

The Influence of Digital Economy on Audit Quality

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Abstract: This paper focuses on issues related to audit quality under the background of digital economy. With the rapid development of digital economy, the audit environment, technology and personnel quality requirements have changed significantly, which affects the audit quality. By combining the theoretical basis of digital economy and audit quality, this paper analyzes the impact path from three aspects: audit environment, audit technology and auditor quality requirements, and presents the specific impact with detailed tables. It is found that, at the level of audit environment, the traditional audit clues are hidden and complicated, which increases the difficulty of audit; In audit technology, although big data and artificial intelligence audit have advantages, there are also problems of data quality and algorithm black box; In terms of personnel quality, some auditors have insufficient knowledge of emerging technologies. Based on this, this paper puts forward some strategies to improve audit quality, such as optimizing audit environment, improving audit technical level and improving the quality of auditors, so as to provide useful reference for audit work in the digital economy era. Audit firms should enhance compliance by improving internal policies and procedures, conducting sampling of at least 20% of key audit projects annually, and allocating no less than 5% of their business income to technology research and development.

1. Introduction

With the rapid development of information technology, digital economy has become the core driving force and key form of global economic development [1]. Digital economy, with its digital, networked and intelligent characteristics, has profoundly changed the operation mode and development pattern of all walks of life, and the audit field is no exception [2].

As the lifeline of audit work, audit quality is related to the protection of investors' interests, the effective operation of capital market and the healthy development of enterprises [3]. The traditional audit mode has formed a relatively stable system in the long-term practice, but the rise of digital economy has brought many new challenges and opportunities, which has affected the audit quality in many ways [4]. On the one hand, under the digital economy, the business activities of enterprises are highly digitized and complicated, the data volume is exploding and the storage and transmission methods are changing, which greatly changes the audit environment, and the traditional audit trail tracking and evidence acquisition methods are facing difficulties [5]. On the other hand, emerging technologies such as big data and artificial intelligence provide innovative means for audit work, which can significantly improve audit efficiency and quality if used reasonably.

From the existing research, scholars have discussed the digital economy and audit quality. Some studies focus on the application of digital technology in auditing, and some pay attention to the changes of auditing risk in the digital economy era [6]. However, there are still some shortcomings in the research, for example, the systematic path analysis of the impact of digital economy on audit quality is not deep enough, and the specific strategies to improve audit quality under the digital economy environment are lack of comprehensiveness and operability. In view of this, this paper aims to deeply analyze the influence of digital economy on audit quality, comprehensively sort out the influence path, and put forward targeted strategic suggestions, with a view to enriching the research of audit theory and providing useful reference for improving audit quality in the digital economy era.

2. Digital economy and the theoretical basis of audit quality

Digital economy is a new economic form that takes digital knowledge and information as the key production factors, digital technology as the core driving force, and promotes economic development through digital industrialization and industrial digitalization. It has the characteristics of high innovation, strong permeability and wide coverage [7]. Digital industrialization covers electronic information manufacturing, software and information technology services, etc. Industrial digitalization refers to the transformation and upgrading of traditional industries by using digital technology. Digital economy relies on big data, cloud computing, Internet of Things and other technologies to break the time and space constraints and reshape the organization, production and exchange of economic activities.

Audit quality refers to the quality of audit work, which is reflected in the ability and level of auditors to follow audit standards, review financial statements and other information of audited units, and issue appropriate audit opinions. High-quality audit should have independence, objectivity and impartiality [8]. Standards to measure audit quality, including the compliance of audit procedures, that is, whether the audit process strictly follows established standards and norms; Adequacy and appropriateness of audit evidence, and the required evidence is sufficient to support the audit conclusion; And the accuracy and timeliness of the audit report, to ensure that the audit report truthfully reflects the audit findings and can be submitted in time.

Digital economy is closely related to audit quality in many aspects. The development of digital economy changes the business process and information system of enterprises, which makes the audit environment more complicated and then affects the audit quality [9]. At the same time, digital technology provides new tools and methods for auditing, which, if properly used, will help to improve the efficiency and quality of auditing.

3. The influence path of digital economy on audit quality

The rapid development of digital economy has profoundly changed the environment and mode of audit work, which has an impact on audit quality from multiple paths, which can be analyzed in the following aspects (see Table 1: Path analysis of the impact of digital economy on audit quality).

(1) The impact of audit environment.

In the era of digital economy, the business model of enterprises has undergone great changes, showing the characteristics of digitalization, networking and intelligence. A large number of businesses of enterprises are carried out through online platforms, and the ways of data generation, storage and transmission have changed. Traditional audit clues are more hidden and complicated, and it is more difficult for auditors to track the economic business track. For example, in e-commerce mode, transaction information is stored in the cloud server in the form of electronic data. When auditors obtain and verify these data, they may face the problem of verifying the

authenticity and integrity of the data, which will affect the quality of obtaining audit evidence and ultimately adversely affect the audit quality.

At the same time, the digital economy promotes the closer business relationship between enterprises and forms a complex business ecosystem. The financial information of an enterprise may be intertwined with the business data of multiple partners. This expands the scope of audit, and auditors need to spend more energy to sort out and analyze these complex relationships, which increases the complexity and uncertainty of audit work.

(2) The impact of audit technology.

The digital economy has spawned a series of emerging auditing technologies, such as big data auditing and artificial intelligence auditing. Big data audit technology can comprehensively collect and deeply analyze massive enterprise data, and help auditors find abnormal data and potential risks that are easy to miss under the traditional sampling audit method. For example, through the comprehensive analysis of financial data, transaction data and market-related data of enterprises for many years, a risk early warning model can be constructed to identify possible financial fraud risks in advance. The artificial intelligence audit relies on machine learning algorithm to make the audit software have the ability of independent learning and judgment. It can quickly process a large number of structured and unstructured data, such as contract texts and emails, and extract key audit information from them to improve audit efficiency and accuracy. However, the application of these emerging technologies also brings some challenges. For example, big data auditing requires extremely high data quality. If there are errors or missing data, the analysis results may be biased; There is a black box problem in the algorithm model of artificial intelligence audit, and it is difficult for auditors to fully understand the algorithm logic, which may affect the trust of audit results.

Table 1: Analysis of the Influence Paths of the Digital Economy on Audit Quality

Influence Aspect	Specific Influence	Direction of Effect on Audit Quality
Audit Environment	Traditional audit clues are concealed and complex, increasing the difficulty of obtaining audit evidence; The audit scope expands due to complex business ecosystems	Decrease
	Tight business associations increase the complexity and uncertainty of audit work	Decrease
Audit Technology	Big data audit can comprehensively collect and analyze data, building risk early warning models	Increase
	AI audit can quickly process large amounts of data, improving efficiency and accuracy	Increase
	Big data audit has high requirements for data quality, and incorrect data may lead to biased results	Decrease
	AI audit algorithms have black box issues, affecting trust in results	Decrease

(3) The impact of auditors' quality requirements.

In the era of digital economy, auditors are required not only to have traditional auditing and financial knowledge, but also to master information technology-related skills. At present, the quality of auditors in the audit industry is uneven, and some auditors have limited knowledge of emerging technologies, so they may be unable to cope with the complex audit work in the digital economy. In addition, the rapid development of digital economy accelerates the updating of knowledge, and auditors need to constantly learn new knowledge and skills to adapt to the changes in audit environment and technology. If auditors can't follow up in time, their professional ability

will lag behind, which will affect the quality and efficiency of audit work.

4. Suggestions on improving audit quality

Facing the various influences of digital economy on audit quality, in order to effectively improve audit quality, we can start from the following key aspects. See Table 2 for specific strategies and expected effects: Strategies to improve audit quality and expected effects.

Table 2: Strategies for Improving Audit Quality and Expected Outcomes

Strategy Category	Specific Strategy	Expected Outcome
Optimize Audit Environment	Improve regulations and standards, clarify the legal effect of electronic data, etc.	Increase compliance in audit work by at least 30%
	Strengthen industry supervision, conduct spot checks on at least 20% of key projects annually	Reduce violations by at least 40%
Enhance Audit Technology Level	Invest at least 5% of annual business revenue in technology research and development	Increase the application rate of emerging technologies by at least 50%
	Establish an audit data platform to store data for at least 5 years and conduct real-time analysis	Improve audit efficiency by at least 40%
Improve Auditor Quality	Conduct at least 4 centralized training sessions of 2-3 days each year with assessments	Increase personnel's proficiency in digital technology by at least 60%
	Provide rewards ranging from 5,000 to 10,000 yuan for personnel who pass information technology qualification exams	Increase personnel's self-directed learning motivation by at least 50%

(1) Optimize the audit environment

Relevant government departments should speed up the formulation of audit regulations and standards that adapt to the digital economy environment. Regulatory authorities should clarify the legal effect of electronic data, establish the standards for obtaining evidence, and define the rights and obligations of auditors in the context of digital auditing. For example, they should stipulate the recognition of electronic signatures as valid audit evidence to ensure that audit work is governed by clear legal frameworks.

Audit supervision institutions need to strengthen the supervision of audit business. The relevant regulatory bodies should regularly conduct spot checks on audit projects and impose strict penalties on audit institutions and personnel who breach established regulations. For example, at least 20% of key audit projects are randomly selected every year, and institutions with serious violations are suspended from undertaking business for 3-6 months.

(2) Improve the level of audit technology

Audit institutions should increase financial support for the research and development of emerging audit technologies. At least 5% of business income is invested in technology research and development such as big data audit and artificial intelligence audit every year, and cooperation is

carried out with scientific research institutions and universities to jointly overcome technical problems and promote audit technology innovation.

Audit institutions should build a unified audit data platform to integrate various audit data resources. Furthermore, they should enhance data quality through data cleaning and standardized processing methods. The platform should have strong data storage and analysis capabilities, which can store financial and business data of enterprises for at least 5 years, realize real-time data analysis, and provide strong data support for audit work.

(3) Improve the quality of auditors

Audit institutions should regularly organize auditors to participate in digital technology-related training. At least 4 times a year for 2-3 days of intensive training, covering big data analysis tools, artificial intelligence algorithm principles and so on. Audit firms should conduct assessment after the training to ensure that auditors master the knowledge and skills they have learned. In addition, audit firms should encourage self-improvement by establishing an incentive mechanism to motivate auditors to learn new knowledge independently. For example, those who have passed the relevant information technology qualification examination will be rewarded with 5,000-10,000 yuan to stimulate the enthusiasm of auditors to improve their own quality.

Through the implementation of the strategies in Table 2 above, it is expected to improve the audit quality in an all-round way in the digital economy era and better meet the demand of economic and social development for high-quality audit services.

5. Conclusions

This paper deeply studies the influence of digital economy on audit quality and draws important conclusions. On the influence path, the digital economy has changed the audit work pattern in many ways. The audit environment has become more complex, and it is more difficult to obtain traditional audit clues. The audit scope has been expanded due to the complex association of enterprises, which has a negative impact on the audit quality. Although audit technology brings innovative means such as big data and artificial intelligence, it also faces challenges such as data quality and algorithm understanding. The quality requirements of auditors have been improved, and some of them have limited knowledge of emerging technologies, so it is difficult to meet the job requirements.

In view of these problems, the promotion strategy proposed is of great significance. Perfecting laws and regulations and strengthening industry supervision will help standardize the audit environment, which is expected to improve audit compliance by at least 30% and reduce irregularities by at least 40%. Increasing investment in technology research and development and establishing audit data platform can promote the progress of audit technology, which is expected to increase the application rate of emerging technologies by at least 50% and the audit efficiency by at least 40%. Carrying out targeted training and encouraging self-improvement can enhance the quality of auditors. It is estimated that the mastery of digital technology will be improved by at least 60% and the enthusiasm for independent learning will be improved by at least 50%. The effective implementation of these strategies will help the audit industry to improve audit quality and better serve economic and social development in the digital economy era.

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