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# THE ADOPTION OF DIGITAL LEDGER TECHNOLOGY FOR INSTANT AUDITING AND ACCURATE FINANCIAL REPORTING IN ACCOUNTING

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## ABSTRACT

*This research paper explores the implementation of Digital Ledger Technology (DLT) and how it affects the accuracy of the financial reporting stage and efficiency of the auditing procedures in organizations in Jordan. The research design employed in the study was quantitative where the researcher aimed to determine the contribution of DLT to the integrity of financial data and the audit capabilities in real-time. A total of 210 accounting and auditing practitioners, selected in five large organizations in Jordan; Central Bank of Jordan, Jordan Customs Department, Arab Bank, Deloitte Jordan, and Ernst & Young Jordan, were used to collect the data. The main data collection tool was a structured questionnaire and a 5-point Likert scale was applied to assess perceptions regarding the main constructs associated with the adoption of DLT. The questionnaire was administered both on the physical and digital platforms to increase the response rates. In the study, descriptive statistics was used to address demographic and inferential statistics i.e. a multiple regression analysis and independent sample t-test in testing the hypotheses. The results showed statistically significant positive correlation between the adoption of the DLT and the accuracy and reliability in the financial reporting, as well as, the adoption of the DLT and the increased speed and efficiency of the auditing process. The results of regression indicated that the variance in the accuracy of financial reporting was indicated to be 52 percent by the adoption of the DLT, and the t-test analysis revealed that there were significant differences between the traditional and the new method of auditing (DLT). Ethical considerations were followed in the research, with all the necessary confidentiality and participation being voluntary. Generally, the methodology was suitable in capturing the role of DLT in changing the accounting functionalities in a developing economy setting.*

**KEYWORDS:** Digital Ledger Technology (DLT), Financial Reporting, Auditing Efficiency, Accounting Technology, Real-Time Auditing, TOE Framework, and Jordan.

## 1. INTRODUCTION

Creative technology is increasingly being sought by modern companies to resolve traditional issues of financial reporting and audit. One of these technologies is the digital ledger technology (DLT), including blockchain and other distributed ledger systems (Danach, et.al, 2024). In particular, audits and financial reporting are some of the sectors where DLT can be an ideal candidate to transform the financial sector as it offers a distributed and immutable transparent base on which transactions are stored. Although it is important to note that the adoption of DLT has the potential to significantly enhance the accuracy, reliability, and efficiency of financial reporting and auditing in the process of dealing with such issues as fraud, transparency, and reconciliation of traditional accounting systems.

Traditionally, accounting systems have depended on human reconciliation procedures and centralized ledgers. Often marked by vulnerability to mistakes, inefficiencies, and fraudulent activity, these conventional systems are Financial records in traditional accounting are kept in a central repository under supervision by one entity or institution. More easily manipulated and fraudulently prone this centralization brings is Accurate financial reporting might result from differences between several accounting departments and mistakes in hand data entering. Conventional systems can call for difficult and time-consuming reconciliation procedures, which might postpone financial reporting and increase error risk.

Especially in reference to the acceptance of Digital Ledger Technology (DLT), the necessity to have more accurate, transparent and efficient systems has stirred curiosity in the digital transformation within the financial industry (Udeh, et.al, 2024). Digital ledger technology refers to the system in which information is stored on a decentralized system of computers where network users can access the same information. One key feature of DLT is its decentralization, i.e. absence of one authority that is controlled by the ledger. Instead, a network of participants stores the data in a common place hence ensuring integrity and transparency. Blockchain technology is the most commonly associated with DTL even though there are other types of distributed ledger systems.

The use of DLT in accounting has a number of primary benefits, the most notable of which is the ability to conduct audits instantly. Traditional audits which are usually done on a yearly basis are carried out in a backward fashion where the auditors are assessing the financial records over a specific period

to measure the soundness and compliance of financial statements (Musiliu, et.al). Months or weeks elapse in the process and fraud or errors may remain undetected over long periods. DLT, in its turn, allows Time-stamped and automatically validated all the transactions recorded on a blockchain; by this procedure, the financial data may be scrutinized as correct and reliable due to continuous auditing, during which auditors can track all financial transactions in real-time. Real-time provision of this information to auditors can contribute to reducing the time spent on manual verification and increasing the chances of detecting an error or fraud in time.

Moreover, DLT can improve the financial reporting accuracy. Conventional accounting systems may rely on middlemen and intricate reconciliation procedures, which can cause mistakes and disparities in the financial accounts (Dashkevich et al, 2024). By offering a single, shared truth that is available to all network participants, DLT replaces the need for middlemen. This facilitates uniformity, financial data reconciliation, and helps to avoid disparities from developing. Moreover, the openness of DLT facilitates more responsibility. Since all network members have access to the same financial information, any party trying to falsify or misreport data finds it more difficult. higher accurate financial reporting and higher confidence among investors, authorities, and auditors follow from this.

Despite its immense benefits, DLT will hamper the application in accounting in many ways (Alsmady, et.al, 2023). These barriers should be eliminated to enable DLT to maximise its potential to transform the way auditing is done and the way financial report is presented. Implementation of Digital Ledger Technology to ensure proper accounting financial reporting and real-time auditing is a significant transformation in how financial transactions are recorded, verified, and reported. Among other benefits, DLT gives real-time audits, enhanced data integrity, and increased openness. To achieve complete realisation of DLT in the financial industry, in the meantime, such problems as regulatory unpredictability, interconnectivity with legacy systems, and privacy should be addressed.

### 1.1 Statement of the Problem

The need to have real-time financial planning information, open accounting processes, and reliable audit procedures has grown tremendously in a more digitised and fast global corporate environment. Investors, authorities and management are modern stakeholders whose expectations cannot be fulfilled with the use of traditional accounting system, often

based on centralised databases, manualisation and periodical audit. These outdated systems affect the timeliness and accuracy of the financial reporting through data tampering, delayed reporting, human error and fraud.

One of the most critical issues of the current accounting and auditing practice is the failure to verify financial transactions and ensure that compliance is maintained in real time. Traditional audit practices are retroactive in nature, thus any error and anomaly could be detected only much later after it occurred- even after significant harm was caused. Moreover, the costs and difficulty of ensuring audit integrity and financial data integrity are increasing that compel companies to upgrade to higher and safer systems at higher pressure.

By allowing transparent, distributed, unchangeable records of financial transactions, digital ledger technology (DLT—more especially, blockchain)—offers a possible fix for long-standing problems. Instant auditing, financial misreporting minimisation, and automation of compliance processes could all be made possible by DLT. Though its advantages are clear-cut, the acceptance of DLT in mainstream accounting is still restricted, particularly in underdeveloped countries and inside companies without digital infrastructure or technological knowledge.

Research and practice concerns the strategic integration of DLT in financial reporting and auditing differ in each direction. Important unresolved questions still exist. How may current accounting systems be successfully included into DLT? Which institutional, legal, and technical obstacles stand in way of adoption? How do accuracy and timeliness of financial reporting change with DLT? How do auditors engage with settings driven by DLT, and are present audit systems flexible enough for this developing technology?

Therefore, despite its potential to solve important inefficiencies and risks inherent in conventional systems, the main issue addressed by this research is the lack of general adoption and implementation of Digital Ledger Technology in accounting systems for real-time auditing and accurate financial reporting. This study aims to investigate the elements influencing DLT acceptance, evaluate its real advantages in the financial reporting process, and pinpoint the main obstacles preventing its full-scale application in various accounting systems.

### 1.2 Research Objectives

The primary objective of this study is to examine the adoption of Digital Ledger Technology (DLT)

and its impact on financial reporting and auditing processes in accounting. Specifically, the study sought to:

1. assess the impact of DLT on the accuracy and reliability of financial reporting.
2. evaluate how DLT facilitates instant or real-time auditing in accounting systems.

### 1.3 Research Questions

1. How does the adoption of DLT influence the accuracy and integrity of financial reporting?
2. In what ways does DLT support instant auditing and real-time verification of transactions?

### 1.4 Research Hypotheses

Based on the objectives and questions, the following hypotheses are proposed:

- H<sub>1</sub>:** The adoption of DLT significantly improves the accuracy and reliability of financial reporting in accounting.
- H<sub>2</sub>:** DLT adoption leads to faster and more efficient auditing processes compared to traditional methods.

## 2. LITERATURE REVIEW

### 2.1 An Overview of Digital Ledger Technology (DLT)

Technology has developed in the digital age, creating numerous options designed to make transactions and processes easier and secure (Mishra et al, 2024). Digital Ledger Technology (DLT) is one of the terms in the discussion of blockchain, cryptocurrencies, and other distributed networks that appear in conversations on this subject matter more and more. Devoid of a central entity, DLT is a category of systems that facilitates the documentation and validation of information throughout a distributed set of computers or nodes, hence an efficient, clear-cut, and secure way of handling information. This invention can become a revolution in a wide range of businesses, including banking, supply chain management, and healthcare, among others. This overview is going to discuss the primary concepts, benefits, and challenges of DLT, its applications, and its impact on various industries.

One of the types of database systems is distributed digital ledger technology, in which one is not dependent on a single point of control or authority (Islam et al, 2024). The storage and management of information in a traditional centralised database is controlled and kept by either one institution like a government agency or a bank.

In comparison, DLT is distributed to multiple nodes, or computers, on a network, and each node maintains a copy of the ledger, which assists in authorizing information entries. This contributes to making single points of failure, fraud and tampering inherently hard. In its simplest form, DLT is the creation of a digital registry, a record keeping mechanism to track transactions or any form of data moving around. These are immutable, once any transaction has been received in the ledger it cannot be reversed or modified without consensus among the network participants. This immutability, in combination with its openness, makes DLT particularly useful in scenarios where trust is particularly important but a centralised power is either absent or unwelcome.

One of the most frequently used types of DLT applications is blockchain technology, which registers transaction data through a series of blocks (Ballamudi, 2016). Creating a blockchain, each block is a bundle of transactions and cryptographically attached to the previous transaction. Despite the fact that the other form of a DLT is Directed Acyclic Graph (DAG), used by such programs as IOTA and Hedera Hashgraph, and although blockchain is the most famous. These various types of DLT have different advantages depending on the specific application, their speed, scalability or flexibility. There are numerous significant characteristics that distinguish DLT among traditional database systems and characterize it. These are demands of decentralisation, immutability, openness, consensus building and security.

Decentralization is certainly one of the simplest properties of DLT. Traditional databases can provide access to and management of the controlled data with a central authority, which is usually a firm or organization (Antal *et al.*, 201). Through a distributed network, which DLT operates on, a single entity does not have the sovereign power. Instead, multiple users, commonly referred to as nodes, join their efforts to authenticate and store the information and in the process, reinforce the system and reduce the chances of having it manipulated or experiencing a crash. This distributed nature is particularly useful when there is very little trust in a central authority such as peer-to-peer transactions or international payments. It also reduces the use of the middlemen, hence reducing the cost and time delays in the transaction.

Another most robust characteristic of DLT is its immutability concept. A transaction or a piece of data posted on the ledger cannot be modified or deleted until the members of the network agree to it

(Hofmann *et al.*, 2017). This ensures that the content which is posted in the ledger is permanent and unalterable. The majority of DLT systems operate cryptography to provide the data immutability, hence, it is nearly impossible to alter the record without being detected. Applications that need data integrity like financial operation, voting scheme, and tracking of supplies that rely on this primitive are simply indispensable. Expanding popularity of DLT is largely motivated by the ability to believe that the information in the ledger is correct and irrevocable.

Usually transparent, DLT systems let all network users view the data kept on the ledger (Ballamudi, 2016). This openness lets consumers independently check data entries and transaction records free from depending on a third party. Many public DLT systems, including Bitcoin and Ethereum, let everyone with network access view all transactions. Transparency does not, however, always equate to public access to all data. Certain DLT systems let for privacy elements, whereby specific data is hidden from public view but nevertheless accessible to authorised users. For instance, permissioned DLT systems – used by governments or companies – may limit access to private data while nonetheless giving some stakeholders openness.

## 2.2 Benefits of Digital Ledger Technology

The general acceptance of DLT has the possibility to deliver several advantages in different sectors. The main reasons for these benefits are DLT's natural characteristics – decentralization, immutability, and transparency – which reflect. Several of the main advantages of DLT consist in:

### 1. Enhanced openness and confidence

DLT lets users interact and exchange data free from middlemen by eliminating the demand for a central authority. Because they can independently confirm the correctness and veracity of the ledger's data, this builds confidence among the parties. In sectors like finance, supply chain management, and healthcare – where monitoring the source of commodities, money, or medical information is vital – transparency is especially important.

### 2. Cost Reductions

By cutting the demand for middlemen – such as banks, notaries, or clearinghouses – which can lower transaction costs – DLT helps to also removes the overhead related to keeping centralized systems – that is, the expenses of data storage, security, and fraud avoidance. Moreover, smart contract automation of procedures helps to lessen demand for

human intervention, therefore saving more money.

### 3. Accelerated Transactions

The traditional payment systems, particularly cross-border payment, can be tedious and costly due to the involvement of multiple intermediaries and the need to change currency. However, instead of having to use an intermediary, DLT enables almost instantaneous transactions between entities, therefore reducing the processing times significantly. This will be of particular benefit to industries that require real-time transactions such as supply chains management and finance..

### 4. Improved Security

Cryptography and the decentralized nature of DLT render it rather resistant to abuse and attack. Information is spread across multiple nodes therefore, it is virtually impossible that any individual participant can alter information without the attention of others. This level of protection is highly valuable in the sectors of banking, healthcare and government where integrity and secrecy of data is paramount.

### 2.3 Impact of Digital Ledger Technology (DLT) on Financial Reporting

One of the largest fields where Digital Ledger Technology (DLT) is being felt is in Financial reporting, this is rapidly becoming a new recognized technology within various industries. Through the use of the centralized accounting systems, financial reporting or the process of the companies reporting the financial picture they have to them in the form of statements, including balance sheets, income statements and cash flow statements, has always been done. Such systems can prove to be highly time consuming, expensive, prone to human error or fraud in most instances when the chain of middle men is involved. The adoption of DLT and its distributed and transparent character is bound to alter the environment of financial reporting, which is bound to bring a number of benefits, not to mention the number of challenges that can blow a huge change to the manner in which business, regulators, auditors, and stakeholders, in general, are addressing the financial data and disclosure.

The enhancement of the integrity and transparency of the financial data presented by DLT is one of the biggest benefits of the financial reporting. The transactions that the DLT leaves immutable, will guarantee that once the transaction financial occurs to a ledger, it cannot be edited or erased without the consensus of the network. On the topic of the financial reporting, this transparency is

applied to assure that the figures being reported are correct to minimize the possibilities of mistakes and fraud. A case in point is that business can instantly make their purchases and financial happenings in a distributed record, and in this manner, the entire stakeholders like regulators, auditors, investors and others are entirely equipped with the same information simultaneously. This transparency will provide real time data validation and therefore will eliminate the delays and chances of disparity between the financial statements and the actual activity.

Moreover, the aspect of immutability of the DLT ensures that any data registered on it remains unchangeable and inalterable again. This offers stronger protection against manipulation, by members of staff or external visitors. As the financial records are not only correct but they are also verifiable and auditable, such security contributes to the establishment of trust between companies and investors. Typically consisting of a number of data collection and reconciliation and verification levels, the traditional financial reporting systems require a number of intermediaries to be involved such as banks, auditors and accountants. Since each intermediate must independently check data before it is transferred along the reporting chain, these systems can be slow, expensive, and prone to mistakes. By contrast, DLT can greatly expedite these tasks.

All transaction data can be entered on one, shared ledger using DLT. Since all network users—including banks, auditors, and accountants—can access the same version of the financial data in real-time, this removes the need for duplicate data entering and reconciliation. Financial reports can thus be produced far faster than with conventional methods. Instantaneous updating and sharing of financial data among several departments or entities helps to lower the lag time usually required in compiling and combining financial statements. Further improving the speed and efficiency of financial reporting are smart contracts—self-executing contracts with the terms explicitly encoded into code—which can automate some chores, such tax calculations, regulatory reporting, or dividend distribution. Automating repetitive procedures helps companies release resources that would otherwise be used on manual operations and enabling more accurate and timely reporting.

The constant difficulty in conventional financial reporting is the possibility of human mistake or fraud. Financial transactions could be manipulated in the form of mistakes done in the reporting process or

dishonest accounting methods. By offering an immutable, distributed record of all transactions that greatly lowers the possibility of fraud and mistakes, DLT solves these problems. Any effort to change the records would need the agreement of the whole network since all transactions are documented in an open and verifiable manner. This makes it almost impossible for malevolent players to tamper with the data undetectably. Furthermore, the real-time transaction recording guarantees that companies may find mistakes or disparities practically instantly, thereby saving time for their correction.

Wenke (2022) asserted that despite the observable benefits, the overall use of DLT in financial reporting poses a number of challenges despite its various challenges. One of the most significant is adoption; the change of financial reporting systems that is to be introduced to many businesses, particularly smaller ones or those operating in traditional industries, may be opposed by them. Installing the distributed systems instead of the centralised ones will require significant restructuring of existing infrastructure and processes, potentially costly and time-intensive. Legal and administrative challenges should also be considered. Though DLT is more open, blockchain-based financial reporting is still unknown in the legal context. Governments and regulatory bodies must come up with clear policies that would ensure that the reporting made through DLET is guided by financial laws and standards. Data privacy is also quite significant, in particular, in the context of GDPR (General Data Protection Regulation) and other data protection regulations. Organizations must take time to consider how to meet confidentiality and maintain the transparency and irreversibility that DLT offers as DLT records data as permanent and public records.

#### **2.4 DLT and Auditing Processes**

The use of Digital Ledger Technology (DLT) and blockchain, in particular, in the operations of companies has already begun transforming industries by enhancing security, efficiency, and transparency. Auditing processes are among the most vital areas in which DLT is changing the way things are. Auditing has been a tedious, manual process, that takes a lot of time, sometimes with errors, which includes the use of operational processes, internal controls, and verification of financial statements. Having distributed, unmodifiable, transparent properties, blockchain technology (DLT) will enhance audit practices on the core level by reducing the time and effort involved and increasing the accuracy and reliability of the financial

statements. Essentially, DLT is a distributed registry or decentralized database where information is recorded and assessed through multiple decentralized nodes or computers or people. The most popular kind of DLT is blockchain; the data is stored in a chain of block-connected, cryptographically to each other, to form an ever-moving chain of information. Such records are irreversible; therefore, once the information is entered into the ledger it cannot be reversed or erased until the majority of the users approve.

One of the main advantages of DLT for auditing is the increased openness it offers. Traditionally, auditors check the correctness of a company's financial accounts using a range of records, financial data, and outside verification. However, it is possible to alter or manipulate these records, and the verification procedures can sometimes be costly and time-consuming. Every transaction and data input entered using DLT is noted in real time on a distributed ledger that is viewable by all network members. Once a transaction is entered, the ledger's data cannot be changed or deleted, guaranteeing the accuracy and reliability of the financial records the auditors are analysing. Between companies, auditors, and stakeholders, such communication builds a far higher degree of confidence. The more openness also facilitates auditors' ability to follow the background of every transaction back to its source, therefore enabling the identification of possible mistakes or dishonest behaviour.

Moreover, rather than doing annual audits at year-end, auditing teams can operate ongoing surveillance. Auditors' constant access to financial data helps them to monitor events and activities as they happen, therefore guaranteeing that the company stays compliant with rules and standards all year long. This approach is a radical departure from conventional auditing, which sometimes depends on retroactive sampling, and it can result in more accurate and timely financial reporting.

Hasan (2022) said, on the other hand, that conventional auditing procedures can be time-consuming and resource-intensive. Auditors usually spend a lot of time gathering information from several sources, reconciling disparities, and personally checking transactions. Reviewing multiple sources, verifying finances, and ensuring faithful recording of every activity can also lead to delays and increased expenses. The words of Alkan, 2021 By automating numerous of these chores, DLT can simplify the whole auditing process. Auditors, for instance, no longer need to ask for data from several departments or systems, as all pertinent transactions are recorded in a common, real-time

ledger. Some of the auditing tasks can further be automated with the help of smart contracts, which are self-executable contracts whose terms are written in code. These smart contracts may automatically verify that financial operations meet specific pre-defined requirements, contractual requirements, compliance with tax law or regulation.

Furthermore, DLT allows auditors to check all transactions in real time, which can drastically reduce the total audit time. Instantaneous record and verification of transactions eliminates the need for thorough back-and-forth correspondence or document collecting. Fewer resources are needed for audit preparation, which directly results in cost savings from this shortened time span.

In auditing, accuracy is paramount; conventional techniques can rely on a sample to confirm a selection of transactions. Auditors might not have a whole perspective of the financial scene; hence, this sample might result in mistakes or undetected disparities. By giving auditors real-time access to the whole transaction history, DLT transforms this dynamic and guarantees a more complete and accurate examination of financial activity. The immutability of DLT is critical in lowering fraud risk. Any effort to alter financial data would be readily evident to other network members since transactions are entered on an unchangeable ledger. For instance, on a blockchain, each block of data is cryptographically connected to the one before it, so it is practically difficult to change past data without being observed. If a hostile actor attempts to tamper with a financial record, they would need to change every subsequent block, which requires a significant amount of processing capacity. Such an arrangement makes it quite impossible for fraudulent behaviours to go unnoticed.

### 3 THEORETICAL FRAMEWORK

#### 3.1 *Technology-Organization-Environment (TOE) Framework*

One of the common theories that have been used to explain how companies adopt and exploit technological advances is the Technology Organisation-Environment (TOE) model designed by Tornatzky and Fleischer in 1990. Based on this framework, three situational factors determine the adoption of new technology; the technical context, the organisational context, and the environmental context (see Figure 1). Each of these dimensions represents valuable variables that, combined with each other, determine the readiness, ability, and willingness of a firm to receive and accommodate the concept of Digital Ledger Technology (DLT).

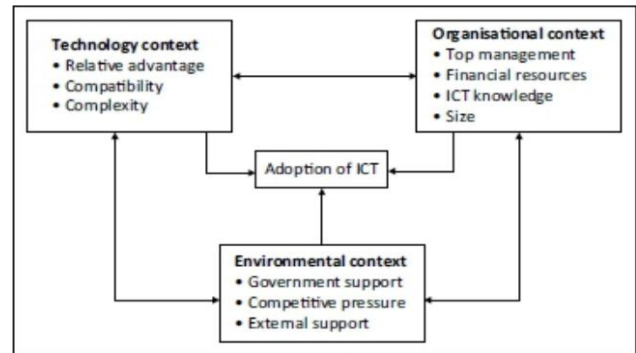


Figure 1: TOE Framework adapted from Tornatzky and Fleischer (1990)

The technical background explains the internal and external technologies related to the company. This includes systems that are already in operation, IT infrastructure and the alleged benefits and complexity of the new technology. Immutability, transparency, and decentralisation are a few of the features of the DLT that significantly enhance the accuracy of financial reporting and offer real-time auditability. Some of the aspects of the organisational setting include the size of the company, managerial structure, available resources and human capital. As an illustration, the internal support system of an accounting business, their technological knowledge, and the approach towards innovation would play a significant role in the uptake of DLT. Finally, the environmental environment comprises of industrial characteristics, legal environment, market forces, and competitive force. The increasing demand of the stakeholders in clear, precise and real time financial data and the trend of the government towards digitalisation can be seen as external drivers of the integration of DLT in the accounting systems. The TOE framework, however, offers an all round picture, including the internal factors and external, which either accelerate or slow down the implementation of disruptive technology. The TOE Framework can also be used to comprehend the relationship between technology, organisational resources and environmental factors comprehensively as opposed to other models that consider only individual or organisational factors (e.g. the Technology Acceptance Model). This framework is more significant in the field of accounting where there is a critical requirement to align the industry best practices and regulatory compliance with technical capacity.

Suitably, the TOE framework is of special interest in this research undertaking on the adoption of Digital Ledger Technology (DLT) of instant auditing and proper financial reporting. Within the technological context, the main features of DLT,

including real-time sharing of data, immutability, and automation through smart contracts, can help to achieve a high degree of accuracy, integrity, and reliability of financial reports and, in this regard, directly respond to the first objective and hypothesis of the study (H1). Accounting firms have differing technological preparation and internal backing in the organisational setting. The capacity of these companies to embrace DLT will be influenced by the support of the management, technical knowledge, and the availability of IT infrastructure that will determine the level to which the applications of DLT can be implemented in their auditing and reporting systems. The environmental context, regulatory requirements of digital transformation, stakeholder requirements of transparency and competition within an industry further affect the adoption decision. This is consistent with the second hypothesis of the study (H2), which holds that the speed and the efficiency of auditing can be improved with the help of DLT. The application of the TOE framework guarantees the study a balanced analysis of the adoption of the DLT, which includes the multidimensional aspects of influencing the manner and reasons behind the adoption of such transformative technologies by the accounting firms (Tornatzky and Fleischer, 1990; Baker, 2012).

### **3.2 Diffusion of Innovation (DOI) Theory**

The theory of Diffusion of Innovation (DOI) proposed by Everett M. Rogers in the year 1962 provides an in-depth model used in the understanding of how, why and at what pace new technology and ideas are adopted in a social system. Based on the hypothesis, innovation spread is caused by knowledge acquisition, persuasion, decision-making, implementation, and confirmation. According to Rogers (2003), there are five factors, relative benefit, compatibility, complexity, trialability and observability, which influence whether an innovation will be accepted or not.

Although compatibility applies to the extent to which an invention corresponds with the values, experiences and needs of potential adopters, relative advantage as understood by Rogers is the extent to which an innovation is believed to be superior to the existing options. Complexity is described as the perceived inability to understand and apply creativity. Observability describes how well an invention can be seen by other people, whereas the extent to which an invention can be tried is called trialability and assesses its readiness to be used on a larger scale. The combination of these attributes is used to determine the adoption curve, categorizing

the adopters into five groups, including innovators, early adopters, early majority, late majority and lags. The concept further focuses on the dissemination process where time, social structures and communication lines are involved. It highlights that adoption is both a social and a technological decision influenced by the organisational culture, peer pressure and the leadership styles towards change (Greenhalgh, Robert, Macfarlane, Bate, and Kyriakidou, 2004). The perceived value and user experience significantly influence adoption trends in the digital transformation models (e.g., the accounting integration of Digital Ledger Technology (DLT)).

However, the theory that is important to this study on the adoption of Digital Ledger Technology (DLT) in the accounting field is the Diffusion of Innovations (DOI) theory, and how it influences financial reporting accuracy and real-time auditing. By being immutable, having greater transparency, and faster, the features of the DLT directly and directly address the hypotheses of the research on what is better and what is efficient about auditing, hence, it has a relative benefit. The compatibility and complexity of DLT has implications on its integration with accounting systems that are currently in place, and this impacts the rate of adoption by companies as well. Further, it is essential that observability and trialability are added since businesses demand to see the benefits of DLT prior to investment. To illustrate, effective application of DLT in the field of auditing should be presented through case studies, or pilot projects should confirm the effectiveness of its use, which can contribute to the overall acceptance in the field. In that connection, DOI provides a solid foundation to study the process of accounting company evaluation and subsequent decision in favor of the use of DLT. It allows the researchers to explore not only technological readiness but also behavioural and organisational factors that affect the use of innovations. The theory improves the TOE paradigm by placing greater emphasis on human and organisational decision-making processes when it comes to the processes of innovation diffusion.

### **3.3 Research Gap**

Although the number of individuals studying the utilization of new technologies in accounting is rising, the research gaps are huge regarding the implementation of Digital Ledger Technology (DLT) in practice, particularly in the area of real-time auditing and the correctness of financial reporting. Whilst the number of studies has been primarily concerned with conceptual benefits, as opposed to the

actual organisational implementation and results, there have been studies that have researched the opportunities of blockchain and DLT to transform the financial operations (Dai and Vasarhelyi, 2017; Yermack, 2017). Moreover, most of the current research on financial markets and cryptocurrencies pays scant attention to conventional accounting methods (Schmitz & Leoni, 2019). Empirical data will help us to better understand the particular processes by which DLT improves audit efficiency or guarantees the accuracy of financial data in real-time environments. Especially in small- and medium-sized enterprises (SMEs), there is also a dearth of studies examining how environmental, technological, and organisational elements collectively affect the adoption process. Therefore, this study aims to close this gap by using strong theoretical models to examine the acceptance of DLT in accounting, thus augmenting academic knowledge as well as useful insights for the accounting field.

#### 4. RESEARCH METHODOLOGY

This study used a quantitative research design to systematically gather and analyse numerical data to look at how Digital Ledger Technology (DLT) affects the accuracy of financial reporting and real-time auditing in accounting. A survey method was employed using structured questionnaires to collect data from accounting professionals, as it is widely recognised for its efficiency in gathering standardised information across a large sample (Creswell, 2014; Saunders, Lewis, & Thornhill, 2019). This study was undertaken in Jordan and it was aimed at the professional accountants, auditors and finance managers in both the government and the business sector. A total of five big organizations that are associated with strong financial activities and technological projects formed the sample: the Central Bank of Jordan, the Jordan Customs Department, the Arab Bank, Deloitte Jordan, and Ernst & Young Jordan. The institutions were strategically chosen based on the fact that they were engaging in sophisticated financial reporting systems and auditing procedures.

The sample size was comprised of respondents having the relevant knowledge and experience in accounting and auditing and digital technologies, through a purposive sampling technique. A total of 250 questionnaires were given out with 210 out of them being validly returned, making the response rate 84. The questionnaire was given through the face-to-face and electronic modes. The questionnaires were sent through hand delivery to the sampled institutions and through a Google Forms version to a wider population of professionals

through professional email lists and LinkedIn. These two-distribution approaches boosted the response rates and met the needs of the tech-savvy professionals (Bryman and Bell, 2015). The demographic breakdown of respondents revealed that 62% were male ( $n = 130$ ) and 38% were female ( $n = 80$ ). In terms of age, 30% were aged 25–34 ( $n = 63$ ), 45% were 35–44 ( $n = 95$ ), and 25% were 45 years and above ( $n = 52$ ). Educationally, 60% held a bachelor's degree ( $n = 126$ ), 35% had a master's degree ( $n = 74$ ), and 5% possessed only professional accounting certifications ( $n = 10$ ). Additionally, 68% ( $n = 143$ ) had more than five years of work experience in accounting and auditing roles.

The collected data were analysed using SPSS version 25, applying both descriptive statistics (percentages and frequencies) and inferential statistics, such as regression analysis, to test the study's hypotheses. This approach enabled the study to draw conclusions about relationships between variables and test the proposed hypotheses with statistical significance (Pallant, 2020). However, ethical approval was obtained from the research committee of the author's academic institution. Participation in the study was entirely voluntary. All respondents were informed of the study's purpose and were assured of confidentiality and anonymity. Consent was obtained through a written statement attached to the questionnaire. Data were securely stored and used strictly for academic purposes in compliance with ethical research standards (Saunders et al., 2019).

#### 5 DATA ANALYSIS AND DISCUSSION

##### 5.1 Research Questions

Research Question 1: What is the effect of the adoption of DLT on the accuracy and integrity of the financial reporting? To respond to the research question, statistical analysis (descriptive) was conducted on the data (see Table 4.1).

The descriptive analysis indicates that the respondents depicted a very positive impression of the effects of DLT on the accuracy and integrity of financial reporting. The general mean of 4.24 means that there is general agreement to strong agreement on all items. In particular, the price of real-time features in enhancing the trustworthiness of financial data was noted due to the highest mean score (4.35) of the item that explained that DLT is used to offer real-time verification that enhances the integrity of reports. The standard deviations are low (between 0.66 and 0.85) indicating that there is a high agreement amongst the respondents. The negative values of the skewness mean that there were more

respondents who gave higher ratings (agree/strongly agree), and the positive Kurtosis of the

kurtosis (except the item number 3) indicates that the responses were concentrated around the mean.

**Table 4.1: Adoption of DLT Influence**

Items	X	SD	Skewness	Kurtosis	Remark
DLT improves the accuracy of financial records.	4.30	0.68	-0.75	0.92	SA
DLT enhances transparency in financial reporting.	4.25	0.71	-0.68	0.81	SA
DLT reduces the chances of financial data manipulation.	4.10	0.85	-0.55	-0.12	A
Financial statements generated through DLT are more reliable.	4.20	0.74	-0.60	0.30	A
DLT provides real-time verification that boosts report integrity.	4.35	0.66	-0.82	1.02	SA
<b>Total/Average</b>	<b>4.24</b>	<b>0.73</b>	<b>-0.68</b>	<b>0.59</b>	<b>A</b>

Source: Field Survey, (2025). Note: SA - Strongly Agreed; A - Agreed

Research Question 2: How does DLT assist in the instant auditing and real-time verification of transaction? To respond to the research question, the

data obtained was subjected to descriptive statistical analysis (see Table 4.2).

**Table 4.2: Adoption of DLT Influence**

Items	X	SD	Skewness	Kurtosis	Remark
DLT enables auditors to access real-time financial data.	4.32	0.64	-0.88	1.15	SA
DLT reduces audit lag by allowing continuous audit processes.	4.25	0.72	-0.74	0.84	SA
DLT minimizes human intervention in auditing through automation.	4.10	0.80	-0.60	0.01	A
Smart contracts in DLT improve audit traceability and accuracy.	4.20	0.78	-0.69	0.23	A
DLT allows faster reconciliation and validation of transactions.	4.28	0.70	-0.79	0.96	SA
<b>Total/Average</b>	<b>4.23</b>	<b>0.73</b>	<b>-0.74</b>	<b>0.64</b>	<b>A</b>

Source: Field Survey, (2025). Note: SA - Strongly Agreed; A - Agreed

The interpretation shows that the respondents highly agree that DLT plays a significant role in promoting instant auditing and verifying transactions in real-time. The mean score of 4.23 is high as it demonstrates that all items are in agreement. The most frequent and largest mean value (4.32) was received when they were asked to provide their answer to the question that states that DLT allows auditors to access real-time financial data, which is one of the main strengths of DLT, namely, immediacy and transparency. The standard deviations lie between 0.64 and 0.80 indicating the same responses, though with little variation. Those

skewnesses that are negative indicate that there is a disposition towards a higher degree of agreement, whereas those kurtosis values that are positive (except one item) indicate that the responses were well concentrated around the mean.

**5.2 Hypotheses Testing**

**Hypothesis 1:** The adoption of DLT does not significantly improves the accuracy and reliability of financial reporting in accounting. In order to test the hypothesis, Multiple Regression Analysis was used to analyze the data (see Table 4.3).

**Table 4.3a: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.721	0.520	0.516	0.504

**Table 4.3b: ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	54.210	1	54.210	213.45	0.000
Residual	50.090	208	0.241		
<b>Total</b>	<b>104.300</b>	<b>209</b>			

**Table 4.3c: Coefficients**

Model	Unstandardized co-efficient		Standardized co-efficient	t-cal.	Sign
	B	Std. Error	Beta		
(Constant)	1.125	0.201	-0.721	5.597	0.000
DLT Adoption	0.765	0.052		14.610	0.000

\*Significant at p < 0.05

The result of the multiple regression indicates that

there is a strong positive correlation between the

adoption of DLT and the accuracy and reliability of the financial reporting. The value of R is 0.721 which has a high correlation and, the value of R-Sq is 0.520 which implies that 52 percent of the variance in the accuracy of financial reporting can be explained by the adoption of DLT. The ANOVA test was used to obtain a significant F-value of 213.45 ( $p = 0.000$ ) which proves that the overall model is significant. Also, the regression coefficient ( $B = 0.765$ ,  $t = 14.610$ ,  $p < 0.001$ ) of the adoption of DLT has a statistically significant and positive effect. According to these

findings, a null hypothesis is rejected. Thus, it is concluded that the use of DLT can greatly enhance the accuracy and reliability of financial reporting in accounting, which confirms the previous studies on the revolutionary nature of blockchain technologies on financial operations.

**Hypothesis 1:** DLT adoption does not leads to faster and more efficient auditing processes compared to traditional methods. In order to test the hypothesis, independent t-test analysis was used to analyze the data (see Table 4.4).

**Table 4.4: t-test Result Comparison of DLT and Traditional Audit Users**

Group	n	Mean	SD	t-cal.	t-crit.	df	p-value	Decision
DLT Auditing Users	120	4.30	0.65	5.82	±1.97	208	0.000	Reject
Traditional Audit Users	90	3.85	0.74					

\*Significant at  $p < 0.05$

Independent samples t-test showed statistically significant difference in the respondents who use DLT to audit and those who use traditional means. The average mean of 4.30 of the DLT users means that there is a strong agreement that the DLT assists in accelerating and conducting efficient auditing than the traditional users who have a low mean of 3.85. The resultant t-value ( $t\text{-cal.} = 5.82$ ) is bigger than the critical t-value ( $t\text{-crit.} = \pm 1.97$ ) of 208 degrees of freedom at the significance level of 0.05 and the p-value (0.000) is far less than 0.05. These results give rise to the null hypothesis being rejected. In this way, the research finds that the use of the DLT contributes greatly to the acceleration and efficiency of the audit processes.

## 6. DISCUSSION OF FINDINGS

### 6.1 Adoption of DLT on the Accuracy and Reliability of Financial Reporting in Accounting

The findings of the hypothesis test are a compelling indication that the adoption of Digital Ledger Technology (DLT) causes the high improvement of the accuracy and reliability of the financial reporting in accounting. The findings regarding the results of the multiple regression analysis revealed that the two variables had a strong positive relationship ( $R = 0.721$ ) and significant explanatory power ( $R^2 = 0.520$ ), i.e., 52 percent of the variation in financial reporting accuracy can be attributed to the adoption of DLT. The value of the regression coefficient ( $B = 0.765$ ) and the p-value ( $p < 0.001$ ) are confirmed to be very significant and justifies the strong impact of the DLT in increasing the credibility and accuracy of the financial reports. Thus, the null hypothesis was rejected to the

alternative one, and the negative hypothesis that the effect of DLT is statistically significant proved to be correct. These findings can be said to correlate to the emerging literature in the world and regional literature that has also documented the potential transformative role of DLT in financial reporting. Indicatively, as cited by Dai and Vasarhelyi (2017), the new technology had the potential to remove errors and fraud because of creating immutable financial records, and Schmitz and Leoni (2019) found that the reliability of data in blockchain-based accounting systems had improved. Al-Kasasbeh et al. (2022) studied in the Middle East and Jordan specifically and found that the adoption of DTL resulted in the accuracy of the audit and financial transparency, especially the banking industry.

In another study conducted by Abu Nassar and Saleh (2021), Gabriely reported that the application of the DLT in the Jordanian public accounting companies led to a significant improvement in timeliness and integrity of financial statements. Their findings were comparable to those described by Al-Kilidar et al. (2020), who have established that blockchain-based accounting systems introduced additional confidence in stakeholders, and reduced the amount of errors when the manual processing is used. At the global level, Peters and Panayi (2016) found the opportunity of DLT to revolutionize financial ecosystem by increasing real-time reporting and traceability. Yermack (2017) also mentioned other long-term benefits of DLT in achieving transparency and improving internal control in corporate governance and accounting. The article by Kokina, Mancha and Pachamanova (2021) substantiated the application of blockchain in minimizing the delays and misstatements in the financial reporting. Also, examining external and

internal financial communications of enterprises based on blockchain technologies, it was also noted that the accuracy level and the rate of compliance with regulatory requirements have significantly increased in the proposed study, which proves the relevance of the current findings in the context of the Jordanian market (Alhawari et al., 2023). In conclusion, the results of the present research are not only locally but also globally justified by a huge number of scholarly researches, which underpins the notion that the shift to the use of DLT is a decisive move towards the extent of accuracy, transparency, and reliability of financial reporting.

### **6.2 Adoption of DLT on Faster and Efficient Auditing Processes Compared to Traditional Methods**

The outcome of the hypothesis testing proves the idea that the implementation of Digital Ledger Technology (DLT) makes the auditing speed and efficiency effective than when it is conducted technically. The independent samples t-test revealed that, statistically, there is a difference between the perceptions of the users of DLT and those ones who do not use it, and the mean score of the former ( $M = 4.30$ ) is higher than the mean score of the latter ( $M = 3.85$ ). The t-value of 5.82 was way above the critical t-value of  $\pm 1.97$  at a level of 0.05 ( $df = 208$ ), and the p-value (0.000) showed that the t-value is very statistically significant. Thus it was seen that the null hypothesis was rejected, which affirms the fact that the adoption of DLT has a significant effect of improving efficiency and promptness of an audit process. The findings are in line with international and national researches that draw attention to the influence of DLT on the efficiency of auditing. As stated by Rozario and Vasarhelyi (2018), blockchain allows auditing to be done continuously and access to its verified transaction records to be accessed in real time, decreasing audit time, and enhancing accuracy. The other finding by Appelbaum and Smith (2018) is that the use of DLT also improves the quality of audits by automating standard checks and reducing the number of manual audits. Applying to the Jordan setting, Al-Hadid and Hijazi (2022) discovered that auditors utilizing blockchain systems reported an increase in efficiency and a lower number of errors.

In the same manner, Al-Dmour et al. (2021) reported a high gain in the transparency and responsiveness of audit trails of Jordanian accounting firms that embraced DLT. Al-Tahat and Abu-Sheikha (2023) affirmed that the blockchain technology also enabled real-time verification of financial records, which saved on the time that would

normally have been used to reconcile the data. Alles (2015) and Issa et al. (2016) are currently advocating these results globally by stating that DLT allows proactive auditing by allowing the auditors access to transaction history through an immutable means. Coyne and McMickle (2017) also emphasized that blockchain facilitates data collection, particularly in a multi-party audit, where data reliability and speed are paramount. Velichety and Shrivastava (2020) found out that audit procedures made with the help of blockchain deliver a decrease in the audit lag and a growth in audit scope with no related increment in the cost. Similar results were supported by a recent study by Al-Zoubi and Al-Kilidar (2024) in Jordan, who have shown that audit systems based on DLT in Jordan SMEs minimized the duration of audit cycle and improved compliance with the procedures. Conclusively, the results of the present research are well in line with the local and international literature, which suggests that the use of DLT has a significant positive impact on the speed, efficiency, and responsiveness of the auditing process.

### **6.3 Theoretical Implications**

This study contributes significantly to the body of knowledge in technology adoption in accounting and auditing field by supporting the relevance and the application of the Technology-Organisation-Environment (TOE) model (Tornatzky and Fleischer, 1990). According to the results, technical factors (such as the benefits of DLT that could be achieved with the help of it in order to have more accurate data and more efficiency in auditing), the readiness of the organisation (its technical foundations and highly qualified personnel), and external factors (such as industry regulations and competition) influence the decision to use DLT significantly. TOE framework was a powerful prism to explain how the conjunction of the three factors determines the technological change, especially regarding the use of the DLT in Jordanian firms.

Moreover, the theoretical discussion has been extended in the paper by illustrating how as a disruptive innovation, DLT does not only enhance the operational results, but also disrupts the conventional perception of financial responsibility and audit assurance. It aids in emphasizing the ways in which the blockchain-based real time auditing and auditory record-keeping require a reassessment of the traditional audit cycles and reporting timetables. The theoretical transformation aligns with previous literature of researchers like Dai and Vasarhelyi (2017), who have argued that blockchain is compelling an accounting information systems

paradigm shift. This contribution is more so relevant to the Jordanian setting since the application of the TOE model to evaluate the adoption of blockchain in financial settings has little practical research. This paper thus fills one of the biggest gaps by placing the theory of technology adoption in a developing nation and offering a ground upon which further research on the topics of DLT and finance digital transformation should be conducted.

## 7. CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

Summing up, the present study aimed to investigate the use of Digital Ledger Technology (DLT) and its effects on the quality of financial reporting and the effectiveness of the audit procedures, based on the experience of organizations used in Jordan. The results prove that the adoption of DLT has a substantial and beneficial effect on the accuracy and reliability of financial reporting and increases the speed and efficiency of audits. Regression and t-test analysis results indicated that there was a strong positive correlation between the use of DLTs and the changes in the financial transparency and audit performance. Such results correspond to the modern world and regional literature, which means that DLT is not only a technological advancement but a complete change in the performance of accounting and auditing functions. Jordan is especially endowed with the implication since companies are becoming more inclined to finding a digital way to correspond with the global financial standards in order to eliminate fraud and to satisfy the continually increasing needs of real-time data verification.

### 7.1 Implications of Findings

The practical implication is to those in the financial practice and auditing profession in Jordan and elsewhere, the use of DLT provides a practical solution to enhancing the quality of the audit process, lessening the time-to-reporting delay, and making sure that all regulations are met. That puts DLT as a strategic resource, particularly in the sectors where financial integrity is paramount. On the organizational level, the result suggests that organizations adopting DLT as a part of their accounting systems may anticipate improved efficiency in their operations, improved tracing of the data, and decreased error rates, which will, in turn, bolster the confidence of investors and

trust in the stakeholders.

### 7.2 Recommendations

1. The official regulations and standards of the adoption of DLT in accounting and auditing should be developed by the Jordanian financial authorities and regulatory bodies (including the Jordan Securities Commission and Central Bank of Jordan). Such standards are expected to be interoperable, providing privacy of data and international best practices.
2. The Jordanian government should design tax or grants incentives that may be availed to companies investing in blockchain based financial systems to encourage early adoption of blockchain financial adoption. This would contribute towards lowering the cost barrier of SMEs.
3. Accountants and auditors should be offered training programs and certifications in blockchain applications in institutions to develop capacity and prevent change resistance.
4. The government of Jordan can lead by example by introducing DLT systems in the realm of government accounting to show the rest of the private sector that transparency and real-time financial reporting are valuable practices.
5. Government, industry, and academia should come up with collaborative forums, to discover and explore more use-cases of DLT in accounting and auditing, to make sure that the technology is adaptable to the context.

### 7.3 Limitations, Validity, and Credibility

The study was constrained by its sample size as it only examined the organizations in Jordan and this could be limiting the application of the results to other regions. Response bias may also be created by the use of self reported data using questionnaires. In spite of these constraints, these limitations were overcome by ensuring that the study had validity by using survey instruments that were reviewed by experts and pilot testing. The credibility was also upheld with the help of the known statistical techniques (regression and t-tests) and sufficiently large sample size (210 respondents) so that the outcomes are not only statistically valid but also relevant to the context.

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