the National Peoples Congress presented a comprehensive framework for transitioning towards a cashless society. This blueprint serves as an methodological guide to develop payment systems that facilitate a smooth transition into a digital economy. The Council meeting played a role in making important decisions that have propelled us forward in terms of adopting electronic payment methods enhancing our national payment system and advancing financial inclusion. due to efforts from all stakeholders aligned with both the Cash Less Transformation Framework and directives, from the National Peoples Congress Decree notable accomplishments have been attained.

3.2. These measures encompass;

- The implementation of Law 18/2019, which establishes a regulatory framework for electronic payments across both public and private sectors.
- The introduction of "Meeza " a payment system primarily designed to handle all government transactions.
- The establishment of the "Meeza" national payment card system enabling cardholders to access an array of financial services.
- Offering cyber risk insurance coverage for digital financial services through innovative policies approved by the CBE and licensed by the Financial Supervisory Authority.
- Implementing initiatives to educate citizens about the risks associated with cryptocurrencies and prevent unauthorized mining and trading activities.
- Introducing various initiatives by the CBE to enhance accessibility and usage of electronic banking services.
- These collaborative endeavors underline the NPC and CBEs commitment, towards fostering a digital financial ecosystem and promoting inclusive finance.

Conclusion :

In addressing the research problem, it is evident that Egypt has made significant progress in achieving financial inclusion by embracing digital financial services (DFS). However, work remains to be done. Enhancing financial literacy is imperative to address knowledge gaps and build trust, especially among marginalized communities. Emerging use cases for DFS must be expanded beyond basic transactions to drive impactful adoption. Additionally, strengthening the capacity of providers and regulators is key to managing the transition towards a cashless economy effectively. Overall, Egypt serves as an exemplary model, displaying the transformative potential of DFS in progressing financial inclusion. Sustained multi-stakeholder efforts focused on inclusion, innovation and resilience will be integral for Egypt to fully realize its vision for an inclusive digital financial future.

Results:

- The overall ownership of transaction accounts, including bank accounts, Egypt Post accounts, mobile wallets and prepaid cards has reached 64.8% among adults in 2022.
- This surpasses strategies and reflects successful implementation efforts. The remarkable growth from a 10% in 2011 highlights the rapid advancements made in the field of financial inclusion.
- The gender gap has seen a reduction going from 12% in 2017 to just 5% in 2022. This shows that progress is being made towards achieving access to financial services for women ,also the Targeted initiatives have played a vital role, in reducing gender disparities in account ownership.
- One clear indicator of the increasing adoption of financial services (DFS) is the rise in mobile wallet accounts, which now stand at 30.4 million as of 2022. Additionally contactless transactions have tripled between 2019 and 2021.
- services such as Mastercard ,InstaPay, instant payments and extensive networks like Fawry have showed how user centric design can bring populations into the digital financial sphere.
- A supportive ecosystem that includes reforms, infrastructure upgrades and cross sector collaborations (such as the National Payments Council) has created a more favourable environment for the growth and inclusion of DFS in Egypt.

Recommendations :

- **Financial Literacy**; It is important to develop and implement targeted strategies to address knowledge gaps and build trust in financial services (DFS) among people who do not have access to traditional banking services or are underserved.
- **Emerging Use Cases:** To encourage adoption and make a greater impact it is crucial for DFS to expand beyond basic transactions and cater to diverse financial needs.

- **Operational Capacity Building**; Strengthening the capacity of DFS providers and regulators is necessary for managing the transition towards a society with less reliance on cash. This involves developing risk management frameworks improving operational efficiency and fostering innovation, in the DFS sector.

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