Implementation of Public Sector Accounting to Handle Fraud in the Public Sector in the Digital Era

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Abstract: To prevent fraud in the digital era, this study will try to develop capital for applying public sector accounting to find and describe the characteristics of fraud in the public sector in the digital era. This research will use secondary data from various studies and reports on the problems discussed through a descriptive qualitative approach. This study provides results in fraud in public sector accounting in the digital era in the form of utilizing human error, taking advantage of the lack of knowledge about digital technology, to take advantage of the misconceptions that occur in public sector accounting in the digital era. Through consideration of preventive strategies, a two-paradigm approach, carrying out technical strategies to performance accountability, the problem of fraud in the digital age can be prevented through the implementation of public sector accounting.

Keywords: Public Sector Accounting, Digital Era, Fraud, Behavioral Accounting.

A. INTRODUCTION

Technology that continues to develop has a significant impact on various processes in human life. These impacts can be in the form of positive effects, which encourage an increase in the effectiveness and efficiency of human activities, or even negative results, namely in the form of misuse of technology for personal gain and creating losses for other parties (Omer, 2008). These two sides of the impact of technology demand a paradigm shift towards technology based on wise considerations to ensure that technological progress becomes an instrument that makes it easier for humans to carry out their activities (Bransford et al., 2000). The expected impact of technological advances on public sector accounting is in the form of more accessible and faster implementation of various accounting processes and more accurate information generated from these processes (Scapens & Jazayeri, 2003). However, this can only be achieved if the parties involved in the accounting process can optimally utilize technology products with a positive goal: to improve public services. The positive capabilities and objectives of using technology in the accounting process will lead to higher efficiency and effectiveness (Kernbach et al., 2015). On the other hand, capability coupled with an opposing goal, namely to gain benefits for oneself, will lead to fraud.

According to Omar, fraud is a business risk that can appear in every business entity, both in state institutions and privately-owned companies. Large or small companies cannot be separated from the potential for fraud to occur in them, so it can be said that no company is immune from a disease called fraud (Omar et al., 2016). According to the fraud triangle theory, fraud can occur because of three main factors that cause it, namely pressure, opportunity, and rationalization. Furthermore, the fraud diamond theory also develops the fraud triangle with one additional contributing factor, namely capability (Said et al., 2017). The essence of the idea states that someone who commits fraud gets encouragement from two categories of factors: internal factors in the form of capability and rationalization and external factors, including pressure and opportunity (Puspasari, 2015).
When associated with technological advances that have reached the digital level as it is today, the capabilities of individuals in utilizing digital technology products can be a strong driver for carrying out fraud. Moreover, the application of digital technology that is still uneven due to the knowledge and ability to operate the technology, which is still not owned by all business entities, including the public sector, presents an excellent opportunity to commit fraud (Zhu et al., 2006).

Fraud can be broadly classified into three actions: misappropriation of assets, false statements in financial statements, and corruption. According to the results of a survey conducted by the Association of Certified Fraud Examiners Indonesia Chapter (ACFE-IC), corruption is the most common type of fraud in Indonesia, followed by misuse of assets, and lastly is financial statement fraud (Association of Certified Fraud Examiners (ACFE) Indonesia Chapter, 2017).

![Figure 1. Fraud Frequency in Indonesia in 2016](image)

Based on these data, ACFE IC also describes the estimated losses caused by each of the above types of fraud. Following its frequency, corruption is the most detrimental type of fraud, followed by misappropriation of assets, and finally, financial statement fraud (Association of Certified Fraud Examiners (ACFE) Indonesia Chapter, 2017).
Besides being the most common type of fraud, corruption also has increasing incidents yearly. This is following the data on recapitulation of corruption crimes compiled by the Anti-Corruption Clearing House of the KPK below (Komisi Pemberantasan Korupsi Indonesia, 2018):

The increase in the number of frauds, especially corruption cases, as the data above is most likely related to the existence of digital technology that provides more excellent capabilities and opportunities for fraud perpetrators. However, previous researchers have not studied this (Prabowo, 2016). In fact, an understanding of the characteristics of fraud that
occurs in the public sector in the digital era will be beneficial in formulating strategies to identify indications of fraud as well as strategies to prevent fraud in the future and can facilitate the implementation of Public Sector Accounting to achieve the goal of producing accurate financial information (Wilks & Zimbelman, 2004).

Public sector accounting is a private accounting mechanism applied in public organizations' practices. Public sector accounting has the scope of high state institutions and departments under them, such as local governments, foundations, political parties, and other non-profit organizations (Broadbent & Guthrie, 2008). Thus, public sector accounting practices are the same as accounting practices in general, only that there are limitations to stakeholders who are parties from the government and the wider community (Burritt & Welch, 1997).

The theoretical approach used to explain the fraud in this study is behavioral accounting, which is a theory that explains the relationship between accounting information systems and human behavior. As said by Kutluk, that behavioral accounting studies human behavior, both those who work as accountants or other than accountants, related to their influence on the accounting system and the factors that shape the behavior that comes from the accounting system (Kutluk, 2017). The behavioral accounting practitioner, who is a behavioral accountant, has the task of analyzing human behavior and human perceptions of his work, duties, company, and co-workers to convey behavioral information to users as a basis for decision making and formulating predictions regarding future human behavior, as well as to determine the most appropriate strategy to change or direct human behavior by the goals to be achieved (Sun & Teng, 2012).

The results of the behavioral analysis include how humans behave and the factors that underlie the formation of these behaviors, as well as recommendations for correcting behaviors that are considered dysfunctional. Further explained by Supriyono, the relationship studied is reciprocal, where human behavior can influence accounting information and business decisions. On the other hand, accounting information can also affect human behavior and business decisions (Supriyono, 2018).

Through the explanation above, the researcher is interested in researching the implementation model of public sector accounting to prevent fraud in the digital era. The study is based on behavioral accounting theory to find a link between negative behavior in the form of fraud on the application of public sector accounting in the public sector.

B. LITERATURE REVIEW

1. Behavioral Accounting

Behavioral accounting studies human behavior, both those who work as accountants or other than accountants, concerning their influence on the accounting system and the factors that shape the behavior from the accounting system (Luckett & Eggleton, 1991). Based on this understanding, behavioral accounting implementers, namely behavioral accountants, have the task of analyzing human behavior and human perceptions of their work, duties, companies, and co-workers, to be conveyed to users of behavioral information as a basis for decision making and formulating predictions regarding human behavior in the future, as well as to determine the most appropriate strategy to change or direct human behavior under the goals to be achieved (Valentine et al., 2015). The results of the behavioral analysis include how humans behave and the factors that underlie the formation of these behaviors, as well as recommendations for correcting behaviors that are considered dysfunctional.

According to Supriyono in (Rachman, 2014), the objectives of behavioral accounting include:
a. Analyze the factors that explain human behavior relevant to the accounting system.
b. Formulate and convey information about these behavioral factors to the decision-makers.
c. Complete information relevant to human behavior required by decision-makers and outlined in financial reports.

The scope of Behavioral Accounting is:

- A. The influence of human behavior on the design, preparation, and use of information systems, where behavioral accounting describes the relationship between the views of values and attitudes of a company's management in controlling the accounting process with the functions of each element in the company.
- B. The influence of the accounting system on human behavior, where behavioral accounting examines the effect of the accounting system on motivation, productivity, decision-making processes, job satisfaction, and cooperation between members of the organization.
- C. Predict behavior and formulate strategies to change human behavior, where behavioral accounting analyzes the role of the accounting system on changes in human behavior.

2. Fraud

Fraud can be interpreted as embezzlement. Fraud is an act carried out with full awareness, not because of negligence or ignorance, to obtain financial benefits by cheating. Fraud is an active action carried out to deceive other parties so that the deceived party suffers losses and the deceptive party gains (Johnson et al., 1993).

Fraud can be classified into three types of actions, namely:

- A. Misappropriation of assets is the easiest form of fraud to detect because it is carried out in the form of misuse or theft of assets so that the losses suffered as a result of the fraud can be calculated or measured.
- B. False statements are fraud committed in financial engineering in the presentation of the company's financial statements to cover up the company's actual financial condition.
- C. Corruption is a type of fraud that is difficult to detect because it is carried out in collaboration with other parties in an organized network and has a systematic way of working. This type of fraud generally occurs in developing countries where law enforcement is still weak, and many parties are not aware of the importance of good corporate governance.

According to the Fraud Triangle theory developed by Donald R. Cressey, fraud can occur because it is caused by three main factors (Schuchter & Levi, 2016), namely:

- A. Pressure
  A person can commit fraud because of the pressures he receives. The pressure can be divided into several types: financial pressure, pressure for bad habits, work pressure, and other pressures.

- B. Opportunity
  Opportunity is an external factor that causes someone to be compelled to commit fraud. This factor generally arises when weak control mechanisms, such as lack of oversight or auditing, make someone see gaps and take advantage of them for personal gain.

- C. Rationalization
  This third factor comes from within a person in thoughts that consider that committing fraud is a natural and morally acceptable thing.

In addition to the fraud triangle theory, there is also a fraud diamond theory with one additional factor besides the three factors mentioned in the fraud triangle, namely the capacity factor. According to Ruankaew, capacity refers to the position or function of a person in a
company that can give him the ability to create or exploit fraud opportunities that are not available to others (Ruankaew, 2016). Based on this, it can be seen that to be able to commit fraud, a person needs to have the capacity, in the form of the nature and abilities required to recognize fraud opportunities and be able to take advantage of them to benefit themselves (Mansor & Abdullahi, 2015). The characteristics and capacities of individuals to be able to commit fraud include:

a. An authoritative position or function in the organization, for example, a CEO who can influence and carry out fraud on an ongoing basis.

b. Have the intelligence to exploit the weaknesses of the accounting system and internal control, understand how the system works, and then use it for profit.

c. Ego and belief that fraudulent behavior will not be detected. The success of the fraud committed will further increase confidence to commit fraud again to get more significant profits.

d. Ability to effectively deal with stress due to the risk of being caught and managing fraud over a long time.

3. Financial Report
   According to the Indonesian Institute of Accountants, financial statements are part of financial reporting whose contents consist of profit and loss statements, balance sheets, reports on changes in financial position, other reports and notes, and explanatory contents of the content of financial statements (Ball et al., 2003). A financial report is a report that shows the company's financial data, which is summarized in the form of an income statement, balance sheet, and other reports, which are used as an essential source of information for decision-makers and related parties who have an interest (Previts et al., 1994).

   According to Septarini & Papilaya, financial statements are an essential source of financial information needed by various interested parties to reference strategic decision-making. Therefore, the information contained in the financial statements must be of good quality per the characteristics set by the government (Burritt & Schaltegger, 2020). The financial statements are prepared with the aim of providing information about the financial position, financial performance, and cash flows of the entity that is useful to most users of financial statements in making economic decisions and shows management's responsibility for the use of resources entrusted to management (Crawford & Weirich, 2011). Financial statements reveal the company's financial condition in three ways, namely:

   a. Through the balance sheet reports the assets, liabilities, and owner's equity of the company.
   b. Through an income statement that explains the company's profits and losses
   c. Through a cash flow statement that provides information about the sources of cash and its use.

C. METHOD
   This research was conducted using a descriptive qualitative approach. Research data comes from various literature studies through data or other research findings. The data that has been successfully collected will then be reduced to sort out the relevant data, presented in various forms so that it is easy to analyze and interpret so that conclusions are finally drawn.

D. RESULT AND DISCUSSION
   1. Performance Accountability
      The digital era presents a new paradigm in accounting that technological developments with all their products are considered capable of rivaling the critical role of accountants in
carrying out various accounting activities that are important for companies. Financial recording to the analysis of financial data has been partially entrusted to computer applications and software rather than relying on the accuracy and precision of an accountant for reasons of efficiency and effectiveness that are far superior. If viewed from one side only, this is a positive impact of technology in easing the task of accountants so that accountants can concentrate on carrying out other functions that computers cannot replace. However, from another point of view, this presents new challenges and threats that are pretty latent, namely the possibility of fraud by utilizing digital technology and by using reasons for the need for effectiveness and efficiency as the basis for covering the tracks of fraud committed and leading opinions on the necessity of using digital technology which allows the fraud to be challenging to detect and last for a long time.

Challenges and threats that are very basic are in the mindset of humans who think that machines and technology, in this case, information technology that creates the digital realm, can be a substitute for humans, especially the accounting profession, in carrying out accounting functions. Technology was developed to help humans carry out their roles more effectively and efficiently. There will always be opportunities for human resources to play a role in various vital processes in all areas of life. However, things that need to be observed are related to the need for humans to develop their capacity to always be better through adaptation to technological developments around them. In a sense, humans must actively use technology as an instrument for their self-development and career by continuing to learn. Thus, a positive perspective on digital technology is critical to place the technology as a threat or a challenge that can be utilized for self-capacity development.

The problem that arises from the misconception about the role of digital technology is the opportunity to take advantage of it for personal gain by deceiving parties who do not have adequate knowledge about the use of digital technology in supporting the accounting process. This follows the concept of the fraud triangle and the fraud diamond regarding the opportunity and capacity to commit fraud by utilizing the development of digital technology and the unequal knowledge and ability to use this technology in some companies.

With the presence of digital technology, especially with its products in the form of big data and cloud computing, then there is a significant tendency that companies that apply these technologies will change the method of measuring their assets from what was initially done conventionally to using digital technology to measure their assets so that all work becomes paperless and highly dependent on the role of applications and digital storage. The application of digital technology does offer much higher efficiency and effectiveness. Still, it is also accompanied by the potential for fraud because the data input process determines all asset information. The slightest error in data input will impact all the information generated by the application. In this case, the error can be caused by negligence, lack of ability to operate the technology or fraud.

One of the digital technology products considered to facilitate fraud is a cryptocurrency, namely digital currency, implemented using cryptographic technology. Cryptocurrencies have four primary characteristics: decentralized, anonymous, cannot be manipulated, and there is no inflation in circulation.

Cryptocurrencies do offer various advantages over physical currencies. However, there is great potential for its use for fraudulent purposes, such as money laundering or committing fraud by providing a fake Initial Coin Offering (ICO) and then embezzling investors’ funds who have purchased the ICO. Fraud using cryptocurrency instruments is complicated to track because users can use accounts with pseudonyms to escape from auditing.

The Association of Certified Fraud Examiners (ACFE Indonesia Chapter or ACFE IC) has realized the potential for fraud by utilizing digital technology, thus encouraging the
implementation of the National Anti-Fraud Conference (NAFC) in 2018 with the theme of fraud in the cryptocurrency investigation category as one of the main topics in the conference. Furthermore, ACFE IC also mentions several fraud models whose implementation is more manageable with digital technology. The first is hacking, namely by stealing access to financial data and other vital data by hackers, then used for personal gain. Next is malware, which is by using a virus to damage the accounting system in the company. Then social engineering uses digital technology to dig up confidential information about company finances. There are also privilege misuse, which are misuse of the access given to important company information, and physical intrusion, which is accessing company data without permission and without having the authority to access them.

2. Implementation of Public Sector Accounting

Concerning the application of public sector accounting to prevent fraud, it refers to implementing its seven elements: public planning, public budgeting, realization of public budgets, procurement of public goods and services, public financial reporting, public sector audits, and public accountability. The implementation of the seven elements cannot be separated from the risk of fraud, as explained by Free regarding the fraud triangle, that fraud can occur due to three factors, namely opportunity, pressure, and rationalization. Coupled with digital technology, which seems to provide more significant opportunities and adds the capacity factor as stated in the fraud diamond theory. In this case, the capacity referred to is the ability to commit fraud by utilizing various digital technology products.

Fraud can be classified into three types, namely in the form of asset misappropriation, false statements in financial statements, and corruption. However, according to the explanation from ACFE IC, the presence of digital technology with a variety of products can lead to the development of methods for committing fraud in the three types of fraud. Therefore, following the conception of the need to develop the scientific capacity of Public Sector Accounting to keep pace with the development of digital technology, it is also necessary to formulate a model for implementing Public Sector Accounting that can be used to prevent fraud in the digital era.

3. Technical Strategy

ACFE IC proposes an essential strategy to overcome fraud that can be applied by the public sector in particular and other business sectors. The strategy focuses on efforts to prevent data loss. The form of strategy that can be done is to use the services of a privacy officer who understands technology and law, has a work program, can set data security policies, along with the technology and instruments needed to keep company data safe, understands the importance of confidentiality of customer data and company data, manages connectivity data with the internet to ensure the usefulness of the internet of things (IoT) and prevent the occurrence of extracting company data from external parties, determine the level of confidentiality of company data and the level of authority for data access, set a reporting schedule and prioritize the timeliness of reporting, and carry out monitoring and control of data in real-time.

Fraud is believed to occur because of the opportunity to do so. Therefore, the critical thing that can be done to prevent fraud is to eliminate this opportunity by increasing the implementation of the internal control system, utilizing internal and external auditing services, conducting fraud examinations, and applying forensic accounting, both manually and in digital form (digital forensic accounting).

Fraud is an act that can be done individually or collectively, and its existence can become an epidemic or a deadly disease that is contagious within a company. Therefore, in addition to eliminating opportunities that allow someone to commit fraud, the second effort that must be made is to create an anti-fraud culture or a culture of honesty within the company.
As explained in Behavioral Accounting theory, human behavior has a close relationship with the accounting system, where changes that occur on one side will be a triggering factor for changes on the other side. Therefore, if the company can create an anti-fraud culture to change the behavior of every member of the company, then this change in the long term will become a barrier to fraud. This is done by instilling the value of honesty and explaining the negative impact of fraud on every part of the company. The explanation is conveyed to the party with the highest position in the company to the staff at the lowest level by an accountant or by a privacy officer who specifically analyzes fraud issues within the company.

4. Fraud Triangle

Muhtar, Sutaryo, & Sriyanto studied fraud in corruption that occurred in public institutions in Indonesia by referring to the fraud triangle theory. The results of his research state that corruption is significantly and negatively affected by performance accountability, meaning that better accountability performance shown by government institutions will be one of the drivers of decreasing fraud that occurs in the public sector. Good performance accountability will reduce the pressure received by the public sector from the community and all stakeholders, reducing the intention to commit fraud on each public sector member.

The occurrence of fraud in the digital era is increasingly challenging to detect because of new instruments that can be used to carry out these actions. When the negative impact of losses on a large scale has been felt, both in the form of financial losses and losses in other aspects, the company only found out about the fraud. Therefore, efforts to prevent fraud always prioritize preventive detection methods.

5. Preventive Strategy

Along with the development of digital technology, fraud detection methods must also continue to be developed to be applied effectively and detect indications of fraud using digital technology. According to Donning, Erikkson, Martikainen, & Lehner, developing a fraud detection system is not easy because it involves new technology and requires financial support from companies that specifically allocate it to fight fraud. However, the implementation of the system will assist companies in monitoring, analyzing, studying, and making various brilliant efforts to detect and fight fraud. Fraud detection systems that carry out their activities using three main methods, namely machine learning algorithms, data mining, and meta-learning, can have intelligence that continues to grow along with the process it goes through. The system can store information about known methods and characteristics of fraud and analyze them to produce indicators of fraud, which are then used to detect trends in fraud.

E. CONCLUSION

The research concludes that the first characteristics of fraud in the public sector that occur in the digital era include the use of misconceptions about the role of digital technology in the implementation of public accountant duties, utilizing digital technology to optimize opportunities to commit fraud, taking advantage of problems in human error and lack of knowledge in using digital technology, using digital technology products, such as cryptocurrencies, to carry out fraud. Furthermore, the application of Public Sector Accounting can prevent fraud in the public sector in the digital era if it is carried out by considering factors that influence fraud, such as performance accountability, and accompanied by the application of fraud prevention methods which include technical strategies, a two-paradigm approach, and preventive strategies. The technical strategy includes fraud prevention efforts through privacy officer services, IoT access, managing data access, establishing timely reporting, and controlling data in real-time. The two-paradigm approach is oriented towards creating an anti-
fraud culture and eliminating opportunities for fraud to occur through the implementation of internal controls. The preventive strategy is developing a fraud detection system that is run using the ms machine algorithm, data mining, and meta-learning methods.

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