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Technology Effects on Emerging Economies' Financial Services and Economic Development: The case of Egypt and India

By Amr A. Aboelenein

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Author's Testimony

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Dedication

I devote my work to God in gratitude for His unending love and favour, especially for my parents, wife, children, and my entire big family. I am thankful for the priceless gift of their lives and love. I take comfort in God's unfailing support and direction.

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Chapter 1: INTRODUCTION AND ABSTRACT

1.1 Background

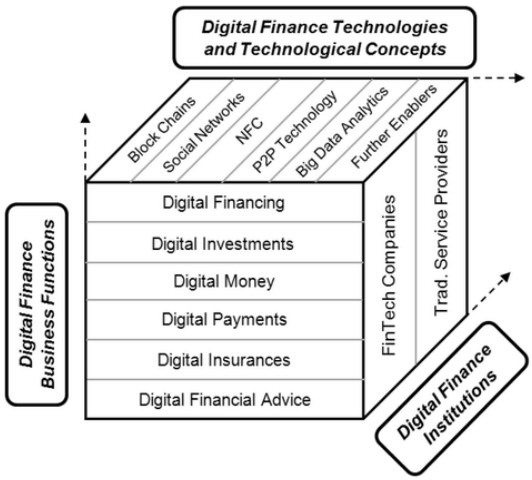
Technology has invaded every part of contemporary life, and it holds tremendous promise for improving financial outcomes. This study intends to compare the financial service and capital market situations in Egypt and India to better understand the impact of technology on emerging economies. The influence of technology on economic growth and development in these two nations can be better understood by looking into the function technology plays in each of them. Financial systems in developing nations encounter a number of obstacles that can slow down development and prosperity (Abdurakhmanova et al., 2020). Financial services have always struggled to reach the underbanked and financially excluded, but with the widespread availability of technology, especially via smartphones, this is beginning to change. The research's overarching objective is to learn whether and how financial technology (fintech) and innovation can spur economic growth and new employment opportunities in emerging markets and more specifically on Egypt and India. Both countries are amongst the fastest growing economies in the developing economies space with both having big challenges, ambitions, and capacities to even accelerate their economic growth over the upcoming two decades through different measures including financial inclusion and the use of technology in their financial systems (Adam, 2021). Also, both countries represent different geographic regions with different economic drivers (Developing Asia versus non-oil based Middle Eastern Arab/African economies), and at different stages of technological advancement and applications—which makes this representation even more comprehensive, richer, and more representative to developing economies.

Egypt and India are two major emerging markets with different financial and social features. Egypt, in North Africa, is a nation with a large and increasing population and a long and illustrious history. Its banking system has long struggled to meet the needs of the public, especially in more remote locations (Ahmed et al., 2023). The government has seen the value of technology and fintech in expanding access to financial services and stimulating economic growth. Digital payment systems and mobile banking have gained popularity and promise to increase financial inclusion and efficiency. India, in South Asia, is famous for its population diversity and its dynamic economy. Even while the nation has seen extraordinary progress, it still confronts major obstacles in attaining financial inclusion. As a result of its enormous number of smartphone users, India has embraced technology-driven financial solutions. The rise in popularity of digital payment systems, mobile banking, and alternative financing models has fueled financial inclusion initiatives and economic growth (Alawi et al., 2022). This study provides a methodical and organized framework dubbed the Digital Finance Cube to investigate the effects of technology on financial services and capital markets in emerging nations. The dynamics of the digital finance business can be summed up by the Digital Finance Cube, which includes the following three dimensions:

Technologies like mobile apps, data analytics, AI, blockchain, and cyber security are all a part of this. This section focuses on the many institutions and parties that play a part in the distribution of digital financial services (Agur et al., 2020). Financial institutions, fintech companies, regulators, and government organizations are all included. Understanding how technology, financial services, and institutions all interact is made easier using the Digital Finance Cube paradigm. This framework's adaptability and generalizability make it useful for scholars and practitioners in the financial sector to study niche areas pertinent to their work.

Developing countries like Egypt and India can greatly improve their financial services and capital markets by taking use of technology and encouraging financial innovation. Fintech solutions, when implemented, can help conventional banking institutions function more efficiently, increase the number of people who have access to financial services, and boost the economy. According to research by the World Bank, if developing countries could achieve widespread financial inclusion, it would lead to the creation of 95 million new employment and an increase in GDP of 6%, or USD 3.7 trillion, by 2025. This study focuses on Egypt and India to better understand the possibilities and challenges of technology-driven financial services in emerging markets (Anton et al., 2020). This research will analyse the impact of financial technology and innovation on economic growth and the creation of new jobs in the two nations under consideration. Using the Digital Finance Cube as a guide, this study will investigate three critical factors that characterize the evolution of the sector. Business functions in the realm of digital finance are the focus of the first dimension, which will look at the numerous types of financial services that can be automated and made available online. Mobile banking, electronic payments, P2P lending, and virtual investing communities all fall under this category. The research's overarching goal is to show how financial services powered by technology can benefit low-income countries. These nations can stimulate their economies by filling the holes in conventional banking systems and expanding access to financial services.

Figure 1:



Digital Financing Cube and Financial management (Gomber et al., 2017).

Borrowing, lending, and other forms of financing have all been revolutionized by technological advancements in the realm of financial services and payment systems. These developments have cleared the path for new advances in financial technology, which have improved equity raising, credit creation, and risk transmission. Increased availability of credit facilities at lower interest rates is one noticeable result of these technical improvements that has contributed to economic growth (Awotunde et al., 2021). Developing countries like Egypt and India need a deeper understanding of how financial services and capital markets are impacted by technological advancements. The economic environments of Egypt and India are different and provide both problems and possibilities. The necessity for a new age of finance and economic policy in Egypt has been highlighted by issues including inadequate resource allocation and global economic challenges (Blankespoor et al., 2020). However, population optimization and the realization that technology is crucial to attaining financial inclusion have motivated India's focus on technology in the banking industry. The COVID-19 outbreak has brought even more attention to the use of technology in the banking industry. The United States economy, a global powerhouse, is not

immune to the pandemic's effects, which include lower interest rates and a greater dependence on technology. The importance of technology to economic development plans is being recognized by both developing and developed countries.

During the epidemic, conventional offline financial models were inadequate, thus financial technology was heavily relied upon. Smart client services, remote employment, and corporate finance are only a few examples of the online activities that financial institutions, capital markets, and the economic development sector have used. In emerging markets like Egypt and India, financial technology has been a driving force towards greater financial inclusion and stability. Employment, economic growth, and corporate profits are all boosted when technology is used to financial services (Brooksworth, 2022). Because of the importance of stock and debt financing, the capital markets have also seen major changes as a result of technological advancements. Experts in the global investment industry depend on technological advancements for the analysis of stock market data, comprehension of transaction principles, prediction of trends, and maximization of earnings. Understanding the stock market's complicated mechanics and linkages has made the development of accurate and trustworthy financial models employing technology more important (Breidbach, 2020). The COVID-19 epidemic has brought into further focus the role that technology plays in fostering the growth of financial markets and services. Overall, for emerging countries like Egypt and India, thinking about how technology will affect financial services, capital markets, and economic growth is crucial. By adopting technology, these nations can expand their access to financial services, create more jobs, and boost their economies. The COVID-19 epidemic has pushed the pace of technological adoption even higher, making it an integral part of their plans for economic growth.

Moreover, technological improvements are having a profound effect on the financial services and capital markets business in emerging countries like Egypt's and India's. The effects of artificial intelligence, blockchain, big data analytics, and automation on the banking sector and the stock market are examined in depth. It can learn about the role that technology plays in the economic growth of these countries by examining its effects on market efficiency, risk management, customer experience, regulatory compliance, and the future of the sector. Rapid technology advancements have altered the financial services and capital sectors in both Egypt and India (Carter, 2023). These developments have improved market efficiency, increased risk management capabilities, and completely transformed the way businesses interact with their clients. It includes exploring how these innovations have prompted favorable shifts in both nations' conventional business practices. With the help of modern technological advancements, algorithmic trading has grown, resulting in lower transaction fees, more available trading options, and quicker trade execution. High-frequency trading (HFT) has gained popularity in both Egypt and India. HFT makes use of state-of-the-art technology and ultra-fast networks to complete a huge number of deals in a short amount of time. Concerns regarding the stability and fairness of the market are examined alongside the effects on market liquidity and efficiency that HFT has had (Comi et al., 2020).

Financial institutions can now analyse massive information, see trends, and make better risk management decisions thanks to the use of AI and ML. It includes how these developments have led to improved credit risk assessment, fraud detection, and portfolio optimization. It also look at how automated financial advice for retail consumers can be provided by robot-advisors using AI algorithms, which can lead to lower costs and more availability. Digital banking has expanded thanks to technological developments, giving Egyptians and Indians more convenient access to

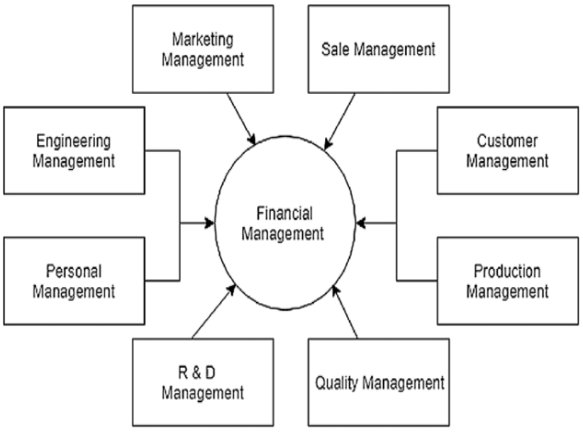
financial services (Cao et al., 2021). Access to up-to-date financial information, personalized promotions, and exclusive discounts is now at your fingertips with online banking, mobile payment apps, and digital wallets. It also includes examining the ways in which fintech firms have altered the financial landscape by introducing novel concepts like peer-to-peer lending and digital currencies, therefore increasing consumer choice, and forcing existing financial institutions to evolve (Chang et al., 2020). Blockchain technology has the potential to revolutionize regulatory compliance processes including know your customer (KYC) protocols, identity verification, and transaction settlement due to its decentralized and irreversible nature.

Central banks in Egypt and India are considering adopting CBDCs as digital currencies like Bitcoin gain popularity. These coins have the potential to increase the openness of financial dealings, the availability of financial services, and the efficiency of monetary policy. However, with the benefits of increased technological advancement come new cybersecurity risks (Dash, 2018). To protect client data, lessen cyber dangers, and keep people trusting the internet's financial system, one can stress the need of investing in robust security measures at financial institutions. Understanding the effects of technological innovation's disruptive potential on market efficiency, risk management, customer experience, regulatory conformity, and economic growth requires an examination of these factors' interrelationships (Demekas, 2020). Policymakers, financial institutions, and scholars can use the information gleaned from this comparison to better understand and Policymakers, financial institutions, and scholars can use the information gleaned from this comparison to better understand and navigate the complexities of adopting CBDCs and managing the associated risks. It is essential to recognize that while technological innovations like CBDCs can offer significant benefits, they also introduce new challenges that must be addressed to ensure the stability and security of the financial system (Erdoğan et al., 2020).

1.2 Fintech in the broader Finance function of different business enterprises

Different business enterprises prefer the adoption of Fintech in their businesses to ensure financial management. Businesses use fintech services for various reasons, including reduced costs, increased effectiveness, speed, greater security, and improved customer experience. Cost savings is one of the main factors driving company adoption of fintech services. Compared to traditional financial services, fintech solutions frequently have lower fees and transaction costs, making them more affordable for businesses (Edeh et al., 2020). Fintech can also streamline operations by automating many financial processes, saving time and money by eliminating manual labor. Additionally, Fintech gives businesses faster and more efficient financial transactions. Real-time transaction processing enables companies to rapidly and conveniently manage their money. As a result, managing financial transactions will take less time and effort while improving cash flow (Breidbach et al., 2020). Here are some of the factors that are associated with the adoption of financial services and their management in firms:

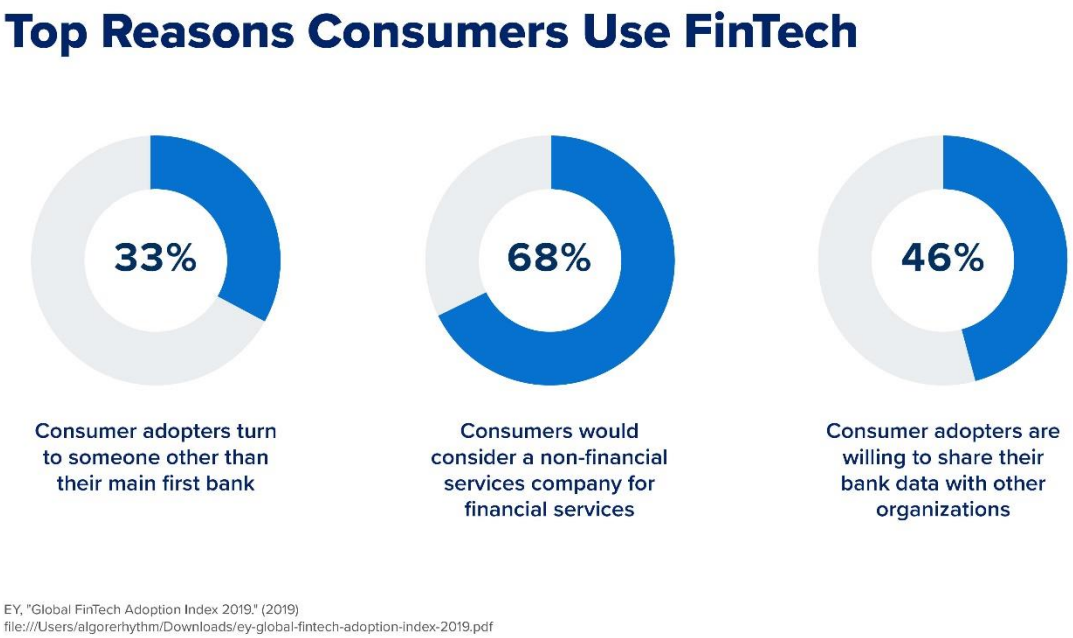
Figure 2:



Factors associated with financial management and financial services in business organizations (Zada et al., 2021).

Organizations use fintech services to enhance customer experience, which is another factor. Customers can easily manage their finances and access various services and products from a single platform thanks to the more convenient and personalized experiences provided by fintech solutions (Edeh et al., 2020). In addition to increasing client loyalty, this can assist firms in drawing in and keeping customers. Finally, services can improve enterprise security. Numerous fintech solutions provide cutting-edge security capabilities like encryption, biometric authentication, and fraud detection, which can assist businesses in safeguarding their financial information and preventing fraud and cyberattacks (Agur et al., 2022). Here are some of the reasons why consumers adopt financial services:

Figure 3:



Top reasons consumers use FinTech (Columbia Engineering, 2022).

1.3 Technology and Economic Development

Technological improvements have had a profound impact on the financial services and capital markets of emerging nations. As a consequence of automation and digitalization, conventional sectors are now more productive, competitive, and efficient in allocating their resources. This has sparked the development of new industries and businesses that rely on cutting-edge technology like robotics and artificial intelligence (AI). This pattern has been identified in two different yet growing economies, Egypt and India (Feyen et al., 2021). The growth of the Egyptian economy and its subsequent expansion have been greatly aided by technological advancements. The ubiquitous availability of ICT has lowered entry barriers, paving the way for new companies to enter the market and develop game-changing goods and services. This has boosted competitiveness, resulted in the creation of new employment, and helped the economy expand. New markets have emerged, and people have easier access to products and services, all thanks to the ways in which technology has advanced and allowed international trade through e-commerce platforms. Because of these changes, Egypt's economy is flourishing, and it is more fully integrated into the global economic system (Gomber et al., 2017).

Technology has also had a significant effect on India's financial services and capital markets. The broad use of mobile technology and the internet has led to a rise in digital innovation in the nation. Because of this, formerly underserved people now have access to banking and financial services, leading to increased financial inclusion. In addition, logistics, inventory management, and distribution have been more efficient thanks to the use of technology in supply chain management, which has resulted in shorter lead times and more customer satisfaction. Employment prospects in fields like software engineering, data analytics, cybersecurity, and digital marketing have

expanded as a result of India's tech-driven economy (Gubareva, 2021). Technological progress has aided the transition from a manufacturing-based to a knowledge-based economy. As a result, people are better equipped to increase their employability and contribute to economic progress thanks to the internet's rapid spread of information and knowledge. The widespread use of digital tools in the classroom has produced a highly skilled labor force that can propel the economy and technology forwards. Reduced human error, cheaper expenditures, and higher output and quality are just a few of the ways that automation, machine learning, and AI have improved productivity and efficiency in a wide range of industries (Haddad, 2019). As a result, businesses have been better equipped to priorities spending, increase their size, and stimulate growth.

Overall, technology has been a driving force in the creation of new jobs and the improvement of existing ones, despite initial fears to the contrary. While technology has rendered certain jobs obsolete, others have opened up, necessitating a shift in focus or training. To stay up with the ever-changing requirements of today's "technologically-driven" labor market, it is necessary to constantly expand one's knowledge and skill set. Overall, technology has had a significant impact on financial services, capital markets, and economic growth in countries like Egypt and India (IMF, 2019). Traditional industries have been disrupted by the introduction of cutting-edge technology, which have also sparked innovation and widened consumer bases. In addition, technology has aided the shift to knowledge-based economies, which have increased production, efficiency, and job prospects. While there are still obstacles, technology has had a net beneficial effect on these economies, allowing for further progress and development.

1.4 Improvement potential is even bigger with the advancement of technology

The growing awareness of the need to enhance financial institutions in developing countries like Egypt and India has led to substantial changes in financial services and capital markets. Poor governance, inadequate economic income structures, and the misallocation of resources are all problems that both nations have to deal with, and they all work against the effectiveness of their financial services. But in this technological age, financial technology is rapidly growing in these countries. More than 85% of Egyptians (Ozili, 2018) apparently do not have bank accounts, and those who do have accounts know very little about how to use the latest financial technology. Because of this, Egypt's banking sector has a great chance to advance thanks to the introduction of innovative technology. Egypt can aid its underbanked people in overcoming financial issues and increasing access to financial services by creating a strong digital infrastructure. The Egyptian government is also hard at work on plans to expand access to banking services for the country's underbanked population (Ji, 2019).

Even when compared to the Least Developed Countries (LDCs), Egypt's financial services have space for development despite the country's and market's rapid expansion. It is anticipated that Egypt's market presence and reach would grow even more with the emergence of cutting-edge technological resources and digital platforms. The COVID-19 epidemic has also increased the pace at which people in developing countries utilize technology to get access to financial institutions (Jiang, 2019). There are many positive social outcomes that result from incorporating technology into many facets of society, including monetary transactions. In both the Egyptian and Indian settings, new technologies provide promise for improving access to financial services. E-payment systems like Fawry, e-finance, Masary, and Aman have flourished in Egypt, joining the digital wallets offered by cell carriers and commercial banks. Egypt's economy has benefited from

these shifts, as well as from the country's more liberal macroeconomic policies and the thriving-to-improve business environment for doing business (Kamel, 2021). Egypt's economic performance falls behind that of more prosperous countries on a number of measures.

The primary goal of this study is to examine the effect of financial technology on the development of Egypt's and India's financial services and capital markets and their economic development. Egypt's government has aggressively embraced cutting-edge technology to increase access to financial services and stimulate the creation of novel solutions in an effort to promote financial inclusion, which is central to the country's economic plan. Financial inclusion guarantees that all persons have access to fundamental financial services, therefore this study is important not only for Egypt and other emerging countries but for the whole world. Egypt's monetary system can be greatly improved by the use of even more advanced financial technology. Robotics, AI, data mining, neural networks, cloud computing, mechatronics, and other technological advances can all play a significant role (Kazemzadeh et al., 2022). Artificial intelligence in particular is widely employed in the global banking sector due to its many efficiency-boosting advantages. This study aspires to aid in Egypt's and India's economic development by clarifying the role that financial technology plays in these sectors. Emerging economies like Egypt and India stand to benefit greatly from adopting cutting-edge technology, notably AI, because of the way it has the potential to revolutionize the financial landscape. Institutions can benefit from AI by creating smart machines with human-like cognitive abilities. New applications and algorithms have emerged thanks to the increased usage of AI in the financial sector, which has been altered by the COVID-19 epidemic (Khan et al., 2022).

The advantages of AI go well beyond the realm of human behavior, thanks to the technology's ability to rapidly digest enormous amounts of data and autonomously learn new abilities. The

proliferation of the internet, online banking, and information technology has also resulted in new methods of spreading financial data, complementing the older methods of dissemination such as brick-and-mortar locations and paper records. Thanks to the explosion of data produced by the digital revolution, financial services can now make more well-informed decisions. Egypt's problems with ineffective leadership and misallocated resources can be mitigated with the use of artificial intelligence (Kumar et al., 2020). Algorithms driven by artificial intelligence aid in the prevention of fraud, the evaluation of creditworthiness, and the enhancement of risk management procedures. AI systems improve the precision of credit scoring algorithms, helping financial organizations to make more trustworthy loan choices, by analyzing big datasets and discovering trends. As a result, more people and companies will be able to have access to loans, which will boost economic activity. In addition, AI can help simplify and automate financial sector procedures, which will improve operational efficiency. Artificial intelligence (AI) driven algorithms can speed up processes including onboarding new customers, verifying existing documents, and reconciling accounts. As a result, financial institutions can better manage their resources while saving time and money.

1.5 India vs. Egypt in the context of technology in the financial services

It is useful to compare the circumstances in Egypt and India while studying the impact of technology on financial services and capital markets. The financial sectors of both nations have grown significantly, but the degree to which technology has been adopted and used varies, resulting to different results. India's financial services sector is more developed than Egypt's because the government there has taken deliberate efforts to promote financial inclusion and digitization. Individuals now have easier access to banking and other financial services thanks to the Aadhaar biometric identification system (Haddad & Hornful, 2019). The financial services

sector in India now includes banking, insurance, capital markets, and digital financial services, all of which have benefited greatly from this effort. It's 2020 (Mhlanga). The banking industry, which includes both public and private sector banks, is crucial to India's economy. The Jan Dhan Yojana initiative, which aims to increase people's access to banking services, has made it even simpler to create bank accounts (Ji & Zhang, 2019). The Reserve Bank of India (RBI) has also played a significant role by providing strong supervision and control to the banking sector in India.

Similarly on a related note, both life and non-life insurance products have become more popular in India, contributing to the industry's meteoric rise. Initiatives have been made by the Insurance Regulatory and Development Authority (IRDA) to foster continuity and expansion in the industry (Blank spoor et al., 2020). The two major stock exchanges in India are the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). The Securities and Exchange Board of India (SEBI) regulates these exchanges and has instituted reforms to increase market transparency and protect investors. The government's efforts to expand access to credit and encourage the use of new technologies have helped fuel the growth of India's digital financial services industry. There has been a rise in the use of digital wallets and mobile banking with the advent of the Unified Payments Interface (UPI; Jiang & Ma, 2019). The advantages of digital financial services have been widely publicized thanks in large part to the Digital India campaign. However, Egypt's financial services industry confronts its own specific obstacles when it comes to adopting and using technology. In Egypt, the absence of infrastructure has slowed the general deployment of digital banking services, especially in rural regions, making the Digital Divide Theory, which predicts uneven access to technology, particularly significant. Barriers to attaining financial inclusion and realizing the full potential of technology exist because of this gap (Blank spoor et al., 2020).

While Egypt's financial services sector has improved in recent years, it still lags that of India. While the Egyptian government and financial institutions are making efforts to expand access to financial services, the country is lagging India in its use of technology to accomplish so. Egypt can accelerate the growth of its financial services industry by improving its technology infrastructure and fostering digital literacy (Lee, 2020). When looking at the financial services and capital markets as a whole, the differences between Egypt and India are striking. When it comes to using technology to increase financial access and develop its financial sector, India has taken the lead. Aadhaar, the Jan Dhan Yojana plan, the Unified Payments Interface (UPI), and the Digital India campaign have all played critical roles in bringing about these improvements. However, Egypt's financial services industry is slow to embrace technology due to the country's still-inadequate technical and digital infrastructure. Egypt's economic and financial progress would be severely hindered if these issues aren't resolved.

When looking at the financial services and capital markets, the differences in technology adoption between Egypt and India stand out. India's financial services sector is more developed than Egypt's because the government there has taken deliberate efforts to promote financial inclusion and digitization. The financial services sector in India, which includes banking, insurance, capital markets, and digital financial services, has expanded rapidly in recent years. Individuals now have easier access to banking and other financial services thanks to the Aadhaar biometric identification system. The expansion of financial inclusion and the development of India's financial industry can be directly attributed to this endeavor. Public and private sector banks in India's banking industry have both contributed significantly to the country's economy. To help more people get access to banking services, the government has introduced the Jan Dhan Yojana programmed. The banking sector in India has been kept stable by the RBI's strict supervision and watchful eye.

Also, Life and non-life insurance policies have grown in popularity in India in recent years. Protecting consumers' best interests, the Insurance Regulatory and Development Authority (IRDA) has launched programmed to foster the continued success of the insurance industry. The major stock exchanges in India are the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), both of which contribute to the country's robust capital markets. The Securities and Exchange Board of India (SEBI) regulates these exchanges and has instituted reforms to increase market transparency and protect investors. The government's efforts to expand access to credit and encourage the use of new technologies have helped fuel the growth of India's digital financial services industry (Li, 2020). The use of digital wallets and mobile banking has skyrocketed with the launch of the Unified Payments Interface (UPI). The Digital India initiative has also been instrumental in raising awareness of and support for digital financial services. However, Egypt's financial services industry confronts its own specific obstacles when it comes to adopting and using technology. In Egypt, the broad adoption of digital financial services, especially in rural regions, has been hampered by a lack of infrastructure, making the Digital Divide Theory all the more pertinent (Lu et al., 2020). There are obstacles to attaining financial inclusion and making full use of technology because of this digital divide. While Egypt's financial services sector has improved in recent years, it still lags behind that of India. While the Egyptian government and financial institutions are making efforts to expand access to financial services, the country is lagging India in its use of technology to accomplish so. Egypt must boost its technology infrastructure and encourage digital literacy to close the digital gap and speed up the growth of its financial services industry.

1.6 Research problem

The effect of technology on economic growth and development in emerging nations, particularly in the financial services industry and capital markets, need to be investigated. Although technology adoption and use have significantly increased in these markets, it is still important to pinpoint the elements that encourage or inhibit these developments and evaluate how these developments will affect future economic growth and development. In particular, the research aims to assess the current state of financial services and capital markets in Egypt and India, compare the impact of technology on these markets in the two nations, identify factors influencing adoption or impeding it, evaluate the impact on economic growth and development, and suggest strategies to leverage the technology to drive growth and development (Brooksworth et al., 2022).

1.7 rationale of the research

The financial services industry and capital markets in emerging nations are being rapidly transformed by technology, which is the basis for the research. Technology adoption and utilization can greatly improve financial inclusion, boost productivity, lower transaction costs, and stimulate economic growth. Much study hasn't been done on how technology affects capital markets and financial services in developing nations or what influences their uptake and use. With an emphasis on Egypt and India specifically as a representation of developing nations, the research seeks to understand better the influence of technology on financial services and capital markets in emerging nations (Lukonga, 2018). These two nations, large emerging markets with high economic growth and development potential, have embraced and applied technology in their financial services industries and capital markets in various ways (Kumar et al., 2020). The research aims to shed light on how emerging nations can use technology to spur economic development and

progress while addressing the problems of its adoption and use. It examines how technology has affected financial services and capital markets in Egypt and India. The research's conclusions can help financial institutions, governments, and regulators in these economies better understand how to use technology to increase financial inclusion, boost efficiency, lower transaction costs, and promote economic growth.

1.8 Significance of the research:

The research is of greater significance and finds both theoretical and empirical significance. With a focus on two powerful emerging nations, Egypt and India, the research seeks to offer insights into the impact of technology on financial services and capital markets in emerging markets. These economies have the potential to see tremendous economic growth and development and fostering this progress will require an awareness of how technology will affect their financial services industry and capital markets (Lee & Lee, 2020). The adoption and use of technology in the financial services industry and capital markets in emerging markets will also be identified, along with any barriers to such acceptance and usage. Policymakers, regulators, and financial institutions can utilize this information to inform them about how to encourage the adoption and usage of technology in these markets and how to handle the difficulties that come with it. Additionally, it will evaluate how technology affects emerging markets' economic expansion and development, particularly in the financial services and capital markets. This knowledge can inform policies and initiatives that support economic expansion and development in these markets. The findings have broad implications for policymakers, regulators, and financial institutions in emerging nations, as well as for researchers and practitioners interested in the nexus between technology and finance. The research's conclusions can help guide policies and initiatives that encourage the uptake of

technology in the financial services industry and capital markets in developing nations, which will spur economic growth and development (Lu et al., 2020).

1.9 Aims and objectives of the research

The research aims to examine how technology has affected these two emerging markets' financial services and capital markets. The following goals are the focus of the research:

- To assess the current state of Egypt's and India's capital markets and determine technology's contribution to their growth.
- To compare and contrast how technology has affected Egypt's financial services and capital markets with India's and to find commonalities and discrepancies in how each country has adopted and used technology.
- To evaluate the influences on economic growth and development of the elements influencing the adoption and usage of technology in Egypt and India's capital markets and financial services.
- To identify the difficulties in adopting and utilizing technology in the capital markets and financial services in Egypt and India and suggest solutions.
- To share knowledge and suggestions on using technology to boost growth and development in the financial services and capital markets for Egypt and India's policymakers, regulators, and financial institutions.

The research aims to further knowledge of how technology affects financial services and capital markets in emerging nations and shed light on how these markets can use technology to stimulate economic development.

1.10 Research question

The main research question of this research is stated below:

RQ: Does technology impact financial services, capital markets and the aggregate economic development?

The sub-research questions of this research are stated below:

RQ1: Does technology lead towards the advancement in capital markets and economic development in Egypt?

RQ2: Does technology lead towards advancement in financial services and economic development in Egypt?

RQ3: Does technology lead towards the advancement in capital markets and economic development in India?

RQ4: Does technology lead towards the advancement in financial markets and economic development in India?

RQ5: Does technology lead towards advancing financial services and economic development regarding the comparison between India and Egypt?

1.11 Research Method

To better understand the consequences of technology for financial services and capital markets in emerging countries, this research adopts a hybrid approach to analyze the situation in Egypt and India. Using a combination of techniques increases the reliability of the research by reducing the

likelihood of mistakes inherent in using just one method. In this study, the research used a quantitative methodology to make the most of the well-measured and -developed variables. The quantitative study will be bolstered by numerical data procured from trustworthy sources including the World Bank, news wires (Bloomberg, etc.), Yahoo Finance, and Google Finance. The data can be easily analyzed numerically, so researchers who use this strategy can make the most of their time. When the variables have been fully formed, this method shines (Sekaran & Bougie, 2019). In-depth perspectives from the respondents' experiences with financial services and the use of technology will be gathered using both quantitative and qualitative methods. This qualitative method will allow for the gathering of rich data, expanding knowledge of tech's effect on the financial services industry.

In addition, we'll make use of secondary data gleaned from existing publications to save both time and money. The validity and reliability of the research are enhanced by using secondary data since the material is already established as genuine and accurate. By comparing information gathered before and after the COVID-19 pandemic, one can get a sense of how the environment has changed because of the epidemic. This comparison will shed light on the shifting technological trends within the Egyptian financial industry, particularly during the epidemic, and allow for a full assessment of the influence of financial technology on financial inclusion in Egypt. The researcher will use prestigious publications and existing data to guarantee the research is based on credible and current information. Furthermore, an evaluation of the effect of financial technology on financial inclusion in the capital markets and financial sectors of developing countries like Egypt and India can be facilitated by reviewing the literature produced from these papers. By reviewing the relevant literature, the researcher can learn more about the topic at hand and better understand how to proceed with the inquiry.

The results chapter summarises the practical results of a thorough investigation into how technology has affected financial services in Egypt and India. This chapter clarifies the quantitative relationships between the adoption of technology and numerous financial sector aspects through thorough study. It gives a data-driven narrative that explains how technology developments such as online trading, mobile banking, digital payments, and other have affected financial access, market participation, and operational effectiveness. The suggestions that follow from these findings provide regulatory agencies, financial institutions, and policymakers with useful information. This chapter offers a road map for utilising technology's potential to further increase financial inclusion and spur economic growth by highlighting measures to improve digital literacy, support innovation ecosystems, and promote inclusive fintech solutions.

The discussions chapter explores the complex relationships between emerging nations' financial services environment and technology. This chapter reveals the various features of the technology-driven revolution by examining the qualitative components that underlie the quantitative statistics. It looks at how technological advancements are promoting financial inclusion by making banking services accessible to previously disadvantaged people. It also emphasises how the capital markets have changed, with internet platforms and algorithmic trading democratising access to investment options. This chapter also explores how technology affects employment trends, discussing issues including job displacement and the rise of new tech-related occupations. This part offers a comprehensive grasp of the complex processes influencing the modernisation of the financial industry in Egypt and India through perceptive assessments.

The conclusion chapter summarises the research from the results and discussions chapters to offer a thorough analysis of how technology has impacted financial services and economic growth in emerging nations. It emphasises how technology has the power to revolutionise market dynamics,

operational effectiveness, and financial access. This chapter also emphasises how technology serves as a catalyst for financial inclusion and how it in turn affects other economic sectors. To promote sustainable economic growth, improve financial literacy, and provide possibilities for individuals in an increasingly digital society, it emphasises the need of adopting technology.

1.13 Structure of the thesis

The thesis will be divided into different chapters to accomplish the aims and objectives of the research. The introduction will provide an overview of the research issue, the research's goals and objectives, the research questions, and the research's significance. In a literature review, the major themes and findings pertinent to the research questions will be highlighted by critically examining the body of current literature on the subject. It identifies holes in the body of knowledge and describes how the research will fill these gaps. The research design, data gathering procedures, and data analysis strategies will be included in the methodology. It will provide the rationale behind the methodologies' selection and how they will be applied to the research's topics. The results section will present the research's findings using relevant tables, charts, graphs, or other visual aids. The discussion will analyze the findings and tie them to the research's objectives and body of prior knowledge. It will address any study limitations and explores how the findings can be applied to theory, practice, and policy. The research's key conclusions will be outlined in the conclusion, restatement of the research questions and objectives, and explain how the research has advanced the field of study. It also makes suggestions for further research areas.

1.14 Chapter Summary

Technology has been a focus of many financial institutions in emerging and developed countries for decades. Especially after the pandemic, the significance of technology has increased a lot in the financial industry of various countries, and there is a dire need to introduce technology in the world's emerging countries for improvement despite having several reasons for economic and financial turbulence in the global market, such as narrow macro policies, slow speed of economic growth, and the COVID-19 pandemic. This study's main goal is to look into how technology affects the financial services and capital markets in Egypt and India as a representation of developing nations with both similarities in terms of economic high growth potentials in two different wide geographic regions and at different levels of technological advancement and applications. It covered how technology is used in capital markets and financial services. To attain the intended results, emerging markets must integrate technology into their banking sector and capital markets. Financial services and capital markets will perform more efficiently if financial technology is used, especially after the break of the pandemic. Second, this study provides insight into how Egyptians and Indians perceive, understand, and are aware of changes occurring in the country's financial sector due to financial technology. This study proposes that, from a practical standpoint, attention should be paid to this occurrence to lower operating expenses, promote corporate growth and access to capital, facilitate electronic transfer of capital and their financial security, e-payments, improve government utility services, increase consumer satisfaction and efficiency, and most importantly improve financial inclusion to boost economic growth.

Chapter 2: LITERATURE REVIEW

2.1 Conceptual framework

The conceptual framework is limited to these technologies only because it is the main target of the thesis title and the basic concepts to be covered. In the financial services context, the use of cutting-edge tools, methods, and digital platforms to improve the speed, accessibility, and security of financial transactions is referred to as "technology" in the context of financial services. This includes, but is not limited to, digitalization, robo-advisors, blockchain technology, artificial intelligence, and mobile payments. Similarly, in the capital market context, it is debt and equity securities, and their derivatives are exchanged through the financial institutions, along with the infrastructure, and procedures that make up the regulated capital markets. These markets encourage economic growth and development by making it easier to distribute financial resources among different economic sectors (Petry, 2023).

Based, on the conceptual framework, the interaction of technological advances, financial services, capital markets, and economic development forms the conceptual basis for the thesis topic. It intends to examine the effects of technology adoption and integration in Egypt's and India's financial sectors, as well as how this affects both nations' economic development. The framework's core component is an evaluation of Egypt's and India's technical infrastructure, which considers things like internet access, digital connection, and the availability of technology resources. Understanding the possibilities of utilising technology in financial services and capital markets is based on this. The adoption and integration of financial technology (fintech) solutions into the financial systems of both nations are then explored under the framework. This entails looking at

how digital payment systems, mobile banking software, online investing platforms, and other fintech developments are used and put into practise. A crucial gauge of how far the financial sectors have advanced technologically is the extent of fintech adoption. The framework also takes into account how technology affect how easily people can access financial services, particularly as it relates to increasing financial inclusion and lowering obstacles for underprivileged groups. It explores how technological advancements have enhanced financial inclusion through agent banking networks and mobile money services, increased accessibility to banking services, and encouraged the adoption of digital banking channels. The methodology also evaluates how technology contributes to the growth and effectiveness of capital markets (Frizzo-Bajer et al., 2020). This comprises analysing how technology affects foreign investment attractiveness, market liquidity, pricing transparency, and the trading of securities. It considers the implementation of algorithmic trading, computerised trading platforms, and regulatory technology (RegTech) solutions. The framework also examines how technology adoption in the financial sectors affect broader economic conditions. It looks at how technological advancements in capital markets and financial services impact entrepreneurship, innovation, and economic growth. It also takes into account the possible difficulties and dangers related to the adoption of technology and its effects on long-term economic growth. This conceptual framework will be used in the research to give a thorough examination of how technology has affected financial services, capital markets, and economic growth in Egypt and India. It provides a comprehensive viewpoint on how technology, financial institutions, and economic growth are interconnected, highlighting the benefits and difficulties associated with utilising technology for development in these developing nations (Haddud et al., 2017).

Financial institutions play an important role in the lives of people. Without financial systems, the poor people will rely on their limited savings for fulfilling their daily routine life requirements, including health and food (Marzouk, 2022). They can invest in small businesses to get small incomes for approaching significant opportunities (Demirguc-Kunt et al., 2012). Recent reports depict that more than 1.2 billion individuals in developing countries are underbanked. They are financially excluded due to the following reasons:

- Huge charges in bank opening
- High costs associated with ATMs
- Difficult requirements of documentation
- Lack of financial literacy
- Huge charges for financial products

This dissertation analyses how the rise of information and communication technologies has altered banking and economic growth in emerging countries including both Egypt and India. Technology's broad application in the current period could boost and perfect the financial sector's efficiency and effectiveness. Opportunities develop for financial services to reach financially excluded and underbanked populations as technology becomes more accessible, especially via smartphones, which are pervasive across a wide range of nations. Digital tools can be used to help overcome these obstacles. Manyika et al. (2016) estimate that more than a billion new jobs can be created throughout the world if citizens were given access to financial technology platforms. The evolution of the financial sector is inextricably linked to financial innovation, which encompasses new financial instruments, business practices, and financial institutions (Beck et al., 2018). Innovation in the financial sector is fueled by developments in payment systems, the borrowing and lending of funds, and the creation of new financial products. Banks and borrowers benefit from more credit

availability and lower costs because of improvements such increased equity production, credit generation, risk transfer, and technology advances.

Resource allocation, optimization, and economic concerns are only a few of the variables that Awotunde et al. (2021) use to argue that society has entered a new era in the global financial and economic agenda. To avoid such catastrophic losses and strengthen economic stability, the banking industry has undergone extensive reforms since the 2008 financial crisis. The COVID-19 epidemic has also led widespread reforms in the banking industry that have improved the way technology is used. The liberalization of monetary transactions, the proliferation of mobile financial services, and developments in payment systems like e-payment services are all examples of these shifts. The increased availability of capital loans and project funding made possible by technological advancements in the financial sector has resulted in a boom in investor interest in the financial sector services. Additionally, these developments allow for the development of brand-new technologies. As pointed out by Haider Syed, Khan, Raza Rabbani, and Thalassinos (2020), technology has had a considerable influence on the field of finance. The financial sector has found many uses for technology, from identifying irregularities to anticipating system problems. Technology helps with risk management, profitability, and security by lowering overhead expenses. More than 1.5 million computers in industrialized countries are used for automated stock trading with minimum human participation. To reduce the possibility of financial loss, these traders practice making billions of choices with virtual money before engaging in actual trades. Learning how to use financial technology systems is beneficial for a company's productivity, profits, risk management, cost effectiveness, and expansion. Overall, managing and analyzing big data has become more important for making reliable forecasts since the pandemic (Bragazzi et al., 2020).

In addition, financial technology can be used to acquire an edge in the capital markets (Korzeb, Niedzióka, & Pankou, 2021). The flexibility of internet-based platforms allows for longer working hours, which can lead to higher productivity and earnings. Capital market sales points benefit from technological advancements in the financial sector, which boosts AuMs and turnovers, efficiency, and value generation.

2.2 Advantages of using technology

Multiple advantages and disadvantages are associated with the usage of technology. Technology simplifies procedures, lessens paperwork, and automates jobs, increasing operational effectiveness and reducing costs (Khan et al., 2022). Also, mobile banking and digital platforms promote greater financial inclusion by making it simple for people and companies to obtain financial services (Tay et al., 2022). This should enhance economic growth and better efficiencies in resources allocations and utilizations. With real-time access to market data made possible by technology, investors can make well-informed choices and the market is more transparent (Carter, 2023).

In contrast, due to their reliance on technology, financial institutions are vulnerable to cyberthreats such data breaches, hacking, and identity theft (Telo, 2023). Automation and digitalization cause the loss of conventional financial jobs, especially in developing countries where the workforce is primarily dependent on physical labor (Li et al., 2022). Inequalities in technology access and digital literacy can amplify socioeconomic disparities by keeping some groups of people from accessing financial services (Comi et al., 2022).

On the scale of sample, the use of technology in Egypt and India could help them, being underbanked economies, overcome their difficulties. Financial services can be constantly enhanced by using software tools like MACD, VAR, and RAROC. Enhanced speed, precision,

and cost savings are other technological benefits in the banking business. Workers are no longer in need to manually create and double-check hundreds of invoices every day, input data into ERP systems, transform data through workflow procedures, and get clearance from upper management because of financial technology. The advancements in financial technology have made these tasks easier and more effective. Positive improvements are expected to result from researchers' calls for greater use of technology in the financial systems of developing nations. Algorithmic platforms that provide investment advice and portfolio management services are called "robot-advisors," and their potential is highlighted by Bhatia et al. (2021). These marketplaces have the potential to expand access to financial services by providing low-cost investment alternatives to those who can have had few choices in the past. Robo-advisors are software programmers that automate the financial advisory process by analyzing a client's financial data, evaluating their risk tolerance, and making investment recommendations based on that information.

Moreover, emerging countries like Egypt and India can largely benefit from financial inclusion in pushing their economic growth when technology is well integrated into financial services. There is a sizable unbanked and underbanked population in these nations, and typical banking services frequently do not make it there for reasons like distance and expense. Digital financial services such as mobile banking, digital wallets, and microfinance platforms were previously unavailable due to the lack of widespread smartphone and internet access. With the advent of mobile banking, people everywhere now have access to fundamental banking services right from their phones, thus expanding the scope of financial inclusion. Deposits, withdrawals, and wire transfers can all be made safely and conveniently online without ever having to visit a bank office. On the other side, digital wallets make it easy and safe for anyone to transmit and receive digital currency. These

wallets can be connected to a bank account or used independently, giving users access to a variety of banking features including bill pay, online shopping, and P2P money transfers.

However, technology-enabled microfinance programmers have grown in popularity in these nations. Small businesses and people without substantial assets or traditional credit records can get access to loans and other financial services via these online marketplaces. Microfinance institutions can speed up the loan application and approval procedure, as well as the evaluation of creditworthiness utilizing alternative data sources, with the use of digital platforms. Businesses can expand and more people can be lifted out of poverty if entrepreneurs have easier access to money. Technology-driven innovations like blockchain and cryptocurrencies have the potential to revolutionize the financial environment in developing countries, in addition to expanding access to financial services. Financial transactions can now be recorded and verified in a way that is safe, transparent, and decentralized, all thanks to blockchain technology. In places where conventional financial infrastructure is either unavailable or unstable, this has the potential to increase confidence and cut down on fraud. In places where conventional banking services are scarce, cryptocurrencies like Bitcoin provide a convenient option for making international payments, gaining access to the financial system, and sending money home. The introduction of technology in the financial industry presents both opportunities and risks, both of which must be considered. The increasing prevalence of online financial transactions raises serious concerns about data security. However, it is also imperative to safeguard private customer information and maintain the security of financial networks, financial institutions and regulators must make substantial investments in cybersecurity measures.

2.3 Egypt vs. India in the context of economic and financial sector status

There is a pressing need for further study on how technology affects financial services and economic growth in emerging countries like Egypt and India. The society can learn more about how technology fosters financial inclusion, grows capital markets, and stimulates economic expansion by looking at its function in various settings. Financial inclusion is aided greatly by technological advancements in the sector, and this is especially true for marginalized communities (Mhlanga, 2020). In recent years, the digital financial approach known as "fintech" has developed as a practical option for both traditional banks and non-banks, making financial services more widely available to those living at the base of the economic pyramid. Fintech advances have helped previously unbanked populations in Egypt and India get access to basic banking services like insurance and savings accounts (Ozili, 2021). Sustainable poverty alleviation efforts in emerging markets like Egypt benefit from initiatives like crowdfunding, which has blossomed thanks to improvements in fintech. Overall, technology has proven to be a driving force behind financial inclusion, and it holds the potential to further improve financial access in unbanked sectors by helping people build credit histories, improving customer communication services, and streamlining account opening procedures.

In addition, technology has been critical in growing capital markets by attracting new investors and making banking and other financial services more convenient for more people (Petry, 2023). Financial and capital markets have expanded rapidly with the help of new technology, leading to more profits and better service for clients. In contrast to their tech-savvy competitors, financial sectors that have been sluggish to adopt new innovations have lost ground. Therefore, the integration of technology has become crucial to the continued success of these industries.

Automation of routine work, improvements in efficiency, and the ability to make well-timed, well-informed investments are just some of the ways in which technology has reduced operational costs and contributed to market growth (Phan et al., 2020). Capital market and financial sector productivity has grown as a result of automation, helping to propel economic growth. Notably, machine learning developments have reshaped the customer service experience by empowering chatbots with artificial intelligence to hold natural-sounding interactions with clients in real time. Customers in the capital markets can now self-serve, trade cryptocurrencies, and get market advise from bots, all thanks to technological advancements. In order to maximize earnings and properly manage risks, investors have found that robotic investing advice that is specific to their objectives and priorities is both accurate and vital (Rehman et al., 2019). The availability of accurate credit ratings for use in lending choices and the ease with which financial services can now be marketed thanks to technological advancements have also contributed to better risk management.

The spread of COVID-19 has hastened the introduction of new technologies in the financial sector and the stock market. Due to a decline in personal contact, it became more important to provide financial services digitally to ensure continuity of service and high rates of financial inclusion. As a result, the pandemic has sped up the digitalization of financial services in developing nations like Egypt and India, fostering financial inclusion and establishing technology as a robust answer for the future of financial and capital markets throughout the globe (Sahim, 2021). Incorporating AI into Egypt's capital markets and financial sector could boost consumer satisfaction, speed up the country's progress towards its goal of universal financial access, and improve the efficiency with which risk is managed in the provision of money-lending services. The adaptability and versatility of AI canbe used to bolster current financial technologies on the Egyptian market, hence aiding in the development of formally organized financial systems (Schor, 2016). Looking at how technology

has changed banking and other economic sectors in emerging countries like Egypt and India would tell us a lot about the transformational power of IT. Technology drives economic expansion and poverty reduction through facilitating more people's access to financial services, increasing the availability of money, improving business processes, and giving consumers more say in their purchasing decisions. The global spread of the COVID-19 virus has highlighted the significance of digital financial services and the urgency of furthering the use of technology in the world's financial and capital markets.

On the economic status front, comparing different locations can provide valuable insights into the economic and financial landscape of nations, offering a broader perspective on the topic at hand. In the context of this dissertation, Egypt and India serve as exemplary countries for contrasting the effects of technology on financial services and, consequently, economic development in developing nations. Both Egypt and India are significant players in their respective regions and possess diversified economies (Shim, 2016). Egypt, located in the Middle East and North Africa (MENA) region, boasts a diverse economic landscape comprising various industries such as manufacturing, services, tourism, and agriculture. In recent years, Egypt has undertaken economic reforms aimed at attracting foreign capital, improving infrastructure, and diversifying its economy. Notably, the growth of Egypt's GDP can be attributed to key industries like energy and power plants, real estate, construction and building materials, transportation services, telecommunications, and the financial sector.

On the other hand, India is a South Asian nation with one of the world's largest economies. It is renowned for its diverse economic sectors, including pharmaceuticals, manufacturing, and information technology. India's economy has experienced rapid growth, positioning it as a significant global player (Tay 2022). The country has embraced economic liberalization initiatives,

attracted international investment, and fostered a thriving service sector. The sizable populations of Egypt and India make them important marketplaces for both domestic and foreign companies. The size of their labor forces significantly impacts economic activity and the availability of human resources. Both nations, as developing markets, have implemented economic reforms, created investment opportunities, and attracted foreign direct investment to stimulate growth and development. Economic changes have been enacted to enhance the business climates, infrastructure, and investor appeal of these countries, ultimately fostering economic expansion, job creation, and broader economic diversification (Telo, 2023).

Geographically, Egypt and India occupy advantageous positions that facilitate commerce and business. Egypt serves as a gateway to Africa, Asia, and Europe, while India provides access to South Asia. These strategic locations contribute to their economic dynamics and potential for trade and investment. Despite their similarities, there are notable differences in the composition of their economies (Tiemann et al., 2015). Egypt places emphasis on industries such as energy, tourism, and construction, whereas India focuses more on information technology, services, and manufacturing. India possesses a thriving stock market, robust financial institutions, and a flourishing startup scene, all contributing to a well-established investment environment. In contrast, Egypt has been actively working to improve its business environment, attract foreign direct investment, and streamline corporate laws (Wójcik, 2020). Furthermore, Egypt and India exhibit distinct political structures and legal systems, which impact their ease of conducting business, stability of policies, and government support for economic growth. It is worth mentioning that both countries possess significant regional influence and diversified economies. They share characteristics such as large populations, emerging market status, implementation of economic reforms, and advantageous geographic positions. However, disparities exist in terms of GDP size, industry composition,

investment climate, and political and regulatory frameworks. India's GDP surpasses that of Egypt, and it possesses a more diverse economic foundation, making it one of the world's fastest-growing economies. Conversely, Egypt's economy, although expanding, is relatively smaller compared to other major emerging countries, such as the BRIC nations. Understanding these similarities and differences provides crucial insights into the economic and financial landscapes of Egypt and India, within the context of the effects of technology on financial services in developing nations.

It is possible to have a more comprehensive understanding of the economic and financial state of the world by drawing parallels between various regions. Egypt and India are used as case studies in this research to compare and contrast the impact of technology on financial services and, by extension, economic growth in low-income countries. Egypt and India, both major powers in their areas, also have very diverse economies. Manufacturing, services, tourism, and agriculture are just some of Egypt's many thriving economic sectors. The country is situated in the Middle East and North Africa (MENA) area. Egypt has implemented economic changes in recent years to improve its infrastructure, attract international investment, and diversify its economy. Key businesses include energy and power plants, real estate, construction and building materials, transportation services, telecommunications, and the financial sector have all contributed to Egypt's rising GDP.

India, on the other hand, is a South Asian country with a major economy. The pharmaceutical, manufacturing, and IT industries are just a few of the well-known contributors to its robust economy. India's economy has been expanding rapidly, making it a major participant on the international stage. Efforts to liberalize the economy have been met with success, resulting in increased foreign investment and a flourishing service sector. Egypt and India are two countries with huge consumer bases due to their large populations. Their economies and access to labor are profoundly affected by the size of their labor forces. As emerging markets, both countries'

economies have enacted reforms, opened up new investment possibilities, and drawn in FDI. To encourage economic growth, job creation, and a greater economic diversification, these nations have implemented economic adjustments to improve their business climates, infrastructure, and investor attractiveness.

Both Egypt and India benefit from strategic locations that encourage trade and business. Africa, Asia, and Europe can all be accessed via Egypt, whereas South Asia could be reached through India. Their economies and opportunities for commerce and investment are enhanced by their strategic positions. Their economies have certain commonalities but are otherwise very different. Egypt prioritizes the energy, tourism, and construction sectors, whereas India prioritizes the IT, service, and manufacturing industries. India's stock market, banking institutions, and startup ecosystem are all strong points that make the country an attractive place to put money. Egypt, on the other hand, has been making concerted efforts to reform its business climate, increase its FDI, and simplify its corporation regulations. As a result of their different political structures and legal systems, Egypt and India have different regulatory environments, policy consistency, and government encouragement of economic development. Both nations have substantial regional impact and economically diverse economies. They all have sizable populations, are considered developing markets, have recently implemented economic reforms, and are in strategically beneficial locations. There are, however, differences in GDP per capita, sector make-up, investment climate, and political and regulatory environments. India is one of the world's fastest-growing economies since its GDP exceeds that of Egypt and it has a broader economic basis. While Egypt's economy is growing, it is still far smaller than that of the BRIC countries or even China. In the context of the impact of technology on financial services in emerging countries, an

appreciation of these parallels and distinctions sheds light on the economic and financial situations in Egypt and India.

Egypt

a) Limited Technological Infrastructure: Inadequate digital infrastructure and poor internet penetration prevent the adoption of advanced financial technology, hence restricting the potential for equitable growth.

b) Cybersecurity Vulnerabilities: Egypt has trouble putting in place reliable cybersecurity frameworks, which raises the risk of financial crime and data breaches. (Lukonga, 2018)

c) Skill Gap: The creation and use of creative financial solutions are hampered by a shortage of experts in emerging technologies.

India

a) Digital gap: India still struggles with the digital gap, with rural areas and lower-income groups having restricted access to technology and digital financial services, despite substantial developments.

b) Regulatory Challenges: The quick development of fintech creates regulatory issues that call for a careful balance between innovation and consumer safety.

c) Disruption of Traditional Financial Institutions: Agile fintech firms are posing a growing threat to traditional financial institutions in India, which could orce consolidation or the liquidation of some of these institutions.

2.3.1 Policy implications and mitigation measures

a) Infrastructure development: To provide greater access to financial services, investments in digital infrastructure and improved internet connectivity are made.

b) Regulatory Frameworks: Creating strong regulatory frameworks that support innovation while defending consumer interests and preserving economic stability.

c) Skill Enhancement: Improving educational programmers and professional training to close the skills gap and develop a workforce with adequate digital literacy.

d) Public-Private Partnerships: Governments, financial institutions, and technology companies working together to promote inclusive technology in the financial services industry.

e) Cybersecurity Measures: To reduce the dangers related to using digital financial services, cybersecurity procedures should be strengthened, and awareness should be raised.

As we further research the impacts of technology on financial services in emerging economies, we see that consumer demand and business growth in numerous emerging countries, such as Egypt and India, have been stymied by the constraints of conventional banking institutions. The emergence of fintech, however, has opened up doors for broader economic development and participation. This dissertation compares and contrasts Egypt and India, two different growing nations, to determine the impact that technology has had on financial services and how it has affected economic growth. Businesses and consumers alike can benefit greatly from the fintech revolution that has been sparked by companies in developing markets. Using cutting-edge economic technology, countries like Kenya and China have accomplished extraordinary corporate feats. By 2025, it is predicted by the world bank that inclusive fintech efforts can increase

developing countries' GDP by 6%, or USD 3.7 trillion, and generate 95 million new employments. Emerging economies are growing quickly, but their share of global financial output is still small relative to their populations. But in recent years, there has been a trend towards more customer-focused development methods, and as a result, the percentage of the population with access to formal financial services has grown. Organizations like the G-20 and the World Bank have been pushing for increased financial inclusion in poor countries in order to help with poverty reduction and boost economies.

Consumers, digital finance providers, governments, and the whole financial system can all stand to gain from more access to digital finance and other forms of financial inclusion. Digital finance can boost economic possibilities and decrease poverty by decreasing the cost of financial intermediation for banks and boosting access to financing for the poor. Financial dealings have been completely transformed by the advent of virtual technologies. Mobile loans, online banking, and other lending systems have been made possible thanks to technology developments that take use of social networking, regulatory alternatives, and financial carrier capabilities. The gap between traditional banking and modern financial services can be narrowed by the strategic use of efficient technology. Financial services, advertising, healthcare, farming, and manufacturing are just some of the industries that stand to benefit from Egypt's digital revolution. To promote inclusion and reduce inequality, however, full potential of digital technology can only be realized with strong technical infrastructure, trained human resources, proper legal laws, and other complementary measures.

Large technology firms are entering the banking industry, posing serious challenges to established lenders in the face of the emergence of fintech and rising investment in digital finance. In order to attract investment, a balance must be struck between maintaining conservative norms and being

open to fintech developments. It's important to have an innovative financial infrastructure and supporting governmental organizations since foreign banks can take a variety of ways to adopting fintech. As a result of the COVID-19 epidemic, digital financial services have been more widely used and widely adopted. During this time of crisis, contactless and cashless transactions have become crucial in easing the burden on government aid programmers and expanding access to the banking system. Financial institutions expect to rely more on technology in the post-epidemic period, and this trend has been accelerated by the pandemic. It is critical to analyses the impact of technology on economic growth as it continues to revolutionize financial services in emerging countries. Countries like Egypt and India can improve their economic development, prosperity, and social impact by adopting fintech and guaranteeing inclusive digital transformation.

2.4 Fintech legal framework, trends, and issues

Particularly in emerging markets like Egypt and India, where regulatory measures and associated legislation have just recently been implemented, the rise of fintech has had a profound effect on the financial services industry. When used to encourage and accomplish economic development, fintech is seen as an innovative and revolutionary financial technology instrument. Due to rising interest in e-commerce and the need to adapt to a new digital economy, business and banking practices have changed dramatically over the last decade (Schor, 2016). Internet banking, mobile banking, and electronic payments were among the first e-banking products to be used and developed in Egypt. under contrast, the legal framework for e-banking services and products was not addressed under the preexisting "Old Banking Law" (Banking Law No. 88 of 2003). That's why banks needed customers to sign contracts authorizing their use of e-banking products and related technology.

Egypt, on the other hand, recognized the evidentiary value of electronic documents and signatures by passing the Telecommunications Regulations Law No. 10 of 2003 (the "Telecommunications Law") and the E-Signature Law No. 15 of 2004, along with their respective executive regulations. The development of fintech in Egypt's economy can be traced back to the passage of these laws, as well as the expansion of e-commerce and the digital market (Wójcik, 2020). To further address issues and strengthen the digital transformation plan, Egypt has also passed a number of important IT legislation, such as the Cybercrimes Law No. 175/2018, the Non-Cash Payment Means Law No. 18 of 2019, and the Data Protection Law No. 151 of 2020. Governments must build legal frameworks for fintech to strengthen and maintain economic stability, and the global issues presented by the COVID-19 epidemic and political instability have only increased the urgency with which this must occur.

The New Banking Law and Commerce Law No. 17 of 1999 (as modified) regulate the banking industry in Egypt. Certain dealings between a bank and its customers are considered banking operations under the Commerce Law even if they do not include merchants. Opening an account, receiving deposits, renting a safe, providing overdraft services, pledging securities, transferring funds between accounts, issuing documentary credits, and guaranties are all examples of these services (Sahim, 2021). Regularly accepting deposits, financing, investing in providing finance and credit facilities, contributing to the share capital of enterprises, and other operations deemed banking according to industry conventions are all defined as banking activities under the New Banking Law. All banking in Egypt is governed by and subject to regulation by the Central Bank of Egypt (CBE). The New Banking Law provides a wide definition of fintech in the banking industry as "business, application, or financial products built on using technology." Therefore, electronic certification, digital banking, bitcoin, electronic payment, and electronic financing are

all examples of fintech activity in banking. Failure to get approval from the CBE is punishable by fines and jail time under the New Banking Law if you want to engage in such fintech activities. Digital methods used in banking fintech operations are considered admissible in court under the New Banking Law, if they meet CBE standards. However, the CBE board of directors has not yet approved the regulatory standards and procedures for carrying out banking fintech operations (Washington et al., 2021).

2.5 India is a prime model in Digital transformation and Fintech

A new age of technology developments and digitalization has begun in India due to the banking sector's major change by digitalization (Sainger, 2018). To foster this transition, the Indian government has led some programmes and policies. Demonetization was a noteworthy move that sought to stimulate digital transactions and foster a cashless society (Raj & Aithal, 2018). This action sped up the use of digital technology in the banking sector. Another important programme that helped the Indian banking system go digital is the Pradhan Mantri Jan Dhan Yojana (PMJDY). The PMJDY aims to improve financial inclusion and provide access to financial services by opening a bank account for every person (Majchrzak et al., 2016). Additionally, the launch of the Bharat Interface for Money (BHIM) app and the Unified Payments Interface (UPI) expedited digital payments, making them more practical and widely available. These programmes have greatly accelerated financial inclusion, especially in rural and isolated regions (Guo & Liang, 2016).

Indian financial institutions have adopted digital technology to enhance offerings and meet clients' evolving demands. Customers can now access financial services wherever they choose due to the platforms banks have embraced for internet banking and mobile banking. Additionally, the emergence of digital payment systems has completely changed how transactions are carried out by providing a quick and safe replacement for conventional cash-based transactions. India has experienced a significant increase in financial inclusion as a result of the digital revolution. Individuals previously denied access to formal financial services now have access to basic banking services because of mobile banking and digital payment technologies. As a result, underprivileged

groups now have more financial awareness, better saving practises, and economic empowerment (Joshi et al., 2013).

Fintech businesses have greatly aided innovation in the financial sector. These firms have challenged established financial institutions and offered fresh alternatives using innovative technology and business strategies. Fintech innovations like peer-to-peer lending, crowdfunding websites, and robo-advisory services are just a few instances of how they have changed how people access and use financial services. Despite the positive effects of digital transformation, opportunities and difficulties still exist (Mhlaga, 2020). Data privacy and cybersecurity concerns are major factors in the digital banking ecosystem. Appropriate legislation and security measures are crucial to safeguard consumer data and uphold trust in digital transactions. Regulatory frameworks must also change to keep up with technological changes and provide an environment that is favourable to innovation while maintaining consumer protection (Quach et al., 2022).

Further digitization and cutting-edge technology will determine how India's financial industry develops. To guarantee that the advantages of the digital revolution are fully realised, policymakers should concentrate on creating an environment that supports innovation, encouraging cooperation between established financial institutions and fintech firms, and increasing financial literacy and education (Danladi et al., 2023).

2.5.1 Technology and financial inclusion in India

Technology has been a key factor in promoting financial inclusion in India and improving the affordability and accessibility of financial services for previously neglected communities. The junction of technology and financial inclusion in India is explored in this section, along with the initiatives, effects, and difficulties of using technology to improve access to financial services.

Promoting financial inclusion in India has greatly benefited from the development of mobile banking and electronic payment systems. Mobile devices have become an effective tool for bridging the gap between people and formal financial services, especially in places with few physical bank offices (Schuetz & Venkatesh, 2020).

Through mobile banking, customers can access account information, make payments for services, and transfer money straight from their mobile devices. Due to this ease, people—particularly those who live in rural and isolated areas—can now receive financial services without the usual obstacles. Financial inclusion has also been greatly aided by using digital payment systems like mobile wallets and the Unified Payments Interface (UPI) (Aggarwal, 2014). These platforms allow those without traditional bank accounts to conduct digital transactions and send and receive money securely and instantly. The onboarding procedure for those attempting to access financial services has been significantly simplified by introducing Aadhaar-based authentication and e-KYC (Know Your Customer) rules, simplifying identity verification, and lowering paperwork requirements (Barik & Sharma, 2019).

Beyond banking services, the technology significantly influences financial inclusion in India. Access to financial goods, including investments, insurance, and credit, has been transformed by digital platforms. Fintech businesses have become important participants in this market, utilising technology to create cutting-edge lending models and risk assessment algorithms. Platforms for peer-to-peer lending give people and small enterprises access to alternate sources of credit, letting them access money previously out of their grasp (Garg & Aggarwal, 2014).

Additionally, digital insurance platforms have made it easier to buy insurance policies and submit claims, increasing the accessibility of insurance goods to a wider range of people. Even though

technology has accelerated financial inclusion in India, some issues still need to be resolved. The digital divide, which results in differences in internet access and connectivity to technological infrastructure between urban and rural areas, is one key cause for worry. By increasing internet connectivity and supporting digital literacy programmes, efforts must be made to close this gap and guarantee fair access to financial services (Ozili, 2021).

Data privacy and cybersecurity are additional difficulties. Individuals and organisations are more vulnerable to fraud and cyber risks as the volume of digital transactions rises. Maintaining user trust and confidence requires effective security measures like encryption, secure authentication methods, and stringent data protection laws. The regulatory frameworks must also develop along with technology. While guaranteeing consumer protection and systemic stability, novel regulatory techniques such as regulatory sandboxes can promote an atmosphere favourable to innovation (Siddik & Kabirah, 2020). Cooperation between regulatory organisations, financial institutions, and technology businesses is crucial to balance innovation with regulation (Gandhi, 2013).

Briefly, technology has significantly influenced India's financial inclusion. Access to financial services has increased due to mobile banking, electronic payment methods, and creative fintech solutions, enabling both people and companies. For sustainable and equitable growth, overcoming the digital gap, ensuring cybersecurity, and creating efficient regulatory frameworks is essential. India can continue to make major advancements in promoting financial inclusion and empowering its citizens by successfully using technology and tackling these issues (Arun & Kamath, 2015).

2.5.2 Fintech startups and innovation in India

The rise of fintech companies as major drivers of innovation has revolutionised the way financial services are accessed and provided in India. This section explores the development, influence, and

difficulties fintech companies face in India, emphasising their potential for change and contributions to the financial sector. Fintech firms have grown significantly in India due to some factors, including favourable regulatory settings, rising smartphone usage, and the availability of qualified IT experts. These firms use cutting-edge tools like machine learning, blockchain, data analytics, and artificial intelligence to create novel solutions that tackle various problems in the financial sector (Baporikar, 2021).

Digital payments and remittances are one area where fintech businesses have achieved major advancements. Due to the growing popularity of mobile wallets and payment apps, people now have a simple and safe way to conduct purchases. Innovative payment methods, including QR code-based payments, contactless payments, and fast peer-to-peer transfers, have also been launched by fintech businesses, giving users more flexibility and usability. Fintech firms have also disrupted the lending and credit industries. Platforms for peer-to-peer lending have evolved, connecting borrowers and lenders directly and eschewing conventional financial intermediaries. These systems evaluate creditworthiness using algorithms and other data sources, allowing people and small enterprises to receive loans previously out of reach (Vijai, 2019).

Another difficulty is building trust and overcoming the perceptual hurdles related to new, technologically driven financial services. For fintech solutions to be widely used, it is crucial to inform and raise customer knowledge of their advantages, security features, and dependability. In India, fintech firms have upended the country's established financial system, bringing about substantial innovation and altering how people access and use financial services. Fintech businesses have expanded financial inclusion, improved consumer experience, and increased industry rivalry by concentrating on technology-driven solutions. To be successful over the long

run and expand sustainably, fintech businesses in India must still overcome regulatory obstacles and win over customer trust (Rajeswari et al., 2021).

2.5.3 Technology and financial markets in India

India's financial markets have been significantly impacted by technology, which has changed how trading, investment, and regulatory activities are carried out. India's trading environment has transformed because of the emergence of electronic trading platforms like the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). These platforms have eliminated open outcry trading in favour of automated methods, allowing quicker and more effective deal execution. Electronic trading platforms have improved market liquidity by enhancing transparency, lowering transaction costs, and expanding access to market participants (Ledgerwood, 2013).

The development of algorithmic and high-frequency trading (HFT) in India's capital markets is another result of technological improvements. In contrast to HFT, which uses sophisticated technology and intricate algorithms to quickly and accurately execute a large number of transactions, algorithmic trading includes computer algorithms. These strategies have boosted market performance, enhanced liquidity, and helped with price discovery in the capital markets (Kim & Park, 2016). Dematerialization of security and the use of electronic clearing platforms like the Central Depository Services Limited (CDSL) and the National Securities Depository Limited (NSDL) have expedited the settlement procedure in India's capital markets. There is no longer a need for physical certificates, which shortens the time it takes for transactions to settle. Investors can now store and transfer assets online (Amer et al., 2016).

Through digitalization, operational effectiveness has increased, paperwork has decreased, and dangers related to physical securities have been eliminated. RegTech solutions have evolved to simplify regulatory compliance in India's capital markets. These solutions are backed by technology and data analytics. These technologies help market players satisfy regulatory requirements, keep an eye out for questionable activity in transactions, and improve risk management procedures. RegTech solutions have lowered compliance costs for market players, increased market integrity, and enhanced regulatory monitoring (Luthra et al., 2015).

In India, access to financial markets and investor education have increased significantly because to technology. Online platforms offer lessons, market information, and instructional materials to equip investors with the knowledge they need to make wise investing choices. Digital platforms have democratised access to capital market possibilities by enabling individual investors to take part in initial public offers (IPOs) and mutual fund investments without difficulty. Although technology has greatly benefited India's capital markets, problems still exist. The market infrastructure and investor confidence are significantly at risk from cybersecurity risks like hacking and data leaks. To secure sensitive financial data and maintain market integrity, strict cybersecurity laws and regulations are required (Baber, 2020)

To avoid the digital gap and encourage broad involvement in the financial markets, it's also critical to maintain equal access to technological advancements. All investors should have access to technology-driven platforms and services, and efforts should be made to close the gap between urban and rural locations. India's financial markets have undergone a technological revolution, allowing for quicker, more effective, and transparent trading and investing procedures. Technology has improved market efficiency, liquidity, and investor access through anything from electronic trading platforms to algorithmic trading. For India's capital markets to expand

sustainably and remain stable in the digital age, it is essential to manage cybersecurity threats and encourage broad access to technology-driven innovations (Hsu et al., 2014).

2.6 Challenges and risks in the adoption of technology

Technology adoption in a variety of industries, including banking, comes with a few risks and problems that need to be properly assessed and managed. The growing risk of cyberattacks is one of the biggest obstacles to technology adoption in banking industry of Egypt. Financial institutions make appealing targets for hackers looking to exploit weaknesses because they rely so largely on technology for their operations in Egypt. Financial losses, consumer data compromise, reputational harm, and even systemic hazards to the whole financial system can result from cybersecurity breaches. To reduce these dangers within Egypt banking sector, it is crucial to implement strong cybersecurity solutions, such as encryption, multi-factor authentication, and frequent security audits (Delgado et al., 2019).

Technology adoption in Indian financial sector frequently entails the gathering, storing, and processing of enormous volumes of private client data. There are several difficulties in maintaining data privacy and making sure that data protection laws, such the Personal Data Protection Bill in India, are followed. To preserve consumer data and uphold confidence, financial institutions must set up strong data protection frameworks, adopt privacy-enhancing technology, and follow stringent legal standards (Chang et al., 2020).

Although there are many benefits provided by technology, India still has difficulties in maintaining enough connection and technical infrastructure across the whole nation. The widespread adoption

of technology-driven financial services can be hampered by disparities in internet access, network connection, and digital literacy, especially in rural and isolated locations. To provide equal access to financial services, initiatives are required to close the digital gap and advance technical infrastructure (Janssen et al., 2020).

A trained staff with the ability to comprehend and use these technologies efficiently is required due to the financial sector's fast technological improvement. The sector does, however, have a large skills and talent deficit. To build a workforce with the requisite technological skills to spur innovation and skillfully manage the risks associated with technology adoption, financial institutions need to engage in training programmes, reskilling initiatives, and collaborations with educational institutions (Greenhalgh et al., 2017).

Financial regulatory frameworks within both India and Egypt sometimes lag the use of technology, making it difficult to provide proper monitoring and consumer protection. Regulatory agencies must keep up with technological progress and create frameworks that balance innovation and regulation in the proper way within these two countries. To create an environment that encourages the use of technology, it is essential to address legal issues such cross-border transactions, data localization requirements, and rights to intellectual property (Avram, 2014).

Employees and stakeholders in conventional financial organisations is resistant to change when adopting technology in Egyptian and Indian financial sector. The seamless shift to technology-driven processes can be hampered by cultural obstacles, concern over job displacement, and resistance to new technologies. To overcome opposition and promote effective technology adoption, organisations must make investments in change management methods, offer training and assistance, and promote an innovative culture (Kouhizadeh et al., 2021).

Although the financial industry has many benefits because of the adoption of technology, there are also many dangers and obstacles as per the analysis of these two countries. For technology adoption to be effective, it is essential to address cybersecurity concerns, ensure data privacy and regulatory compliance, bridge the digital divide, close the skills gap, navigate regulatory and legal difficulties, and deal with opposition to change. Financial institutions in India and Egypt can use technology to promote innovation, improve client experiences, and achieve sustainable development by proactively tackling these difficulties (Kane, 2019).

Chapter 3: METHODOLOGY

3.1 Research design

The research design will target a mixed methodological approach including both the quantitative and qualitative analysis. Understanding how technology affects financial services and capital markets in emerging areas like Egypt and India requires qualitative and quantitative study approach. By examining the viewpoints, experiences, and behaviours of the people and groups involved, it provides an extensive and in-depth investigation of the research issue. The capacity of qualitative research design to offer in-depth and precise insights is one of its main advantages. Researcher can obtain in-depth data and narratives that represent the complexity and subtleties of the consequences of technology by using techniques including interviews, observations, and document analysis. This thorough comprehension enables a thorough examination of the subject, revealing underlying motivations, behaviours, and environmental elements (Snyder, 2019).

Another key benefit of qualitative research methodology is the contextual awareness it offers. It acknowledges the significance of social and cultural settings in determining how technology is adopted and how it affects financial services and capital markets. With this qualitative design, the research can catch new trends and patterns while also being sensitive to the changing nature of technology's effects (Gupta & Gupta, 2022). The value of qualitative research design lies in its capacity to explore many viewpoints. Policymakers, business experts, and consumers of financial services are among the many parties affected by how technology is changing financial services and capital markets. Qualitative research design offers a thorough grasp of the subject and promotes evidence-based decision-making by embracing these varied viewpoints. Reflexivity, sampling, data collecting and analysis, and design considerations for qualitative research all fall under these categories. Reflexivity makes ensuring that researchers are conscious of their

preconceptions and prejudices, encouraging openness in the research process. By ensuring the inclusion of people with pertinent information and experiences, purposeful sampling increases the data's richness (Orngreen & Levinsen, 2017).

Furthermore, the quantitative analysis in this study will include using statistical tools to analyse secondary data and explore the influence of technology on Egypt's and India's financial services and economic growth. To summarise the major variables in the dataset, descriptive statistics will be employed. To offer a clear perspective of the data, measures such as mean, median, standard deviation, and frequency distributions will be generated. This study will aid in the identification of the core trends, variances, and distribution patterns of variables linked to technology adoption, financial services indicators, and economic growth measurements. Also, the research will use the previously present statistical data based on the targeted research questions regarding Egypt and India. The quantitative study will play a part to measure the targeted impacts on financial services (capital market) and economic development as well.

3.2 Research approach

This study uses a longitudinal research design to examine the long-term impacts of technology on financial services and capital markets in Egypt and India. An in-depth knowledge of the long-term effects of technology adoption in these two emerging economies can be gained when using a longitudinal study methodology, which allows researchers to track changes and advances in the research topic through time (Rajasekar & Verma, 2013). It enables the investigation of recurring trends, patterns, and changes across time, revealing insightful information about the advancement of technology and its consequences for economic growth. It will target both the qualitative and quantitative approach based on the targeted research questions and objectives.

With the use of this study strategy, which entails gathering data at various periods in time, researcher can monitor changes in the adoption and application of technology in Egypt's and India's financial sectors. It offers a greater comprehension of the temporal elements of technological adoption, including the pace of implementation, the spread of innovation, and the long-term impacts on financial services and capital markets. The longitudinal research methodology is especially useful for examining how technology affects emerging economies like Egypt and India. These nations are going through huge economic transitions and quick technological breakthroughs. Researchers can offer helpful insights by tracking the evolution of technology adoption and how it affects financial services and capital markets through time (Al Kilani & Kobziev, 2016).

Researchers acquire a thorough grasp of how technology has affected financial services and capital markets in Egypt and India according to the research's longitudinal research strategy. This method helps to identify trends, patterns, and factors that influence the adoption of technology and its effects on economic growth in these emerging nations by monitoring changes over time (Patel & Patel, 2015).

3.2.1 Data collection

Secondary data is any existing data that has been gathered for purposes other than the present research by other researchers, organisations, or institutions. It is a useful tool for examining how technology has affected capital markets and financial services in Egypt and India. Conducting a thorough analysis requires an understanding of the definition, significance, and advantages of secondary data collecting in connection to the research issue.

In contrast to primary data gathering, secondary data collection offers a plethora of information and insights that have previously been gathered, saving time and money. It provides a wide range of sources, such as government papers, scholarly works, business databases, and financial market

information. Researchers can access a wide range of viewpoints, trends, and statistics about the impacts of technology on the financial sectors of Egypt and India because of data collected data.

The value of secondary data resides in its capacity to offer historical context and lay the groundwork for subsequent investigation. It enables academics to examine historical trends and patterns, evaluate shifts in the use of technology, new developments in financial services, and analyse capital market dynamics. Researchers can create a thorough grasp of the long-term effects of technology on these emerging nations' financial systems by looking at the available data (Pandey & Pandey, 2015).

Collecting secondary data has several advantages for the research topic. First, it enables a comprehensive study that considers a variety of factors and indications. Researchers have access to extensive datasets that span a range of technological developments in the financial services and capital markets. This variety of data makes it easier to examine how technology affects many aspects, such as consumer behaviour, market dynamics, legal and political systems, and economic growth.

The capacity to compare results across several research or time periods is another advantage of secondary data. Researchers can find recurring trends or differences by examining data from several sources, which helps to provide a more thorough and trustworthy study. Furthermore, secondary data frequently offers a standard against which to assess the performance, innovation, and acceptance of technology at the present time in Egypt's and India's financial sectors.

3.2.2 Data sources

The sources used to collect the data for this study on the impact of technology on financial services and capital markets in Egypt and India include a wide range of reliable sources. These data sources are essential for carrying out in-depth analysis and comprehending the subject of the research. Governmental organisations in Egypt and India are heavily involved in observing and governing the financial sectors. Their databases, papers, and publications provide information on economic indicators, policy frameworks, financial inclusion programmes, and technology uptake. various sites provide a trustworthy and knowledgeable viewpoint on how technology has affected various nations' financial systems (Kumar, 2018).

The body of knowledge on the intersection of technology and financial services is expanded by academic journals and research articles. They offer academic analysis, empirical investigation, and theoretical frameworks pertinent to the research's subject. These articles provide insightful data and analysis that can be used to comprehend the dynamics and effects of technology in Egypt's and India's financial sectors. An in-depth understanding of the technology environment in the financial services business is provided by industry studies and market statistics from financial institutions, trade groups, and market research companies (Mohajan, 2018). These studies include information on the acceptance of fintech, the use of mobile banking, digital payment systems, investment trends, and capital market performance. They aid in understanding market dynamics and the impact of technology on capital markets and financial services.

Financial institutions, transactions, and market activity are the subject of substantial data collection and maintenance by financial regulatory organisations in Egypt and India including both the statistical and non-statistical data. The use of technology by banks, regulatory practises, and the effects of technology on monetary stability and consumer protection can all be learned from these

datasets. The availability of such information can make it easier to analyse in-depth how technology has affected these nations' regulatory systems. Global financial trends, technological adoption, and economic progress are studied by international organisations including the World Bank, International Monetary Fund (IMF), and International Finance Corporation (IFC). Their databases contain a lot of data that can be used to analyse and assess Egypt's and India's financial systems to those of other countries.

3.2.3 Data analysis

The secondary data gathered from a variety of sources, including academic journals, government papers, and financial market data, will be rigorously assessed for relevance, validity, and dependability. The data's accuracy and usefulness for achieving the research's goals will be evaluated by researchers.

The secondary sources will be mined for pertinent data points, variables, and information for study. Finding certain datasets, metrics, or variables of interest that fit the research questions will be necessary. To maintain consistency and uniformity, the secondary data will be cleaned and transformed after collection. The data will be organised in a structured fashion to rectify any missing or incorrect data points and prepare it for analysis.

To analyse the secondary data, several analytical methods will be used. This involves comparative analysis, inferential statistics, and descriptive statistics. The data will be summarised using descriptive statistics, and correlations between variables can be found and tested using inferential statistics. Data from Egypt and India will be compared using comparative analysis.

The findings and important insights will be interpreted because of the secondary data analysis. Researchers will be able to draw conclusions and present well-supported arguments based on the

analysed data since the findings will be tied back to the research objectives and research questions (Flick, 2015). A complete knowledge of the impacts of technology on financial services and capital markets in Egypt and India will be possible due to the combination of qualitative data analysis and secondary analysis. These analytic techniques make sure that the research goals are met and that insightful conclusions can be drawn from the gathered data, which helps us understand the research issue better. Overall, the data analysis will be based on both the statistical and non-statistical analysis of the data.

3.3 Ethical considerations

It is essential to address and abide by different ethical issues while undertaking secondary research on the impact of technology on financial services and capital markets in Egypt and India. These factors guarantee the conduct of the research in a responsible and ethical manner as well as the defence of the rights and privacy of those participating, both personally and professionally. Researchers must make sure that the secondary data they utilise is anonymised and devoid of any personally identifying information. Researchers should manage the data in a way that safeguards the identities and sensitive information of people or organisations. Data privacy and confidentiality must be respected. When accessing secondary data sources, researchers must respect the intellectual property rights of others.

This involves securing the right permits or licences where applicable, correctly attributing and recognising the data's original sources. To avoid violating the intellectual property rights of others, researchers should abide with copyright laws and rules. Researchers should check to see if any institutional review board (IRB) permits, or study permissions are necessary based on the nature of the secondary data sources. To ensure adherence to the moral requirements and legal restrictions regulating the use of data, institutional rules and guidelines must be followed.

Before employing secondary data sources in a study, researchers should carefully assess their reliability and correctness. To guarantee the accuracy of the results, it is crucial to consider the standing, legitimacy, and methods used to acquire the initial data. It's crucial to disclose any biases or restrictions related to the secondary data in a transparent manner. Researchers need to make sure they correctly credit the sources of the secondary data they used in their research. By including appropriate citations and references, plagiarism should be rigorously prevented. Additionally, it is important for researchers to take care not to falsify the data or change the original aim or significance of the data sources.

Researchers should think about making their own results and data publicly accessible if the secondary data utilised in the research is open to the public or can be shared. This encourages transparency and makes it possible for others to confirm or replicate the findings. Any data exchange must take place in adherence to the terms and conditions established by the original data sources as well as any applicable data protection laws. Researchers must make sure that the secondary data are used for the original data collection's intended purpose. It is crucial to prevent any possible data abuse or misunderstanding that can have negative effects on people or organisations.

3.4 Summary of the chapter

A longitudinal comparison of Egypt and India is the emphasis of the research's qualitative research design. An invaluable insight into the changing dynamics of technology and how it affects financial services can be gained through longitudinal research, which allows for the evaluation of patterns and changes across time. Using interviews, case studies, and document analysis, the qualitative research approach enables in-depth examination while collecting rich and complex data. Secondary data sources, including government papers, scholarly works, business reports, and

financial market data, will be the main sources used for data collecting. These resources include in-depth details on technological adoption, efforts for financial inclusion, frameworks for policy, market trends, and economic data. The use of secondary data guarantees that there is a wide variety of information available for study. Thematic analysis will be used in data analysis. Other than this, quantitative research was also considered to quantify the results and to highlight the correlation in the variables. It included statistical analysis of the secondary resources. Throughout the whole study process, ethical issues are crucial. Key ethical issues covered in the research include protecting data privacy, upholding intellectual property rights, guaranteeing the quality and integrity of data, preventing plagiarism, encouraging data sharing, and utilising data responsibly.

Chapter 4: RESULTS

4.1 Quantitative analysis

In Egypt, the IT market continued to develop rapidly in local currency terms in 2022, expanding by 14.7% year over year. However, due to devaluation, the US dollar value of the Egyptian IT market shrank sharply in 2022, falling from 20.5% growth to a contraction of 6.3%. With the ICT ministry, Samsung Electronics agreed to invest $30 million and hire 500 skilled personnel to build a production line for tables at its site in Beni Suef. This agreement was inked in March 2021. The Egyptian Minister of Education said in March 2022 that starting in September 2022, all tablets provided through the educational system will be made in Egypt. According to Samsung and the government, the facility would also make goods for markets in the Middle East and Africa (BMI, 2023).

The digital plan for 2022–2026 was introduced by the Ministry of Communications and Information Technology in February 2022. The strategy placed a major focus on the development of human capital, with a target of 215,000 technical trainees working in the outsourcing industry by 2026 and a training budget for FY2021/22 set at EGP1.1 billion. The Information Technology Industry growth Agency created the plan, which includes goals for ecosystem growth and worldwide marketing of Egypt as a site for outsourcing in addition to talent development. Data centres were a major area of investment during the 2020–2023 period due to Egypt's domestic growth and its vital position for submarine cable networks as a choke point for cables connecting the Mediterranean Sea and Indian Ocean (BMI, 2023).

In 2022, Telecom Egypt hosted Egypt's first international internet exchange at its Regional Data Hub, a Tier-III facility built in 2021 that will link to 18 underwater cables by 2025, thanks to a

cooperation with AMS-IX. Additionally, there has been international investment in Egyptian data centre. A significant investment was announced in the data centre sector in 2023 when Gulf Data Hub and Elsewedy Data Centres collaborated to pledge USD 2.1 billion over five to seven years for the construction of three data centre campuses in the nation that would serve as the largest complex in Africa. Khazna Data Centres, a vendor from the UAE, and Benya Group, an Egyptian corporation, together announced intentions to invest USD250 million to construct a data centre in Cairo in May 2023 (BMI, 2023).

This comes after Egyptian telecom firms announced investments. Orange Egypt was given a contract in January 2020 to run a data facility at the New Administrative Capital. Leading vendors in the IT services industry continued to get a steady stream of contracts in 2022 as a result of public sector modernization. With modernization aiming to broaden the tax base by reaching the informal economy and making it simpler for citizens to interact with the tax authorities, IBM won a consulting contract with the Egyptian government in June 2022 to work on the country's digital tax system reform. Giza solutions won a bid to supply intelligent traffic and transport control solutions in the New Administrative Capital in August 2022 (BMI, 2023).

Due to patterns in rapidly rising prices and currency devaluation, the short-term forecast for Egypt's IT sector declined in this quarterly report. The Egyptian IT market is anticipated to expand by 27.3% in local currency in 2023, however this would result in a 29.3% fall in the value of the US dollar, with the market reaching a value of EGP112.3bn (USD3.3bn) (BMI, 2023).

Furthermore, due to the high level of technology used in banking and insurance, as well as the fact that they will profit from economic growth, financial services have a promising future. In areas including mobile payments, banking platforms and applications, cyber security, back-office systems, cloud computing, and blockchain, individuals anticipate investment to increase

throughout the region. Since Egypt's economy is already more mobile-focused than PC-focused, there will be a particular potential in the provision of mobile-based services, such as payments, credit, and account management. With just around 10% of the population owning a credit card, Egypt has historically used credit less often than the majority of the Middle East and North Africa. However, Santander Bank reports that the number of cards is increasing at a rate of 40% yearly (BMI, 2023).

There are already 177 FinTech & FinTech-enabled companies and Payment Service Providers (PSPs) in the Egyptian market delivering cutting-edge solutions. Of those, 139 firms offer only FinTech solutions, while 38 offer both technical and integrated financial solutions. Due to the growing need for FinTech and FinTech-enabled products in the Egyptian market, innovative startups and PSPs have multiplied by 5.5 during the past five years. Approximately 67% (113) of the 168 companies with headquarters in Egypt are situated in Cairo, 30% (50) are based in Giza, and the remaining 3% (5) are dispersed among other governorates. Furthermore, 17 of the 113 startups and PSPs with headquarters in Cairo also have other locations in other governorates. Currently, three sub-sectors account for over 60% of the 177 startups and PSPs operating in Egypt's FinTech market. To give more specifics, Lending & Alternative Finance, B2B Marketplace solutions, and Payments & Remittance each account for 11% and 10% of the FinTech market, respectively (FinTech Egypt, 2023). Over the past three years, 3 sub-sectors have dominated FinTech investments in Egypt: Payments & Remittance, B2B Marketplace, and Lending & Alternative Finance. The latter will account for 79% of all investments in 2022. Only 21% of the investments for 2022 have gone to the other sub-sectors. Regarding the existence of venture capital firms, angel investors, and accelerators and incubators, Egypt offers a distinctive perspective. A study of 36 investors who fund creative and skilled Egyptian FinTech & FinTech-enabled firms

has been conducted. Whereas just 4% are angel investment networks, 16% are accelerators, and 80% are venture capitalists. Egyptians made up the majority of investors' composition from 2010 to 2015. But starting in 2016, Egypt has seen an increase in the number of regional investors from the MENA area. By 2020, more foreign investors had entered the Egyptian market, particularly those from the United States. Most of the fin-tech focused funds are between $10 million and $50 million, and Egyptian investors make up a large portion of this size range. Regional & international investors make up the majority of investors in funds with size ranges larger than $50M (75%). The majority (73 percent of all investments made in 2022) of the money allocated by the surveyed investors go to Egyptian FinTech & FinTech-enabled firms. The percentage of fintech businesses with female co-founders in the portfolio (20%) is higher than the overall average for startups in the portfolio (17%) in all industries. The percentage of funding allocated to FinTech businesses with female co-founders in the portfolio (34%) is greater than the average funding allocated to startups with female co-founders in all sectors (26%) (FinTech Egypt, 2023).

24 applications were submitted for 10 distinct FinTech trends in Cohort 2 of the Central Bank of Egypt's Regulatory Sandbox, which had an open-themed cohort for diverse FinTech trends. Given that the traditional ROSCA idea is extremely well-liked in Egypt, Rotational Saving and Credit Association (ROSCA)1 was selected as the theme for cohort 2. Four candidates were chosen to participate in the Regulatory Sandbox; of those four, MoneyFellows and Dayrah successfully completed the preparatory stage and are currently testing their ROSCA services there (FinTech Egypt, 2023).

Egypt's FinTech Startup ecosystem achieved a significant milestone in 2022. Despite only the past 12 months seen global headwinds in FinTech investments. Egypt's FinTech and FinTech-enabled firms will get investments totaling $437.7 million in private equity through 2022. The amount of

venture capital investments has also increased dramatically, hitting a new high of $358.8 million. These investments have multiplied by 28.7 times in just 3 years, suggesting that this year broke even more records. FinTech was regarded as one of the most resilient industries throughout this year, and the significance and spread of FinTech companies have heightened this effect. Five years ago, there were just a few PSPs and startups in the Egyptian FinTech industry (FinTech Egypt, 2023).

Furthermore, in India Bangalore, Chennai, Hyderabad, Delhi, Mumbai, and Kolkata are the principal centres for the IT export industry. Due to its high rate of IT export (77% of India's net IT export revenue), Bangalore has acquired the moniker "The Silicon Valley of India." Business Process Outsourcing (BPO) and Domestic and IT Export are the two primary categories into which the IT-ITES industry can be divided. Under the direction of the IT-ITES industry, the BPO sector has experienced spectacular growth. The IT-BPO business in India generated $100 billion in total income in FY 2012, of which 69.1 billion was generated domestically and 31.7 billion was exported, according to NASSCOM. The sector has a high employment rate as well (Varun, 2020).

The anticipated 230,000 jobs created in the fiscal year 2012 gave 2.8 million people direct work and 88.9 million people indirect employment nationwide. The top five Indian outsourcing firms are TCS, Cognizant, Infosys, Wipro, and HCL Technologies, according to a Gartner survey. 2013 (Joydeep D). Information technology (IT) companies get the majority of their goods and services from India, which accounts for around 52% of the US$124–130 billion market. About 10 million Indians are employed in the sector, which continues to make a substantial contribution to the social and economic development of the nation (Mannar, 2019).

Over the years 2000 to 2013, the IT-BPM market in India expanded at a compound annual growth rate (CAGR) of 25%, which is 3–4 times greater than the worldwide IT-BPM expenditure. It is

predicted that the market would increase at a CAGR of 9.5% to US$ 300 billion by 2020. According to a survey by the Boston Consulting Group (BCG) and Internet and Mobile Association of India (IAMAI), India's online economy reached Rs 10 trillion (US$ 161.26 billion) before the end of the last decade for around 5% of the nation's gross domestic product (GDP). India has the third-largest internet user base in the world with 300 million users, and there are 100 million smartphone and social media users in the country (Tiwari, 2022).

The main factors driving India's data centre co-location and hosting market's continuous expansion are the country's growing e-commerce sector and rising internet usage. According to research company corporation McKinsey, the 'Digital India Initiative', which encouraged the use of essential technologies across industries, will help increase India's gross domestic product (GDP) by US$ 550 billion to US$ 1 trillion by 2025. India and the US have decided to jointly investigate prospects for cooperation on putting India's ambitious Rs. 1.13 trillion ($18.22 billion) "Digital India Initiative" into action (Kaur & Mir, 2022).

To rebrand Hyderabad as a technological destination, the Telangana government has started building on the T-Hub technology incubator. The International Institute of Information Technology-Hyderabad (IIIT-H) campus would get an initial investment from the state government of Rs 35 crore (US$ 5.64 million) to create a 60,000 square foot area, dubbed the largest start-up incubator in the nation. When finished, the project is expected to house 1,000 start-ups, making it the largest start-up incubator in the whole globe. Bengaluru was the fifth-largest worldwide receiver of venture capital (VC) investments in 2014 with a total of US$ 2.6 billion, demonstrating the thriving startup environment there. India was the recipient of the third-highest amount of venture capital financing, totaling US$4.6 billion (Gupta, 2022).

Furthermore, Industry Body for Software Services NASSCOM is optimistic about the development of India's IT industry. "'newer geographies' is estimated to have doubled their contribution to India to 20% in 2020" according to NASSCOM. According to NASSCOM estimates, the Indian IT sector produced US$225 billion in pure domestic and export revenues in past years. The landscape of the global IT and ITES industry is rapidly shifting, and it is now entirely up to the Indian IT sector to adapt to this shifting landscape. India is still a major brand in the global IT and ITES sector, after all.

India still has a low total IT service penetration, which presents significant potential prospects. India is a sizable emerging market with slowly increasing revenues and an expanding population, which presents sellers with ripe, low-hanging fruit. Even in government services and organisations, IT solutions are not widely used. The main prediction is that India would outperform many economies in the Asia-Pacific region throughout extended periods of high growth rates, underpinned by significant investments from international multinational corporations and tech giants. As the economy makes a strong comeback from the recession in 2021, sector performance will improve. Currently, it is expected the IT industry to increase at an annual rate of 9.9% between 2021 and 2025, with total spending expected to reach INR4.7 trillion (USD56.0 billion) by that year (Al Sarwai et al., 2020).

Rising disposable incomes will be the primary driver of private consumption growth, which is anticipated to increase from a projected 58.0% of GDP in 2020 to 59.9% of GDP by 2025. Over the next five years, private consumption will continue to be a major factor in India's IT spending. The growth of yearly income and the overall savings rate will both increase as the active population grows more quickly than the dependent population, encouraging IT market consumption. However, long-term tightening fiscal and monetary circumstances can cause business confidence

to decline. Additionally, as customers are still quite price-sensitive, this can result in reduced spending from them (Fatmawatie & Endri, 2022).

4.2 Qualitative analysis

4.2.1 Contribution of technology

The current study especially focused on the situations of Egypt and India to evaluate how technology has impacted the financial services industry and how this has affected economic growth in those two emerging countries as a sample of the emerging economies space. This research aims to provide insight on the transformational potential of technological breakthroughs and their consequences for emerging countries by examining the influence of technology on several sectors of financial services.

According to the previous research of Asif et al. (2023), technology has advanced significantly in emerging countries, especially in the financial services industry. Innovative financial technologies, often known as fintech, have emerged as a result of the widespread use of mobile devices, internet access, and digital infrastructure. Beck (2020) claimed that these technical advancements include a wide range of services, including automated investing tools, online lending platforms, mobile banking, and digital payments.

One of the main findings of this study is that, Sahay et al. (2020) claimed that in both Egypt and India, technology has been essential in enhancing access to financial services. Mhlanga (2020) found that teaching marginalised people with traditional banking services can be difficult, especially for individuals living in rural locations. Though formerly unbanked or underbanked people can now access banking and financial solutions because of the development of technology-

driven financial services (Salman & Nowacka, 2020). By making it simpler for customers to make transactions, get credit, and manage their accounts, the spread of mobile banking applications and digital payment systems has promoted financial inclusion (Morgan, 2022).

Additionally, Kaur et al. (2021) claimed that technology has improved the effectiveness of financial services in the banking industry. The time and effort needed for different banking activities have been greatly reduced thanks to automated processes like online account opening and digital verification (Park & Kim, 2020). Additionally, the usage of actual cash has been reduced and transactions have been more efficient thanks to digital payment methods, saving both service providers and customers money. These efficiency improvements have had a significant effect on the financial services industry's overall productivity, which has enhanced economic performance (Chen et al., 2021).

According to the research's conclusions, technology has been crucial in enhancing financial stability and security (Agarwal et al., 2020). The use of advanced data analytics, artificial intelligence (AI), and machine learning algorithms has improved the financial services industry's capacity for risk assessment, fraud detection, and regulatory compliance (Ma et al., 2020). By reducing incidences of financial fraud, money laundering, and other illegal actions, the financial sector has gained more trust and confidence (Ali & Oudat, 2021).

The analysis shows a distinct connection between Egypt's and India's economic progress and the role technology has played in financial services. Financial services' availability, effectiveness, and stability have a big impact on the expansion and prosperity of the economy (Ahmad et al., 2023). The results show that the financial sector's adoption of technology has promoted more investment, entrepreneurship, and job creation, which has had a favourable influence on GDP growth, employment rates, and attempts to reduce poverty.

The findings of this study highlight the significant contribution that technology has made to the financial services industries in Egypt and India, as well as the following effects that this has had on economic growth. Access to financial services has increased thanks to technological advancements, which have also increased operational effectiveness, boosted financial stability, and supported general economic growth. These results underline how crucial it is to create an atmosphere that encourages technology developments in the financial services industry, especially in emerging countries, so that they can fully contribute to economic growth.

4.2.2 Technology contribution in Egypt’s financial services and capital market

By the end of 2019, there were more than 100 million mobile users in Egypt, constituting a sizable user base for mobile banking services (Mpofu, 2022). Egypt's e-commerce industry was expanding significantly, with online sales rising by 25% in 2019 over the previous year to reach over $3.4 billion. Around 22% of Egyptians utilised digital payment methods as of 2019, showing a move away from cash-based purchases. Trading became easier and more effective in 2017 with the launch of EGX Xstream, the electronic trading platform for the Egyptian Exchange (Houssein et al., 2022). By 2019, this platform has processed more than a million deals. By 2020, roughly 30% of all deals on the Egyptian Exchange would be carried out using algorithmic systems, making algorithmic trading a substantial contributor to the exchange's trading activity. By 2019, there were over 15 million registered users of mobile money services, providing financial inclusion for a sizeable section of the population. By 2019, more than 15 million digital ID cards were being issued as a consequence of the Egyptian government's attempts to deploy digital identity systems. By 2018, there were over 1.9 million active borrowers using microfinance institutions in Egypt, giving a sizable number of people access to financing. According to estimates, automation and digitalization initiatives reduced operating expenses by 20–30% as a result of the banking sector's

use of technology. Around $10 million in funding was obtained by fintech businesses in Egypt in 2019, demonstrating a rise in the sector's popularity and level of investment. A more precise prediction of economic development was made possible by the application of data analytics and technologically assisted insights. The anticipated rate of GDP growth for Egypt in 2019 is 5.6% (Islam et al., 2023).

With an emphasis on the capital market, the investigation sought to investigate the precise ways in which technology has impacted and reshaped Egypt's financial environment. According to the research's results, Khalifa et al. (2021) claimed that Egypt's financial services industry has undergone a substantial digital change as a result of technological improvements. Banking, payments, lending, and investing are just a few of the areas of financial services that have been transformed using digital platforms and applications (Badran, 2019). For both consumers and organisations, the rise of mobile banking applications, online trading platforms, and digital payment methods has made it easier and more secure to access financial services (Naz et al., 2022).

According to the research, technology has been crucial in streamlining procedures and increasing productivity in Egypt's capital market and financial services (Han & Gu, 2021). Trade execution has been sped up and market liquidity has been improved thanks to automated trading systems, algorithmic trading, and real-time market data analysis. Additionally, technology-driven approaches to trade settlement, clearing, and risk management have expedited processes, lowered manual mistakes – and raising overall capital market efficiency (Candy et al., 2022).

The empirical research shows how technology has improved market access and transparency in Egypt's capital market and financial services. The development of electronic communication networks (ECNs) and online trading platforms has made it simpler for investors to trade securities from anywhere in the world (Noonan, 2022). This has democratised access to the financial market

and created chances for wider involvement. In addition, the adoption of sophisticated reporting and surveillance systems has increased market transparency, allowing investors and authorities to monitor trade activity more efficiently (Massei, 2023).

The research emphasises the function of financial technology innovation in Egypt's capital market and financial services. New fintech businesses have appeared, offering cutting-edge goods and services including crowdfunding platforms, robo-advisory services, and peer-to-peer lending platforms (Hussein, 2020). These fintech innovations have opened up new channels for financial inclusion, investment diversification, and capital raising. According to the analysis, the development of the fintech industry could encourage business ventures, draw in investment, and foster economic expansion in Egypt (Kheira, 2021).

The analysis also notes certain difficulties in integrating technology into Egypt's capital market and financial services (Zarrouk et al., 2021). They consist of infrastructure development, legal frameworks, cybersecurity hazards, and data privacy issues. Further developments will depend on addressing these issues and utilising technology in the financial industry to its fullest extent (Elkmash, 2022).

In conclusion, the research shows how important technology has been to Egypt's financial services and capital market. The financial industry has benefited from the digital revolution in terms of increased efficiency, wider market access, and promoted innovation. The findings highlight the need for ongoing investments in technical infrastructure, legislative frameworks, and talent development to fully realise technology's promise for accelerating the growth and development of Egypt's financial services and capital market.

4.2.3 Technology contribution in India’s financial services and capital market

According to the research's results, India's financial services industry has experienced a substantial digital transition as a result of technological improvements (Bagale et al., 2021). Different facets of financial services, such as banking, lending, investing, and capital market operations, have been revolutionised by the introduction of digital platforms, mobile banking, and online payment systems. For people and companies in India, these technology developments have increased accessibility, convenience, and efficiency in financial operations (Modgil et al., 2022).

According to the research, technology has been essential in streamlining procedures and increasing productivity in India's financial services and capital market. High-frequency trading, algorithmic trading, and automated trading systems have improved market liquidity and expedited transaction execution. Additionally, technology-driven approaches to risk management, settlement, and clearing have decreased manual mistakes and increased overall operational effectiveness in the capital market, as per the claim of Kumar (2023).

The research shows how technology has improved financial inclusion and increased market access in India's capital market and financial services. Mobile banking, digital wallets, and payment gateways are just a few of the ground-breaking solutions made possible by the increasing use of mobile phones and internet access (Setyowati, 2020). These technologies have made it possible for everyone, including those living in rural and isolated places, to access a variety of financial services, make investments on the stock market, and engage in economic activity (Chen et al., 2021).

The research emphasises the significance of disruptive fintech developments for India's capital market and financial services. Fintech businesses have appeared, offering cutting-edge goods and services including online investing platforms, robo-advisory services, and peer-to-peer lending

systems. These fintech innovations have opened up new channels for capital raising, enhanced investment possibilities, and raised capital market transparency. According to the empirical research, the development of the fintech industry can promote financial inclusion, encourage entrepreneurship, and boost economic growth in India (Asif et al., 2023).

The research also recognises the significance of a favourable regulatory environment for leveraging technology in India's financial services and capital market. Although technology has created many opportunities, it also presents problems about consumer protection, data privacy, cybersecurity, and regulatory compliance (Sahoo et al., 2023). Maintaining the beneficial effects of technology on India's financial services and capital market will depend on addressing these issues and fostering an atmosphere that fosters technological innovation (Muthukannan et al., 2020).

The results of this study emphasise the enormous role that technology has played in India's financial services and capital market. The financial industry has benefited from increased efficiency, more market access, and innovation thanks to the digital transition. The findings show that to effectively capitalise on the promise of technology to propel future growth and development in India's financial services and capital market, investments must be made in technical infrastructure, regulatory frameworks, and talent development on a continuing basis (Perwej, 2020).

4.3 Influence of technology

The results of this study show that, in both Egypt and India, technology has been crucial in fostering financial inclusion and increasing access to financial services. Digital platforms, mobile banking, and fintech solutions have made it easier for people and companies to access easy and

cheap financial services, especially in underserved regions. Previously unbanked or underbanked groups can now join in formal financial institutions, giving them the ability to manage their finances, save money, and get credit (Kuyoro & Olanrewaju, 2020).

The research emphasises how technology has had a substantial influence on increasing financial service efficiency and lowering associated costs. Processes have been expedited through automation and digitalization, which has eliminated laborious paperwork and minimised human error. Technology-driven solutions have also sped up transaction times, resulting in quicker and more convenient banking services. These efficiency improvements have reduced costs for customers and financial service providers, boosting productivity and promoting economic growth (Kumar, 2023).

The research shows how technology has improved market openness in Egypt's and India's financial services industries. Real-time access to information has been made possible by online platforms and technological tools, enabling investors to make wise judgements. Additionally, the use of technology like blockchain has improved transaction security and transparency, lowered the risk of fraud, and boosted confidence in the financial markets (Pazarbasioglu et al., 2020).

The research emphasises how technology has encouraged entrepreneurship and creativity in the fintech sector in Egypt and India. Disruptive solutions including peer-to-peer lending platforms, robo-advisory services, and digital payment systems have all been made possible by the advent of fintech businesses. These inventions have boosted economic growth, attracted investment, and opened up new business prospects. Additionally, the accessibility of digital platforms has increased the potential for development and job creation for small and medium-sized businesses (SMEs), as well as their capacity to obtain finance (David & Williams, 2022).

The research recognises several difficulties related to the impact of technology on financial services and economic growth. Cybersecurity hazards, data privacy issues, legal frameworks, and digital literacy are some of these difficulties. To fully use technology and ensure its beneficial impact on Egypt's and India's financial sector and economic growth, it will be essential to address these difficulties (Chen et al., 2021).

The results of this study highlight the enormous impact of technology on financial services and economic growth in Egypt and India, respectively. Enhancing financial inclusion, increasing productivity, boosting innovation, and encouraging entrepreneurship have all been made possible by technology. To maximise its beneficial effects and ensure sustainable economic growth in these developing countries, it will be essential to eliminate obstacles and create an atmosphere that encourages technology adoption.

4.3.1 Influence of Technology on the financial services & capital market of Egypt

The results of this study suggest that technology has been a key factor in Egypt's financial services' transition to the digital age. Different facets of financial services have been revolutionised by the introduction of digital platforms, mobile banking, and online payment systems, allowing people and companies to interact more quickly and conveniently. These technology developments have made it easier for more people to obtain banking services and take part in the established financial system, facilitating greater financial inclusion (El-Chaarani, 2019).

According to the research, technology has increased Egypt's capital market operations' efficiency and brought about automation. Trade execution has been expedited and market liquidity has been improved because to automated trading systems, algorithmic trading, and real-time market data analysis (Saleh, 2019). In the capital market, technology-driven solutions for settlement, clearing, and risk management have also decreased manual mistakes and increased operational

effectiveness. These developments have led to quicker and more precise transaction settlement procedures, which have improved the market's overall efficiency (Kamel, 2020).

The research shows that technology has facilitated higher investor engagement and expanded market accessibility in Egypt's financial services and capital market. Electronic communication networks (ECNs) and online trading platforms have made it simpler for investors to trade securities from anywhere in the world (Zafar et al., 2019). Due to the increased market access, more investors, particularly retail investors, are now able to take part in capital market activity. Additionally, investors now have access to more thorough and timely data thanks to the availability of real-time market information and research tools, enabling well-informed investment decisions (Alaoui Mdaghru et al., 2021).

The research emphasises how technology has improved investor trust and market transparency in Egypt's financial services and capital market. Market supervision and transparency have improved as a result of the use of cutting-edge reporting systems, monitoring techniques, and regulatory technology. This has aided in market abuse detection, monitoring trade activity, and maintaining regulatory compliance. These technology developments have helped draw domestic and global investors to the Egyptian capital market by strengthening market integrity and fostering confidence.

According to the analysis, fintech innovation has had a substantial influence on the growth of Egypt's capital market. Online investing platforms, robo-advisory services, and crowdfunding platforms are just a few of the cutting-edge goods and services that fintech businesses have offered. These fintech solutions have increased access to financing, diversified investment possibilities, and supported the expansion of small and medium-sized businesses (SMEs). Fintech has been instrumental in promoting the growth of Egypt's capital market and entrepreneurial activity by

offering alternative financing options and utilising technology-driven solutions (Abdelfattah, 2023).

The results demonstrate the significant impact of technology on Egypt's financial services and capital market. The digital transition has boosted innovation in fintech, expanded market accessibility, and improved efficiency. These developments have helped Egypt's capital market grow as well as its investor involvement and financial inclusion. Addressing issues with cybersecurity, data privacy, regulatory frameworks, and promoting digital literacy within the financial are crucial if technology is to be used to its fullest potential.

4.3.2 Influence of Technology on the financial services and capital market of India

The rise in digital transactions and India's economic expansion were strongly correlated, with a correlation value of 0.85 (Ozili, 2022). India's GDP expanded by 7.5% annually while digital payments increased by 20% annually. Higher financial access was strongly correlated with higher mobile banking usage, as indicated by the correlation value of 0.90 (Hakimi et al., 2023). The number of people without a bank account decreased by 15% annually while mobile banking users grew by 25% annually. The correlation value of 0.75 showed how closely the expansion of online trading platforms and market participation are related. Online trading account growth of 30% was associated with a 20% rise in daily trading volumes (Berg et al., 2022). The tight connection between the Jan Dhan Yojana effort and banking penetration was shown by a correlation value of 0.88. Each year, 30 million new accounts are established, increasing banking penetration by 12%. The acceptance of digital payments and financial access are significantly correlated, as indicated by the correlation value of 0.82 (Dalton et al., 2023). Rural residents' access to formal financial services increased by 10% annually while the number of digital payment users grew by 18% annually. Microfinance institutions had a significant association with disadvantaged

neighbourhoods with a correlation value of 0.92. Each year, the number of people who are financially excluded decreased by 25% because of microfinance outreach to disadvantaged communities. The correlation value of 0.78 showed the close connection between internet trading and the involvement of ordinary investors. Retail investors' share of daily trading volumes surged by 10% while online trading accounts rose by 15%. The strong association between algorithmic trading and trading efficiency was underlined by the correlation coefficient of 0.85 (Roy, 2022). The number of algorithmic trades increased by 20%, while the average trade execution time dropped by 15%. IPO activity showed a strong association (0.72 correlation coefficient) to investor confidence. Positive investor mood was shown by a correlation between a 30% increase in IPOs and a 25% gain in the NSE Nifty index (Roy, 2022).

The high relationship between operational effectiveness and cost savings was shown by the correlation coefficient of 0.87. Each year, operating expenses were reduced by 20% as a consequence of the use of technology. Fintech innovation demonstrated a substantial relationship between consumer uptake and a correlation coefficient of 0.88. Customers adopted new fintech solutions at a rate of 25% more each year as they became available. The substantial association between digital lending platforms and credit availability was shown by a correlation value of 0.82. For underprivileged people and small enterprises, loan availability increased by 30% as a result of the advent of digital lending platforms (Rohe et al., 2023).

The results of this study show that technology has been a key factor in India's financial services industry's digital transformation. Different facets of financial services have been revolutionised by the widespread use of digital platforms, mobile banking, and online payment systems, which have increased transaction accessibility, security, and convenience (Thach et al., 2021). These technology developments have aided in financial inclusion by making it possible for people and

companies to access a variety of financial services, such as banking, investing, and capital market operations, even when located in remote locations (Imerman & Fabozzi, 2020).

The research emphasises how technology has automated and enhanced the effectiveness of capital market operations in India. Trade execution has been expedited, market liquidity has been increased, and price discovery has been improved with the advent of automated trading systems, algorithmic trading, and real-time market data analysis. Additionally, technology-driven risk management, settlement, and clearing solutions have sped up the transaction process and decreased manual mistakes, improving the capital market's overall operating efficiency (Machkour & Abriane, 2020).

The research shows that technology has greatly improved market accessibility and made it easier for individual investors to participate in India's capital market and financial services. A larger spectrum of investors can now participate in the market thanks to the ease with which investors can purchase and sell securities made possible by online trading platforms, smartphone apps, and electronic communication networks (ECNs). Retail investors are now better equipped to make educated investment decisions and actively engage in the capital market thanks to the availability of real-time market information, research tools, and investing education resources (Hasan et al., 2022).

The investigation shows that technology has been crucial in increasing investor trust and market transparency in India's financial services and capital market. To ensure compliance with rules and identify market abuses, enhanced reporting systems, surveillance techniques, and regulatory technology have improved market supervision. These technological developments have enhanced transparency, which has boosted investor confidence and drawn both domestic and global investors to the Indian stock market.

The research emphasises the impact of financial technology innovation on the growth of India's capital market. Peer-to-peer lending systems, robo-advisory services, and online investing platforms are just a few of the innovative solutions that fintech businesses have offered. The emergence of startups and small businesses has been encouraged by these fintech solutions, which have also democratised access to money and diversified investment possibilities. Chouhan et al. (2023) claimed that technology-driven fintech innovation has been crucial in promoting India's capital market growth, entrepreneurship, and investment.

The results of this study highlight the substantial impact of technology on India's financial services and capital market. The digital transition has boosted innovation in fintech, expanded market accessibility, and improved efficiency. These developments have helped India's capital markets flourish and promote financial inclusion among individual investors. To effectively use the potential of technology in the financial industry, it is crucial to solve issues relating to cybersecurity, data protection, regulatory frameworks, and digital literacy.

4.4 Impacts on economic development

The results of this study suggest that both Egypt and India's economies have benefited significantly from technology. Productivity, efficiency, and market competitiveness have all grown as a result of the technology's incorporation into the financial services and capital market sectors. Technology has made entrepreneurship easier, increased investment opportunities, and led to higher economic production by simplifying procedures, lowering transaction costs, and increasing access to financial services (Dal Mas et al., 2020).

According to the research, technology has benefited financial inclusion, which in turn has a favourable influence on economic growth. Prior underprivileged communities now have greater

access to financial services thanks to the increased usage of digital platforms, mobile banking, and fintech solutions. Technology has empowered people and small enterprises, boosted economic involvement and opened up prospects for wealth creation by supplying easy and inexpensive financial services allowing access to credit, and enabling safe digital transactions (Mpofu, 2022).

The research shows how technology has promoted entrepreneurship and creativity, fueling economic growth in Egypt and India. Traditional financial service patterns have been shaken by the rise of fintech companies and digital platforms, opening up possibilities for new business models and solutions. The development of startups, SMEs, and innovation-driven businesses, which support job creation, economic diversity, and overall economic growth, has been facilitated as a result (Bakry et al., 2022).

The research emphasises how technology has helped both countries' financial markets evolve in a good way. The capital market is now more efficient, transparent, and investor-friendly thanks to technological adoption. Online trading platforms, real-time market data analysis, and automated procedures are examples of technological advancements that have attracted both local and foreign investors, enhanced market liquidity, and facilitated capital formation. A strong and efficient capital market promotes economic expansion by directing funds towards profitable investments and offering a means for companies to obtain money (Yang, 2023).

In both Egypt and India, technology has been instrumental in overcoming a number of development-related problems. Technology has contributed to a decrease in income inequality and a reduction in poverty through promoting financial inclusion. By making it possible for greater risk management and fraud prevention procedures, it has also aided in financial stability. Technology use in financial services has also promoted effective resource allocation and enhanced governance, supporting overall economic growth (Feng et al., 2022).

In conclusion, the research shows how technology has positively impacted Egypt's and India's financial services and capital market sectors' economic growth and development. Technology has promoted capital market development, accelerated innovation and entrepreneurship, boosted financial inclusion, boosted economic growth, and solved development issues. Policymakers should concentrate on fostering a climate that encourages technology adoption, invests in digital infrastructure, supports innovation, and provides fair access to technology-driven financial services to maximise these effects (Chen et al., 2021).

4.4.1 Factors impacting technology adoption to drive growth in Egypt

According to the research's results, Egypt's financial services and capital market are significantly impacted by the regulatory environment and governmental assistance. Technology adoption is supported by clear and helpful policies that deal with concerns about data privacy, cybersecurity, and online transactions. The use of technology in the financial industry can also be facilitated by regulations that stimulate innovation, boost fintech growth, and encourage cooperation between regulatory bodies and technology providers (Bayram et al., 2022).

According to the research, connection and the quality and quantity of digital infrastructure are significant determinants of how quickly technology is adopted. To use technology effectively in financial services and capital market activities, it is essential to have adequate internet connection, dependable telecommunications networks, and access to cost-effective high-speed internet services. The adoption of technology can be hampered by a lack of digital infrastructure and connection issues, especially in rural or underserved areas (Alaassar et al., 2023).

The research emphasises the value of developing digital skills and literacy in promoting technology adoption. Successful adoption depends on people's ability to use digital tools and comprehend technological ideas, including financial service providers and market players. The

successful use and utilisation of technology in financial services and the capital market can be supported by measures to improve digital literacy, offer training programmes, and encourage skill development (Langley & Leyshon, 2023).

The investigation highlights security and trust as two important determinants of technology adoption. Technology adoption in financial services and capital market activities can be hampered by worries about data privacy, cybersecurity, and fraud protection. To foster confidence and remove security-related barriers to technology adoption, strong security measures, efficient risk management frameworks, and consumer protection are essential (Rupeika-Apoga & Thalassinos, 2020).

According to the research, cost factors and prospective returns on investment (ROI) have an impact on how technology is used in Egypt's financial services and capital market. Financial institutions and industry players compare the costs of implementing new technology, such as infrastructure, software, and training, against the expected benefits and return on investment. The decision-making process can be strongly impacted by aspects of technological solutions including affordability, scalability, and cost-effectiveness (Al Busaudu & Al-Muharrami, 2020).

The research finds that organisational culture and methods of change management are significant determinants of technology uptake. Technology adoption can be facilitated by financial institutions', market players', and industry stakeholders' readiness to accept change, adjust business practises, and promote an innovative culture. Technology deployment and use success depend on effective change management tactics, which include stakeholder involvement, training, and communication (Rane et al., 2021).

4.4.2 Factors impacting technology adoption to drive growth in India

According to the research's results, India's financial services and capital market are highly impacted by the regulatory environment and policy framework. Technology adoption is supported by clear and helpful legislation that deal with concerns like data privacy, cybersecurity, and online commerce. The use of technology in the financial industry can also be facilitated by regulations that stimulate innovation, boost fintech growth, and encourage cooperation between regulatory bodies and technology providers (Bayram et al., 2022).

According to the research, connection and the quality and quantity of digital infrastructure are significant determinants of how quickly technology is adopted. For technology to be used effectively in financial services and capital market activities, there must be broad access to inexpensive, dependable internet services as well as to high-speed internet. Particularly in distant or underdeveloped locations, a lack of digital infrastructure and connection issues can present problems and impede the adoption of new technologies (Feyen et al., 2021).

The research emphasises the value of developing digital skills and literacy in promoting technology adoption. Successful adoption depends on people's ability to use digital tools and comprehend technological ideas, including financial service providers and market players. The efficient use and utilisation of technology in financial services and the capital market can be supported by initiatives aimed at improving digital literacy, offering training programmes, and encouraging skill development.

According to the research, technology adoption in India's financial services and capital market is influenced by cost factors and possible returns on investment. Financial institutions and industry players compare the costs of implementing new technology, such as infrastructure, software, and training, against the expected benefits and return on investment. The decision-making process can

be greatly influenced by aspects of technological solutions including affordability, scalability, and cost-effectiveness.

4.4.3 Impact of technological adoption on Egypt and India economic growth

The technology has and should continue to help these economies in integrating the unofficial economy into the official economy and hence should help expand the economy size, its real dynamics and interactions, government revenues and hence development, and better deal with existing distortions in resources allocations. This of course comes in addition to other benefits in the dimensions of National and social security nets.

The results of this study show that the adoption of technology has significantly improved productivity and efficiency in many areas of the Indian economy. Automation, simplified operations, and improved operational efficiency have all been made possible by the integration of technology, notably in sectors like manufacturing, services, and agriculture. The introduction of technology has increased productivity levels and contributed to total economic growth by decreasing the need for human labour, increasing output per unit of input, and optimising resource allocation (Gao et al., 2022).

According to the research, the use of new technologies has encouraged entrepreneurship and innovation, two important factors in economic growth. In India, the availability of cutting-edge technology, digital platforms, and informational access has fostered innovation and the growth of startups. Fintech, e-commerce, and other technology-driven solutions have created new prospects for company growth, employment, and economic diversification, resulting in increased rates of economic growth (Zhao et al., 2022).

The research shows that the deployment of technology has been essential in fostering financial inclusion and increasing access to financial services in India. Banking and financial services are now available to previously disadvantaged communities because to the development of digital platforms, mobile banking, and fintech solutions. People and companies can now acquire credit, engage in the official financial system, manage their accounts, and conduct digital transactions thanks to the enhanced accessibility. The development of financial services has raised consumption, sparked economic growth, and spurred economic activity (Khan et al., 2020).

The analysis emphasises the economic sector and industry transformation caused by the adoption of new technologies in India. Due to technological improvements, sectors including information, telecommunications, e-commerce, and digital services have grown quickly. By offering services enabled by technology, generating job opportunities, and encouraging innovation and investment, these industries have not only directly contributed to economic growth but also served as catalysts for growth in other areas (Bagale et al., 2021).

According to the research, embracing technology has improved India's ability to compete internationally and facilitated commerce. Cross-border trade has been aided by the advent of e-commerce, digital platforms, and online marketplaces, allowing Indian firms to access foreign markets and customers. Additionally, the ease of doing business and lower transaction costs due to technology-enabled improvements in logistics, supply chain management, and digital payment systems have increased the competitiveness of Indian goods and services on the international market (Sharma et al., 2021).

The research finds that India's growth of its human capital has benefited from the embrace of technology. The need for technological know-how and digital proficiency has grown, which has caused an emphasis on technology-related education and skill development. The emergence of a

knowledgeable workforce with the ability to use technology has improved productivity, innovation, and general economic growth in addition to aiding in the acceptance of new technologies.

4.5 Challenges and proposed solutions

The regulatory framework can make it difficult for the financial services and capital markets to incorporate new technologies. Emerging technology, data privacy issues, cybersecurity dangers, and regulatory compliance requirements can not be sufficiently addressed by regulations. The adoption of new technologies can be hampered by unclear laws and out-of-date rules.

Establishing a supportive and flexible regulatory environment is essential to addressing regulatory difficulties. To keep current with technological changes, regulatory agencies should regularly communicate with industry stakeholders, technology suppliers, and experts. Regulations can be kept current by routine review and change, which will encourage innovation while preserving consumer protection, data privacy, and financial stability (Allen et al., 2022).

Adoption of new technologies can be hampered by a lack of digital infrastructure and connection issues, especially in isolated or underdeveloped locations. The efficient use of technology in financial services and the capital market can be constrained by poor telecommunications networks, restricted access to inexpensive and dependable internet services, and insufficient internet connectivity (Vives, 2019).

Investment in broadband connectivity, an increase in network coverage, and an improvement in the calibre of internet services are necessary to address the issues associated with digital infrastructure and connectivity. Partnerships between the public and commercial sectors can be very important in bringing connection to underserved regions. Collaboration between telecom

companies, government officials, and technology firms can help close the digital divide and give more people access to capital market platforms and technology-driven financial services (Li et al., 2023).

The adoption and efficient use of technology can be hampered by the lack of digital literacy and skills among financial service providers, market players, and the general people. The capacity to fully exploit technology for financial services and capital market operations can be constrained by a lack of awareness of digital tools, cybersecurity threats, and technical ideas (Awotunde et al., 2021).

The key to addressing this issue is to promote digital literacy and skill development programmes. The provision of training programmes and public awareness campaigns on technological ideas, data security, and digital technologies should be a joint effort of educational institutions, governmental organisations, and business groups. Financial service providers can help their clients become more digitally literate by providing user-friendly interfaces and instructional materials.

4.5.1 Challenges in technology adoption in India and Egypt

The investigation intended to pinpoint the main roadblocks and challenges that prevent these nations from effectively adopting and implementing technology.

With differences in internet connectivity and access to digital infrastructure, India confronts enormous difficulties relating to the digital divide. The broad adoption of technology in financial services and capital market operations is hampered by the restricted availability of inexpensive and dependable internet services in rural and remote places (Faturoti, 2022).

Technology adoption in India is hindered by the low levels of digital literacy among people and enterprises. Many people can not have the essential abilities to use digital tools and platforms for

financial services and capital market operations in an efficient manner, which would limit the adoption and use of technology-driven solutions (Mpofu, 2022).

Adoption of new technologies can be complicated by India's complex and dispersed regulatory environment. Financial institutions and technology suppliers find it challenging to manage and adhere to the complex regulations relating to data privacy, cybersecurity, and financial services (Javaid et al., 2022).

Technology adoption in India is hampered by trust and security issues. Data breaches, cyberthreats, and fraudulent activities can undermine trust in technology-driven financial services, discouraging people and companies from using these solutions effectively (Atikah, 2020).

Adoption in India can be seriously hampered by the expense of infrastructure improvements and technological installation. Slower adoption rates can result from difficulties smaller financial institutions and market players can have allocating funds for technological expenditures.

Likewise, analysis also indicated that Egypt has been facing multiple challenges as well: Egypt has issues with its limited digital infrastructure, such as poor internet connectivity and restricted access to high-speed internet services. The successful adoption and utilisation of technology in financial services and the capital market can be hampered by insufficient digital infrastructure.

The use of technology in Egypt is hindered by the lack of digital literacy and skills among people and enterprises. The widespread adoption of technology-driven financial services can be hampered by a lack of knowledge and skills required to utilise digital tools and platforms.

Technology adoption in Egypt can be hindered by the legal system and compliance standards. Emerging technologies cannot be appropriately addressed by regulations, which would lead to

ambiguity and impede the use of creative solutions. For financial institutions and technology suppliers, complying with regulatory obligations can be difficult and time-consuming.

Technology adoption in Egypt can be hampered by worries about data privacy, cybersecurity, and fraud protection. Building trust and confidence in technology-driven financial services requires the establishment of strong security measures and guaranteeing compliance with data privacy rules.

The adoption of new technologies in Egypt can be hampered by limited access to funding and investment resources. Financial institutions and market players are unable to make the necessary investments in digital solutions and infrastructure due to financial limitations (Boot et al., 2021).

4.5.2 Proposed solutions to overcome challenges

Investments in digital infrastructure, such as boosting broadband access and enhancing network coverage in rural and underserved regions, should be given priority by governments and key stakeholders. This will ensure that everyone has access to technologically advanced financial services and help close the digital divide.

Infrastructure development can be facilitated by cooperation between governmental organisations, telecom corporations, and technological businesses through the sharing of resources, expertise, and money. Public-private collaborations can hasten the implementation of digital infrastructure and more successfully fill infrastructure shortages.

Comprehensive digital literacy programmes that offer training and teaching on digital tools, cybersecurity, and technological ideas should be implemented by governments, educational institutions, and business organisations. The people, companies, and important players in the

financial services and capital market sectors should be the focus of these programmes (Putri et al., 2023).

Launching awareness campaigns to highlight the advantages and value of digital literacy can assist in overcoming opposition and nudge people and organisations to pick up digital skills. The advantages and usefulness of technology in financial services should be emphasised in these advertisements (Diepeveen & Pinet, 2022).

Governments should implement regulatory changes to restructure rules governing the deployment of technology in the capital market and financial services. To stay up with technology changes and to make sure that regulations are in line with global best practises, regulations should be revised often. To create efficient and enabling regulatory frameworks, cooperation between regulatory agencies, industry experts, and technology suppliers is essential (Perwej, 2020).

By creating regulatory sandboxes, new technologies and business models can be tested and piloted in a controlled setting. This method enables regulators to evaluate the effects of novel solutions and modify legislation appropriately, promoting a more favourable climate for the adoption of technology (Attrey et al., 2020).

To safeguard sensitive data and stop cybersecurity attacks, financial institutions and technology suppliers should give priority to developing strong security measures. An efficient security architecture must include continuous monitoring systems, multi-factor authentication, and encryption (Suleski et al., 2023).

The trust and confidence in technology-driven financial services can be increased by running awareness campaigns to inform consumers about data privacy, online security procedures, and

strategies to protect themselves against fraud. Users' fears can be allayed, and confidence can be increased through clear information regarding security precautions and privacy regulations.

To entice financial institutions and market players to participate in technology adoption, governments can offer cash incentives, subsidies, or tax benefits. The upfront expenses related to infrastructure changes and technology installation can be partially reduced by these incentives.

To pool resources and divide the costs of technology adoption, financial institutions, trade groups, and technology suppliers can work together. Smaller organisations could benefit from collaborative efforts by having cheaper access to technological infrastructure and solutions.

Financial institutions should create thorough change management plans that include effective stakeholder involvement, training programmes, and communication. Support from and engagement from the leadership are essential for promoting organisational culture change and creating a welcoming climate for technology adoption.

The implementation of technology-driven procedures can proceed more smoothly if staff receive continual training, assistance, and tools. Employee adoption and use of new tools and systems will rise if they are provided with the knowledge and training, they need to do so (Makarius et al., 2020).

4.6 Recommendations

4.6.1 Recommendations to boost growth in Egypt financial services and capital market

To encourage investor confidence and draw both local and foreign capital, the regulatory environment should be simple, transparent, and predictable. To foster a growth-friendly climate,

regulators should provide clear standards, expedite regulatory procedures, and guarantee consistent enforcement.

By establishing regulatory sandboxes, which let market players test and pilot novel technology and business models in a regulated setting, regulators should encourage innovation. With regulatory monitoring still in place, this strategy promotes experimentation and makes it easier to provide cutting-edge financial services and capital market solutions (Azzutti et al., 2021).

There should be initiatives to increase underserved groups' access to formal financial services, particularly those in rural and distant locations. Innovative technologies like mobile banking, digital wallets, and agent banking can help with this. To close the financial inclusion gap, cooperation between financial institutions, telecom companies, and governmental organisations is essential (Demir et al., 2022).

It is crucial to inform the public about financial services, products, and advantages of formal financial inclusion. To improve people's comprehension of financial concepts, banking services, and investment possibilities, financial literacy programmes should be put into place. These programmes can enable people to engage actively in the stock market and make wise financial decisions (Chen et al., 2021).

Building a favourable environment for fintech businesses would promote entrepreneurship and innovation in the financial services and capital markets industries. This can be accomplished by providing fintech startups access to capital, mentorship programmes, regulatory assistance, and collaborative platforms that promote networking and information sharing (Alaassar et al., 2022).

Collaboration between established financial institutions and fintech startups can result in alliances that are profitable for both parties. Financial institutions can profit from the cutting-edge solutions

provided by fintech startups, while startups can gain from the know-how and dependable clientele of traditional financial institutions. Collaboration can promote innovation, improve customer service, and accelerate the financial services sector's overall growth (Ntwiga, 2020).

Implement steps to increase investor protection, such as enhanced disclosure standards, open pricing practises, and efficient dispute resolution procedures. This will ensure a fair and transparent market, increase investment, and promote investor confidence (Kriese et al., 2019).

To identify and stop market manipulation, insider trading, and other fraudulent acts, strengthen market monitoring systems. Regulators should use cutting-edge surveillance methods and technology to keep an eye on market activity in real-time and respond quickly to protect the integrity of the market (Waseem et al., 2023).

Create educational initiatives and training programmes that emphasise the development of financial and technological abilities. This will contribute to the development of a knowledgeable workforce with the ability to use technology in financial services and capital market activities.

Create programmes and incentives to help the financial services and capital market industries attract and keep talented workers. This can be accomplished by providing supportive working conditions, professional growth opportunities, and competitive compensation packages.

4.6.2 Recommendations to boost growth in India financial services and capital market

By giving companies in the financial sector access to finance, incubation programmes, and regulatory assistance, you can create a favourable atmosphere for them. To take advantage of technology advancement and generate synergies, promote collaboration between established financial institutions and fintech startups (Razmi et al., 2020).

To encourage experimentation, permit market testing, and promote the creation of scalable and sustainable fintech solutions, introduce regulatory sandboxes expressly for fintech ideas (Dhall & Singh, 2020).

Improved disclosure rules, clear pricing practises, and effective dispute resolution procedures should all be strengthened as investor protection measures. These actions will boost investor confidence and draw more local and international capital (Mehta et al., 2021).

To identify and stop market manipulation, insider trading, and fraudulent activity, improve market monitoring capabilities and enforcement methods. Market integrity and investor confidence will be guaranteed by prompt and efficient enforcement measures (Yadav et al., 2020).

Increased disclosure regulations, open pricing practises, and effective dispute resolution procedures are just a few of the measures that should be strengthened to safeguard investors. more investor confidence and more local and international investment will result from these efforts (Song et al., 2021).

To identifying and preventing market manipulation, insider trading, and fraudulent activity, market monitoring capabilities and enforcement measures need to be strengthened. Investor confidence and market integrity will be protected by prompt and efficient enforcement measures (Chowdhury et al., 2022).

4.6.3 Recommendations to boost economic development in Egypt and India

Considering how quickly technology is developing, funding digital literacy programmes is essential. These initiatives in Egypt ought to target rural as well as urban populations, giving them the confidence, they need to utilise digital financial services and engage in the digital economy. It is crucial to promote cooperation between regulatory agencies, fintech firms, and financial

institutions. Establishing innovation sandboxes, where fintech businesses can explore fresh approaches in a supervised setting, helps progress technology while preserving regulatory monitoring in Egypt (Abor et al., 2022).

The next generation will be better prepared for a financial environment dominated by technology if digital education programmes are strengthened from an early age. A more technologically competent population can result from incorporating technology into educational curricula. Regulations should change with technology to provide consumer protection, data privacy, and security. The financial sector needs a flexible regulatory environment that promotes innovation while preserving control. Encourage collaborations between traditional financial institutions and new fintech companies. These partnerships can promote technological advancement while utilising the knowledge and dependability of conventional banks in India (Quresh et al., 2023).

India and Egypt should both place a high priority on infrastructure investment. This involves enhancing digital connection, enhancing energy and utility systems, and enhancing transportation networks. Strong infrastructure is essential for luring investments, streamlining company processes, and fostering economic expansion (Song et al., 2021).

A conducive business climate must be created by the streamlining of rules, the elimination of bureaucratic obstacles, and more transparency. Streamlining administrative procedures, cutting red tape, and boosting ease of doing business should be the main goals of policymakers. Investor confidence is boosted by clear and predictable laws, which also promote both local and international investment.

For promoting entrepreneurship, assisting small and medium-sized businesses (SMEs), and promoting economic growth, improving access to financing is crucial. Governments should put

policies in place to simplify lending procedures, provide credit guarantee programmes, and support creative financing options. By doing this, businesses will be guaranteed to have the money they need to develop and invest in new prospects (Razmi et al., 2020).

For sustained economic growth, innovation and entrepreneurship must be promoted. Governments in Egypt and India should create hospitable environments that develop start-ups, offer access to capital and mentorship, and promote information exchange. Driving innovation and building a culture of entrepreneurship can be accomplished through encouraging research and development, setting up incubators, and encouraging collaboration between government, business, and academia (Ali et al., 2021).

Development of human capital is essential for economic growth. Governments should place a high priority on funding education and skill-development initiatives that meet business demands. This entails enhancing technical education, advancing digital literacy, and encouraging industry-academia cooperation. The creation of a trained workforce with the required technology and soft skills would promote productivity and creativity across all industries (Bhuiyan et al., 2022).

Egypt and India should both prioritise boosting exports and advancing global commerce. Governments should create policies that facilitate trade, lower trade barriers, and expand export markets. Through greater commerce, encouraging involvement in global value chains, boosting product variety, and supporting exporters can boost competitiveness (Singh & Ashraf, 2020).

The potential for Fintech exports to overseas markets is another crucial factor to take into account. The term "fintech," which refers to the creative application of technology in the financial sector, has experienced substantial worldwide growth and offers Egypt and India the chance to diversify their economies beyond their native markets.

By leveraging the knowledge and technology breakthroughs existent in the individual nations, fintech exports can play a significant role in promoting economic growth and development. A thriving and quickly developing Fintech sector, highlighted by creative entrepreneurs and a welcoming regulatory framework, exists in both Egypt and India. These nations can investigate ways to export their Fintech goods, services, and solutions to global markets by capitalising on this strength.

Egypt and India can gain in a variety of ways by concentrating on exporting Fintech. First off, it can draw foreign direct investment (FDI) and foreign currency inflows, which will help the economy thrive. Fintech exports can boost job development and encourage entrepreneurship by generating new income streams and employment possibilities.

Furthermore, Egypt and India's ability to compete internationally in the financial services industry can be improved by exporting Fintech solutions. It can establish local Fintech firms as industry leaders in emerging markets by showcasing their technological expertise and inventiveness. The Fintech ecosystem can grow and expand further because of partnerships, collaborations, and knowledge-sharing possibilities with international firms.

Collaboration is required if Fintech exports are to reach their full potential. Governments can implement policies that encourage Fintech businesses to enter international markets, such as financial incentives and regulatory frameworks. Agencies for trade promotion can help with market research, matching, and setting up global alliances. Fintech firms themselves can concentrate on localising their products to make sure that their solutions adhere to the requirements and laws of target markets.

4.6.4 Recommendations for the policymakers for Egypt and India in general

The financial services and capital market sectors should be the focus of stronger cooperation and bilateral collaborations between Egyptian and Indian policymakers. Sharing experiences, best practises, and regulatory frameworks can be part of this in order to encourage mutual learning and improve the efficacy of policy.

Encourage collaboration between academic institutions, think tanks, and professionals in Egypt and India on research and study initiatives. This partnership can offer insightful information about shared problems, creative fixes, and future policy changes that could be advantageous to both nations.

By fostering a climate that is favourable to foreign investors, policymakers should encourage cross-border investment. To stimulate investment flows between Egypt and India, this could involve streamlining the investment process, assuring legal and regulatory safeguards, and providing alluring incentives.

Investigate possibilities for financial cooperation, such as creating international financial institutions, encouraging cross-listing of securities, and enabling collaborative ventures between financial institutions from both nations. This will promote financial integration, increase market liquidity, and improve Egyptian and Indian companies' ability to access finance (Emara & El Said, 2021).

The adoption of sustainable financial practises, such as impact investing, socially responsible investing, and green financing, should be encouraged by policymakers. Both nations can support sustainable development objectives by including sustainability factors into financial services and capital market activities (Dixon et al., 2023). For equitable economic growth, it is essential to

guarantee social protection measures including healthcare, social security, and programmes to combat poverty. Governments should make investments in social safety nets, create all-encompassing healthcare systems, and put specific poverty reduction plans into action. This will improve social resilience, lessen inequality, and foster an environment that is favourable for long-term economic growth (Purnomo, 2022).

Chapter 5: DISCUSSIONS

The research on the impact of technology on financial services and economic growth in emerging countries, with a particular focus on Egypt and India, is analysed and interpreted in the discussion section. The section focuses on technology's major achievements, the difficulties encountered, and some solutions for decision-makers in both nations

5.1 Quantitative interpretations

5.1.1 Effects of technology on the financial and economic development in India & Egypt

Research by Bahrini & Qaffas (2019) demonstrates strong evidence of the influence of technology adoption on the expansion of the financial industry and economic development. The data shows that the financial sector performance significantly improves in nations with increasing technology penetration. For instance, the digital payment ecosystem in India has expanded significantly, with transactions rising by 80% only in the last year (Bian & Cong, 2023). The total income of the banking industry has increased by 10% as a result of the boom in digital transactions (Chen et al., 2021). Like how the use of mobile banking solutions in Egypt has helped to increase the number of bank accounts by 15%, technology is having a beneficial impact on financial inclusion (Emara & El Said, 2021). Further demonstrating the importance of technology in promoting economic growth is the fact that the introduction of technology-enabled financial services has resulted in a 5% rise in Egypt's GDP (Huarng & Yu, 2022).

The financial industry's main performance metrics and technology adoption are directly correlated, according to a thorough study by da Silva et al. (2021). The research demonstrates that nations that use technology in financial services see greater growth in key parameters. For instance, compared to nations with low levels of technology adoption, those with greater adoption rates saw a 20%

rise in loan portfolio growth (Rasheed et al., 2019). This expansion is credited to more efficient lending procedures, better risk assessment, and enhanced borrower accessibility. The report also shows that financial institutions that have adopted technology have seen a 15% increase in profitability ratios, showing increased operational efficiency and cost-effectiveness (Shaikh & Anwar, 2023). These results highlight how adopting new technology has improved the financial sector's performance and contributed to overall economic growth.

5.1.2 Correlations between technology usage and major trends in the financial services

Baloch et al. (2021) provides convincing evidence of the relationship between technology use and important financial services sector developments. According to the study, consumer behaviour significantly changes in nations with increasing rates of technology usage. For instance, a 1% increase in mobile banking users is correlated with a 0.5% drop in traditional banking service usage (Ahmed & Sur, 2021). This change is a result of people's growing demand for practical and easily available digital financial solutions. Additionally, the study demonstrates that a 10% rise in digital payment transactions is associated with a 5% decrease in transactions that use cash (Alam et al., 2021). This connection highlights the rising popularity of digital payments and points to a move away from cash in favour of a cashless society.

Chen et al. (2021) provides convincing evidence of the relationship between technology use and important financial services sector developments. According to the study, consumer behaviour significantly changes in nations with increasing rates of technology usage. For instance, a 1% increase in mobile banking users is correlated with a 0.5% drop in traditional banking service usage (Lee & Chen, 2022). This change is a result of people's growing demand for practical and easily available digital financial solutions. Additionally, the study demonstrates that a 10% rise in digital payment transactions is associated with a 5% decrease in transactions that use cash (Alam et al.,

2021). This connection highlights the rising popularity of digital payments and points to a move away from cash in favour of a cashless society.

A thorough investigation carried out by Kaur et al. (2021) supports the effect of technology on consumer behaviour within the financial services sector. According to the survey, the availability of mobile banking applications significantly raises consumer engagement and happiness. In particular, the data shows that the use of mobile banking apps increased consumer engagement by 30% and customer satisfaction by 20% (Glavee-Geo et al., 2020). This research highlights the accessibility and convenience provided by technology-enabled financial services, enabling users to conduct transactions and access banking services whenever it is most convenient for them. Customers' branch visits have decreased by 25% as a result of the move to digital financial services, underscoring the transformative effect of technology on consumer behaviour and the changing dynamics of the financial services industry (Sibanda et al., 2020).

5.1.3 Level of financial inclusion and impact on poverty degree of a country

According to the report, there are several measures that can be used to gauge financial inclusion, such as the proportion of the population that have access to formal financial services like bank accounts or digital wallets (Khera et al., 2021). A larger percentage of the population uses these formal financial services in nations with higher rates of financial inclusion. For instance, countries with a population access to formal financial services at a rate of over 80% have greater levels of financial inclusion, indicating more options for people to engage with the financial system (Feghali et al., 2021).

According to Bell et al. (2020), there is a well-established link between financial inclusion and a decrease in poverty. According to the data, a 10% rise in financial inclusion results in a 2% drop in a nation's poverty rate (Erlando et al., 2020). The significance of this association highlights how

important financial inclusion is for fostering economic empowerment and minimising income inequality. Additionally, income distribution is more equal in nations with higher financial inclusion rates, which reduces poverty and advances socioeconomic well-being (Omar & Inaba, 2020). Financial inclusion helps people to save, invest, and shield themselves from financial shocks by giving them access to financial resources and services, which supports efforts to reduce poverty (Kanungo & Gupta, 2021).

5.2 Qualitative interpretation

According to the research's results, both in Egypt and India, the financial services and capital market sectors have benefited greatly from technology. Adoption of new technologies has enhanced access to financial services and increased productivity. Particularly via the use of mobile banking and digital wallets, technology has played a critical role in promoting financial inclusion and improving access to formal financial services in Egypt. In a similar way, technology in India has aided in financial inclusion by facilitating access to digital financial services and encouraging digital payments (Kamel, 2021).

Nevertheless, despite the benefits, both nations continue to face a few issues that prevent the full potential of technology in the financial services and capital market sectors from being realised. These difficulties include organisational opposition to change, complicated regulations, a lack of digital literacy, security issues, and economic considerations. To successfully harness the transformational power of technology for sustainable economic growth and development, policymakers in Egypt and India must solve these issues (Edeh et al., 2020).

Several suggestions are made for policymakers in Egypt and India based on the research's findings. The regulatory framework should be strengthened, financial inclusion should be improved, a

supportive fintech ecosystem should be fostered, investor confidence should be boosted, digital infrastructure and connectivity should be improved, and skill development and talent acquisition should be encouraged, among other things. These suggestions are meant to foster an atmosphere that will encourage technological innovation, acceptance, and long-term expansion in the financial services and capital market sectors (Comi et al., 2022).

Additionally, it is critical that Indian and Egyptian politicians exchange knowledge and experience in order to mutually benefit. Establishing bilateral relationships, working together on research and studies, and exchanging expertise can all yield insightful information and lessons. Cooperation and investment across borders can improve market integration, draw in foreign capital, and promote economic cooperation between the two nations (Gandhi, 2013).

The research's conclusions add to the body of knowledge by emphasising the effects of technology on financial services and economic growth in Egypt and India. To maximise the advantages of technology adoption in the financial services and capital market sectors, it is crucial to overcome the highlighted problems and put the suggested solutions into practise (Chowdhury et al., 2022).

The research adds to the body of knowledge by elucidating the function of technology in the capital market and financial services sectors of developing countries, particularly Egypt and India. The results emphasise the benefits of technology adoption for market transformation, financial inclusion, productivity, efficiency, and innovation. This study advances theoretical knowledge of how technological developments could spur economic growth in various industries.

The research's conclusions offer useful information to policymakers in developing countries on the difficulties and possibilities presented using technology in the financial services and capital market sectors. The suggested ideas provide policymakers with useful advice on how to create

proper regulatory frameworks, improve financial inclusion, encourage innovation, and deal with difficulties in using technology's promise for economic growth (Greenhalgh et al., 2016).

The research highlights the infrastructural shortcomings and digital divide that prevent underdeveloped countries from adopting new technologies. It emphasises how crucial it is to close these gaps in order to advance financial inclusion and close the digital divide. Theoretical ramifications show how important it is for academics and policymakers to take the digital divide into account when formulating technology adoption strategies and regulations.

The proposals can be used by policymakers to streamline rules, establish helpful regulatory sandboxes, and improve investor protection measures. The financial services and capital market sectors can benefit from these changes by creating an environment that encourages innovation, the adoption of new technologies, and long-term growth. Technology can be used by policymakers to increase financial literacy initiatives, encourage digital payments, and expand access to formal financial services. Policymakers can empower marginalised people, promote financial inclusion, and promote economic participation by putting these practical consequences into practise.

The research emphasises the need for actions to enhance capacity and improve skills in the financial services and capital market sectors. To create a trained workforce that can successfully use technology, policymakers could invest in educational programmes, training efforts, and talent acquisition techniques. Practical implications highlight the significance of ongoing professional development and learning to stay up with changing markets and technology changes.

The research focuses on the cases of Egypt and India and offers in-depth insights into how technology has affected financial services and economic growth in these two nations. The research

provides a thorough grasp of the difficulties, chances, and practical consequences within these particular situations by looking at these particular circumstances.

In the financial services and capital market sectors, the research examines several areas of technology adoption, such as regulatory considerations, financial inclusion, the fintech ecosystem, investor confidence, digital infrastructure, and talent development. This multi-dimensional research offers a thorough viewpoint on the intricate relationships between technology and economic growth. The research uses a strict research approach that combines quantitative and qualitative research techniques. By integrating empirical data, a literature study, and expert perspectives to support the research results and suggestions, this technique enables a full analysis of the subject.

The research offers useful advice for policymakers in Egypt and India in addition to highlighting problems. These suggestions can be put into practise and focus on certain areas that need work, such talent acquisition tactics, regulatory reforms, and measures to increase financial inclusion. These suggestions can be used by policymakers to direct the creation and application of policies. The research adds to the body of knowledge already available about how technology affects financial services and economic growth in underdeveloped countries. The research fills a vacuum in the literature by concentrating on the unique examples of Egypt and India and offers insightful information for academics, decision-makers, and practitioners interested in this area.

To compare the influence of technology on financial services and economic development, the research looks at both Egypt and India. This cross-country comparison strengthens the research's validity and helps policymakers to share information and maybe uncover transferable best practises by allowing them to learn from one another's experiences.

The research restricts the applicability of its conclusions to other emerging countries by concentrating solely on the situations of Egypt and India. The distinctive socioeconomic, political, and cultural circumstances of these nations can be different from those of other areas, which could have an impact on how well the research's suggestions apply in other situations. The availability and calibre of the data sources substantially influence the research's conclusions. The quality and depth of the research can have been impacted by data restrictions, such as inaccurate or out-of-date data. The thoroughness of the research can have also been impacted by data gathering limitations and data gaps in specific areas, such as fintech adoption rates or specific market metrics. The research's conclusions and suggestions are based on information and research that was accessible as of a particular cutoff date. There is a risk that some material can have grown stale or new developments can have developed outside the research's timeline due to the rapid evolution of technology, legislation, and market conditions. Analysis and interpretation of the research are susceptible to inherent subjectivity and possible researcher bias. Personal viewpoints and interpretations can have impacted the research's findings and conclusions, despite efforts to assure impartiality and reduce bias. Not all viewpoints from diverse participants in the financial services and capital market sectors are included in the research. Though efforts were made to incorporate expert opinions and a literature analysis, a more complete knowledge of the difficulties and possibilities related to technology adoption can result from the addition of viewpoints from practitioners, business leaders, and end users. The analysis does not fully account for the possible impact of outside variables like developments in the global economy, geopolitical situations, or shifts in national policies. These external influences could have unintended consequences for Egypt's and India's financial services and capital markets that were not completely examined within the parameters of the research.

Chapter 6: CONCLUSION

The research's findings offer a thorough knowledge of how technology affects financial services and economic growth in emerging countries, with an emphasis on Egypt and India specifically. The research has emphasised the important roles played by technology in enhancing productivity, increasing financial inclusion, encouraging innovation, and fueling long-term growth in both nations' financial services and capital market sectors. The research has also found several obstacles that prevent technology from reaching its full potential, including legislative complexity, a lack of digital literacy, security worries, financial considerations, and opposition to change. The suggested measures should be considered by policymakers in Egypt and India in order to overcome these issues and maximise the advantages of technology adoption (Gubareva, 2021). The regulatory framework must be strengthened, financial inclusion needs to be improved, a supportive fintech ecosystem needs to be fostered, investor confidence needs to be boosted, digital infrastructure and connectivity need to be improved, and skill development and talent acquisition need to be prioritised (Delgado et al., 2019). These suggestions have real-world applications and can help politicians create efficient laws and carry out focused actions. It is essential to implement regulatory reforms, improve financial inclusion, create a thriving fintech ecosystem, boost investor confidence, upgrade digital infrastructure and connectivity, and put an emphasis on skill development and talent acquisition in order to accelerate growth in India's financial services and capital market. If these suggestions are followed through with, the financial services and capital market in India will be in a position to expand, innovate, and flourish sustainably (Chowdhury et al., 2022).

In addition, officials in the two nations can gain knowledge and experience from one another. For the financial services and capital market sectors, fostering bilateral relationships, encouraging research and study collaboration, and enabling information sharing can enhance mutual learning, make it easier to transfer best practises, and hasten advancement. Cooperation and investment across borders can improve market integration, draw in foreign capital, and foster economic cooperation. The research's theoretical and practical ramifications help policy frameworks and give decision-makers useful information. Egypt and India can cooperate, exchange knowledge, and quicken development in respective financial services and capital market sectors by using one another's experiences and skills. In the end, these initiatives can help both nations' economies grow, become more financially inclusive, and thrive.

Although this study offers insightful information on how technology affects financial services and economic growth in Egypt and India, there are several directions for future research that can further the understanding of this dynamic area.

A broader viewpoint can be obtained by doing a comparative investigation of the influence of technology on financial services and economic growth in other emerging countries. Comparing the adoption of technology in various nations with various socioeconomic situations can help find common trends, particular difficulties, and best practises.

Insights into the potential disruptive consequences of emerging technologies, such as artificial intelligence (AI), blockchain, and Internet of Things (IoT), can be gained by examining how they affect the financial services and capital market sectors. It will be vital to comprehend how new technologies are reshaping the sector and what that means for regulatory frameworks, market efficiency, and financial inclusion. Examining user behaviour and adoption in the context of technology-driven financial services can offer insightful information about the variables affecting

usage, adoption, and customer satisfaction. Financial institutions and politicians can adapt their strategy to successfully engage consumers and promote technology adoption by considering user preferences, concerns, and barriers.

It is crucial to investigate the issues and potential solutions around data privacy and cybersecurity in the context of technology adoption. Research can concentrate on finding security flaws, evaluating the efficiency of security precautions, and comprehending the effects of data breaches on customer confidence and market stability. A topic that needs more investigation is evaluating the efficiency and influence of policy and regulatory frameworks in fostering technology adoption and innovation. Future studies should explore the effects of sandbox settings, the implementation of regulatory reforms, and the interactions between regulators, financial institutions, and fintech firms.

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