



The Role of Technology Integration in Public Sector Accounting Fraud Prevention Efforts

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Abstract: This research aims to determine the role of public-sector accounting information technology in preventing fraud in public-sector organizations. The study was a literature review based on articles suitable for further analysis of the research topic. The study found that there are ways to prevent fraud that, include technology and prevention strategies. The technology strategy includes leveraging data protection officers for fraud prevention, IoT access, data access management, timely reporting, and real-time data management. The prevention strategy is to develop a fraud detection system using machine algorithms, data mining, and meta-learning techniques.

Keywords: Information Technology, Public Sector Accounting, Fraud

Introduction

Technological advances have brought changes to various fields of life. Today's rapidly developing technology has provided many conveniences for people in carrying out different activities. The positive impact is in the form of increased effectiveness and efficiency in human activities. Positive impacts in public sector accounting include the easier and faster implementation of various accounting processes to make the information obtained more accurate. Implementing an effective accounting information system will benefit organizations and management in running their business. Using information technology for problem-solving approaches related to accounting will simplify processes associated with processing data into information, such as accounting transactions (Arza, 2021).

Public sector accounting is a sectoral accounting method used in the operations of government agencies. High-level government agencies and institutions, including municipal governments, agencies, major political parties, and many other non-profit organizations, are subject to public sector accounting. One of the benefits of having a good information system is the ability to prevent and detect accounting fraud. However, advanced technology is often misused to manipulate data, so more and more fraud is committed by irresponsible people who only think about their interests. Fraud can be broadly divided into three actions: misuse of assets, misrepresentation of financial statements, and corruption (Haryono, 2015). According to Hantono (2021), fraud is a business hazard or risk in any business entity, including public benefit organizations and

private companies. According to the fraud theory above, the basic principle of this theory is that there are two categories of factors that encourage a person to commit fraud: internal forces in the form of ability and rationalization, as well as pressure and opportunity. This means that there are external factors (Hantono, 2021).

Users of accounting information systems have expectations not only of the quality of the fraud prevention system but also of the quality of information output by the information system. Fraud prevention occurs when the information provided is accurate, current, relevant, and complete. Quality information makes the organization feel helpful because it can benefit from the information. This shows that fraud prevention can also be influenced by information quality. The higher the quality of information, the higher the utilization of the accounting information system. A system is said to be successful if the quality of its information can provide the information needed to make decisions to prevent internal and external fraud (Hamid, 2018).

Based on the Association of Certified Fraud Examiners Indonesia Chapter (ACFE-IC) findings, the most common type of fraud in Indonesia is corruption, followed by asset misappropriation, and the last is accounting fraud. Based on a 2019 survey conducted by the ACFE Indonesia chapter on 239 respondents, the most common fraud in Indonesia is corruption, chosen by 64.4% or 154 respondents. The following types of fraud are misuse of government and corporate assets, with a percentage of 28.9% (selected by 69 respondents), and financial reporting fraud, with a rate of 6.7% (chosen by 16 respondents).

The increase in fraud cases, especially corruption cases, is likely related to the presence of information technology, which provides fraudsters with more excellent capabilities and opportunities. However, this has not been studied much by previous researchers. Understanding the characteristics of public sector fraud and the role of information technology can be very helpful when developing strategies to identify signs of fraud and future fraud prevention strategies to ensure accurate accounting targets.

The theoretical approach used to explain the fraud in this study is behavioural accounting. A theory that describes the relationship between accounting information systems and human behaviour. To mitigate or prevent fraud that continues to occur, an institution or organization is expected to make preventive efforts, and the institution itself can start these actions. Information technology in the accounting system can prevent fraud by implementing an internal control system to prevent fraud. The existence of an appropriate accounting information system is expected to reduce abuse, fraud, and other harmful practices. Therefore, research was conducted to investigate the role of information technology in public-sector accounting in preventing fraud.

Research Method

The research method used in this research is qualitative. The research data is secondary data collected through literature review, theory collection, research data, or previous research results from various sources related to the research topic. In qualitative

research, evaluation results from data collection to answer a research question. This research was conducted with an inductive approach, and the researcher's understanding and knowledge of relevant theories were assessed.

Result and Discussion

The digital age has introduced new concepts to accounting, and it is believed that technological advancements and offerings can compete with the critical role of accountants, who perform a wide range of accounting functions vital to businesses. To achieve much greater efficiency and productivity, documentation and economic analysis are outsourced to computer equipment and systems rather than relying on the accuracy of accountants. Seen from one side only, technology has a positive impact on accountants by making their work easier and allowing them to focus on activities that cannot be replaced by technology (Kusmawati, 2019).

The first problem and danger is the mindset of those who believe that computers and technology, in this case, information technology that creates a digital environment, can replace humans who carry out accounting tasks, especially in the accounting industry (Cahyadi, 2019). Technology was created to help people do their jobs more effectively and efficiently and to ensure that human resource management always contributes to various key operations throughout society (Kruskopf, 2019). However, it must be remembered that humans must be involved in developing the potential that each human being must improve by adapting to technological changes outside themselves. People must be able to actively use technological tools for professional and personal growth through observation and learning (Putritama, 2019).

Good accounting practices by government agencies and optimal monitoring of the quality of agency financial reporting are expected to improve government performance accountability and optimize performance in managing government affairs. The Indonesian government is expected to realise good governance at the central and regional levels because improving the quality of performance accountability of government agencies is expected to impact minimizing corrupt practices (Hantono, 2021).

Fraud, whose birth in the public mandala was bribery, betrayal of authority, infidelity of local property, and blasphemy pegari menggalas influence (trading influence), found a criminal movement. The existence of various kinds of lying scandals whose birth part in multiple forms in the mandala of nyana power gives rise to enormous local financial losses. Fraud finds a parallel list or corpus containing irregularities (irregularities) and corpus denying the law (illegal acts) committed by the inner clump that plays directions using the outer clump or vice versa. The outer clump plays directions using the inner clump, which is driven to the profit of a person or forum that brings material and immaterial damage to the State (Ruotolo, 2018).

The role of information technology in public sector accounting can potentially improve government agencies' performance accountability. Therefore, it is necessary to prevent

fraudulent activities in government agencies. To increase the accountability of government agencies, it is essential to introduce public accountants and monitor the quality of government agencies' financial reports. Research conducted by Tatik Amani (2017) uses a qualitative approach by reviewing existing theories and previous research results and adding new management procedures carried out by computers through information technology. Sawsan Saadi Halbouni (2016) also researched the impact of information technology on fraud detection and prevention. This study used a survey of accountants and internal and external auditors to determine their perceptions of the effectiveness of information technology on the effectiveness of audit committees and internal and external audit functions in preventing and detecting fraud in the UAE.

The results show that information technology plays a role in fraud detection and prevention. Information technology can improve the internal control system by adding new computer control procedures and replacing controls usually performed manually and prone to human error. In addition, information technology also provides better quality information. When setting up these information systems, strategic fraud detection measures are applied. This consists of understanding the system or entity, identifying possible cases of fraud, collecting fraud indicators in a list, collecting data on fraud indicators, and finally, writing a computer program that can be analyzed automatically to detect the occurrence of fraudulent activities.

The ACFE IC has laid out an essential strategy to combat the fraud that can be committed, especially by the public sector and other economic sectors. This strategy focuses on data loss prevention. A possible approach is to use the services of a data protection officer who is tech- and law-savvy, has a work program, can establish a data security policy, and has the necessary technology and tools to keep company data safe. Customer Data Confidentiality To ensure the usability of the Internet of Things (IoT) and prevent the misuse of company data by external parties, manage connectivity data on the Internet, protect company data, and evaluate data access rights. Determine the reporting schedule and prioritize the timeliness of reporting, as well as regular monitoring and control of data. It is expected that fraud will occur. Therefore, eliminate this possibility by improving the implementation of internal control systems, utilizing internal and external audit services, conducting fraud investigations, and introducing manual and digital forms of forensic accounting (Santoso, 2018).

The development of fraud detection systems requires new technologies and especially financial support from the companies that provide them to combat fraud. However, the implementation of these systems will help businesses monitor, analyze, investigate, and implement various smart fraud detection and anti-fraud measures. Fraud detection systems that use three main methods to carry out their activities: machine learning algorithms, data mining, and meta-learning have intelligence that is constantly evolving along with the processes performed. The system can store information about known fraud techniques and characteristics and analyze them to create fraud indicators used to detect fraud trends (Meliala, 2017).

According to Ruotolo (2018), fraud detection requires comprehensive capabilities

using machine learning. Machine learning itself can automate the extraction of known and unknown patterns from existing data. Machine learning itself learns and adapts as new results and patterns are presented, and can occur in a supervised or unsupervised form. For machine learning to build the necessary models, it must be provided with a large amount of well-classified data, including many instances of fraud history. Using this data, the computer looks for existing patterns and builds highly accurate models. The more data available, the more data that can be detected and the more accurate fraud detection can be.

Data mining can be used to uncover cases of accounting fraud such as monetary embezzlement and data manipulation. Fraud monitoring through data mining can be done using techniques such as outlier detection, clustering, and association rule mining. The application of data mining techniques is effective and efficient when used as part of a complete and integrated internal control system.

Conclusion

The role of public sector accounting information technology integration in preventing fraud in the public sector can be achieved by considering the factors affecting fraud as follows: Involves performance accountability and the implementation of anti-fraud methods, including technical and prevention strategies. The technological strategy includes the utilization of data protection officers for fraud prevention, IoT access, data access management, timely reporting, and real-time data management. The prevention strategy is to develop fraud detection systems using machine algorithms, data mining, and meta-learning techniques.

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