

Conceptual Paper

The Impact of Financial Technology on Auditing **Profession: An Analytical Perspective**

Mohamed Khamis Juma Zaytoun¹⁰, Mohamed Mahmoud Salem Elhoushy¹⁰ Department of Accounting, Arab East College, Riyadh, Saudi Arabia

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Abstract

This research aims to analyze the impact of the increasing development of financial technology on the auditing profession. To achieve this goal, it defined financial technology as the use of technological innovation in the financial sector using the online market as a place to provide solutions to various financial problems experienced by digital customers through the development of strategic models, processes, applications, or innovative products. The auditing profession faces great challenges; the changes brought about by fourth industrial revolution are not limited to technology only, but have extended to include the need to redesign some of the concepts that constitute the basic building blocks of accounting and auditing; like the concept of value. The changing face of the business environment may shift professional services from focusing on assurance services to focusing on non- assurance services. The research concluded that financial technology innovations enhance the use of the real time audit approach and the emergence of audit applications. The research also concluded that there is an update in the professional assurance services currently provided by the auditor. The role of the auditor emerged in assurance management's assertions regarding the effectiveness of internal control over information technology, management's disclosures regarding the application of artificial intelligence tools, auditing fair value estimates and accounting estimates prepared using artificial intelligence tools, management's disclosures about cybersecurity risks, and cyber security risks management. Finally, the research concluded that new professional services have emerged, including auditing smart contracts, Trust assurance service in blockchains system, the function of the central administrator, and the function of arbitration in disputes. However, to achieve the future vision of professional assurance services for the auditor, the profession needs to overcome a number of challenges. First, it is to bridge the gap between the approach and method of real time audit and current auditing standards. Second, high investment to create tools to automate the audit.

Keywords: Assurance Services, Auditing Profession, , Blockchains, Financial Technology, Smart Contracts.

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¹ Corresponding author's Email: mkzaytoun@arabeast.edu.sa



Introduction

Over the past two decades, there have been rapid developments in internet, social media, and mobiles. These developments have led to digital disruption that had a widespread impact on the business community. In financial institutions specifically, the most innovative and emerging companies are exploring the opportunities available from the failure of traditional banks to respond to digital developments, by providing a variety of complex software solutions, and offering wide-ranging financial services systems and processes, extending from providing online loans and payments to managing assets and foreign currencies. Digital disruption introduced by new and innovative participants in financial sector is often known as Financial Technology (FinTech) (World Economic Forum 2016; Treasury 2016; Juita 2019; Utami et al. 2021; Stankevičienė and Kabulova 2022; Giglio 2022).

FinTech can affect financial institutions internally through integration of financial technologies into their operations, and externally through emergence of new FinTech companies that offer services that traditional financial institutions do not offer or provide less efficiently (Schueffel 2016; PWC 2017; Navaretti et al. 2017; Demirguc -Kunt et al. 2018; Gimpel et al. 2018; Kemboi 2018; Utami et al. 2021). In its definition of FinTech, the Basel Committee decided to use the definition proposed by Financial Stability Board, which is that is a financial innovator based on to use technology that can create strategic models, processes, applications, or innovative products that have an impact on financial markets and institutions and on providing financial services (FSB 2017; BCBS 201).

In general, FinTech involves the application of a variety of advanced technologies to support the development of the finance industry and related fields include big data, artificial intelligence, cloud computing, and blockchain (Fernandez-Vazquez et al. 2019; Wang et al. 2021; Stankevičienė and Kabulova 2022; Giglio 2022). In addition, FinTech includes both digital innovations and technology-enabled business model innovations in financial sector (Wang et al. 2021). Such innovations can disrupt existing industrial structures, blur industry boundaries, facilitate strategic disintermediation, change how existing firms create and deliver products and services, provide new gateways to entrepreneurship, and democratize access to financial services (Philippon 2016; Wang et al. 2021).

Today's financial markets are witnessing various applications of FinTech, from crowdfunding, peer-to-peer lending, smart contracts, and robo-advice to the most popular applications in the field of cryptocurrencies (Utami et al. 2021; Giglio 2022). Therefore, we can said that FinTech is described as the application of technological innovation in financial markets.

On the other hand, the rapid and comprehensive developments of FinTech have not only affected how financial services are delivered to customers but have also had an impact on accounting service providers and related regulations (PWC 2017; Juita 2019). In addition, the increasing role that FinTech companies now play represents both a challenge and an opportunity for accounting profession; For example, many bookkeeping processes are automated using cloud-based accounting. The development of FinTech also



increasingly emphasizes the importance of the availability of forward-thinking professional accountants, who have a strong digital understanding, and can provide guidance on how a company can address the challenges and opportunities presented by FinTech development in the future (Richins et al. 2017). Thus, we can be said that although the presence of FinTech will reduce the working time of many current financial functions, the nature of adaptation to this rapid technological revolution will also require shifts in measurement, accounting disclosure, and professional assurance services. For this reason, accountants, auditors, and finance stakeholders are required to be able to participate in the digital transformation process, and to be able to provide continuous analysis that can help companies understand the value created by these changes.

In the same context, the development of the modern auditing profession has driven by technological development in the past decades. Traditional, labor-intensive manual auditing has left a heavy burden on auditors who tasked with providing a reasonable level of assurance over an entire company within a limited period. Since the 1970s, auditors have gradually been able to use computers, software, and databases to examine accounting data (Hoffman 2017; Juita 2019). These tools significantly reduced auditors' efforts to track transactions. Since then, an increasing number of techniques have been used in the audit profession to increase the efficiency and effectiveness of audit activities, and ultimately to improve the professional assurance quality.

Based on the above context, the problem of the study is to answer theoretically and critically the following question: What is the impact of FinTech on the auditing profession? Therefore, the current study aims to evaluate the development of FinTech and identify the extent of its impact on the auditing profession through an analysis of accounting research. This study derives its importance from that provides a theoretical framework linking both FinTech innovations and auditor services considering the digital environment, as well as from its response to the recent global awareness of the importance of technological trends that affect the auditor roles, with the aim of increasing the level of transparency and value relevance of auditing profession.

To achieve the objective of the current study, the remainder of it will be organized as follows: First: Financial technology: definition and characteristics. Second: The impact of financial technology on the auditing profession. Finally: Summary of the study and proposed research areas.

Financial Technology: Definition and Characteristics

The definition of the term FinTech has received the attention of many, as the study of Dapp et al. (2014) stated that FinTech is a term used to describe the digitization occurring in financial sector, and refers to new and innovative companies operating in the field of information technology that aim to change the traditional financial sector. Likewise, Truong (2016) explains that FinTech refers to companies that provide financial business services through technological platforms or means (Internet), making financial products and services more innovative and efficient¹. FinTech is a new form of financial services provided by startups companies that are trying to change the forms and methods of

¹ The definitions provide a clear distinction between innovation and disruption, where innovation fits into existing regulatory frameworks while disruption requires the development of new rules (Utami et al. 2021).



traditional financial transactions to become new, modern, and more efficient. These transactions use high-tech devices such as mobile payment systems, money transfer, peer-to-peer lending/borrowing, fundraising, and asset/wealth management, and blockchains (Stankevičienė and Kabulova 2022; Giglio 2022).

In the same context, the studies of Wesley et al. (2015) and Ozili (2018) define FinTech as companies, not phenomena, which provide technologies for banking, corporate finance, capital markets, financial data analytics, payments, and personal financial management. FinTech also includes companies that use technology in lending, personal finance, payments, and retail investments, institutional investments, equity financing, remittances, retail banking, financial research, and banking infrastructure (Skan et al. 2014).

Dinardo (2015) confirm; Vasiljeva and Lukanova (2016) and Gomber and Siering (2017) state that FinTech comes from two words: financial and technology, it refers to all companies that apply technological innovations in the financial services industry. FinTech in financial sector is considered the alternative that yields important innovation from the use of an online marketplace that works by meeting the needs of borrowers with offers from investors and fund owners. The alternative financial services consist of crowdfunding, online invoice trading, merchant financing, payments, and trade finance (Hamadeh 2022). Although different in the form of business models, the different forms of FinTech share the same features: that they are web-based rather than bank-based, and that they offer products and services similar to those of a bank but use the influence or power of their customers' experience (Milian et al 2019).

Accordingly, we can said that FinTech is the use of technological innovation in the financial sector by using the online market as a place to provide solutions to various financial problems that digital customers suffer from.

On the other hand, Lee and Teo (2015); Vasiljeva and Lukanova (2016); Demirguc-Kunt et al. (2018) and Utami et al. (2021) define FinTech as an industry geared towards arranging and organizing financial services for individuals and industries with the aim of providing customer-oriented solutions in the most efficient way and at the lowest possible cost, through innovation and technology¹. As innovative ideas that improve financial services operations by proposing technical solutions according to different business situations, while the ideas can also lead to new business models or even new businesses (Leong and Sung 2018). In other words, the proposed definition of FinTech and its status as an innovative reference can also serve to help companies rethink their business models or even propose new business models. FinTech consists of multiple elements that can be divided into four main categories: finance, asset management, payments, and other financial technologies. In turn, these four categories include distinct types of technology (Dortfleitner et al. 2016).

¹ Ozili et al. (2018) have confirmed that various technological innovations in financial institutions are retail banking services, debit and credit cards, free advisory services, and the implementation of standing instructions. To customers, utility bill payment, money transfer, internet banking, mobile banking, point of sale terminals, selling insurance products, issuing free check books, traveler's cheques, and many more valuable services.



The Impact of FinTech on the Auditing Profession

Turker and Bicer (2020) indicated that the changes brought about by Fourth Industrial Revolution are not limited to technology only but extend to the need to redesign some of the concepts that constitute the basic building blocks of the auditing profession; the concept of value. Traditional audit services are likely to remain essential; however, auditors will need to raise the bar of the profession by providing increasingly complex assurance services in more flexible business environments supported by future digital transformations (Drew 2018). The changing face of the business environment may shift professional services from a focus on assurance services to a focus on non-assurance services. A different professional auditing mindset and additional expertise will be needed to meet stakeholder expectations in this new, untested ecosystem (Nikitin 2017).

It can be said that FinTech innovations and the tools used to apply them can affect auditor services from three directions: first: promoting the shift from the traditional audit approach to the real time audit approach. Second: developing the professional assurance services currently performed by the auditor regarding confirming the effectiveness of the internal control structure, confirming non-financial electronic disclosure, and other assurance services. Third, the emergence of new professional assurance services that suit the FinTech environment.

Regarding enhancing the shift from the traditional audit approach to the real time audit approach, one of the main advantages of blockchains, which are used in FinTech innovations, is to increase the possibility of information audibility, blockchain technology, in addition to preventing errors, can also prevent fraud and earning management. (Cai and Zhu 2016; Fanning and Centers 2016; Drew 2018; Gökten and Özdoğan 2020). Additionally, although permission to add a new record to the chain can only be granted to the relevant company via the individual blockchain infrastructure, audits can be developed by granting follow-up permission to the audit firm (Drew 2018; O 'Leary 2017). In addition, to improve auditing processes, with the aim of detecting errors and fraud more accurately, audit firms are attaching importance to the use of technology and making significant investments in areas such as big data analysis (Cohn 2017). Accordingly, the use of blockchain technology in auditing will increase audit transparency and reliability of audit reports by making traceable audit efforts. All activities and results of previous audits can be completely transferred to the new audit firm; thus, the audit quality can be increased. Moreover, regulatory bodies need to formulate a new set of objectives for assurance and audit services, especially to build an audit portal for real-time data management (Turker and Bicer 2020). To develop assurance services, the profession might evaluate by providing assurance the reliability of blockchains rather than auditing transactions, and it is possible that the audits could be done on the digital environment and would not require any fieldwork. However, new skills will need improvement. Regulatory bodies also need to adopt their standards and educational programs for these developments, and the auditor will need to innovate in terms of continuous learning (Turker and Bicer 2020).

Appelbaum and Nehmer (2017) showed that there are three critical issues that may lead to disruptions in current audit processes and their lack of integrity, which are data reliability, data security, and transaction transparency. To overcome it, auditing may



become real time if organizations keep their accounting records in blockchains, integrate them with enterprise resource planning (ERP) systems, and give auditors permission to follow up (Christidis and Devetsikiotis 2016). In this way, the role of audit will evolve to prevent rather than detect fraud and corruption. Gökten and Özdoğan (2020) showed that there are many obstacles that prevent the establishment of a complete control environment through current corporate resource planning systems; both ERP users and IT users can deactivate or distort various controls during or after a transaction is executed. In this case, the audited transactions may be viewed as not containing material misstatements (Bumgarner and Vasarhelyi 2018). Conversely, when using blockchains transactions cannot be unilaterally changed or destroyed, and the entire process of a transaction can be followed by authorized parties simultaneously, thus this infrastructure opens the doors to real time auidt for internal auditors as well as external auditors (Drew 2018). At the same time, the cost of auditing can be significantly reduced, and effectiveness can be increased by enabling remote auditing (Byrnes et al. 2014).

In the same context, Krahel and Titera (2015); Zhang et al. (2015); Arnold (2018); Gepp et al. (2018) and Altarawneh and Al-Makhadmeh (2022) showed a change in the way audits are conducted through the use of big data analytics (BDA) techniques, which promotes more efficient and effective audit processes, and provides a wide range of tools, including text-mining and sentiment analysis techniques, which are suitable in the preacceptance engagement stage, to analyze various aspects of the media as a means of establishing the client's potential financial reputation and information about its key officials, for example, CEO and CFO (De Santis and D'Onza 2021; Altarawneh and Al-Makhadmeh 2022). At the same time, clustering techniques are useful for comparing a potential client's financial statements with those of other companies in the same industry as a means of establishing the organization's financial stability (Rose et al. 2017; Appelbaum et al. 2018). Big data analytics techniques also help determine whether an audit contract will be executed or not, and what fees will be charged. At the planning stage, traditional analyzes can be supported by clustering, descriptive and regression analyses, allowing the auditor to reach a more detailed picture of his client, and thus gain more insight into risk and materiality (Cao et al. 2015; Earley 2015; Altarawneh and Al-Makhadmeh 2022).

On the other hand, Turker, and Bicer (2020) indicated that while the audit process may become more real time, auditors must still apply professional judgment when analyzing accounting estimates and other judgments made by management when preparing financial statements. In addition, for areas that are becoming automated, they will also need to evaluate and test internal control over data integrity for all relevant sources of financial information.

In addition to the development of the real time audit approach, the development of audit applications (Audit Apps)¹ has emerged, and the term "application" refers to a software application that runs on devices, such as computers, tablets, and smartphones

¹ CaseWare International Inc. has begun developing audit applications in recent years. It has created a market selling audit apps that can only run on its own platform. There are about 23 audit apps in the market covering various accounting accounts and ledgers such as general ledgers, accounts receivable, accounts payable, inventory, fixed assets, and payroll. ACL Services Ltd has created 15 pre-built analytical applications that automate standard financial control over four operational cycles. KPMG has launched an audit app on the Apple Store that provides the latest revenue audit, regulatory and FASB compliance information to auditors. Many other companies have developed apps with similar purposes to audit apps but with different names (Dai and Li 2016; Dai 2017).



(Izhar and Malhotra 2014). Audit Apps are defined as formal audit procedures that can be performed through a computer-based tool (Warren 2014) and are a set of software packages that automate certain audit procedures with limited need for human intervention (Dai and Li 2016; Dai 2017). Audit Apps are used to perform targeted audit tasks on a recurring basis, or each application may perform a single audit task, or a set of multiple related tests. It can also be customized to accomplish special-purpose audit tasks (Dai and Li 2016).

The biggest challenge in using apps to conduct auditing is not in the tool itself, but in understanding the underlying knowledge; Applications, especially analytical applications, may perform functions that include data mining, machine learning, and advanced data analysis models. Because auditors have limited knowledge and training on these models, they may not be able to use the applications effectively (Byrnes 2015). Compared to traditional audit programs, the most important benefits of audit applications are their ease of use; Audit applications simplify and automate audit procedures, thus enabling the auditor to conduct audit tests efficiently (Dai and Li 2016; Dai 2017). They usually require little user interaction, i.e., after data is loaded into audit apps, they automatically analyze the data based on pre-programmed algorithms (Dai and Li 2016). In contrast, large audit programs typically require users to perform complex processes to obtain results; therefore, the auditor must be specially trained before using the software. Therefore, compared to traditional software with standard packages, audit apps are more customizable (Dai and Li 2016; Dai 2017), and applications, unlike traditional audit software that can only be used on computers, can run on various computing devices, including computers, tablets and smartphones, which increases the flexibility of auditors' work environment. Small computing tools, such as spreadsheets and smartphones, are more convenient to use when conducting audit inspection away from the office, such as field inventory auditing (Dai 2017).

Regarding the development of professional assurance services currently performed by auditors, it is expected that the widespread use of FinTech innovations will depend on the security of the underlying environment (Leonowicz 2018). In order to be in a position to provide the necessary level of assurance, the audit profession needs to shift further towards evaluating the effectiveness of the design and operation of IT internal control, whether through an independent service of confirming management's assertions about the effectiveness of IT internal control or in the context of the audit process itself.

In the same context, Lindsay et al. (2019) suggest that using artificial intelligence (AI) tools to guide business decisions (e.g., how much inventory to purchase, how much cash holding) does not necessarily create new audit risk; because business changes can create operational risks that are not necessarily reflected in the form of audit risk. However, auditors should provide confirmation of their understanding of how the use of AI affects the company's transaction flows, including the generation of reports or analyzes used by management. Auditors should also consider whether AI is making decisions or being used by management as part of the decision-making process (Lindsay et al. 2019). This may prompt the development of the auditor's assurance service on management's disclosures regarding the application of AI tools, especially in companies that have FinTech innovations.



More importantly, Lindsay et al. (2019) that AI can be used to develop accounting estimates, but it is considered likely to incorporate data that is not directly related to accounting estimates, and as part of testing the accounting estimate, the auditor takes into account the risks of completeness and accuracy of data elements. In addition to the AI methodology, which may pose unique challenges due to the characteristics of machine learning technology in AI, so it can be said that there is an evolution in the service of auditing fair value estimates and accounting estimates.

In addition, companies' increasing reliance on information technology for financial management has increased their exposure to cybersecurity risks. Companies are required to use multiple tools to cover cybersecurity risks through the cybersecurity risk management process and disclose this process (Al-Rashidi and Al-Sayed 2019). This has created an additional demand for the auditor's services to evaluate information about cybersecurity management procedures, and thus he is responsible for monitoring and testing the material risks through the assessment of cybersecurity threats in the context of the audit process. Because data breaches can generate an impact on financial reporting, the potential impacts also have a direct impact on auditors' functions. An understanding of the company's internal control and information technology systems and how they relate to financial reports must be reported by auditors in their reports. As well as the assessment of the risks of material misstatement of the financial statements after a data breach event (Moreira 2019). On the one hand, on the other hand, this led to a request for a professional assurance service on management's disclosures of cybersecurity risks, and on cybersecurity risk management (Badawy 2021).

On the emergence of new professional services suited to the FinTech environment, as FinTech and its tools standardize transaction processing across many industries, auditors may be able to help provide assurance to technology users; The auditor is able to fill a potential future role because of his skills, degree of independence, objectivity, and experience (Leonowicz 2018). Potential new professional services for the auditor include, for example, each of:

Audit of smart contracts: Smart contracts can be embedded in blockchains to automate processes (Lindsay et al. 2019). Contracting parties may wish to use an assurance service provider to verify that smart contracts are implemented with the correct business logic (Ali and Badawi 2022). In addition, the auditor can verify the interface between smart contracts and external data sources that trigger business events (Rozario and Vasarhelyi 2018). Without independent evaluation, users of blockchain technologies face the risk of errors or weakness of unknown origin. To assume this new role, the auditor may need a new skill set, including an understanding of technical programming language and blockchain functionality (Rozario and Vasarhelyi 2018; Bonyuet 2020). In addition, learning and understanding controls and smart contracts and being able to read them and analyze what smart contracts do; fraud detection and risk assessment are a step above tracking and verifying records (Kozlowski 2018). The auditor must also be able to develop his skills to successfully handle different sizes of blockchains and storage options, as well as the potential use of big data for their clients. This type of role also raises important questions for the assurance profession (CPA Canada 2017). Including: What types of skills does the profession need to remain relevant? What factors might



affect the risks of an assurance engagement? What is the continuing responsibility of the assurance provider once a smart contract is issued on the blockchain?

In the context of the financial statement audit, management will be responsible for designing and operating internal control to verify whether the smart contract source code is consistent with the intended business logic. The independent auditor charged with performing the audit of a company with smart contracts/blockchains will likely consider the internal control that management has established over the smart contract code. Future auditing standards and auditing guidelines may need to consider this technique; Thus, clarifying the role and responsibilities of the auditor (CPA Canada 2017).

• Trust assurance service in blockchains system: before the launch of a new application on the platform of existing blockschains or the benefit of the product of a blockschain that have subscribed. The system users may want to obtain an independent assurance on the stability and strength of the structure of the blockchains system (Ali and Bedoui 2022). Instead of each participant performing his due care, it may be one of the <u>most efficient ways</u> to employ an auditor to achieve these goals. In addition, the auditor can design the elements of an important blockschains (for example, the encryption key management) that provide continuous protection for the most sensitive information. In addition, the controls for safety, availability, treatment, privacy, and confidential safety on a continuous basis, and may be needed a reliable and independent third party to provide assurance on the effectiveness of controlling a certain blockchain (Bonyuet 2020). This type of service raises important questions for the profession (CPA Canada 2017), including when providing assurance on trust in the blockschains system, from the service customer? How can an auditor assess the risk of sharing for an independent system? How do independence rules apply to the users of the blockschains?

• Central administrator function: Permissioned blockchain solutions may leverage a trusted, independent, and unbiased third party to perform central administrator functions to grant permissioned access (Ali and Badawi 2022). This function could be responsible for verifying identity or performing another screening process to be completed by a participant before granting them access to the blockchain. This central administrator can verify the correct enforcement and monitoring of blockchain protocols. If this function is performed by a user in the blockchain, there may be an undue advantage for them, and trust between chain members may be weakened. Since this role will be designed to create trust in the chain, due diligence will be needed when establishing both its function and legal responsibilities (Bonyuet 2020). As a trusted professional, an independent auditor may be able to fulfill this responsibility (CPA Canada 2017). However, this role would raise new questions for the profession (CPA Canada 2017): By assuming this critical role, is the assurance provider independent of blockchain participants?

• Dispute arbitration function: Business arrangements can be complex and lead to disputes between parties. Therefore, an arbitration function may be needed in the future to settle disputes between participants in a blockchain consortium (Ali and Badawi 2022). This position is like that of a liquidator in a corporate liquidation, a role that is typically filled by several qualified professionals, including auditors. Blockchain participants may require this type of functionality to enforce contract terms where the spirit of the smart



contract may deviate from the legal document or contractual agreement. Further considerations should be explored to determine whether an arbitration function is necessary. If auditors are to play this role, important questions will need to be answered (CPA Canada 2017), such as what legal framework will be used to resolve disputes? What skill set will be required for the auditor? Could this role lead to unintended threats to independence regarding client testimony?

Complementing the above research trends and realizing the future vision of professional assurance services for auditors, Veltkamp and Jagesar (2021) showed that the profession needs to overcome a number of challenges. First, it is to bridge the gap between the approach and method of real time audit and current auditing standards. There is one aspect of an audit that cannot be automated, which is the auditor's professional judgment. In practice, misstatements occur, either because a particular transaction does not fit within established processes or because disruptions in technology have led to disruptions in transactions. When these misstatements occur, or when they do not occur, it remains the auditor's responsibility to make sound professional judgments by adhering to auditing standards. To achieve more audits under the fourth industrial revolution, this gap between audit tools and professional standards must be bridged (Veltkamp and Jagesar 2021).

Second, creating tools to automate auditing requires a large upfront investment and will not generate profit until several years of operation. This problem is less likely when audit firms use off-the-shelf systems on a large scale, as the cost of development can be shared across many audits involving the same system. This problem can also be partially solved using low-code technological advancements, which typically require less time and investment to create a piece of automation. In combination with code sharing platforms, this allows for smaller, more efficient pieces of automation for organizations with more unique systems (Veltkamp and Jagesar 2021).

Finally, there are many technical challenges to overcome regarding data integrity and ensuring that automated procedures produce results of consistent quality. Future audits also require an auditor of the future, so the existing skill set of accounting knowledge should be supplemented with some form of data analysis or coding skills to automate its routine and ensure its reliability. This can be achieved by teaching auditors a coding language or implementing low-code or more beginner-friendly tools (Veltkamp and Jagesar 2021).

Therefore, it can be said that the extensive use of FinTech and smart companies is pushing the business community towards highly automated and highly flexible interconnected environmental forecasting, with the ability of companies to immediately disclose information, detect faults, and make decisions. Therefore, the auditing profession must adapt to this wave of changes, and benefit from emerging technology expands audit scope, reduces audit time, improves accuracy, and increases the level of assurance for the entire business community. Without capitalizing on these changes, it remains unclear what exact impact FinTech will have on customers and the service firm. Moreover, increased reliance on new technologies, companies being created to leverage their capabilities and resolve vulnerabilities is evident, and these improvements in data management, actionable insights, operational efficiency and reduction (or elimination) of



manual processing are expected to change the role of the auditor in driving its focus up the value chain. However, a different professional assurance mindset and additional expertise will be needed to meet stakeholder expectations (Leonowicz 2018). In other words, it can be said that the message has become clear to the auditor: remain agile and flexible and embrace new technologies, such as FinTech innovations. Your development and ability to adapt to change is what ensures your relationship with the future.

Discussion and Conclusion

This study aimed to analyze accounting research on the impact of the increasing development of FinTech on the auditing profession. To achieve this goal, the researcher analyzed FinTech. The researchers concluded by defining FinTech as the use of technological innovation in the financial sector by using the online market as a place to provide solutions to the various financial problems experienced by digital customers through the development of strategic models, processes, applications, or innovative products.

The researchers also concluded that FinTech could increase market volatility and threaten financial stability; it represents a threat to traditional financial institutions if they cannot successfully deal with these innovations. This, on the one hand, and on the other hand, can reduce potential risks to financial stability by increasing transparency, diversification and decentralization of financial services. In the same context, the researchers concluded that FinTech could reduce the distance between financial institutions and their customers while increasing financial inclusion by reducing the cost of obtaining financial services. FinTech products consist of six areas including digital finance, digital investment, digital money, digital payments, digital insurance, and digital financial advice. The risks that customers face when adopting FinTech products include the risk of financial loss, privacy concerns, and security risks.

The researchers also concluded that the audit profession faces major challenges resulting from the fourth industrial revolution, most notably FinTech innovations. The changes brought about by fourth industrial revolution are not limited to technology only but have extended to include the need to redesign some of the concepts that constitute the basic building blocks of accounting and auditing, like the concept of value. The changing face of the business environment may shift professional services from focusing on assurance services to focusing on non-assurance services. A different professional audit mindset and additional expertise are also needed to meet stakeholder expectations.

The researchers concluded that to enhance FinTech innovations, the use of the realtime audit approach; real-time audit help in effective follow-up and early identification of misstatements, at the same time, they reduce audit costs and increase effectiveness by enabling remote auditing. They also concluded the emergence of audit apps, which are defined as formal audit procedures that can be performed through a computer-based tool and are a set of software packages that automate certain audit procedures with limited need for human intervention. one of the most important benefits of audit apps is their ease of use, it works to simplify and automate audit procedures, thus enabling auditors to conduct audit tests efficiently.



The researchers also concluded that there is an update in the professional assurance services currently provided by the auditor. It is expected that the widespread use of FinTech innovations will greatly highlight the auditor's role in assurance on management's assertions regarding the effectiveness of internal control over information technology, management's disclosures regarding the application of artificial intelligence tools, and auditing fair value estimates and accounting estimates prepared using artificial intelligence tools, management's disclosures about cybersecurity risks and cybersecurity risk management.

Finally, the researchers concluded that new professional services have emerged that suit the FinTech environment. The auditor can help provide assurance services to technology users and fill a potential future role because of his skills, degree of independence, objectivity, and experience. Potential new professional services for the auditor include, for example, all of auditing smart contracts, the trust assurance service in the blockchain system, the function of the central administrator, and the function of arbitrating disputes. However, to achieve the future vision of professional assurance services for the auditor, the profession needs to overcome a number of challenges. First, it is to bridge the gap between the approach and method of real time audit and current auditing standards. Second, high investment to create tools to automate the audit. Future audits also require an auditor of the future, so the existing skill set of accounting knowledge should be supplemented with some form of data analysis or coding skills to automate its routine and ensure its reliability.

As for the proposed research areas, the researchers believes in the importance of future research in some related areas, the most important of which are the following: Testing the impact of FinTech risk disclosure on the market value of banks, testing the impact of FinTech application disclosure alternatives on the stock investment decision, testing the impact of alternatives to accounting recognition for FinTech innovations on the quality of accounting information, testing the impact of FinTech innovations on audit planning procedures, Finally, a proposed approach towards narrowing the gap in external auditing standards in light of the application of FinTech.

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