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Research Article

The Impact of Financial Technology on Accounting Measurement to Enhance Capital Markets to Reduce Tax Avoidance: An Empirical Study

Nabil Abd El-Raouf Ebrahim*

Sherouk Academy, Cairo, Egypt

Abstract

Many countries of the world have turned to the use of financial technology in advanced economies, as this trend imposed by the fourth technology revolution that the world has known in recent years has allowed to improve the quality of financial services provided to the public of customers, reduce their cost, and provide them to the class of customers that were previously financially excluded. FinTech applications have replaced the human factor in financial institutions and financial systems in general, from managing financial risks, providing financial services to clients, and other tasks that require processing a huge amount of information and data, in a way that enhances the role played by financial technology innovations in Preparing and presenting the financial statements of companies providing these services quickly and with high accuracy in accordance with the requirements of the International Financial Reporting Standards (IFRS), in a way that contributes to reducing financial corruption and audit failures, and limits tax avoidance, and that financial technology innovations lead to adaptation with electronic tax systems, and the researcher prepared An applied study on a sample of financial technology companies, and it became clear to the researcher the existence of a set of challenges represented in accounting and tax problems, the researcher provided solutions to them, and the researcher prepared a field study on the same sample, and it was found from the statistical study, the rejection of the study's hypotheses and therefore there are no differences between the categories The study was based on the outputs of the SPSS program, Chi-Square, and the study ended with a set of results and recommendations.

Keywords

Financial Technology, Tax Avoidance, Accounting Measurement

1. Study Framework

1.1. Introduction

Financial Technology or FinTech refers to software, mobile applications, and other technologies created to improve and adapt traditional forms of finance for businesses and consumers alike. FinTech can include everything from straightforward mobile payment applications to complex blockchain networks that contain cryptocurrency transactions. [1]

The trend toward the use of financial technology has be-

*Corresponding author: dr.nabil.abdelraouf@sha.edu.eg (Nabil Abd El-Raouf Ebrahim), n2002nabil@gmail.com (Nabil Abd El-Raouf Ebrahim)

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come the dominant feature in the provision of financial services and the management of banking and financial activity in the economies of developed countries. This modern trend, imposed by the fourth technology revolution that the world has known in recent years, has allowed improving the quality of financial services provided to the public customers, cutting down their costs and providing them to a customer class financially excluded before. FinTech applications have replaced the human factor in financial institutions and financial systems in general, from managing financial risks, providing financial services to customers, and other tasks that require processing a large amount of information and data. [2]

1.2. The Study Problem at the Applied Level in Egypt

In March 2019, the Central Bank of Egypt launched its integrated strategy to advance the financial technology and innovation system, based on the role it plays as a catalyst for the development process and supporter of the financial technology industry, which aims to transform Egypt into a regional center for the financial technology industry. It is consistent with the 2030 strategy. Egypt has achieved rapid growth in capital investments in the field of financial technology over the past years, reaching a new level of $195 million in the first half of 2022.

Egypt is among the four largest African countries active in the field of financial technology- in terms of the number of emerging financial technology operating companies and the sectors feeding them in Africa. That is due to the tremendous growth over the past seven years in this field, as the number of Egyptian startups specializing in financial technology and feeder companies has increased to reach about 112 companies by 2021 out of only two companies compared to 2014, with a growth rate of more than 178%. It is expected that this increase will continue in the number of startups specializing in financial technology.

Figure 1. *The growth of startup companies in financial technology.*

It is also noticeable, according to the following figure, the emergence of several promising sub-sectors that are witnessing a rise at the global level and that need to activate Egyptian cadres towards them, such as automated dialogue services, digital investment platforms, supply chain digitization platforms, big data, artificial intelligence, and digital banking services. It directly affects how the financial data is presented in financial statements in terms of the speed of data presentation and operation through the development of electronic accounting information systems mechanisms.

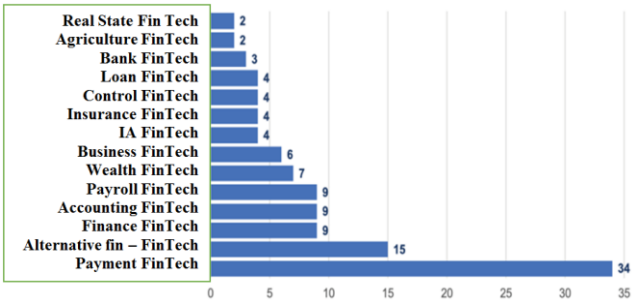


Figure 2. *Financial technology activities.*

FinTech represents a technology or innovation that seeks to compete with traditional financial methods when providing financial technology services. It is an emerging industry used to improve activities in accounting and finance. This technology is represented in the use of smartphones in banking or financial services in general, including encrypted digital currencies, which aim to make financial services accessible to the public, and financial technology companies consist of start-ups and financial institutions that aim to enhance the use of financial services provided by existing financial companies. [3]

The financial technology sector is witnessing rapid growth globally, as it succeeded in attracting 1,824 investment deals worth $14.2 billion in venture capital investments in 2021, according to the Bahrain FinTech Ecosystem Report 2020.

In some countries, including the Asia-Pacific region, a new financial technology center was opened in Sydney in April 2021m according to the accounting firm KPMG, it indicated it faced many problems, like the major accounting firms, the Big Four Firms, when recognizing revenues following the provisions of the IFRS Standard: 15, which corresponds in Egypt to the Egyptian Accounting Standard No. (48) Revenues from Contracts with Clients. In Sydney, Australia, for example, revenues from financial technology services represent 9% of the gross domestic product, like those in Hong Kong and Singapore in 2021; this indicates that the current and future financial markets will move towards establishing more of these activities.

Therefore, this study examines the issues faced by companies providing financial technology services when preparing and presenting financial statements and then curbing tax avoidance to prevent them from getting into the trouble of violent tax avoidance, which is legally punishable as per the provisions of Article 92 bis of Law No. 53 of 2014 amending certain provisions of Law No. 91 of 2005 of the Income Tax

Law. In addition, the study examines ways to overcome such issues, as well as how to review them by the auditor, which can be done rapidly when implementing the mechanisms of the audit plan without falling into audit failures to form a neutral technical opinion of the auditor.

Furthermore, digital banks and digitization companies are gaining mounting systemic importance in their local markets. These banks, also known as modern digital banks, are more exposed than their traditional counterparts to the risks arising from consumer lending, which usually has less protection against losses because it is often unsecured. It is also characterized by high credit losses (ECL) in application of the International Financial Reporting Standards (IFRS) No. 9, corresponding to the Egyptian Accounting Standard No. 47 – Financial instruments, when recognizing expected credit losses. Their exposure includes bearing a higher level of risk in the securities portfolio and higher liquidity risks (especially since liquid assets, as a percentage of digital bank deposits, are often less than their percentage with traditional banks). [4]

1.3. The Importance of Studying

Innovative financial technology is one of the most promising industries in the world due to the superior ability to use modern technology and benefit from it in expanding the scope of providing financial and banking services and products, and as a result of the tremendous development that the world is witnessing today in the field of information and communication technology, which led to the emergence of many Innovative financial and banking applications and solutions, which greatly help in increasing the efficiency of financial services and expanding their spread, and the consequent positive impact on the speed of presenting the financial statements of companies operating in this field, as well as the consequences of periodic review and assurance services when presenting the annual financial statements.

1.4. Objectives of the Study

The objectives of the study are as follows:

1. Identify the stages of the actual implementation of the accounting cycle when applying financial technology services.
2. Find solutions to the problems of presenting the financial statements of companies operating in financial technology.
3. Identify the major problems of auditing the financial statements of financial technology companies and contribute to finding solutions to avoid audit failures.
4. Identify international accounting standards or international financial reports when preparing and presenting financial statements for financial technology services companies.
5. Identify the means of combating tax avoidance when providing financial technology services.

1.5. Literature Review

1.5.1. Study of (Marisa: 2022)

The study dealt with financial technology innovations in terms of their impact on financial business covered by changes in financial services, on several specialized levels influencing future transformations of the accounting process, and its impact on presenting financial data quickly that requires high efficiency in auditing, especially electronic auditing. The study ended with the recommendation that it is necessary to adopt the idea of industrial networks from major offices to present the developments of accounting registration affected by financial technology. [5]

1.5.2. Study of (Salman: 2022)

The study dealt with a new phenomenon titled Intelligence of Finance through the Internet of Things and its impact on the digitization of companies providing financial technology services, such as lending companies, verification of fraud detection, and financial manipulation to combat financial corruption. The study focused on a group of companies suffering from remote accounting registration problems because of the Internet of Things transactions, and it recommended the necessity of harmonizing with the automated and digital systems of tax administrations to achieve harmonization of financial transactions between them to enable financial technology companies to adapt with the upcoming challenges in financial technology challenges. [6]

1.5.3. Study of (Cipriani: 2022)

The study focused on the problems of financial technology companies that deal with Chinese investment funds. It showed the extent of the wide gap in the problems of accounting measurement between the cash basis and accrual in measuring revenues, especially with the full adoption of the Chinese government sector for this type of company, which is reflected in the accuracy of presenting business results in the financial statements. The study concluded the necessity of motivating managers to develop and improve the daily accounting records work to give confidence in the accuracy of the records. [7]

1.5.4. Study of (Francesco: 2022)

The study dealt with a bigger problem concerning the electronic accounting registration of mergers and acquisitions, the extent to which the financial markets react to this phenomenon, the earned profits and record them directly, and the presentation of up-to-date financial reports. The study concluded the necessity of full normalization with governmental institutions, especially tax institutions, and financial markets in the rapid response to electronic accounting registration for financial technology service providers. [8]

1.5.5. Study of (Victor Murindea: 2022)

The study sheds light on the financial techniques of financial technology companies, which avoid business risks, especially when paying salaries or granting loans. Payment or not due to considerations of measuring the expected credit risk, which is carried out through the platforms of financial technology companies. It recommended the need to create databases to review credit risks before granting loans. [9]

1.5.6. Study of (Hakkı Deniz Karaman: 2021)

The study dealt with the effects of accounting registration for the services of financial technology companies that provide loans to borrowers as an alternative to the banking business, such as banks, as a consumer financing activity, and the effects resulting from the recognition or non-recognition of the expected debt losses and its impact on the business results in the technological registration environment of those companies, in which the accounting registration is automatic, and then the effect of the delay in payment by some borrowers. The study pointed out that studying the creditworthiness of the borrowers can resolve this, but does the tax legislation accept that? Since the study was about the Turkish environment in which the tax legislation accepts the impairment of loans based on what has not been paid and not estimated, the study indicates the necessity of recognizing credit losses to achieve tax justice since tax returns are filled through websites, which represents a risk of the non-payment of tax liabilities incurred by financial technology companies, but not approved with tax examination, especially with the automated examination. [10]

1.5.7. Study of (Tsui -Yueh: 2021)

The study highlighted the importance of financial technology companies in providing funding services to achieve a strategy to improve banking performance, which improves the service. This requires more cost reduction strategies to achieve more profitability for these companies; however, the problem facing these types of companies is the extent of normalization with tax services in automated business with tax administrations, especially in China. The study demanded the application of the characteristics of automated interaction with tax administration to provide declarations consistent with financial technology innovations. [11]

1.5.8. Study of (Ani Stoykova: 2020)

The study focused on a quick presentation of accounting development techniques in registering automated systems and the use of artificial intelligence mechanisms by financial technology companies in managing documents and recording all operations through electronic systems and risk management for financial and accounting services. The study recommended reviewing the requirements of accounting standards when preparing financial reports to ensure consistency with them and recording transactions with tax effects to combat tax avoidance. [12]

1.5.9. Study of (Carmen Leong Felix: 2020)

The study pointed to the importance of the new role of financial technology companies, which have turned away from achieving profitability to entrepreneurship through the experience of Indonesia to confront the digital economy. However, the study sheds light on the problems of accounting measurement according to the requirements of the International Financial Reporting Standards issues and the necessity of consistency with them to create financial statements free from misrepresentations and audit failures to improve the role of digital technologies in financial business. [13]

1.5.10. Study of (Pavel Leonov: 2020)

The study went on to present an indicator analysis of the financial data as one of the elements of artificial intelligence and the extent of the impact of the audit process using artificial intelligence tools in assurance services for audit to avoid audit failures of the financial statements of financial technology companies which operates entirely electronically. The study recommended relying on analytical procedures when planning the audit process because it is effective. [14]

1.6. Literature Gap

It is clear from previous studies that they tended to present the problems of accounting registration and the inability to detect early financial errors or interaction and full normalization with tax administrations, especially automated systems. Accordingly, the research gap is that the researcher tends, after reviewing the previous studies in this regard, to present the accounting problems and tax challenges of adapting and automating accounting systems to develop accounting registration and rein in tax avoidance and offer suggestions for solutions that enhance financial markets.

1.7. Limitations of the Study

The study deals with the accounting problems arising from dealing with companies that provide financial technology services in the scope of transactions that take place via the Internet through digital programs, whether through mobile or electronic devices, when registering electronically in the stages of the accounting cycle from the journal or posting to the ledger, as well as when preparing the trial balance and the adjustments to present the financial statements to prepare for the closing entries, in addition to the problems that arise when auditing and providing electronic verification services, in a way that avoids audit failures. The limitations of the study also extend to combating tax avoidance, not tax evasion, when preparing tax adjustments for the wages and salaries tax and the income tax on the profits of juridical entities, not the value-added tax, the real estate tax, or the stamp tax.

1.8. Outline of the Study

1. General framework of the study
2. The concept of financial technology services
3. Accounting and tax challenges facing financial technology.
4. An applied and a field study on a sample of financial technology companies to meet accounting and taxation challenges in order to combat tax avoidance.

2. The Concept of Financial Technology Services

2.1. What Is Meant by Financial Technology Services

Fintech refers to any business that uses technology to enhance or automate financial services and operations, and it includes a fast-growing industry that serves the interests of consumers and businesses in multiple ways. Financial technology also helps companies, business owners, and customers better manage their financial operations by using specialized programs and algorithms developed on computers and smartphones. [15]

Digital Lending and Credit: Some large companies directly finance small business loans (SMEs) to make lending decisions faster, and some companies also provide the option of peer-to-peer lending, that is, from customer to customer, through which customers can lend money to each other without the need to involve a financial institution.

Mobile Banking: Many financial institutions seek to expand their mobile banking capabilities to meet the growing customer demand for digital banking services since customers are looking to improve banking performance; therefore, most banks now offer the option of doing some mobile banking through private banking platforms.

Mobile payment: Most people under the age of 30 prefer to conduct payment transactions via mobile applications, and as societies have gradually moved from cash-based to digital societies, mobile payment services have emerged to replace traditional payment methods.

Cryptocurrencies: Cryptocurrency exchanges have been able to connect users who buy or sell cryptocurrencies such as Bitcoin.

Trading and investing: Trading and investing have improved with the adoption of financial technology. Information from Big Data is often unstructured and unreadable without the help of AI technologies. These technologies can sift through complex datasets and extract insights from them in seconds by using natural language processing, and traders can now run large amounts of data through algorithms.

2.2. Advantages of Using Financial Technology

1. Improves the quality of traditional financial institutions by increasing efficiency and productivity.
2. Completed financial transactions are at reduced costs.
3. Uses technologies that improve customer experience and enhance their confidence.
4. Does business faster and more efficiently.
5. Enjoys advanced security systems technologies. [16]

2.3. Financial Technology Services

The types that are stable in the global banking market, including Egypt, pay for most professional services and purchase goods and services using credit cards and loans, in addition to digital mobile services, which include various digital services. More of the services provided by digital technology, which may be for financial inclusion or other purposes, [17].

Business operations through FinTech take the subsequent virtual reality: [18]

1- Blockchains

It is an advanced database that allows clear information to be shared within the business network. A blockchain database stores data in blocks linked together in a chain. The data is temporally consistent because you cannot delete or modify the string without network consent. As a result, you can use blockchain technology to create an immutable or stable ledger to track orders, payments, accounts, and other transactions.

2- Cryptocurrencies

They are digital or virtual currencies that are secured by cryptography, making it nearly impossible to counterfeit or double-spend. Many cryptocurrencies are decentralized networks based on blockchain technology - a distributed ledger enforced by a disparate network of computers. A distinctive feature of cryptocurrencies is that they are not generally issued by any central authority, which makes them theoretically immune to government interference or manipulation. There are many cryptocurrencies, but Bitcoin is the first decentralized cryptocurrency to use blockchain technology to facilitate digital payments and transactions. Instead of using a central bank to control the money supply in the economy (such as the Federal Reserve along with the US Department of the Treasury) or related parties (a third party) to verify transactions (such as a local bank, credit card issuer bank, merchant bank, etc.)

3- Peer-to-Peer (P2P) E-Commerce

The term Peer-to-Peer (P2P) refers to the exchange or sharing of information, data, or assets between different parties without the participation or supervision of intermediaries. Simply put, the Peer-to-Peer (P2P) system includes direct decentralized interactions between individuals and groups. This approach has been used in computers and networks before (Peer-to-Peer file sharing), and now with cryptocurrency trading.

A P2P cryptocurrency exchange is a platform in the crypto world where users can exchange cryptocurrency with each

other privately without using any intermediary, such as banks or similar. P2P cryptocurrency exchanges allow authorized users to conduct asset trading without difficulties. Instead of using an order book to pair buying and selling orders and control the underlying assets on the platform, the P2P model allows users to transact with each other directly without using an intermediary to hold funds or process transactions for buying and selling in a peer-to-peer platform, depending on the system of the platform you choose, you may or may not be subject to additional identity verification.

4- Business-to-Business (B2B) E-Commerce

Business-to-Business transactions are exchanges between businesses, such as the exchange between manufacturers and wholesalers, wholesalers and retailers, or the commercial exchange between one company and another. B2B is a business model that focuses on selling products and services to other companies. Among the most popular services in our modern world are Dropbox, General Electric, Xerox, and WeWork; they are great examples of recent applications for B2B companies. It differs from B2C or business-to-consumer sales. [19]

3. Accounting and Tax Challenges Facing Financial Technology

3.1. Accounting Challenges

The financial services industry is one of the fastest-growing sectors of the economy. Technological developments, such as mobile payments and cloud-based accounting software, fundamentally transform how businesses operate and interact with their customers. Moreover, the shift in culture and literature in the accounting business has caused technological changes, according to nearly 90 percent of accountants. For accounting firms, the mainstay of their business has been providing compliance and advisory services to their clients. With the advent of financial technology, a new crop of startups is challenging the status quo and offering innovative solutions that are shaking up the financial and accounting industry:

3.1.1. Positive Aspects of Financial Technology in Accounting

Faster flow of financial data than ever before.

With increased power in the hands of critical decision-makers within organizations, companies can make more responsive and better-informed decisions due to increased access to data, process automation, and integration of software and tools. The continuous innovation in artificial intelligence and machine learning can display far more important information than manual analysis can provide, which can change the way companies understand and predict customer behavior. [20]

The impact of accounting technology on business decisions

Rapid access to data, insights, and information has allowed companies to make more informed and responsive decisions. In addition, process automation has allowed companies time to focus on growing their business.

3.1.2. How Technology Is Changing the Role of Accountants

With the advent of new technology, accountants can now provide more value-added services such as financial advisory, fundraising, personal tax advisory, investment advisory, and small business growth (entrepreneurship) advisory. With the increasing globalization of businesses, the need for accountants who can provide services in multiple languages and across industries will become more important. The use of technology will also allow accountants to become more efficient and provide a higher-quality service. Technology will also change how accountants communicate with colleagues in other organizations, including customers and suppliers. Using online collaboration tools will provide real-time advice and support for either investment funds or financial technology companies. [21]

3.1.3. Techniques for Developing Accounting Registration and Electronic Bookkeeping

1 - Artificial intelligence and robots:

With the help of artificial intelligence and bots, repetitive and time-consuming tasks such as data entry, invoices, payment reminders, inventory updates, and bookkeeping can be automated. This will save time for accountants to focus on the most important tasks.

2- Cloud computing technology:

Cloud computing has changed the rules of the game in the accounting industry. It has allowed accountants to access client data and provide information and financial reports through cloud computing anytime and anywhere, which allowed easy collaboration with clients and working on client accounts remotely. In addition, it enables accountants to be more involved with their clients and encourages strategic tasks rather than cumbersome paperwork.

3- Tax software innovations:

Recent tax software has improved data accuracy and computation with a reduced margin of error, which companies like to adopt to eliminate tax penalties with stakeholders and authorities. This tax software is also used to improve the efficiency and effectiveness of tax audits.

4- Dynamic mobile apps:

Mobile apps have changed the way businesses and consumers interact with accountants and data. Mobile apps allow businesses to track expenses, income, invoices, and receipts while on the go. This has helped companies manage their finances easily and stay on top of their accounts.

5- Blockchains

It is a distributed database that enables secure, transparent,

and tamper-proof transactions. This could revolutionize the accounting industry by making it easier to track financial transactions and reduce the chances of fraud (financial corruption). Blockchains could also facilitate the auditing of financial data and records. [22]

Thus, financial technology companies and their clients will benefit from these reduced operating costs allowing for better service delivery rather than time and resources spent on administrative functions such as accounting itself.

3.1.4. The Required Development

Many studies, including studies in the professional field of major accounting firms, indicated that accountants who wish to maintain their competitiveness in the accounting sector must adopt rapid changes in accounting technology. It also requires staying abreast of technological developments, improving, and adapting current accounting programs to suit their business requirements, and being open to adopting and learning new technologies.

3.1.5. The Interaction Between Financial Technology and Accounting

Although a computer that is as intelligent as a human and simulates it has not yet been invented, limited intelligence is rapidly increasing over time. This limited intelligence includes gaining experience, recognizing what is important, processing complex situations, understanding, and working with visual images, and being creative.

Accounting is no longer tedious and monotonous as repetitive work is carried out with the help of algorithms with a few clicks of a computer mouse with also great accuracy, reduced operating costs, and increased efficiency as profits and taxes are now calculated using software. Since accounting is done along with the occurrence of business transactions, the results are available on a real-time basis which saves more time in deciding on the economical use of accounting data.

3.2. Tax Challenges

3.2.1. Electronic Receipt

It is the replacement of paper sales receipts provided by the supplier to the consumer with a paper receipt of an official format approved by the Tax Authority through the electronic system that allows immediate review of the data recorded in the receipts issued by the financiers joining the system.

The receipt is subject to several specifications, the most important of which is that its content is unified for all financiers, registered merchants, and service providers, and the final consumer can check it electronically through the QR Code written on it, in addition to being secure and not subject to manipulation.

The electronic receipt contributes to the inclusion of all outlets within the framework of the informal economy that deal directly with the final consumer and issues receipts to customers, such as pharmacies, bakeries, clothing stores, supermarkets, selling foods, and commercial malls that include permanent and seasonal activities that achieve large returns in a manner that maximizes revenues for establishments and then tax revenues.

Among the advantages of the electronic receipt, which will also reflect positively on both the final consumer and the state in protecting the customers' rights, are the following:

1. Receive an official tax receipt for every purchase of a good or service as a legal basis for the tax paid to the state.
2. Guarantee their rights in case of any dispute between them and the financier (the merchant) with whom they made the purchase.
3. Join the loyalty program incentive system that the Tax Authority plans to implement in preparation for its launch in the future so that they get points, gifts, and rewards.
4. Increasing the tax revenue of the state
5. Achieving tax justice
6. Governing tax compliance
7. Achieving the comprehensive economic and commercial vision
8. Improving and developing tax procedures and services.

3.2.2. Electronic Invoice

On the idea of dealing between companies without the presence of a final consumer, once transactions are conducted between companies, an electronic invoice is issued and then sent electronically to the Tax Authority, which in turn reviews the entire transaction that took place between the two parties to the sales process. The following are the percentages of each tax for the total tax revenue. [23]

Table 1. *Distribution of tax revenues in Egypt.*

No.	Type of Taxes	Percentage	Possibility of tax avoidance and evasion
1	*Income Tax on natural persons*	*6.27%*	
2	From: Revenue from salaries	16.9%	doesn't exist
3	From: Revenues from commercial & industrial activity	4.9%	exists
4	From: Revenues non-commercial professions	1.1%	exists

No.	Type of Taxes	Percentage	Possibility of tax avoidance and evasion
5	From: Real estate wealth revenues	2.0%	exists
6	*Income Tax on legal persons*	*5.48%*	
7	From: Oil revenues	1.9%	doesn't exist
8	From: Suez Canal revenues	5.7%	doesn't exist
9	From: Corporate Revenue	9.31%	exists
10	*Income Tax on dividends and profits from the sale of securities*	*5.5%*	exists
11	*duty tax*	*2.6%*	doesn't exist
12	*Tax on treasury bills and bonds*	*9.11%*	doesn't exist
13	*Tax on capital gains*	*3.0%*	exists
Total		100%	

As operating models change, corporate tax departments, in general, financial technology companies, and banks may need to broaden their horizons to consider several different areas as follows:

1- Incentive systems

Many of these new models require organizations to innovate to remain relevant, whether through designing a new digital banking platform or integrating bundled services into a bank's existing infrastructure leading to opportunities to benefit from different countries' incentive systems, such as research and development credits or preferential rates for items approved from certain expenditures such as patents or innovation-based activities.

2- Digital services taxes

This is a currently contentious area, particularly with France and the UK introducing a digital services tax (DST) in a targeted manner and whether other countries will retaliate through mutual policy changes. While existing DSTs are not expected to have a material impact on this new business, other countries offer their unilateral measures regarding digital business models (for example, Spain, Austria, and Italy are currently considering this possibility).

3- Taxable Profits

Digital business models are generally subject to significant scrutiny from tax authorities all over the world, given the significant complexity this can bring on a cross-border basis, particularly when there is no physical presence.

4- Focus on Transaction Pricing

Any change in operating models usually leads to consideration of transfer pricing issues related to change; therefore, digital business models may require a fresh look at the value creation, value chain, and transfer pricing associated with many financial services institutions. The OECD Base Erosion and Profit Shifting Project (BEPS) called for a closer look and focus on the DEMPE functions (Development, Enhancement, Maintenance, Protection, and Exploitation) and the risk control functions.

5- Increase revenue from financial technology

Where new financial technology is a major driver of revenue generation and increased profits, the transfer pricing policies used may need to be modified to include a reward for the technological contribution, as is the case when residual profit-splitting methods are used.

4. An Applied Study

4.1. Aim of the Study

Technological development requires spreading sufficient awareness of how to deal with financial technology services and other future technology. The volume of financial exchanges and transfers was linked to the Corona crisis. With the imposition of partial closure in some areas, customers turned to electronic financial transactions, and the percentage of financial technology consumers increased from 33% in 2017 to reach 64% in 2021.

As mentioned in the study, the researcher aims to reach professional solutions within an academic framework to face the challenges facing financial technology companies in registration and accounting presentation, as well as when preparing tax returns, whether income for a legal person or wages and salaries to reduce the fight against tax avoidance, especially violent tax avoidance.

4.2. Study Population

In the context of the transformations that Egypt is currently witnessing, the first report of its kind issued by the Central Bank of Egypt indicated that the number of startups practicing financial technology and operating in this field increased from two startups only in 2014 to 112 companies by the end of 2021 in more than 14 sub-sectors of innovative financial technology sectors, an equivalent of 55 times, to make Egypt

among the four largest African countries active in this field. The following figure shows the development in the capital of financial technology companies, which was issued in a report by the Central Bank of Egypt.

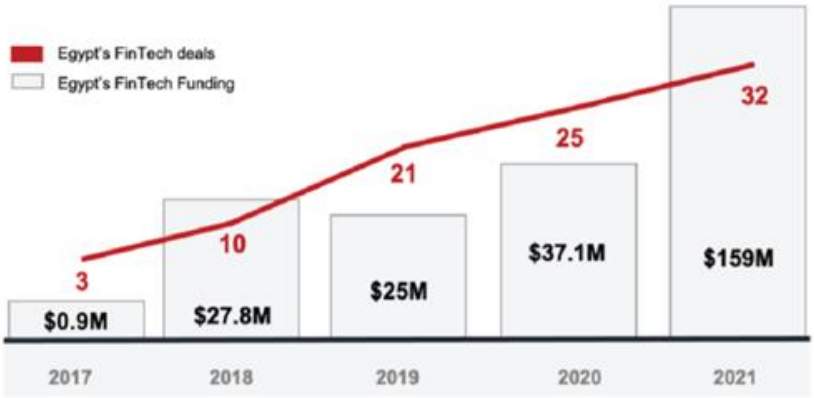


Figure 3. *Fund invested in financial technology companies in EGYPT.*

4.3. Sample of the Study

There are currently 112 startup financial technology companies in Egyptian society operating or supported by financial technology, known as Start-ups, working in 14 sectors of the following fields:

1. First-Class: 34 companies in the field of payments and transfers, representing about 30% of them.
2. Second-Class: 15 companies in the field of financing and lending, representing about 13%.
3. Third-Class: 9 Companies in the field of personal finance management, representing about 8%.
4. Fourth-Class: 9 Companies in the field of Administration, accounting and expenses, representing about 8%.
5. Fifth Class: 9 Companies in the field of wealth management, salaries and benefits, representing about 8%.

In the applied study, the researcher will rely on a selected sample of 4 companies out of the 112 companies that were chosen as a random sample from emerging companies in the field of financial technology, headquartered in Cairo, subject to tax accounting in the Center for Senior Financiers, and started working in Egypt in 2019 and continues to carry out its activities so far. Companies will be named in alphabetical terms while using a statistical coefficient for the confidentiality of data that could be obtained in the years 2019 to 2021. For the applied study, the researcher will rely on operating the data for the year 2021 for the selected companies in the sample to study the challenges they face in terms of accounting and tax problems and to indicate how to overcome them in the accounting cycle for the registration and presentation of financial statements under the Egyptian Accounting Standard No. (1) Preparation and Presentation of Financial Statements, as well as study the tax problems and how to overcome them to combat tax avoidance. The following are the names of those companies selected as a sample to identify them, the nature of the activity, and the value of the funding used.

Table 2. *The four most important financial technology companies in Egypt*

No.	Name	Funding	Activity
A	Telda	5 million US dollars	It is an emerging digital banking company that offers completely free accounts opened online that come with a MasterCard-backed card and P2P instant transfers.
B	Dayra	3 million US dollars	It offers virtual accounts, prepaid cards or microloans, plus in-app bill payment functionality and plug-and-play API integration.
C	NowPay	2.8 million US dollars	It gives salaries to employees of the companies in advance at any time during the month and then the companies deduct the borrowed amount from the monthly exchange statements and pay it back to NowPay.
D	Kashat	1.8 million US dollars	It provides micro-loan solutions to businesses in Egypt as its mobile platform offers short-term micro-loans ranging from EGP 100 to EGP 1,500 with a repayment period of up to 61 days.

4.4. Accounting Challenges

After reviewing the application of Egyptian accounting standards No. 47, 48, and 49, which correspond internationally to IFRS: 9 and15, in the sample companies, the researcher will discuss them as follows:

1- Egyptian Accounting Standard No. (47) "Financial Instruments":

Egyptian Accounting Standard No.: 47 "Financial Instruments", which replaced Egyptian Accounting Standard (26) Financial Instruments: Recognition and Measurement, was issued in April 2019 and the implementation of the standard begins on or after January 1, 2020, in Egypt, with the possibility of early application. Except for hedge accounting, where the retrospective application must be applied, the adjustment of comparative information is not mandatory. As for hedge accounting, the requirements are applied prospectively, with some limited exceptions. However, the sample companies chose not to apply the Egyptian Accounting Standard (47) early, and the application was made at the beginning of 2021.

The new impairment model requires the recognition of provisions for impairment in value based on expected credit losses (ECL) rather than incurred credit losses as is the case in the Egyptian Accounting Standard (26), and it applies to financial assets classified at amortized cost and debt instruments measured at fair value through other comprehensive income. The researcher found that the sample companies did the application and recognized the impairment losses according to the business aggregation model for the debtors' balances, but not for all the debtors' balances. Reference will be made to tax challenges later in these transactions.

2- Egyptian Accounting Standard No. (48) "Revenue from Contracts with Customers":

Egyptian Standard No. 48 was issued in April 2019 and will be effective from January 1, 2021. The standard establishes a five-step model for accounting for revenue from contracts with customers. The standard establishes a comprehensive framework for determining whether, in what amount, and when revenue should be recognized, bearing in mind that the standard supersedes existing revenue recognition guidelines, including Egyptian Accounting Standard 11 "Revenue" and Egyptian Accounting Standard 8 "Construction Contracts." Revenues are recognized at an amount that represents the consideration to which the entity expects to be entitled in exchange for transferring the goods or performing the promised services to the customer. It turned out that the sample companies chose not to apply the standard early, but Company (A) implemented the application on January 1, 2020.

3- Egyptian Accounting Standard No. (49) "Leasing Contracts"

Egyptian Accounting Standard 49 was issued in April 2019, and its effective date is January 1, 2020. It replaced LAS 20 "Accounting Rules and Standards Relating to Capital Leases", and Egyptian Accounting Standard 49 now requires lessees to recognize lease liabilities that reflect future "right-of-use" lease payments on approximately all lease contracts. There is an optional exemption for some short-term lease contracts and lease contracts for low-value assets. The sample companies applied the standard, as the companies applied the effect of the standard, which resulted in the recognition of the right-to-use assets and liabilities in return for the lease contracts.

4.5. Tax Challenges and Treatment Proposals

1. It was found that the sample companies calculated expect credit losses (ECL) as contained in the financial statements, but they did not add them to the taxable income, which they had to do, as it is not considered a deductible cost under the provisions of Article 24 of the Minister of Finance's declaration No. 172 of 2015 issued on 4/6/2015, considering that it is an expense that has not been realized. Thus, it will increase the taxable income upon examination by the tax administration of all sample companies, although those companies review their tax returns with the Big Four firms, the leading accounting and professional consulting firms.
2. The quarterly tax returns for the salaries of the sample companies were reviewed and found to be identical to the total monthly settlements, Payroll, from which the tax is calculated, but one of the companies, Company (C), was not identical even though the payment is made online on the electronic tax system. In the view of the researcher, this is because the information system of those companies, the ERP system, is ineffective in the tax system, except for the invoice and the electronic receipt, despite the application of the mechanized system in the tax administration.
3. It was found that the entire sample companies purchased a usufruct right in return for the uses of big data systems and cloud computing, and paid amounts abroad without deducting the 20% withholding tax contained in Article No. (56) of the Income Tax Law No. (91) of 2005 and its amendments, and provided them to the tax administration, and without deduction and supply of value-added tax on imported services (reverse assignment) contained in Articles: 17 and 32 of the Value Added Tax Law No. 3 of 2022 amending Law No. (67) of 2016 and its amendments. Consequently, the tax burden on these companies will be great for non-compliance with tax laws, and this may be because the tax experience of the employees of these companies has not received sufficient training.
4. It was found that the sample companies are registered for value-added tax and that they did not submit the monthly returns because they are subject to the exemption contained in the list of exemptions No. (36) at-

tached to Law No. (67) of the 2016 Value Added Tax Law which states "exemption of non-banking financial services subject to the supervision and control of the Financial Regulatory Authority," which corresponds to the executive regulations of the value-added tax law No. (66) of 2017, Article No. (78), item four. "Non-bank financial services" means non-bank financial instruments that are supervised and monitored by the Financial Supervisory Authority and outlined in Article 2 of Law No. (10) of 2009, including capital markets, futures exchanges, insurance activities, real estate financing, financial leasing, factoring, securitization, and microfinance added by Law No. (141) of 2014. In addition, the activity of these companies is among the activities supervised by the General Authority for Financial Supervision issued by Resolution No. 66 dated 7/12/2009. And since the nature of the activity of these companies is financing and insurance as companies that provide financial services, they are considered among the activities exempt from value-added tax if they do not practice within their activities an activity that is subject to value-added tax, unless they sell a used commodity. This applies to Company (D), but it did not pay the value-added tax on it, which is considered non-compliance with tax laws and the reverse charge in supplying the tax for the purchase of cloud computing services. This behavior is considered a form of tax evasion and not tax avoidance.

5. It was found that the sample companies did not apply the transfer rates between related persons, especially the parties with a relationship abroad, and apply the standards of Article (30) of the Income Tax Law and Articles No. (38-39) of the executive regulations issued by the Minister of Finance's decision No. 991 of 2005 as well as the Minister of Finance Decision No. 221 dated 5/22/2018 to add Article 40 to the executive regulations by adding new methods of determining the neutral price between the related parties. Therefore, this is considered a violent tax avoidance in accordance with the provisions of Article 92 bis issued by Law No. (53) of 2014 amending the provisions of Law No. 91 of 2005. Accordingly, the sample companies must agree with the tax administration in determining neutral prices according to the text of Article No. 127 of Law No. 91 of the year 2005 - Income Tax Law to ensure serious tax compliance.

4.6. Proposals to Treat Accounting and Tax Challenges

1. Applying ERP, People soft or Oracle technologies to the accounting cycle within the company or the first-time facility to interact with all financial transactions and apply the requirements of the accounting cycle until extracting financial reports for all financial transactions with renting a cloud computing to record the financial data on it, this contributes to reducing the risk of not recording any financial transactions that took place during official working days and interacting with the system requirements from anywhere inside or outside the company.
2. Executing the recordings in the direct application system for each transaction that took place and not waiting for Batch by Batch, which makes interaction faster in issuing financial reports. For example, if you want to transfer a sum of money from the company's account (A) to another person's account (B), the transfer process does not take place directly, but rather you need a third party to confirm the credibility of the company's account balance, then review the data of the two parties and encrypt the communication process Then, it stores the balance in a storage cloud until the integrity of all pending data is confirmed, and then transfers it to the balance of account (B). The financial dealings here are characterized by centralization sponsored by a third party. This party may be represented in the bank, the government institution, the delivery representative, or in any other way that sponsors the completion of the exchange process from party (A) to party (B). This is what is currently called Blockchain, and this gives emphasis on the validity of the financial transaction.
3. Dealing with the comprehensive tax system of salaries and collection declarations under the tax account and submitting the annual tax return for legal or natural persons through the tax information network with the possibility of uploading Excel files, for example, and interacting with them with the electronic tax system and applying tax review mechanisms electronically as well as tax notifications and not dealing with taxpayers except through the electronic tax system. Therefore, it must be adapted to that, as today it is not ready for application, for example, Excel salary files from ERP outputs or any other electronic system to facilitate application between the tax administration and the public of financial technology companies.
4. When interacting with artificial intelligence systems to identify the feasibility of financial transactions between financial technology companies and each other and the audience of dealers, it is necessary to update databases and rely on modern templates of big data for the possibility of predicting the seriousness of financial transactions among companies, especially customers who leave the world of business quickly, which affects the results of companies' business with successive losses, so it is necessary to constantly update the big data templates on which financial technology companies rely on.
5. Applying Article No. (52) / 1 of Law No. 91 of 2005 on financial technology companies regarding their en-

titlement to deduct debt returns without comparing the average loans and the average property rights as they are financing companies, specifically consumer financing companies stipulated in Law No. (18) of 2020.

6. It is necessary and imperative to apply Article No. (52) / 2 of Law No. 91 of 2005 to financial technology companies regarding their entitlement to deduct 80% of the technical provisions that they make on the occasion of paying the salaries of employees of the contracting companies or providing loans to others from the public customers with them due to the possibility of non-payment from some of the contracted companies provided that the value of the provision is measured under the requirements of Egyptian Accounting Standard No. (28) provisions because these companies are among the financing companies stipulated in Law No. (18) of 2020, the Consumer Finance Law.

4.7. A Field Study on the Study Sample

In this part, the researcher prepares a field study to find out the most important differences among investigators regarding the innovations of financial technology that greatly contribute to the speed of preparing and presenting the financial statements in a correct manner far from the errors of financial corruption without exposure to audit failures and contribute to a large extent in tax avoidance when preparing tax returns through what follows:

Hypotheses

The first hypothesis:

There are no statistically significant differences as the significance level is (0.005) among the study groups regarding that information technology innovations contribute to presenting the financial statements of companies that provide financial technology services via the Internet in a faster way, with high accuracy in accounting registration and distinguished internal audit results.

The second hypothesis:

There are no statistically significant differences as the significance level is (0.005) among the study groups regarding that financial technology innovations contribute to exchanging tax information faster and without errors in preparing and sending wage and salary forms to workers according to the tax administration's publications on the electronic tax system (quarterly and annually) and paying wages and salaries tax monthly on the Internet for those companies and related companies in a way that is far from any errors and represents confirmation of automated tax obligations.

The third hypothesis:

There are no statistically significant differences as the significance level is (0.005) among the study groups regarding that financial technology innovations contribute to reducing tax avoidance when preparing and uploading the annual tax return for legal persons and forms of deduction and collection transactions under the quarterly tax for companies that provide financial technology services because they are prepared in adaptation with electronic tax systems.

4.8. Statistical results

Table 3. *Reliability test.*

Reliability Statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**No. of Items**
0.86	0.92	19

It is evident from the table above the validity of the respondents' answers to the survey lists from the high-reliability test result as shown above.

Study hypotheses test:

The first hypothesis: It is clear from the result of the chi^2 test that there are no differences among the study groups, according to the following table:

Table 4. *Chi-Square Tests: X.*

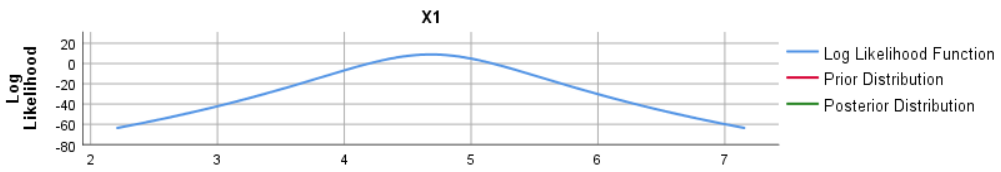
X					
		Frequency	**% Percent**	**Valid Percent**	**Cumulative Percent**
valid	No	5	7.6	7.6	7.6
	Yes	61	92.4	92.4	100.0
	Total	66	100.0	100.0	
Chi-Square Tests: X					
			Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square			5.900	1	.003

It is clear that (61) of the respondents, representing 92.4%, agreed that there are no statistically significant differences at the level of significance (0.005) among the study groups that information technology innovations contribute to the presentation of the financial statements, as is evident from the calculated Chi^2 result= 5.9, which exceeds the tabular value which confirms that financial technology innovations contribute to presenting the financial statements of companies that provide financial technology services via the Internet in a faster way, with high accuracy in accounting registration and distinguished internal audit results; those who agreed on this have contributed to the phrases from (1) to (5), where most of them, in terms of discrepancy, refer to phrase (3), and the least refers to the phrase (4), of the total number of 66 respondents, as shown in the following table from the outputs of SPSS.

Table 5. *Distribution Characterization for One-Sample Mean of: X.*

Posterior Distribution Characterization for One-Sample Mean						
	N	**Posterior**			**95% Credible Interval**	
		Mode	**Mean**	**Variance**	**Lower Bound**	**Upper Bound**
X	66	.92	.92	.001	.86	.99
X1	66	4.68	4.68	.012	4.46	4.90
X2	66	4.85	4.85	.006	4.70	5.00
X3	66	4.83	4.83	.004	4.70	4.96
X4	66	4.55	4.55	.019	4.27	4.82
X5	66	4.85	4.85	.006	4.70	5.00

The average of the five expressions is very close to the normal distribution for all the study groups, as shown in the following figure for the five expressions.



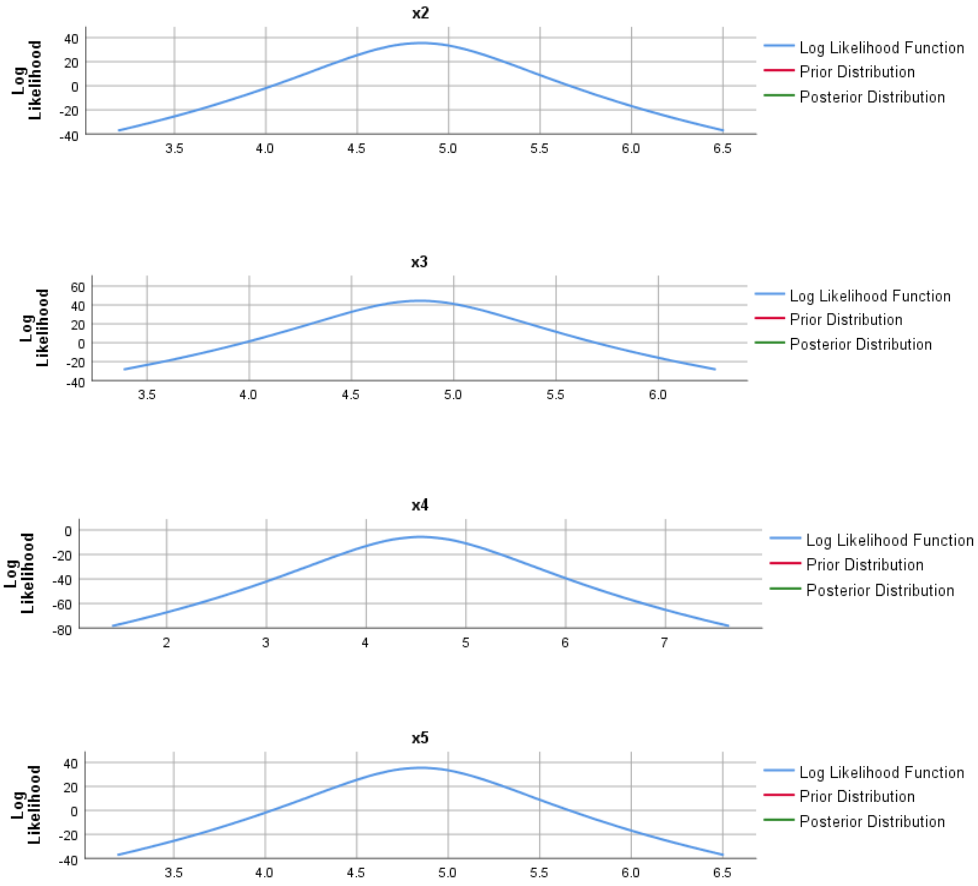


Figure 4. *Normal distribution of the study sample of: X.*

The second hypothesis: It is clear from the result of the Chi^2 test that there are no differences among the study groups, according to the following tables:

Table 6. *Chi-Square Tests: Y.*

Y					
		Frequency	**% Percent**	**Valid Percent**	**Cumulative Percent**
Valid	No	3	4.5	4.5	4.5
	Yes	63	95.5	95.5	100.0
	Total	66	100.0	100.0	
Chi-Square Tests: Y					
		Value	df		Asymptotic Significance (2-sided)
Pearson Chi-Square		6.000	4		.002

It is clear that (63) of the respondents, representing 95.5%, agreed that there are no statistically significant differences as the significance level is (0.005) among the study groups regarding that information technology innovations contribute to exchanging tax information faster and without errors in preparing and sending wage and salary forms to workers according to the tax administration's publications on the electronic tax system as is evident from the calculated Chi2

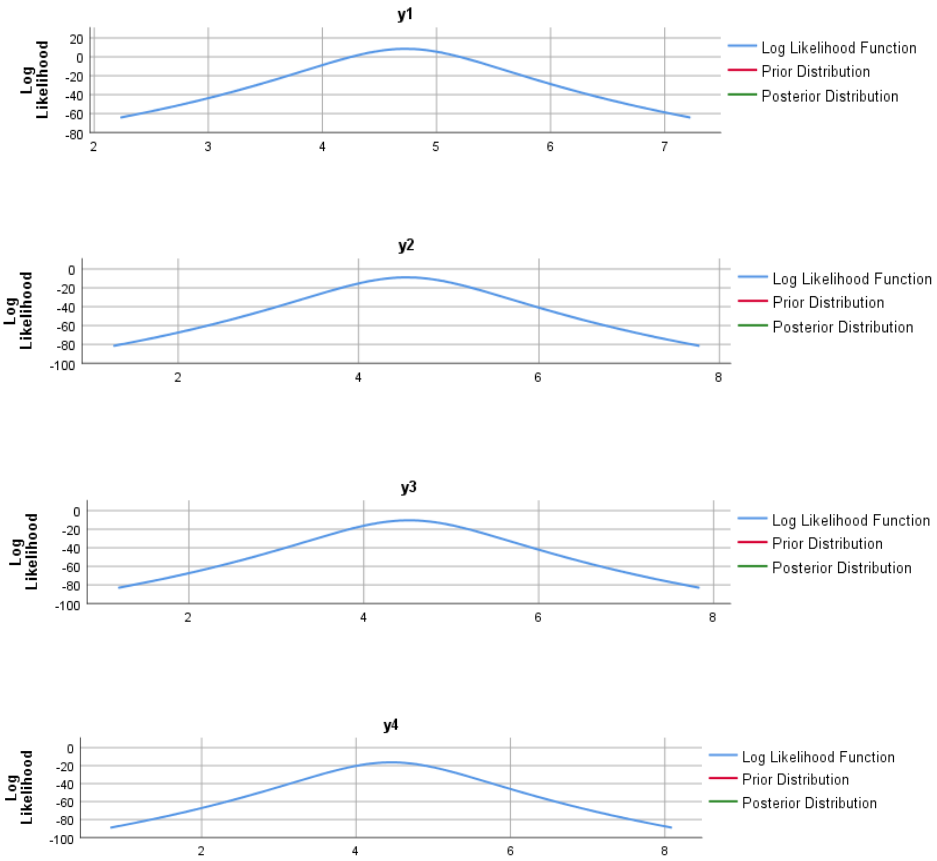
result= 5.9, which exceeds the tabular value which confirms that financial technology innovations contribute to avoiding any mistakes and represent confirmation of automated tax obligations; those who agreed on this have contributed to the phrases from (1) to (5), where most of them, in terms of discrepancy, refer to phrase (5), and the least refers to the phrase (4), of the total number of 66 respondents, as shown in the following table from the outputs of SPSS.

Table 7. *Distribution Characterization for One-Sample Mean of: Y.*

Posterior Distribution Characterization for One-Sample Mean

	N	Posterior			95% Credible Interval	
		Mode	Mean	Variance	Lower Bound	Upper Bound
Y	66	.95	.95	.001	.90	1.01
Y1	66	4.73	4.73	.013	4.51	4.95
Y2	66	4.53	4.53	.021	4.24	4.82
Y3	66	4.52	4.52	.022	4.22	4.81
Y4	66	4.45	4.45	.027	4.13	4.78
Y5	66	4.73	4.73	.011	4.52	4.93

The average of the five expressions is very close to the normal distribution for all the study groups, as shown in the following figure for the five expressions.



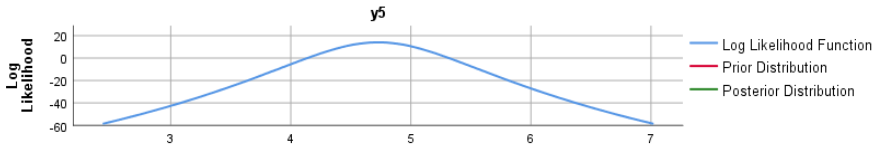


Figure 5. *Normal distribution of the study sample of: Y.*

The third hypothesis: It is clear from the result of the Chi^2 test that there are no differences among the study groups, according to the following tables:

Table 8. *Chi-Square Tests: Z.*

Z					
		Frequency	**% Percent**	**Valid Percent**	**Cumulative Percent**
	No	6	9.1	9.1	9.1
Valid	Yes	60	90.9	90.9	100.0
	Total	66	100.0	100.0	
Chi-Square Tests: Z					
		Value	df	Asymptotic Significance (2-sided)	
Pearson Chi-Square		5.800	4	.004	

It is clear that (60) of the respondents, representing 90.9%, agreed that there are no statistically significant differences as the significance level is (0.005) among the study groups regarding that financial technology innovations contribute to reducing tax avoidance when preparing and uploading the annual tax return for legal persons and forms of deduction and collection transactions under the quarterly tax for companies that provide financial technology services because they are prepared in adaptation with electronic tax systems as is evident from the calculated Chi2 result= 5.800, which exceeds the tabular value and confirms that financial technology innovations contribute to reducing tax avoidance; those who agreed on this have contributed to the phrases from (1) to (5), where most of them, in terms of discrepancy, refer to phrase (4), and the least refers to the phrases (2) and (3), of the total number of 66 respondents, as shown in the following table from the outputs of SPSS.

Table 9. *Distribution Characterization for One-Sample Mean of: Z.*

Posterior Distribution Characterization for One-Sample Mean						
	N	**Posterior**			**95% Credible Interval**	
		Mode	**Mean**	**Variance**	**Lower Bound**	**Upper Bound**
Z	66	.91	.91	.001	.84	.98
Z1	66	4.77	4.77	.012	4.56	4.99
Z2	66	4.33	4.33	.028	4.00	4.66
Z3	66	4.47	4.47	.028	4.14	4.80
Z4	66	4.71	4.71	.010	4.51	4.91
Z5	66	4.64	4.64	.019	4.36	4.91

The average of the five expressions is very close to the normal distribution for all the study groups, as shown in the following figure for the five expressions.

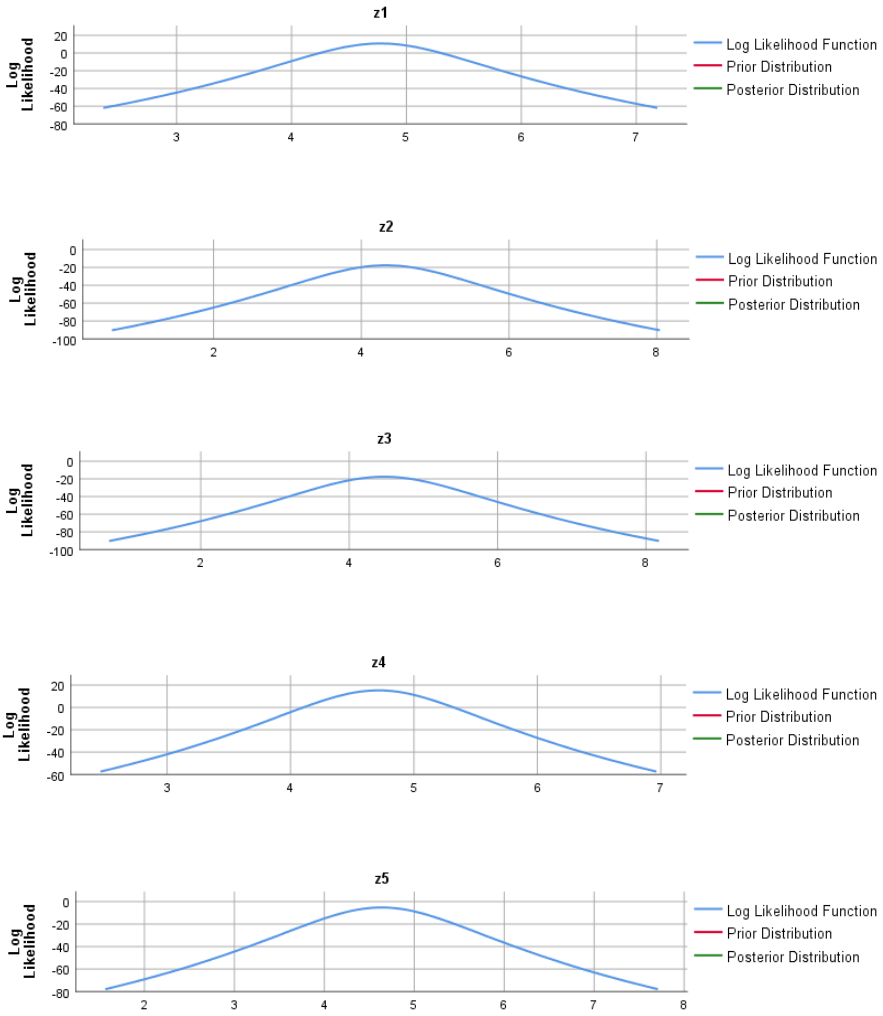


Figure 6. *Normal distribution of the study sample of: Z.*

When testing the three questions and running them statistically at once (One-Sample Test), which tests the hypotheses of the study together for all the study items to show the significance of the answers, the following is revealed:

Table 10. *One-Sample Test for: X, Y, Z.*

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
X	28.160	65	.000	.924	.86	.99
Y	36.946	65	.000	.955	.90	1.01
Z	25.495	65	.000	.909	.84	.98

The table above shows that the respondents' answers indicated that there were no statistically significant differences as the significant level is (0.005) for the three questions for all study groups, at 65 degrees of freedom, and the calculated value of the T-test is greater than the tabular value of the answer to each question which indicates the acceptance of the validity of the study hypotheses that there are no differences among the study groups. It was also found through the statistical analysis that there are no differences according to what was previously stated when reviewing the result of each hypothesis separately.

4.9. Statistical Operation Results

Acceptance of the validity of the first hypothesis: there are no differences among the study groups regarding that information technology innovations contribute to presenting the financial statements of companies that provide financial technology services via the Internet in a faster way, with high accuracy in accounting registration and distinguished internal audit results.

Acceptance of the validity of the second hypothesis: there are no differences among the study groups regarding that financial technology innovations contribute to exchanging tax information faster and without errors in preparing and sending wage and salary forms to workers according to the tax administration's publications on the electronic tax system (quarterly and annually) and paying wages and salaries tax monthly on the Internet for those companies and related companies in a way that is far from any errors and represents confirmation of automated tax obligations.

Acceptance of the validity of the third hypothesis: there are no differences among the study groups regarding that financial technology innovations contribute to reducing tax avoidance when preparing and uploading the annual tax return for legal persons and forms of deduction and collection transactions under the quarterly tax for companies that provide financial technology services because they are prepared in adaptation with electronic tax systems.

5. Recommendations

All companies providing financial technology services are required to apply the ERP system "Enterprise Resource Planning systems" when recording all their financial transactions because they are under the provisions of the automated Oracle systems and are consistent with the requirements of Egyptian accounting standards in the presentation of the financial statements.

The necessity of training the tax community through scientifically equipped teams from the tax administration available in the Federation of Chambers of Commerce, the Federation of Industries, research institutions, clubs, and other institutions to urge the tax community to interact with electronic tax systems and publish evidence for that to increase awareness of electronic tax.

Implementation of the ERP system "Enterprise Resource Planning Systems" for all establishments operating in Egypt to distribute electronic receipts issuing machines and interact quickly with the tax administration automated systems to achieve tax justice in tax accounting and curb tax avoidance.

Providing training programs for the tax administration from electronic tax review systems applied in the United Kingdom, the United States of America, and other European Union countries on electronic mechanized systems to achieve rapid development in the automatic review of tax returns.

The need for the tax advisor or the person in charge of preparing and approving tax returns for financial technology companies to be professionals other than the auditor for companies providing financial technology services because the separation of jobs leads to better accounting and tax results, which reduces the volume of tax disputes.

The need to allow companies to amend their tax returns, especially annual salaries, after submitting them to correct errors, if any.

6. Conclusion

This study showed the role assigned to startup companies and the extent of their importance in adding to the gross domestic product, and it may be a locomotive to attract more funds to expand investments in financial technology activities. The researcher recommends the need to expand the study of the variables and reasons that hinder the establishment of more of these companies in the business environment. So what are the additions that these companies offer with the artificial intelligence revolution?

Author Contributions

Nabil Abd El-Raouf Ebrahim is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] From publications: The Central Bank of Egypt website, https://www.cbe.org.eg about the request for the speedy generalization of financial technology services.

[2] Erik Feyen, Jon Frost, "Fintech and the digital transformation of financial services: implications for market structure and public policy" Monetary and Economic Department. International bank. July 2021.

[3] Clarifications and inquiries: The Financial Regulatory Authority (FRA), https://fra.gov.eg/ to show the impact of financial technology companies on the development of the lending market in Egypt.

[4] Yafen Ye, Shenglan Chen, Chunna Li, "Financial technolo-gy as a driver of poverty alleviation in China: Evidence from an innovative regression approach". Journal of Inno-vation & Knowledge, 3 February 2022.

[5] Marisa A. Sánchez, "A multi-level perspective on finan-cial technology transitions". Technological Forecasting and Social Change, Volume 181, August 2022.

[6] Yu Youa Zongdai Yub Wenqiao Zhangc LeiLud, "FinTech Platforms and Mutual Fund Markets", Journal of International Financial Markets, Institutions and Money, 8 September 2022.

[7] Cipriani, Marco & Guarino, Antonio & Uthemann, Andreas, 2022. "Financial transaction taxes and the informational efficiency of financial markets: a structural estimation," LSE Research Online Documents on Economics 115664, London School of Economics and Political Science, LSE Library.

[8] Francesco Cappaac Francesca Collevecchiob Raffaele Orianic Enzo Peruffoc, "Banks responding to the digital surge through Open Innovation: Stock market performance ef-fects of M&As with fintech firms", Journal of Economics and Business, Volume 121, July–August 2022.

[9] Victor Murindea Efthymios Rizopoulosb Markos Zachariadisb, "The impact of the FinTech revolution on the future of banking: Opportunities and risks" International Review of Financial Analysis, Volume 81, May 2022.

[10] Hakkı Deniz Karaman Tanseli Savaser Gunseli Tumer-Alkan, "Financial technology in developing economies: A note on digital lending in Turkey", Economics Letters, Vol-ume 207, October 2021.

[11] Tsui -Yueh Cho Yi- Shuan Chen, "The impact of financial technology on China's banking industry: An application of the meta frontier cost Malmquist productivity index", The North American Journal of Economics and Finance, 22 March 2021.

[12] Ani Stoykova, Mariya Paskaleva "RISK MANAGEMENT AND ACCOUNTING WITH FINTECH" Entrepreneurship, 2020, vol. 8, issue 1, 59-73.

[13] Carmen Leong Felix Ter Chian Tan Fithra Faisal, "The emancipatory potential of digital entrepreneurship: A study of financial technology driven inclusive growth", Infor-mation & Management, 23 October 2020.

[14] Pavel Leonov Anastasia Kozhina Artyom Sviridenko, "Vis-ual analysis in identifying a typical indicator of financial statements as an element of artificial intelligence technolo-gy in audit", Procedia Computer Science, Volume 169, 2020. 15 April 2020.

[15] Hui Li Nazar Usman Xiaoying Tang, "Does the resources curse hypothesis exist in China? What is the dynamic role of fiscal decentralization, economic policy uncertainty, and technology innovation for sustainable financial develop-ment?" Resources Policy, 22 September 2022.

[16] Dr. Basant Ali Ahmed Noureddine, "A quantitative ap-proach to measuring the expected added value in the ac-counting application of financial technology in order to hedge against its risks in the financial markets." Journal of Financial and Commercial Research - Volume (23) Issue 3 - Port Said University. July 2022.

[17] Dr. Nahla Abul-Ezz, "The Impact of the Application of Financial Digitization Technology on Financial Inclusion in the Banking Sector in African Countries," Journal of the Faculty of Politics and Economics, Issue Ten, Cairo Univer-sity - Faculty of Higher African Studies - April 2021.

[18] Dr. Wahiba Abdel-Rahim and Dr. Al-Zahraa Oqasem, "Financial Technology in the Gulf Countries between the Nov-elty of the Phenomenon and the Speed of Absorption," Journal of Economic Studies. University Center Tamanras T. ISSN: 2602-7925, Issue 28, 2019.

[19] Rongda Chenabc Jiahao Huanga Chenglu Jinab Yili Yanga Bing Chena, "Multidimensional attention to Fintech, trading behavior and stock returns". International Review of Economics & Finance, Volume 83, January 2022, Pages 373-382.

[20] Shuo Huang, "Does FinTech improve the investment efficiency of enterprises? Evidence from China's small and medium-sized enterprises", Economic Analysis and Policy, Volume 74, June 2022, Pages 571-586.

[21] Federico Carlini Belinda Laura Del Gaudio Daniele Previ-tali, "Banks FinTech and stock returns", Finance Research Letters17 June 2021.

[22] Anjan V. Thakor, "Fintech and banking: What do we know"? Journal of Financial Intermediation, 22 August 2019.

[23] Ryan Randy Suryono Indra Budi Betty Purwandari, "Detection of fintech P2P lending issues in Indonesia", Heliyon19 April 2021.