Applied Mathematics & Information Sciences
An International Journal

http://dx.doi.org/10.18576/amis/180210

The Impact of Digitization on the Audit Client's Business Risk: An Applied Study on Companies Listed on the Saudi Stock Exchange

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Received: 10 Nov. 2023, Revised: 18 Nov. 2023, Accepted: 25 Nov. 2023.
Published online: 1 Mar. 2024

Abstract: The purpose of this study is to know the role of digitization, its characteristics, and the extent of its impact on the client's business risks by analyzing the accounting research. as well as the role of digitization in developing the audit by improving the monitoring of client data and improving the quality of the audit by providing new digital tools that cover all customer data, which facilitates conducting a more relevant analysis of the various operations of the client and identifying most of the misstatements in the financial statements, which leads to reducing material fraud in them and thus reducing the risks of the client's business. The current study's statistical population was all listed firms on the Saudi Stock Exchange that are included in (TASI) index between 2019 and 2022. The systematic elimination method was used for the sampling, and selection of (137) corporations to represent the study sample distributed over several different economic sectors. Three results of the current study are found; the results are conclusive. First, there is a negative, significant correlation at the level of (0.01) between Digitization and audit report lag risks on Companies Listed on the Saudi Stock Exchange, which supports the validity of the first hypothesis of the study, as the correlation coefficient is negative with a value of (0.691). Second, there is a negative, significant correlation at the level of (0.01) between Digitization and earning management Companies Listed on the Saudi Stock Exchange (From the opposite angle there are positive, significant correlation with audit quality), which supports the validity of the second hypothesis of the study, as the correlation coefficient is negative with a value of (0.671). Third, is a negative, significant correlation at the level of (0.01) between Digitization and Litigation Risks Companies Listed on the Saudi Stock Exchange, which supports the validity of the third hypothesis of the study, as the correlation coefficient is negative with a value of (0.560). The current study recommends conducting a proposed frame of reference for applying business digitization techniques to reduce material misstatements in the financial statements of Saudi companies.

Keywords: Audit Digitization, Client's Business Risk.

1. Introduction

Digitization represents a group of technologies such as big data, block chains, artificial intelligence, crypto currencies, robots, cloud computing, and neural networks. The expansion of market opportunities and the lack of common opportunities to use these tools lead to some risks for operating companies. Production processes and resources to the digital economy lead to changes in the accounting system, and this requires the development of accounting in general, this results in a change in auditing and internal control processes, as digitization means using digital technologies to change the business model and provide new opportunities to achieve income and value, which requires companies to continuously develop and the rapid adaptation of using this technology to meet changes in society's expectations [1].

In this context, a study by [2] mentioned that the customer review has witnessed many developments in light of digital development and the presence of the Internet, which has led to improving the efficiency of the company's operational processes, increasing customer confidence, discovering new markets, improving productivity and developing models for the company. The presence of robots has also led to a change in the concept of human labor concerning services, as companies have resorted to artificial intelligence as a means of providing relevant services and consultations, which has led to the necessity of developing workers, as employees spend most of their working time on the Internet communicating with customers and the public through social media. To promote their products, improve

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the image of the company, and support its financial performance.

Therefore, the current research aims to know the role of digitization, its characteristics, and the extent of its impact on the client's business risks by analyzing the accounting research. This research derives its significance by providing a theoretical framework linking the techniques and methods of modern digitization and its role in reducing the risks of the client's business, as well as the role of digitization in developing the audit by improving the monitoring of client data and improving the quality of the audit by providing new digital tools that cover all customer data, which facilitates conducting a more relevant analysis of the various operations of the client and identifying most of the misstatements in the financial statements, which leads to reducing material fraud in them and thus reducing the risks of the client's business.

In light of the idea and objective of the research, it will be divided as follows: Background and Literature Review, Applied Study Methodology and Conclusions & Recommendations.

2. Background and Literature Review

2.1 Digitization and Auditing Profession.

As over the recent decades, the business environment has become increasingly digital, with new technologies constantly arriving on the market and being integrated into every aspect of private and business life. Digital technologies are causing changes in consumer behavior, forcing businesses to adopt these technologies. Companies are also changing their business models thus resulting in changes in their strategies, information technology, marketing, and supply chains by increasingly integrating digital technologies into the business [3].

A number of methodologies and techniques have been offered to help companies achieve these goals and avoid merely speculating about what the future may bring. Companies must exercise foresight to "support decision making, enhance long-term planning, allow early warning, enhance the innovation process, and improve the effectiveness of "Responding to environmental change" in order to create a competitive advantage and increase profitability [4]. Companies also need to consider the future of technological trends, which have the potential to change regulations and create new competition.

The term digitization is one of the concepts developed in accounting thought. According to the study [5], there are three terms in the English language (Digitization, Digitalization, and Digital Transformation), where the term Digitization (digital information) refers to the process of representing physical objects or features with a digital string to be processed by computer algorithms easily and effectively.

Therefore, it is a technical process that refers to the language used by devices to convert all data and information into binary codes consisting of a string containing the number (zero) and the number (one), then it decodes a second time and converts it into the data and information that appears on the screens of electronic computers and smartphones, which achieves the advantage of speed of information transmission in information networks and tracking [6].

The term digitalization (business digitization) refers to the use of digital technology, data, and digital information to transform business processes, business models, and work procedures (not just digitize them) and then create digital business models to improve performance, operational efficiency, and competitive position, thus, digital data and information (Digitization) mainly for the digitization of business (digitalization), as digitization generally entails profound changes in business performance or reshaping the strategy concerning digital business [7].

2.1.1 Business Digitization Techniques

The auditor requires the need to find a way to review the advanced technology represented in (artificial intelligence - robots), which can be done through the application of digital technology during the audit activity, and when conducting the audit process to maintain the quality of the audit and to face the pressures associated with the audit fees and customer requirements related by obtaining value for money, and thus the auditor can improve the efficiency of the audit work, the quality of the audit, and adding value through the application of digitization, and from here the researcher seeks to identify the most digital trends that would affect the audit and the way they affect as follows:

(1) Big Data

The two digital technologies that audit firms utilize most frequently are big data and artificially intelligent technology [8]. This is because big data typically consists of data sets that are too huge and complex to handle or analyses with conventional tools or procedures. A study by [2] defined big data as a tool to support the process of risk assessment and trend analysis, and therefore the audit profession must gain an integrated understanding of how to use big data to support the audit process, and if such experience is not available within the audit office, it must Resort to the work of an expert or other audit partner.

[9] stated that large data is separated into data sets that are too large for the usual database programs to handle, store, capture, and analyze. The most crucial aspect of big data for auditors is the collection of various forms of data, which can include a combination of conventionally organized financial and non-financial data, sensor data, emails, phone conversations, blogs, social media data, emails, and internal and external data. As a starting point for transactions, auditors' typical focus is on transactional data, which makes it easier to find pertinent material unique to big data in the

audit environment:

Big Data = Transactions + Interactions + Feedback

Big data is generally characterized by the five-point model that includes volume, velocity, diversity, value, and credibility. Due to these features, big data provides tremendous opportunities to access and analyze large, diverse, and usually unstructured data sets quickly, and transform this information into valuable knowledge, which provides good audit evidence for the auditor [10].

(2) Artificial intelligence

The intelligence exhibited by machines is known as artificial intelligence or AI. According to computer science, the perfect "smart" machine is a flexible, logical agent that recognizes its surroundings and acts in ways that maximize its chances of success. When a machine replicates "cognitive" processes, including learning and problem-solving, that humans identify with other human minds, it is generally referred to as "artificial intelligence" [11]. Artificial intelligence helps the auditor learn and operate millions of data and processes in one minute. Artificial intelligence also fits all accounting standards such as (generally accepted accounting standards - international financial reporting standards), including identifying audit considerations and using them in providing advice to auditors in specific audit matters and challenges. Artificial intelligence can read and evaluate audit evidence and can also be used to issue audit reports [2].

The scope of artificial intelligence's effects on the functioning of businesses and auditing firms can be summed up as follows: artificial intelligence is now being applied in many different industries [12]. Accounting transactions can be automatically recorded using machine learning. AI can analyze unstructured data, including emails, social media posts, and audio recordings from conference calls. It can also assist auditors in making the most of their time so they can apply their human judgment to examine a larger and more in-depth set of documents and information.

(3) Blockchains

[13] emphasized how consumers might benefit from blockchain technology at different times. Since the blockchain stores copies of earlier activities within the chain, it is also possible to access all of them retroactively. The blockchain allows this service to be performed without centralized transaction processes and records the transactions made by everyone involved in a single ledger.

Specifically, it guarantees that all modifications are visible, accepted, and recorded by all users and that there is no administrative control or central authority. As a result, system transparency becomes increasingly crucial because blockchain technology prevents the cancellation, alteration, or deletion of completed transactions and enables the recording of actual transactions virtually instantaneously. It does, however, remove the possibility of user payment or collection. Every transaction made on the chain is contained in a verifiable record called the blockchain. This also stops the item that the blockchain may track from being recorded more than once. Furthermore, the inability to modify or tamper with transactions after they have been completed has improved the system's ability to provide facts fairly [13].

(4) Cloud computing

the context of [14] Professionals can work remotely and access a wealth of information online with computing-based accounting software, which enables them to serve clients more quickly and efficiently. Users can also introduce themselves to the system without having to pay extra fees for software updates or additional licenses.

This lowers expenses considerably because accounting information entered into the cloud is constantly stored in multiple copies at the headquarters of the service provider and in off-centered backup units. It also shields the business from data loss due to unfavorable events (natural disasters or malice). The computing system also makes it simple to avoid paying for the price of sending and backing up legal papers that must be delivered to public institutions [14].

So, digital technologies facilitate the standardization of business procedures and the absorption of competitive advantages for companies. Digitization also includes a set of changes to organizational processes and tasks, which leads to more digital and automated business processes. Thus, digitization refers to organizations' readiness to apply digital technologies in their strategy and operations. Current business models and the hiring of knowledge workers across all industries are severely challenged by today's accelerated digitization, so audit firms are likely to be impacted by further information technology advancements, particularly when utilizing big data analytics and artificial intelligence techniques. Since machines replaced physical labor during the Industrial Revolution, so too could these rapid advances in digitization lead to the automation of cognitive tasks. This makes these developments highly relevant to the auditors and stakeholder groups, as they pose a threat to the entire auditing industry [15].

Digitization is characterized by many characteristics that may represent a double-edged sword for the accounting and auditing profession. The most prominent of these characteristics are the following [5]:

Reliance on digital technology: Business digitization depends on digital technology such as cloud computing, artificial intelligence, machine learning, big data analytics, the Internet of Things, and block chain technology. Changes towards immediate processing of accounting data, preparation of financial reports in real-time, and implementation of the report online, Digital technology helps reduce the burden of financial reporting on accountants, by digitizing routine and repetitive tasks, and thus accountants can focus on more creative, non-routine, and unorganized tasks that require more thinking and

additional skills and Digital technology helps collect and store huge amounts of data, and it may be very difficult to maintain the security of this data. Once it is hacked, huge amounts of private information end up in the hands of competing hackers or financial technology companies.

And digitization depends on converting all transactions into a form of digital information that software understands, translates, and transmits across digital networks such as electronic money and digital currencies. Thus, banking digitization essentially removes the physical nature of providing services, and then organizations can create value for their services and achieve profits without any physical presence in a particular region, which poses challenges to the financial reporting system, and the outsourcing of financial reporting to other countries.

Increasing reliance on intangible assets: The typical feature of business digitization is the increasing reliance on intangible assets, especially intellectual property assets, the essence of which is innovation from digital talent. It is well known that the concept of internally generated intangible assets is not precisely defined in accounting practice nor It may be appropriately taken into account when accounting recognition due to the difficulty of accurately estimating its value, which necessitates accounting disclosure.

Using data to create value: Digitization depends on the use of big data, especially personal data derived from customers and the active participation of users on social media. The process of collecting and using data in the context of business digitization raises new challenges for the financial reporting system in organizations.

And supporting decision-making processes: Digitization significantly increases the information available to management because it makes new types of information available from different sources and thus increases the quality and utility of administrative decisions.

It is clear from the above that digitization enables the development of the auditing profession towards improving the monitoring of client data and towards improving the quality of auditing, as digitization provides coverage of all client data and thus helps to conduct a more relevant analysis of the various processes and data of the client and thus most errors or distortions in the financial statements are identified. Which limits the discretionary power of managers? Digitization also works to increase the transparency of financial statements and thus enables the Board of Directors to make the right decisions. It also enables the Audit Committee to improve internal systems and processes to produce accounting information based on auditors' recommendations, which in turn limits profit management on the part of management.

2.2 Client business risks: context from professional issues

The auditor must have an understanding of the client's way of working to assess the degree of reliability of the financial statements, as he obtains an understanding of the business subject to audit to plan and implement the audit process following auditing standards. Understanding the nature of the client's work and its internal and external environment enables the auditor to assess the potential effects of business risks on The financial statements and then affect the audit planning decisions, The PCAOB Oversight Board indicated that the audit based on activity risks or the audit based on risks is the audit that depends on the comprehensive vision of the client's activities, which includes examining strategies and operations, internal and external factors, and performance measurement policies to identify risks of material misstatements in financial reports [16].

Three factors make up auditor engagement risk: audit risk, auditor risk to the company, and client business risk. The danger of a short- or long-term decline in the client's financial status is represented by client business hazards. Audit risk is the possibility that the auditor will unintentionally neglect to appropriately adapt his opinion about the financial statements that are substantially incorrect. Auditor's business risk is the possibility that the audit will result in loss caused by the assignment due to litigation, loss of reputation, or difficulties in achieving fees. These risk factors are connected to one another.

Furthermore, according to a study by [17], audit risk and the business risk of the customer are impacted by the auditor. In addition to having a direct influence on the auditor's ability to collect fees in the future, a client filing for insolvency will probably place him at greater risk of lawsuit, damage his reputation, and potentially Similarly, in cases when audit procedures or errors are not directly linked to bankruptcy, a customer experiencing worsening financial circumstances might turn to dubious accounting practices, hence raising the danger of an audit.

The client's business risks are also defined as the possibility of the company being exposed to unexpected and unplanned losses or the fluctuation of the expected return from a specific investment and the effects resulting from future events that are likely to occur and have the ability to influence the achievement of the company's objectives and the successful implementation of its strategy. The client's business risks are closely linked to the audit risk model. It is considered a counterpart to the inherent risk.

The client's activity risk approach was based on understanding and analyzing the client's performance strategies, basic operations, and the environment in which he operates, to identify and evaluate the risks he faces and arrive at a professional accounting opinion on the validity of the client's financial reports, and the extent of the client's ability to confront the risks that surround all the activities that he practiced, and these risks do not affect the distortion of financial reports. Therefore, the requirements arising from applying the client activity risk approach in the audit.

(1) The auditor must know the nature of the client's various activities, basic and supporting operations, performance strategies, performance indicators in the industry in which he works, the legal and legislative environment, and the political environment following Auditing Standard No. (315). this knowledge helps the auditor to identify the various risks that may arise. Client activities can be affected by [18] , which represents the core of the client activity risk approach, and the process of identifying risks is considered one of the most difficult components of the entry, as they are events or incidents that are likely to occur in the future, and their impact may be positive or negative, and therefore the auditor cannot consider it as one of the evidence in the audit process, except through Carrying out a set of procedures that can limit the occurrence of these risks or the possibility of avoiding their negative impact on the client's activities, and then the accounts that reflect these activities. The process can be reviewed.

(2) Changing the form and content of the working papers for the audit process, as the process of analyzing the risks of the client's previous activity and using the information available to the auditor about the client's environment led to a change in the form and content of the auditor's working papers during the process of planning and implementing the audit process. The design of the format of the working papers in the audit determines the type of information that the auditor wants to obtain.

(3) The diversity of sources for obtaining evidentiary evidence from the audit process. In addition to the common sources such as observation, follow-up, inquiry, confirmations, etc., International Auditing Standard No. (500) indicated that evidentiary evidence can be obtained from analysts' reports in the field of the industry in which the client works. Given the nature of risks as expectations that depend on a lot of personal judgment, this may limit reliance on them as evidentiary evidence that the auditor can defend.

(4) The audit team possesses diverse skills and scientific backgrounds, as the shift to the client activity risk approach in the audit process demonstrated the need for the audit team to consist of individuals with different experiences and scientific backgrounds that include the specializations of accounting, information technology, financial analysis, specialists in the activities in which it works. With the client, in addition to the practical and scientific experience required by traditional auditing to enable them to carry out the input requirements, especially concerning evaluating the client's activity strategies and internal operations [19].

The auditor is not responsible for identifying and evaluating all risks of the client's business except business risks that result in a significant misstatement in the financial statements. This was specified by the Egyptian Auditing Standard (315) entitled "Understanding the company and its environment and assessing the risks of material misstatement," and this will certainly be reflected in the procedures. The approach is followed by the auditor when reviewing the financial reports of the client company.

Risk is also embodied in reducing the values of the company's assets or outgoing job opportunities that arise from the jobs performed in the work environment. Furthermore, since SMEs lack the same incentive to adhere to risk standards, risk emerges when repetition, exposure, probability, or the risk rating is not specified since it refers to a potential risk occurrence. Ultimately, the scope of their activities seldom necessitates thorough adherence to standards resembling those of bigger businesses.

According to the study, small and medium-sized business owners perceive risk management, but compared to best practice standards, their expertise is typically restricted to crisis management. According to the study, 70.3% of participants among 332 small and medium-sized enterprises in South Africa did not appear to be using any risk management guidelines at all. On the other hand, it was found that most SME owners relied on personal knowledge rather than sound and comprehensive regulations like those created by the ISO because they lacked managerial complexity experience or the resources necessary for effectively handling risks [21].

2.3 Digitization and the Client's Business Risks

There are a group of factors that affect the audit firm's decision to accept the audit client, the most important of which is the assessment of the relevant risks, whether they are the risks of the audit client's business or audit risks. It is necessary for the auditor responsible for the decision to accept the client to study the audit client and obtain an understanding sufficient for the nature of his work, the complexity of his operations, and the assessment of the risks related to his business and the industry in which he works, which could affect the auditor and expose him to risk. Through his assessment of the risks, the auditor can deal with and manage them which lead to reducing the risk of litigation that he may be exposed to in the future.

Therefore, the researcher presents the impact of digitization on the client's business risks during the implementation of the audit process, as follows:

2.3.1 The stage before accepting the assignment of the audit process and digitization

At this stage, the auditor avoids dealing with a client with high risks, regardless of the level of fees, because once he agrees to audit the financial statements of this client, he will be exposed to legal accountability, whether in the short or long term. Therefore, the auditor must obtain sufficient information that enables him to evaluate Client business risks, Here comes the role of artificial intelligence (AI), as it is the most innovative and powerful technology for other

disciplines for its effective applications and benefits because, in the current scenario, this is the only technology that is comparable to human intelligence and its results can be trusted to a large extent. Because in the current scenario, this is the only technology that is comparable to human intelligence and its results can be trusted to a large extent.

As its growth and applications are increasing every day, and we are witnessing new roles for artificial intelligence in different sectors as a result of relying on artificial intelligence greatly, business and growth opportunities expand and they explore more markets for their services and products, and in this case, artificial intelligence can provide many benefits to meet business goals, and artificial intelligence also facilitates Integrating technology and concepts into a real-time environment gives a better return on investments and other tangible and intangible benefits. These benefits may include cost analysis, risk assessment, market development, and strategic analysis [22].

[23] indicated the extent of the importance of artificial intelligence in the field of accounting and auditing and measured violation decisions related to artificial intelligence in accounting. The study concluded that artificial intelligence helps in obtaining a better and more favorable environment in the field of accounting and auditing, as [24] that the impact of artificial intelligence on the accounting and auditing profession is significant in terms of reducing accounting fraud, and the study found a positive impact of artificial intelligence on reducing accounting fraud in addition to its positive impact on the quality of accounting information.

2.3.2 The stage of accepting the assignment and digitization

The decision to accept the assignment is considered one of the most difficult decisions due to the conflicting pressures between programming considerations and the professional considerations necessary to make the decision, and thus the auditor faces the risks of accepting the assignment. Whereas the need for the auditor to evaluate the risks of accepting an assignment includes the risks of the client's business, which arise from changes in the external or industrial environment, the severity of which cannot be reduced and are outside the scope of the auditor's control. The audit risk is also affected by several factors, including fundamental weaknesses in the structure. Internal control and failure to prepare the required report promptly. Finally, the risk to the auditor's work is the loss of reputation, incurring litigation costs, and the possibility that he will not adhere to auditing standards in performing the assigned work [25].

Electronic information systems review methods help the auditor reduce these risks, and there are a set of conditions for the auditor to accept the assignment or not, including the extent of the auditor's ability to collect sufficient and appropriate evidence to support his conclusions regarding management's assertions, and the availability of a work team with the auditor that includes People with sufficient and appropriate experience in all technical matters related to the field of commissioning, in addition to the necessity of initial knowledge of the nature of the client's activity. [26], as big data affects this stage through the following points: [25].

It allows the auditor to compile and study databases from various sources, and use intelligent information systems to confirm the reliability of the data to analyze initial risks, which contributes to providing contract terms information in advance to complete contracts between the two parties and The auditor can use expert systems or decision support systems to decide to approve or reject the assignment because of the ability of these systems to provide results in light of the expected risks, which helps the auditor to make an objective decision to accept or reject the assignment.

2.3.3 The planning stage of the audit process and digitization

By confirming that there are no mistakes or significant irregularities, the auditor can now obtain additional evidence to raise the level of confidence in the audit process. According to a study by [14], big data offers more pertinent business insights and high-quality audit evidence. With the aid of big data and analytics, auditors may more effectively detect operational business hazards, fraud, and financial reporting, and they can modify their methodology to produce an audit that is more pertinent. Numerous sources for audit evidence can be added with the use of automatic sensor data collecting and GPS data streams. For instance, employing data from RFID or barcode readers as one of the big data sources allows real-time monitoring of inventory costs rather than relying on techniques like LIFO and FIFO to calculate inventory costs. Capital market files, emails, websites, social media, and media news are a few components of big data. These data serve as instruments for assessing and enhancing processing performance.

Note that machine learning, a subset of artificial intelligence (AI), is being used by the large Four auditing companies for data gathering and validation, and that ninety percent of large data is unstructured [15]. Artificial intelligence has a lot of possible applications in the future. For example, it may be used to enhance auditing procedures and standards or make inventories less prone to human error. *It's believed that block chain can be used to reorganize the auditing of specific financial statement assertions while also applying artificial intelligence in logical problem solving, visual style and language recognition, or using it to detect deviations in accounting data, even though the potential risks and benefits of using it in auditing haven't been thoroughly investigated.*

2.3.4 The stage of implementing the audit process and digitization

At this stage, the auditor is expected to fulfill the requirements of the accepted auditing standards. When the client's business risks increase, the amount of work

required of the auditor to complete the audit procedures increases. If the client's business risk level decreases, the auditor takes fewer procedures in light of the accepted auditing standards and professional auditing guidelines. Big data's rise and social media's modifications have fundamentally altered how businesses assess information, particularly in light of the availability of new KPIs that increase competition. The primary forces behind the acceleration of the audit process' digitization have been the resulting pressure and competitiveness to give clients accurate and pertinent financial information.

The process of digitizing auditing through digital tools like analytics, data mining, cloud, and cognitive technology is generally expected by auditors to result in more value-relevant audits for clients [1]. Digitalization may also increase the productivity of audit-related tasks, which would further boost the reputation of auditors. It should be noted that the early 2000s accounting scandals and recent corporate misconduct have severely tarnished the reputations of auditors. In part, this is why practitioners in small to medium-sized audit firms concentrate on adding value to both their audit clientele and themselves by employing audit techniques in carrying out regular, required audit tasks.

Users expect that digitization will have a significant impact on audit service fee models and hence digitization will lead to lower demand for manpower and thus reduce audit fees. Nonetheless, audit firms will have to spend money on hiring core capabilities and expensive R&D (hardware, programs, algorithm development). Additionally, users think that a harsh connection between the auditor and the customer won't result from digital openness. This finding is consistent with the Association of Chartered Certified Accountants (ACCA) research findings, which revealed significant evidence of practitioners in medium-sized and small audit firms building enhanced relationships with consumers as a result of using audit methods while performing routine mandatory audit tasks. A similar study, [27], examined the potential impact of big data analytics in resolving conflicts between clients and auditors.

Implementing digitalization frees auditors from the burden of verifying that routine transactions adhere to accounting standards and allows them to concentrate on data analysis and decision making. Block chain has the potential to lower fraud, audit fees, and human mistake [28]. Block chain is beneficial to the audit process, particularly when it comes to gathering transparent and trustworthy audit evidence [29]. A real-time system, extensive automatic audits, and guaranteed data security are all implemented by block chain [30].

Impact of Implementing CAATs on the Quality of Audits In order to prevent fraud at an early stage and improve the quality of audits that auditors produce, computerized audit functions, or CAATs, are programmers that perform audit functions. They also make the audit process easier to navigate and enable comprehensive operations on a variety of electronic data types [31]. Software is used by public accounting companies to assist auditors in using computers to do audit activities, enabling them to perform their duties accurately and provide high-quality audit reports.

Because auditors who will use CAATs must possess knowledge based on the complexity of CAATs and take into account several KAPs, the implementation of CAATs and training to comprehend their use tend to be costly. The operational review of IT audits, which includes pre-audit, implementation, and reporting, is positively impacted by CAATs. The following factors have a positive (+) impact on audit quality: work experience, auditor competence, independence, and computer assisted audit techniques [31]. CAATs improve the efficacy of audits.

An improved level of audit testing is a significant contemporary result of audit in the IT environment. The audit profession is currently going through a paradigm shift from conventional audits with samples to computerized audits involving comprehensive data analysis, thanks to improvements in digital technology [32].

Instead of focusing on looking through small data sets, as is the case with the traditional audit strategy, the digital environment's risk-based audit approach allows for the potential of directing the audit approach towards the discovery of abnormalities. Disparities between the data and the auditor's expectations of the data based on their understanding of the business are typically what we mean when we talk about anomalies. Data analytics, when combined with artificial intelligence, has the potential to enhance future audits by enabling the development of a knowledge base that can be applied across various audit engagements and time periods, which will have a positive impact on when the auditor's report is prepared [33].

3. Applied Study Methodology:

In the previous parts, the researcher dealt with a scientific basis for the theoretical framework of the research topic, and the value of scientific research is achieved by linking the theoretical aspects with the practical aspects so that the research topic is completed, and its objectives are achieved. In the light of the foregoing, and to complement the desired benefit of the research, the researcher believes that it is necessary to verify the validity of what was reached through the theoretical study, in addition to testing the research hypotheses, by going to the practical reality and conducting an applied study on a sample of joint stock companies registered in the Saudi Stock Exchange. In order for the applied study to achieve its objective, the applied study methodology and quantitative models that express the research hypotheses must be addressed, by addressing the following points:

The current study providing practical evidence from the Saudi environment for the companies listed on the Saudi Stock Exchange to the Impact of digitization on the audit client's business risk. measuring the extent to which

companies listed on the Saudi Stock Exchange apply Technologies Used in Business Digitization (Big Data, Artificial Intelligence, Block chains, cloud computing) and measuring The Impact Digitization on the Audit Client's Business Risk.

The following research hypotheses were developed in accordance with the research objectives and literature review:

1st Hypothesis: There is a statistically significant effect of Digitization on audit report lag risks.

2nd Hypothesis: There is a statistically significant effect of Digitization on audit Quality.

3rd Hypothesis: There is a statistically significant effect of Digitization on Litigation Risks.

3.1 Population and Sample Study:

The current study's statistical population was all listed firms on Saudi Stock Exchange that are included in (TASI) index between 2019 and 2022. After sampling using the systematic elimination approach and applying the following requirements, the research's statistical sample was ultimately chosen:

The corporation's shares are listed in the Saudi stock exchange in the (TASI) index and are subject to trading throughout the study period.

- Excluding financial services sector corporations (banking sector and non-banking financial services sector) because of their different nature.
- Excluding companies in some sectors that are far from the research objective, which are the sectors of public utilities, insurance companies, investment, and financing funds.
- Excluding sector companies whose number of companies is less than (5) companies in order to control the relative weight between the sample sectors.
- The company needs to have been on the stock exchange for over four years, not had any consistent losses during the research period, and not been affected by a delisting, merger, or suspension.
- The company's website routinely provides access to its financial reports, which are given in Saudi cash. The data available is adequate for assessing the study variables.

The application of the previous criteria resulted in the selection of (137) corporations to represent the study sample distributed over a number of different economic sectors, and the following table shows the study population and the sample selection, as follows:

Table 1: Corporations representing the research sample and their sectors

NO	Sector name	No. of corporations	Views (4 years)	%
1.	Capital Goods	12	48	8.8%
2.	Commercial & Professional Svc	5	20	3.6%
3.	Consumer Durables & Apparel	6	24	4.4%
4.	Consumer Services	13	52	9.5%
5.	Energy	7	28	5.1%
6.	Food & Beverages	15	60	10.9%
7.	Food & Staples Retailing	8	32	5.8%
8.	Health Care Equipment & Svc	9	36	6.6%
9.	Materials	28	112	20.4%
10.	Real Estate Mgmt & Dev't	13	52	9.5%
11.	Retailing	9	36	6.6%
12.	Software & Services	5	20	3.6%
13.	Transportation	7	28	5.1%
Totals		137	548	100%

Source: Prepared by the researcher. Appendix No. (1) shows the corporations names under study, the sector to which each corporation belongs.

3.2 Data Collection Methods and Sources:

The applied study relied on the content analysis method, based on the corporation's annual financial reports, and the available information either on the corporation website, or on the Saudi Stock Exchange website as well as the available information on websites that are interested in financial analyzes of registered corporations.

Data related to the empirical study variables were obtained from the following sources:

1. The sample firms' websites.
2. Saudi Stock Exchange website https://www.saudiexchange.sa
3. Mubashir Saudi website https://www.mubasher.info/markets/sa
4. Investing.com website https://sa.investing.com
5. Reuters website http://www.reuters.com/finance

3.2 Applied Study Variables:

Based on the study's objectives, hypotheses and limits, the study variables are represented in independent variables, dependent variables, and control variables, as follows:

First: the independent variable (Digitization):

The independent variable of the study is technologies used in business digitization which (Big Data, Artificial Intelligence, Block chains, cloud computing).

According to studies ([6]; [3]), this variable is measured by considering it that takes a value from (1) to (4), so that the value indicates the extent to which the company applies digitalization technologies in business, which is (Big Data, Artificial Intelligence, Block chains, cloud computing), and the researcher observed the extent to which the company applies these technologies through some Information available on the company's website, board reports, and other disclosed non-financial reports, in addition to the researcher communicating with department in some companies.

Second: the dependent variable (Audit Client's Business Risk):

According to previous studies, there is no direct measure to identify audit client's business risks. Therefore, in measuring the risks of an audit client's business, the researcher relies on proxies' variables through which the extent of the audit client's business risks can be identified.

In light of the above and by analogy with the study [20]; [17]), the researcher relied on the following to indicate audit client's business risks:

1- Audit report lag risks (ARLR).

Audit Lag is measured by the period between the date of preparing the financial statements and the date of signing the audit report [33].

2- Audit quality (AQ)

The quality of external audit is measured by measuring earning management in the financial statements, which is an inverse variable that some studies relied on [34] when measuring the quality of the audit, where the lower the earning management in the financial statements, the more this indicates the quality of the audit of these statements by the auditor, and the exposure of the audit client to the risks of errors and manipulation in the financial statements decreases.

Earnings management is measured using the Discretionary Accruals Modified Jones Model method [35]. Total Accruals in period t is the difference between operating income, which in this case is equal to income before extraordinary items in period t, and cash flow from operating activities in period t. The stages of determining the value of discretionary accruals are as follows:

1. Menghitung *Total Accruals* (TAC):
$$TACit = NIit - CFOit$$
2. Nilai *total accrual* (TAC) diestimasi dengan persamaan regresi OLS sebagai berikut:
$$TACit/Ait\text{-}1 = \beta1(1/Ait\text{-}1) + \beta2(\Delta REVt/Ait\text{-}1) + \beta3(PPEt/Ait\text{-}1) + e$$
3. Dengan menggunakan koefisien regresi diatas, nilai *non discretionary accrual* (NDA) dapat dihitung dengan rumus:
$$NDAit = \beta1(1/Ait\text{-}1) + \beta2(\Delta REVt/Ait\text{-}1 - \Delta REC/Ait\text{-}1) + \beta3(PPEt/Ait\text{-}1)$$
4. Selanjutnya *discretionary accrual* (DAC) dapat dihitung sebagai berikut:
$$DACit = TACit - NDAit$$

Description: TACit= Total Accruals, Niit= Net Income, CFOit= Cash Flow Operation, NDAit= Nondiscretionary Accruals, DAit= Discretionary Accruals, ΔREVit= Change in revenue, ΔRECit= Change in accounts receivable, PPEit = Fixed assets, Ait-1 = Total assets in year t-1, β = Firm-specific Parameters.

3- Litigation risks (LITIR)

The risk of Litigation of the audit client is measured as a dummy variable that takes the value (1) in the event of exposure to penalty or lawsuits filed against the entity by other parties, and the value (0) otherwise, according to studies ([36]; [37])

Third: the control variables of the study:

The control variables, as will be shown in the following table, are some factors affecting the basic variables of the study, but they do not fall within the scope of the study. And these factors were added in order to neutralize its impact and adjust the relationship between the independent variables and the dependent variables. Among the most important variables identified by the researcher in light of the results of previous studies is the corporation size, the degree of financial leverage, Reputation of the audit firm, Quality of governance.

Table 2: Controlling study variables and their measurement method.

Variables	abbreviation	The purpose of listing as a control variable and Measurement method
Firm size	**FSIZE**	▪ In the stock market the size of corporations and the size of their assets on Digitization and the Audit Client's Business Risk, and it were entered as a control variable to identify its role in influencing the Audit Client's Business. ▪ In this study, the firm size is assessed by the natural logarithm of the total assets owned by the company
The degree of financial leverage	**LEV**	▪ Leverage ratio is a ratio that describes how much the use of external party funds by companies to finance the expansion and operation of the company. The high debt to asset ratio shows that the company has a high risk of not being able to pay off the interest or principal of the debt . ▪ Leverage ratio of the company is determined by dividing total liabilities on total assets
Reputation of the audit firm	**BIG4**	▪ The reputation of the audit firm is proxied by the Big Four, the world's four largest accounting firms (Deloitte, Ernst & Young, KPMG, and Price Waterhouse Coopers). Because of their well-established brand names, Big Four companies are more motivated to provide higher-quality auditing services in order to preserve their reputation. ▪ It is a dummy variable, which takes a value of 1 if a Big Four companies audits the company's financial statements; otherwise, 0.
Governance Quality	**GQ**	▪ The perfect implication of corporate governance is one of the most important factors affecting the Audit Client's Business Risk. ▪ researcher measure the quality of corporate governance based on an aggregate variable ranging in value from (1 to 5) according to the availability of some of the characteristics of the quality of governance (independence of the majority of the members of the Board of Directors (more than half of the members of the Board according to the latest version of the rules of governance in Saudi), the non-duplication of the position of the Executive Director (not combining the positions of Chairman and Managing Director), the existence of an independent internal audit committee, and the availability of financial and accounting expertise in The Board of Directors (at least one member), and the periodicity of the meetings of the Board of Directors (not less than (4) times a year in accordance with the rules of governance which stipulate that the Committee must convene at least once every 3 months ([38]; [39])

3.3 Applied study Models.

Based on what was presented through the study problem, objectives and hypotheses, the researcher created three models to test the first, second and third hypotheses of the study, which are:

1- The first model:

Model objective	▪ It is a model to Measuring the Impact Digitization on the Audit Client's Business Risk by determining the impact of digitization on audit report lag risks. ▪ This model covers the first hypothesis of the study: There is a statistically significant effect of Digitization on audit report lag risks.
Model Equation	$\mathbf{ARLR_{it} = \beta_0 + \beta_1\ DIGIT_{it} + \beta_2 FSIZE_{it} + \beta_3\ LEV_{it} + \beta_4\ BIG4_{it} + \beta_5\ GQ_{it} + \varepsilon it}$
Abbreviation Definition	*$ARLR_{it}$: Audit lag risks, $DIGIT_{it}$: digitization, $FSIZE_{it}$: Firm size, LEV_{it}:The degree of financial leverage , $BIG4_{it}$:Reputation of the audit firm, GQ_{it}: Governance Quality*

2- The Second model:

Model objective	▪ It is a model to Measuring the Impact Digitization on the Audit Client's Business Risk by determining the impact of digitization on audit Quality. ▪ This model covers the second hypothesis of the study: There is a statistically significant effect of Digitization on audit Quality.
Model	$\mathbf{AQ_{it} = \beta_0 + \beta_1\ DIGIT_{it} + \beta_2 FSIZE_{it} + \beta_3\ LEV_{it} + \beta_4\ BIG4_{it} + \beta_5\ GQ_{it} + \varepsilon it}$

Equation	
Abbreviation Definition	*AQ_{it} : audit Quality, $DIGIT_{it}$: digitization, $FSIZE_{it}$: Firm size, LEV_{it}:The degree of financial leverage , $BIG4_{it}$:Reputation of the audit firm, GQ_{it}: Governance Quality*

3- The third model:

Model objective	▪ It is a model to Measuring the Impact Digitization on the Audit Client's Business Risk by determining the impact of digitization on Litigation Risks. ▪ This model covers the Third hypothesis of the study: There is a statistically significant effect of Digitization on Litigation Risks.
Model Equation	$\mathbf{LITIR_{it} = \beta_0 + \beta_1\ DIGIT_{it} + \beta_2 FSIZE_{it} + \beta_3\ LEV_{it} + \beta_4\ BIG4_{it} + \beta_5\ GQ_{it} + \varepsilon it}$
Abbreviation Definition	*$LITIR_{it}$: Litigation Risks, $DIGIT_{it}$: digitization, $FSIZE_{it}$: Firm size, LEV_{it}:The degree of financial leverage , $BIG4_{it}$:Reputation of the audit firm, GQ_{it}: Governance Quality*

3.4 The Method of Data Analysis

The researcher applied some statistical methods contained in the Statistical Package for Social Science (SPSS)] (version (25) in statistical data analysis). The nature of the data required determining the necessary and appropriate statistical methods, which are as follows: ([40], [41])

***First: Determining the validity of the data and* Strength of the Study Modeles**

1- Normal Distribution Test:

The following table shows the values resulted from both (Kolmogorov Smirnov) and (Shapiro-Wilk) tests and the level of significance for each variable:

Table 3: Normal Distribution for the Study Continuous Variables

Continuous Variables		Kolmogorov-Smirnov Statistic		Shapiro-Wilk Statistic	
		value	Sig.	value	Sig.
Digitization	DIGIT	0.292	0.000	0.770	0.000
Audit report lag risks	ARLR	0.148	0.000	0.939	0.000
Audit Quality (Earning management – jones model)	AQ	0.198	0.000	0.662	0.000
Firm size	FSIZE	0.048	0.004	0.984	0.000
The degree of financial leverage	LEV	0.035	0.049	0.981	0.000
Governance Quality	GQ	0.281	0.000	0.758	0.000

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of views (548) views

The previous table shows that:

- The level of significance (Sig.) for both (Kolmogorov-Smirnov) and (Shapiro-Wilk) tests is less than (0.05) for all study variables.
- Based on the previous conclusion on the variable's significance values, the data are not following a normal distribution.

From the point of view of the researcher, this does not affect the results of the analysis, and they justify this by the large size of the observations, which were represented in (548) observations, where according to the theory of the statistical central end, the data is considered to follow a normal distribution if the size of the community is large ([42], [43]), and in addition to that and to reduce the impact of the problem of lack of Linearity of the data The researcher used statistical transformations (Transformation) by taking the natural logarithm of some variables (Log) in order to make the variance more stable and bring the data closer to the linear relationship.

The data on litigation risks and the reputation of the audit firm is not subject to the conditions of the normal distribution test, as it is a discontinuous (dummy) variable with binary values.

2- Testing Linear duplication and Autocorrelation issues Test

The researcher tested the extent of the multi-collinearity problem between the study's explained variables (independent and controlled) through the Multi-Collinearity Test, through which the variance inflation factor (VIF) and the tolerable variance coefficient (Tolerance) are calculated for each of the explained variables. affect the dependent variable of the study models,

[44] believe that whenever the value of the (VIF) factor is less than (10), and the value of the (Tolerance) factor is less than the correct one, this is sufficient justification to judge that the explained variables do not suffer from the presence of the problem of linear interference, in addition to Verify that model variables are free of the autocorrelation problem using the Durbin Watson Test. This can be clarified in the following table.

Table 4: Multicollinearity Test, Durbin Watson Test results

The independent variables in the study models (Independent and controlling)	Collinearity Test results					
	Model (1) Audit report lag risks (ARLR)		Model (2) Audit Quality (AQ)		Model (3) Litigation Risks (LITIR)	
	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance
Digitization (DIGIT)	2.035	0.491	2.035	0.491	2.035	0.491
Firm size (FSIZE)	3.486	0.287	3.486	0.287	3.486	0.287
leverage (LEV)	3.034	0.330	3.034	0.330	3.034	0.330
Audit firm Reputation (BIG4)	1.503	0.665	1.503	0.665	1.503	0.665
Governance Quality (GQ)	1.527	0.655	1.527	0.655	1.527	0.655
Durbin Watson Test	1.924		1.735		1.831	

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of views (548) Observations

The previous table shows that:

- Variance Inflation Factor (VIF) of all independent and control variables are less than (10), which means that independent variables are free from both overlapping issues and linear duplication, as the correlation between them has no statistical significance and is very low, which indicates the strength of the model that is used for explanation and determination of the independent variable impact on the dependent variable.
- Durbin Watson (DW) values are equal to (1.924), (1.735), (1.831) thus it falls within the ideal range which is within the range of (1.5-2.5), which indicates the absence of any auto-correlation issues between independent variables that may affect the validity of results [45].

Based on the above, the independent variables are proved to be free from both overlapping issues and linear duplication; also, there are no auto-correlation issues in the model variables. Therefore, the strength of the study models and their increase in their explanatory capacity are proved which can ensure the validity of the data for statistical analysis and any produced results.

Second: Study Variables Descriptive Statistics.

This section will introduce a descriptive analysis for the study variables; the starting point for this analysis will be the following table that shows the descriptive statistics of the study variables over the study period, as follows:

Table 5: Descriptive Statistics of the Study Variables

Continuous Variables	Mean	Std. Deviation	Maximum	Minimum
DIGIT	3.20	1.002	4	0
Audit Lag risks (ARLR)	46.79	15.31	80	11
Audit Quality (AQ) (Earning management – jones model)	0.1002	0.117	0.637	0.00
Firm Size (FSIZE)	21.3134	1.44622	25.22	16.82
Leverage (LEV)	0.4390	0.22073	0.92	0.00
Governance Quality (GQ)	4.20	0.863	5	1
Dummy Variables				
Litigation Risks (LITIGR)	classification		Observations	Percentage
	Litigation Risks: Value (1)		223	40.7%
	Not Litigation Risks: Value (0)		325	59.3%
Audit firm Reputation (Big4)	classification		Observations	Percentage
	BIG4 : Value (1)		480	87.6%
	Not BIG4: Value (0)		68	12.4%

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of views (548) Observations

According to the indicator proposed by the researcher to measure the extent to which companies apply digitization technologies in the business environment, it becomes clear to the researcher that the sample companies apply, on average, more than three digitization techniques out of the techniques identified by the researcher, which are (Big Data, Artificial Intelligence, Block chains, cloud computing), It is also clear from the results that there are some companies that have applied the four technologies, and there are other companies that have not applied any of them, which explains the disparity between the sample companies in their application of digitization.

As for the audit lag risks, which was measured by the

length of the audit report issuance period, which was calculated by the number of days between the date of preparation of the financial statements and the date of the independent auditor's report, the results of the previous table confirmed that the average period of delay in the audit report is (46.7) days, and that the longest period was (80) day, while the least lag periods were (11) days.

Regarding earnings management practices (as an inverse measure of audit quality), the average voluntary absolute accruals according to the modified Jones model was (0.1002), and the maximum absolute accruals that occurred during the years of the study was (0.637).

On the other hand, the results of the previous table confirmed that the sample companies were exposed to litigation risks in (223) observations (40.7%), while the number of observations during which the sample companies were not exposed to litigation risks was (325) observations as (59.3%).

Regarding the control variables, the results of the table showed that the average size of the sample companies was (12.31) measured by the natural logarithm of total assets, and the maximum was (25.22) and the minimum was (16.82), to reflect the disparity between the sample companies in the size of assets, and the degree of financial leverage for the study sample was (0.439) with a standard deviation of (0.22), with values falling between (0.00) and (0.92), and financial leverage expresses the company's indebtedness in relation to ownership rights. With regard to the quality of corporate governance, the results of the table confirmed that the sample companies are committed to applying corporate governance with an overall average of (4.20) (84%) According to the components of the measurement method consisting of (5) elements, Finally, the results of the table with regard to the audit firm reputation variable confirmed that the sample companies are committed to auditing with one of the major audit firms (BIG4) at a rate of (87.6%), so that this rate represents the size and quality of the audit firm and then the quality of the external audit.

Third: Analyzing and discussing the results of hypothesis testing:

The validity of the study hypotheses is tested by analyzing the results of the correlation matrix (testing one-way correlations between the study variables), and analyzing the results of multiple regression (after introducing the control variables), while following logistic regression when testing the third hypothesis due to the nature of the dependent variable, which takes a binary value, as follows:

1- Analyzing the results of the correlation matrix

Table 6: Results of the analysis of the correlation matrix

		DIGIT	LAGR	AQ	LITIGR	FSIZE	LEV	BIG4	GQ
DIGIT	Pearson Correlation	1							
	Sig. (2-tailed)								
ARLR	Pearson Correlation	-0.671**	1						
	Sig. (2-tailed)	0.000							
AQ	Pearson Correlation	-0.691**	0.547**	1					
	Sig. (2-tailed)	0.000	0.000						
LITIGR	Pearson Correlation	-0.560**	0.380**	0.258**	1				
	Sig. (2-tailed)	0.000	0.000	0.000					
FSIZE	Pearson Correlation	-0.639**	0.853**	0.545**	0.338**	1			
	Sig. (2-tailed)	0.000	0.000	0.000	0.000				
LEV	Pearson Correlation	-0.610**	0.855**	0.477**	0.346**	0.795**	1		
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000			
BIG4	Pearson Correlation	0.495**	-0.600**	-0.446**	-0.184**	-0.511**	-0.341**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		
GQ	Pearson Correlation	0.507**	-0.472**	-0.380**	-0.226**	-0.528**	-0.527**	0.286**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of views (548) Observations

– *(**) indicates the significance of the correlation coefficient at a significance level of 0.01, (*) indicates the significance of the correlation coefficient at a significance level of 0.01,*

The following results are clear to the researcher from the table:

- There is a negative, significant correlation at the level of (0.01) between Digitization and audit report lag risks, which supports the validity of the first hypothesis of the study, as the correlation coefficient is negative with a value of (0.691) and the level of significance (sig) is less than (0.01). This indicates that The more the company applies digitization techniques in its business, the more this leads to a reduction in business risks by reducing the risk of delaying the auditor's report, The degree of audit responsibility, comprehension of the client's environment, evaluation of the efficacy of internal controls, risk and materiality, and application of analytical methods are all impacted by digitalization. Better identification of operational

hazards is another benefit. It also affects the level of audit fees, productivity, correctness, and efficacy of the audit opinion creation, as well as the report lag. Whereas the primary effects of technology are seen in the execution of audits in real-time, the long-term reduction of tasks completed by accountants and financial managers, the annual reduction of audit preparatory work, the ease of gaining insight into the beginnings and development of business operations, and the enhancement of internal control functions and reporting.

- There is a negative, significant correlation at the level of (0.01) between Digitization and earning management (From the opposite angle there are positive, significant correlation with audit quality), which supports the validity of the second hypothesis of the study, as the correlation coefficient is negative with a value of (0.671) and the level of significance (sig) is less than (0.01). This indicates that The more the company applies digitization techniques in its business, the more this leads to a reduction in business risks by improving the quality of auditing and protecting the company from the risks of errors, manipulation and fraud in the financial statements, Auditors can experience several advantages from digitalization, including increased data security, reduced fraud and manipulation, more transparency and traceability, and decreased audit fees. Based on the advantages of digitalization and its continued growth, along with auditors' intention to research it, it is possible that digitalization may alter the audit system.
- There is a negative, significant correlation at the level of (0.01) between Digitization and Litigation Risks, which supports the validity of the third hypothesis of the study, as the correlation coefficient is negative with a value of (0.560) and the level of significance (sig) is less than (0.01). This indicates that The more the company applies digitization techniques in its business, the more this leads to a reduction in business risks by reducing the risk of Litigation, Robust and predictive software solutions are used in a modern setting to analyze large and complicated data sets. Digitization lowers the risk of lawsuit because auditors who are proficient with huge data sets can also offer new advisory services to the market [46].
- Regarding the control variables, the results of the correlation matrix show that audit delay risks and litigation risks are related to a positive relationship with both company size and financial leverage, and a negative relationship with both the reputation of the audit firm and the quality of governance. On the other hand, audit quality has a negative relationship with company size and financial leverage, and a positive relationship with the audit firm's reputation and governance quality.

2- Regression analysis between the study variables

1st Hypothesis: There is a statistically significant effect of Digitization on audit report lag risks.

The first hypothesis of the study is tested by analyzing the results of regression analysis to measure effect of Digitization (independent variable) on audit report lag risks (dependent variable), as follows:

Table 7: Regression Analysis for the First Hypothesis Variables

The Dependent Variable		Audit report lag risks (ARLR)				
The Independent Variables		Regression coefficient (B)	Beta Value	T value	Significance level	Significance
(Constant)	(B_0)	-28.146		-4.077	0.000	--
Digitization	DIGIT	-1.069	-0.070	-3.165	0.002	statistically significant at level (1%)
Firm size	FSIZE	3.160	0.298	10.323	0.000	
Financial leverage	LEV	36.515	0.526	19.512	0.000	
Audit firm Reputation	BIG4	-11.761	-0.253	-13.35	0.000	
Governance Quality	GQ	1.255	0.071	3.695	0.000	
model explanatory value		R^2 =0.870				
F value		725.945				
model overall significance (Prob (F-Statistic)				ANOVA = 0.000		

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of views (548) Observations

Based on the above table the researcher concluded that:

There is a statistically significant negative effect at a significant level (0.01) of digitization on the audit report lag risks in the presence of control variables, as the regression coefficient is negative with a value of (-1.069), and the probability value (P-value) in the model is (0.002), which is less than (0.01). The explanatory value of the model (R^2) was (0.870), which indicates that (87%) of the total changes that occur in the dependent variable (audit report lag risks) can be explained through the explanatory variables (digitization and control variables), and the rest of the percentage is due to Random error in the estimation or failure to include other variables that could have been included in the model and have an impact on the relationship. The previous result is consistent with what was concluded by the results of the applied evidence of

many studies, including the study [33].

Based on the above, ***the researcher can accept the validity of the first hypothesis of the study in the presence of a statistically significant effect of Digitization on audit report lag risks***, which enables the regression model expressing the variables of this hypothesis to be estimated by representing it with the following equation:

$ARLR_{it}$= -28.1 – 1.06 $DIGIT_{it}$ + 3.16$FSIZE_{it}$ +36.5 LEV_{it} – 11.7 $BIG4_{it}$ + 1.25 GQ_{it}
$ARLR_{it}$: Audit lag risks, $DIGIT_{it}$: digitization, $FSIZE_{it}$: Firm size, LEV_{it}:The degree of financial leverage , $BIG4_{it}$:Reputation of the audit firm, GQ_{it}: Governance Quality

2nd Hypothesis: There is a statistically significant effect of Digitization on audit Quality.

The second hypothesis of the study is tested by analyzing the results of regression analysis to measure effect of Digitization (independent variable) on audit Quality (dependent variable), as follows:

Table 8: Regression Analysis for the second Hypothesis Variables

The Dependent Variable		Audit Quality (AQ)				
The Independent Variables		Regression Coefficient (B)	Beta Value	T value	Significance level	Significance
(Constant)	(B_0)	0.075		0.724	0.470	--
Digitization	DIGIT	-0.065	-0.555	-12.85	0.000	statistically significant at level (1%)
Firm size	FSIZE	0.013	0.154	2.72	0.007	
Financial leverage	LEV	-0.009	-0.017	-0.319	0.750	
Audit firm Reputation	BIG4	-0.035	-0.099	-2.65	0.008	
Governance Quality	GQ	0.000	0.003	0.069	0.945	
Model explanatory value		R^2 =0.503				
F value		109.597				
model overall significance (Prob (F-Statistic)				ANOVA = 0.000		

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of views (548) Observations

Based on the above table the researcher concluded that:

There is a statistically significant negative effect at a significant level (0.01) of digitization on Earning management risks (positive effect on audit quality), as the regression coefficient is negative with a value of (-0.065), and the probability value (P-value) in the model is (0.000), which is less than (0.01). The explanatory value of the model (R^2) was (0.503), which indicates that (50.3%) of the total changes that occur in the dependent variable (Earning management risks) can be explained through the explanatory variables (digitization and control variables), and the rest of the percentage is due to Random error in the estimation or failure to include other variables that could have been included in the model and have an impact on the relationship. The previous result is consistent with what was concluded by the results of the applied evidence of many studies, including the study ([31]; [28]).

Based on the above, ***the researcher can accept the validity of the second hypothesis of the study in the presence of a statistically significant effect of Digitization on audit quality***, which enables the regression model expressing the variables of this hypothesis to be estimated by representing it with the following equation:

(EM)AQ_{it}= 0.075 – 0.065 $DIGIT_{it}$ + 0.013 $FSIZE_{it}$ -0.009 LEV_{it} – 0.035 $BIG4_{it}$ + 0.00 GQ_{it}
(EM)AQ_{it} *Earning management risks, $DIGIT_{it}$: digitization, $FSIZE_{it}$: Firm size, LEV_{it}:The degree of financial leverage , $BIG4_{it}$:Reputation of the audit firm, GQ_{it}: Governance Quality*

3rd Hypothesis: There is a statistically significant effect of Digitization on Litigation Risks

The third hypothesis of the study is tested by analyzing the results of logistic regression analysis to measure effect of Digitization (independent variable) on Litigation Risks (dependent variable), as follows:

Table 9: Regression Analysis for the third Hypothesis Variables

The Dependent Variable		Litigation Risks (LITIGR)				
The Independent Variables		(B)	Wald	S.E.	Significance level	Significance
(Constant)	(B_0)	5.208	2.561	3.254	0.110	--
Digitization	DIGIT	-1.800	81.767	0.199	0.000	statistically significant at level (1%)
Firm size	FSIZE	-0.032	0.048	0.148	0.826	
Financial leverage	LEV	0.117	0.018	0.872	0.893	
Audit firm Reputation	BIG4	-0.724	2.955	0.421	0.086	
Governance Quality	GQ	0.219	1.925	0.158	0.165	
Cox & Snell R Square = 0.311				Nagelkerke R Square = 0.420		
model overall significance (Prob (Chi-square)			= 0.000			

Source: The table prepared by the researcher based on the outputs of statistical analysis, and the number of

views (548) Observations

Based on the above table the researcher concluded that:

There is a statistically significant negative effect at a significant level (0.01) of digitization on Litigation Risks in the presence of control variables, as the regression coefficient is negative with a value of (-1.8), and the probability value (P-value) in the model is (0.000), which is less than (0.01). The explanatory value of the model (Cox & Snell R Square) ،(Nagelkerke R Square) was (0.311)-(0.420), The previous result is consistent with what was concluded by the results of the applied evidence of many studies, including the study [46].

Based on the above, ***the researcher can accept the validity of the Third hypothesis of the study in the presence of a statistically significant effect of Digitization on Litigation Risks***.

At the end of the statistical analysis of the data and after testing the hypotheses, the results of the research hypotheses test can be summarized from the following table:

Table 10: the results of the research hypotheses

NO	hypotheses	expected	results
1st Hypothesis:	There is a statistically significant effect of Digitization on audit report lag risks.	-	**Accepted**
2nd Hypothesis	There is a statistically significant effect of Digitization on audit Quality.	+	**Accepted**
3rd Hypothesis:	There is a statistically significant effect of Digitization on Litigation Risks.	-	**Accepted**

4. Conclusions & Recommendations

This research targeted the accounting analysis of the impact of new digitization methods on client business risks. To achieve this goal, the researcher addressed and analyzed the characteristics and characteristics of digitization and its relationship to the auditing profession. The researcher came to define digitization as an intermediary located between digital business and digital transformation, and it is linked to technical and organizational changes. It is the use of digital technologies to digitize and model businesses and thus provide new opportunities for generating income and value, which requires the audit profession to continuously develop to generate confidence in audit reports and in the profession itself.

The researcher also concluded that digitization provides data that is collected immediately and made available for visibility and traceability, in addition to providing advice to customers upon request. Digitization works to approach customers, partners, and employees and consult with them. Digitization is also represented in a group of technologies such as big data and artificial intelligence, cloud computing, and neural networks. The expansion of market opportunities and the lack of joint opportunities to use these tools lead to some risks for operating companies. The transition from the economy of production processes and resources to the digital economy also leads to changes in the accounting system.

The researcher also concluded that digitization works to develop the auditing profession by improving the monitoring of client data and also works to increase the quality of auditing, as digitization allows coverage of all client data and thus helps to conduct a more extensive analysis of the client's various processes and data. Consequently, most errors or distortions in the financial statements are identified, which limits tampering with them and thus increases the transparency of the financial statements. This results in enabling the Board of Directors to make the right decisions. It also enables the Audit Committee to improve the internal systems and processes to produce accounting information based on the auditors' recommendations. This, in turn, limits the manipulation of earnings management by management.

It has been concluded that artificial intelligence has a major role in investing in stocks in the financial markets and analyzing financial data in companies to know the risks and returns, both of which are calculated easily and accurately by artificial intelligence, as this method processes unstructured data, improving efficiency by reducing the cost resulting from modeling. Risk management processes, helping to provide preventive advice on risks in real time and then responding faster in critical situations, which in turn helps to have a clear vision of potential risks, which helps in making better decisions.

The researcher finally concluded that big data allows the auditor to collect and study all data from different sources, which increases his degree of assurance about the reliability of the data for initial risk analysis. It also helps him in deciding to approve accepting the assignment through its prediction of the expected risks. Finally, it helps him access and analyze data, which provides good audit evidence.

There is a negative, significant correlation at the level of (0.01) between Digitization and audit report lag risks, which supports the validity of the first hypothesis of the study, as the correlation coefficient is negative with a value of (0.691).This indicates that The more the company applies digitization techniques in its business, the more this leads to a reduction in business risks by reducing the risk of delaying the auditor's report on Companies Listed on the Saudi Stock Exchange.

There is a negative, significant correlation at the level of (0.01) between Digitization and earning management

(From the opposite angle there are positive, significant correlation with audit quality), which supports the validity of the second hypothesis of the study, as the correlation coefficient is negative with a value of (0.671). This indicates that The more the company applies digitization techniques in its business, the more this leads to a reduction in business risks by improving the quality of auditing and protecting the company from the risks of errors, manipulation and fraud in the financial statements on Companies Listed on the Saudi Stock Exchange.

There is a negative, significant correlation at the level of (0.01) between Digitization and Litigation Risks, which supports the validity of the third hypothesis of the study, as the correlation coefficient is negative with a value of (0.560) .This indicates that The more the company applies digitization techniques in its business, the more this leads to a reduction in business risks by reducing the risk of Litigation on Companies Listed on the Saudi Stock Exchange.

As for the proposed research areas, digitization represents one of the important and wide-ranging research areas, and the researcher may propose some related topics, which are: Measuring the impact of business digitization on the practices of the internal audit process: an applied study on Companies Listed on the Saudi Stock Exchange. In addition to testing the impact of applying digitization techniques on evidence of the audit process: an experimental study. Finally, a proposed frame of reference for applying business digitization techniques to reduce material misstatements in the financial statements of Saudi companies.

Acknowledgements:

"The authors extend their appreciation to Prince Sattam bin Abdulaziz University for funding this research work through the project number (PSAU/2023/02/24867)"

Conflicts of Interest Statement

The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

References:

[1] Manita, R., Elommal N., Baudier, P., & Hikkerova, L., (2020). The digital transformation of external audit and its impact on corporate governance. *Technological Forecasting and Social Change*, 150, 119751.

[2] Metwally, A. Z. H., (2021), "The Impact of Digitization on the Auditing Profession," *Scientific Journal of Accounting Studies*, Faculty of Commerce, Suez Canal University, Volume 3, Issue 1, 1-6.

[3] Betti, N., Sarens, G., & Poncin, I. (2021). Effects of digitalization of organizations on internal audit activities and practices. *Managerial Auditing Journal*.

[4] Rohrbeck, R., & Kum, M. E. (2018). Corporate foresight and its impact on firm performance: A longitudinal analysis. *Technological Forecasting and Social Change*, 129, 105–116.

[5] Noora Ayoob Mohammed Hassan; Badariah binti Haji Din; Vally, Senasi, (2023), "Reviewing The Relation Between Agility in Audit Committee and Financial Performance on Stock Price" international journal of accounting and management sciences, 2(1), 148-178

[6] Bloomberg, J. (2018). Digitization, digitalization, and digital transformation: Confuse them at your peril.

[7] Knudsen, D. R. (2020). Elusive boundaries, power relations, and knowledge production: A systematic review of the literature on digitalization in accounting. *International Journal of Accounting Information Systems*, 36, 100441.

[8] Magdy Shokry Fawzy Mohamed (2023), "The Role of Both Audit Rotation and Joint Audit on the Enterprise's Value" international journal of accounting and management sciences, 2(1), 131-147.

[9] Alles, M. G. (2015). Drivers of the use and facilitators and obstacles of the evolution of big data by the audit profession. *Accounting Horizons*, 29(2), 439-449.

[10] Wamba, S. F., Akter, S., Edwards, A., Chopin, G., & Gnanzou. D. (2015). How ''Big Data'' can make big impact: Findings from a systematic review and a longitudinal case study. *International Journal of Production Economics*, 165, 234–246.

[11] Khalifa, M.(2022) The Role of Artificial Intelligence in the Education Process of Political Science Field, *ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems, ICETSIS*, pp. 409–416

[12] E&Y. (2018). https://www.ey.com/en_us/assurance/why-ai-is-both-a-risk-and-a-way-to-manage-risk.

[13] Ovenden, J. (2017). Will blockchain Render Accountants Irrelevant, Retrieved December, 5, 2018.

[14] Adiloglu, B., & Gungor, N. (2019). The impact of digitalization on the audit profession: a review of Turkish independent audit firms. *Journal of Business Economics and Finance*, 8(4), 209-214.

[15] Tiberius, V., & Hirth, S. (2019). Impacts of

digitization on auditing: A Delphi study for Germany. *Journal of International Accounting, Auditing and Taxation*, *37*, 100288.

[16] Shehadeh, F. M. F., (2016), "Using the Business Risk Review Approach to Develop an Audit Risk Estimation Model: An Applied Study," *Journal of Accounting Thought*, Faculty of Commerce, Ain Shams University, 20 (2), 1173-1232

[17] Ranasinghe, T., Yi, L., & Zhou, L. (2021). Do Auditors Charge a Client Business Risk Premium? Evidence from Audit Fees and Derivative Hedging in the US Oil and Gas Industry. Forthcoming, *Review of Accounting Studies*.

[18] Pham, N. K., Duong, H. N., Pham, T. Q., & Ho, N. T. T. (2017). Audit firm size, audit fee, audit reputation and audit quality: The case of listed companies in Vietnam. *Asian Journal of Finance& Accounting*, 9(1), 429-447.

[19] Awaid, Z. M. M., (2013), "The impact of the client activity risk approach on the external auditor's report: a field study," *Journal of Accounting Thought*, Faculty of Commerce, Ain Shams University,17, 363-400.

[20] Krüger, N. A. (2020). A risk management tool for SMMEs: the case of Sedibeng District Municipality (Doctoral dissertation, North-West University (South Africa).

[21] Krüger, N. A., & Meyer, N. (2021). The development of a small and medium-sized business risk management intervention tool. *Journal of Risk and Financial Management*, 14(7), 310.

[22] Naim, A., Muniasamy, A., Clementking, A., & Rajkumar, R. (2022). Relevance of Green Manufacturing and IoT in Industrial Transformation and Marketing Management. In Computational Intelligence Techniques for Green Smart Cities, 395-419. *Springer*, Cham .

[23] Greenman, C. (2017). Exploring the impact of artificial intelligence on the accounting profession. *Journal of Research in Business, Economics and Management*, 8(3), 1-20

[24] Li, Z.,& Zheng, L.(2018). The impact of artificial intelligence on accounting. In 2018 4th International Conference on Social Science and Higher Education (ICSSHE 2018). ATLANTIS PRESS.

[25] Ghoneim, M. R. Y., (2021), "The impact of the audit client's big data on planning external audit procedures: a future vision," *Alexandria Journal of Accounting Research*, Faculty of Commerce, Alexandria University, Volume 5, Issue 2, 171-207.

[26] Ali, A.W.N., (2019), When is the auditor's confirmation of corporate sustainability reports an integrated professional service? The Third Scientific Conference of the Faculty of Commerce, Tanta University, entitled (Development and Financial Inclusion - Visions, Impacts, and Implications), April 15.

[27] Salijeni, G., Samsonova-Taddei, A., & Turley S. (2019). Big Data and changes in audit technology: Contemplating a research agenda. *Accounting and Business Research*, 49 (1), 95–119.

[28] Li, Z. (2017). Will Blockchain Change the Audit? China-USA Business Review, XVI (6), 294-298.

[29] Usul, H., & Karaburun, G. (2020). Changes in The Professional Profile of Auditors in The Light of Blockchain Technology. European Journal of Digital Economy Research, I(1), 5-12.

[30] Zhang, Y., Xiong, F., Xie, Y., Fan, X., & Gu, H. (2020). The Impact of Artificial Intelligence and Blockchain on the Accounting Profession. IEEEAccess, VIII(10), 110461-110477.

[31] Sujanto, M., Lindawati, A. S. L., Zulkarnain, A., & Liawatimena, S. (2021). Auditor's Perception on Technology Transformation: Blockchain and CAATs on Audit Quality in Indonesia. *International Journal of Advanced Computer Science and Applications*, *12*(8).

[32] Fotoh, L. E., & Lorentzon, J. I. (2021). The Impact of Digitalization on Future Audits. Journal of Emerging Technologies in Accounting, 18(2), 77-97.

[33] Vuković, B., Tica, T., & Jakšić, D. (2023). Challenges of using digital technologies in audit. *The Annals of the Faculty of Economics in Subotica*, 1-16.

[34] Santi, A., Dicky, D., & Dwiyanti, W. (2023). Review of Audit Quality Indicators. *International Journal of Social Science, Education, Communication and Economics (SINOMICS JOURNAL)*, *1*(6), 737-742.

[35] Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of accounting research*, *29*(2), 193-228.

[36] Li, L., Monroe, G. S., & Coulton, J. (2023). Managerial litigation risk and auditor choice. *International Journal of Auditing*.

[37] Fingland, S. G., Pickerd, J. S., & Piercey, M. D. (2023). How Does High Uncertainty in Accounting Estimates Impact Auditor Litigation Risk? Opposite Effects in Jury Trials and Attorneys' Out-of-Court Settlements. *Current Issues in Auditing*, 1-8.

[38] Aldamen, H., & Duncan, K. (2012). Does adopting good corporate governance impact the cost of intermediated and non-intermediated debt?. *Accounting & Finance*, 52, 49-76.

[39] Aldamen, H., Duncan, K., Kelly, S., & McNamara, R. (2020). Corporate governance and family firm performance during the Global Financial Crisis. *Accounting & Finance*, 60(2), 1673-1701.

[40] Aronson, D., Hammerman, H., Kapeliovich, M. R., Suleiman, A., Agmon, Y., Beyar, R., ... & Suleiman, M. (2007). Fasting glucose in acute myocardial infarction: incremental value for long-term mortality and relationship with left ventricular systolic function. Diabetes Care, 30(4), 960-966.

[41] Abu-Bader, S. H. (2021). Using statistical methods in social science research: With a complete SPSS guide. Oxford University Press, USA.

[42] Stanković, S., Orović, I., & Amin, M. (2013). L-statistics-based modification of reconstruction algorithms for compressive sensing in the presence of impulse noise. Signal Processing, 93(11), 2927-2931.

[43] Verbeek, R. E., Leenders, M., Ten Kate, F. J., Van Hillegersberg, R., Vleggaar, F. P., Van Baal, J. W., ... & Siersema, P. D. (2014). Surveillance of Barrett's esophagus and mortality from esophageal adenocarcinoma: a population-based cohort study. Official journal of the American College of Gastroenterology| ACG, 109(8), 1215-1222.

[44] Kutner, Micheal H. et al. [2005], "*Applied Linear Statistical Models*", 5th Edition, McGraw Hil/Irwin, New York.

[45] Kang, M. J., Won, Y. J., Lee, J. J., Jung, K. W., Kim, H. J., Kong, H. J., ... & Seo, H. G. (2022). Cancer statistics in Korea: incidence, mortality, survival, and prevalence in 2019. Cancer Research and Treatment: Official Journal of Korean Cancer Association, 54(2), 330-344.

[46] Richins, G., Stapleton, A., Stratoppoulos, T., & Wong, C. (2017). Big Data analytics: opportunity or threat for the accounting profession? Journal of Information Systems, 31(3), 63–79.

APPINDX (1)

Symbol	CompanyName	Sector
4001	Abdullah Al Othaim Markets Co.	Food & Staples Retailing
4191	Abdullah Saad Mohammed Abo Moati for Bookstores Co.	Retailing
1820	Abdulmohsen Alhokair Group for Tourism and Development	Consumer Services
2382	Ades Holding Co.	Energy
2330	Advanced Petrochemical Co.	Materials
2340	Al Abdullatif Industrial Investment Co.	Consumer Durables & Apparel
6020	Al Gassim Investment Holding Co.	Food & Beverages
4007	Al Hammadi Holding	Health Care Equipment & Svc
1214	Al Hassan Ghazi Ibrahim Shaker Co.	Retailing
3091	Al Jouf Cement Co.	Materials
3008	Al Kathiri Holding Co.	Materials
1833	Al Mawarid Manpower Co.	Commercial & Professional Svc
7200	Al Moammar Information Systems Co.	Software & Services
1304	Al Yamamah Steel Industries Co.	Materials
6014	Alamar Foods Co.	Consumer Services
4320	Alandalus Property Co.	Real Estate Mgmt & Dev't
2320	Al-Babtain Power and Telecommunication Co.	Capital Goods
4163	Aldawaa Medical Services Co.	Food & Staples Retailing
4200	Aldrees Petroleum and Transport Services Co.	Energy
6070	Al-Jouf Agricultural Development Co.	Food & Beverages
4290	Alkhaleej Training and Education Co.	Consumer Services
2280	Almarai Co.	Food & Beverages
1322	Almasane Alkobra Mining Co.	Materials
4162	Almunajem Foods Co.	Food & Staples Retailing
4141	Al-Omran Industrial Trading Co.	Capital Goods
4192	AlSaif Stores for Development and Investment Co.	Retailing
2170	Alujain Corp.	Materials
6015	Americana Restaurants International PLC	Consumer Services
4061	Anaam International Holding Group	Food & Staples Retailing
7201	Arab Sea Information System Co.	Software & Services
3010	Arabian Cement Co.	Materials
4321	Arabian Centres Co.	Real Estate Mgmt & Dev't
2381	Arabian Drilling Co.	Energy
7202	Arabian Internet and Communications Services Co.	Software & Services

4150	Arriyadh Development Co.	Real Estate Mgmt & Dev't
6060	Ash-Sharqiyah Development Co.	Food & Beverages
1212	Astra Industrial Group	Capital Goods
4292	Ataa Educational Co.	Consumer Services
2140	AYYAN Investment Co.	Health Care Equipment & Svc
4051	Baazeem Trading Co.	Retailing
4110	Batic Investments and Logistics Co.	Transportation
1302	Bawan Co.	Capital Goods
4161	BinDawood Holding Co.	Food & Staples Retailing
4004	Dallah Healthcare Co.	Health Care Equipment & Svc
4300	Dar Alarkan Real Estate Development Co.	Real Estate Mgmt & Dev't
6013	Development Works Food Co.	Consumer Services
4013	Dr. Sulaiman Al Habib Medical Services Group	Health Care Equipment & Svc
4010	Dur Hospitality Co.	Consumer Services
1303	Electrical Industries Co.	Capital Goods
7203	Elm Co.	Software & Services
4220	Emaar The Economic City	Real Estate Mgmt & Dev't
4240	Fawaz Abdulaziz Alhokair Co.	Retailing
2283	First Milling Co.	Food & Beverages
4180	Fitaihi Holding Group	Consumer Durables & Apparel
6001	Halwani Bros. Co.	Food & Beverages
6002	Herfy Food Services Co.	Consumer Services
4250	Jabal Omar Development Co.	Real Estate Mgmt & Dev't
4190	Jarir Marketing Co.	Retailing
6090	Jazan Energy and Development Co.	Food & Beverages
4310	Knowledge Economic City	Real Estate Mgmt & Dev't
4011	Lazurde Company for Jewelry	Consumer Durables & Apparel
1830	Leejam Sports Co.	Consumer Services
4262	Lumi Rental Co.	Transportation
1831	Maharah Human Resources Co.	Commercial & Professional Svc
4100	Makkah Construction and Development Co.	Real Estate Mgmt & Dev't
4009	Middle East Healthcare Co.	Health Care Equipment & Svc
2370	Middle East Specialized Cables Co.	Capital Goods
4002	Mouwasat Medical Services Co.	Health Care Equipment & Svc
4164	Nahdi Medical Co.	Food & Staples Retailing
2210	Nama Chemicals Co.	Materials
2282	Naqi Water Co.	Food & Beverages
1213	Naseej International Trading Co.	Consumer Durables & Apparel
6010	National Agricultural Development Co.	Food & Beverages
4291	National Company for Learning and Education	Consumer Services
2090	National Gypsum Co.	Materials
2060	National Industrialization Co.	Materials
4005	National Medical Care Co.	Health Care Equipment & Svc
2220	National Metal Manufacturing and Casting Co.	Materials
4030	National Shipping Company of Saudi Arabia	Energy
3004	Northern Region Cement Co.	Materials
7204	Perfect Presentation for Commercial Services Co.	Software & Services
3040	Qassim Cement Co.	Materials
2380	Rabigh Refining and Petrochemical Co.	Energy
6012	Raydan Food Co.	Consumer Services
4230	Red Sea International Co.	Real Estate Mgmt & Dev't
4322	Retal Urban Development Co.	Real Estate Mgmt & Dev't
4142	Riyadh Cables Group Co.	Capital Goods
2020	SABIC Agri-Nutrients Co.	Materials
1832	Sadr Logistics Co.	Commercial & Professional Svc

2310	Sahara International Petrochemical Co.	Materials
6004	Saudi Airlines Catering Co.	Commercial & Professional Svc
2030	Saudi Arabia Refineries Co.	Energy
2160	Saudi Arabian Amiantit Co.	Capital Goods
1211	Saudi Arabian Mining Co.	Materials
2222	Saudi Arabian Oil Co.	Energy
2223	Saudi Aramco Base Oil Co.	Materials
4050	Saudi Automotive Services Co.	Retailing
2010	Saudi Basic Industries Corp.	Materials
2110	Saudi Cable Co.	Capital Goods
3030	Saudi Cement Co.	Materials
2040	Saudi Ceramic Co.	Capital Goods
2230	Saudi Chemical Co.	Health Care Equipment & Svc
4008	Saudi Company for Hardware	Retailing
6050	Saudi Fisheries Co.	Food & Beverages
4031	Saudi Ground Services Co.	Transportation
2130	Saudi Industrial Development Co.	Consumer Durables & Apparel
4140	Saudi Industrial Export Co.	Capital Goods
2250	Saudi Industrial Investment Group	Materials
2190	Saudi Industrial Services Co.	Transportation
2350	Saudi Kayan Petrochemical Co.	Materials
4006	Saudi Marketing Co.	Food & Staples Retailing
2300	Saudi Paper Manufacturing Co.	Materials
4270	Saudi Printing and Packaging Co.	Commercial & Professional Svc
4040	Saudi Public Transport Co.	Transportation
4020	Saudi Real Estate Co.	Real Estate Mgmt & Dev't
1320	Saudi Steel Pipe Co.	Materials
2360	Saudi Vitrified Clay Pipes Co.	Capital Goods
2270	Saudia Dairy and Foodstuff Co.	Food & Beverages
2050	Savola Group	Food & Beverages
4014	Scientific and Medical Equipment House Co.	Health Care Equipment & Svc
1810	Seera Group Holding	Consumer Services
3050	Southern Province Cement Co.	Materials
4323	Sumou Real Estate Co.	Real Estate Mgmt & Dev't
6040	Tabuk Agricultural Development Co.	Food & Beverages
3090	Tabuk Cement Co.	Materials
4090	Taiba Investments Co.	Real Estate Mgmt & Dev't
1201	Takween Advanced Industries Co.	Materials
2281	Tanmiah Food Co.	Food & Beverages
2150	The National Company for Glass Industries	Materials
4261	Theeb Rent a Car Co.	Transportation
4160	Thimar Development Holding Co.	Food & Staples Retailing
4012	Thob Al Aseel Co.	Consumer Durables & Apparel
4170	Tourism Enterprise Co.	Consumer Services
4003	United Electronics Co.	Retailing
4260	United International Transportation Co.	Transportation
2100	Wafrah for Industry and Development Co.	Food & Beverages
2240	Zamil Industrial Investment Co.	Materials

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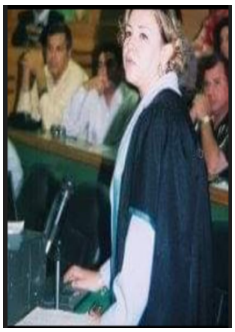

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