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Risk Management Analysis to Minimize the Occurrence of Fraud in ATM Machine Activities (A Study at XY Company in the Jakarta Area)

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Abstract

The purpose of this study is to analyze and detect the factors influencing fraud occurrences in ATMs at XY Company and evaluate the risk management strategies implemented to minimize such risks. This research employs a qualitative method with a descriptive approach and utilizes purposive sampling in the selection of informants. The study focuses on a state-owned bank, XY Company, located in the Jakarta area. Data was collected through interviews with four informants from XY Company, as through observations and documentation related to fraud cases that occurred between 2021 and 2023, totaling 240 cases. The findings show that ATM fraud at XY Company is caused by several factors, including weaknesses in the security system, low customer awareness of the mode of operation in fraud, and limited supervision of suspicious activity. Common types of fraud include skimming, card trapping, and jackpotting. The conclusion of this study emphasizes that the implementation of stringent security systems, technology-based monitoring, and continuous customer education are key measures in combating ATM fraud. With effective risk management strategies, XY Company can reduce fraud crime rates and enhance customer trust in banking services.

1. INTRODUCTION

Banks in life play a very important role, especially since the development of the economy and information technology. Currently, the relationship between banks and the public is very difficult to separate, because banks need funds from the public, which is one source of income for banks. On the other hand, the community needs a bank as an institution that can manage the finances owned by the community. With the existence of banks, it is easier for people to transact financial matters, etc.

In carrying out its operational activities, it is inevitable that in a banking company fraud will occur. Fraud is an act of fraud that is deliberately carried out with the aim of obtaining benefits for the perpetrator of fraud but is not realised by the injured party. Fraud generally occurs due to the pressure and burden of life from the perpetrator so that he has the urge to cheat, (Kartoningrat & Andayani, 2020). Along with the increasing use of ATM services, the risk of cybercrime in the form of ATM fraud also increases, causing significant losses to customers and banks. This research is important to do because in a period of 3 (three) years, ATM fraud at Company XY caused significant losses with a value of billions of rupiah, both for customers and banks. This will have an impact on customer confidence in Company XY because many customers report transactions that are not made, which of course can reduce the credibility of the bank. In addition, banking crime technology is growing, so a stronger risk management

strategy is needed.

The purpose of this research is to analyse the main factors that trigger fraud on ATM machines, and to determine effective solutions in minimising the occurrence of fraud on ATM machines.

Management is a process, way, or method associated with managing something. Management can also be understood as the science and art of managing the process of utilising human resources and other resources effectively and efficiently to achieve a certain goal. Management is a way of achieving predetermined goals through the activities of others (Terry G. R., 2015).

According to Rustam (2020) risk management is a series of methodologies and procedures used to identify, measure, monitor, and control risks arising from all business activities, including credit risk, market risk, operational risk, and other risks in an effort to maximise company value. The components of risk management in general include several important elements such as risk identification, risk assessment, follow-up or risk mitigation, monitoring and monitoring, and evaluation and continuous improvement.

Fraud can be defined as an act of fraud or error committed by a person or entity who knows that the error can result in losses to other individuals or entities (Surjandari, 2015). Fraud perpetrators can be classified into two groups, namely management and employees / employees. Management usually commits fraud for the benefit of the company. Meanwhile, fraud committed by employees or employees is intended for individual gain.

An attack that uses malware to turn ATM machines into cash-spewing machines. Hackers can get money without the need to enter a stolen debit card and PIN. This malware is usually installed on ATM machines. (Lazuardhi Utama 2020).

The advantage of using Fishbone Diagram is that it helps in identifying the root causes of emerging problems in a structured manner and makes research easier (Komarudin & Nugroho, 2022). In fact, this cause-and-effect analysis was originally developed as a quality control tool.

Fishbone diagrams are easy to use and understand and can be used in all departments at all levels. FishbonDiagram is an illustration used to explore the potential or root causes of a problem (Ariyanti et al., 2021).

2. METHOD

The research was conducted using a qualitative method through surveys and observations, with the population being used in all fraud that occurred at XY Company from 2021 to 2023, totalling 240 fraud cases. Selected based on their roles in fraud management, this research uses purposive sampling techniques, or non-random sampling. meaning that this research is focused on fraud case reports submitted to XY Company in the Jakarta area.

This research data collection technique was carried out through interviews with informants who came from XY Company employees with different position backgrounds. The sample criteria in this study are the XY Company from the Risk Management Division (risk management staff) and Customer Service. There are 4 (four) informants appointed by the author as resource persons. These informants include Mr Rian as Senior Fraud Officer, Mrs Oktavera as Fraud Staff, Mrs Yuni as Investigation Supervisor, and Mrs Nisya as Investigation Manager at XY Company.

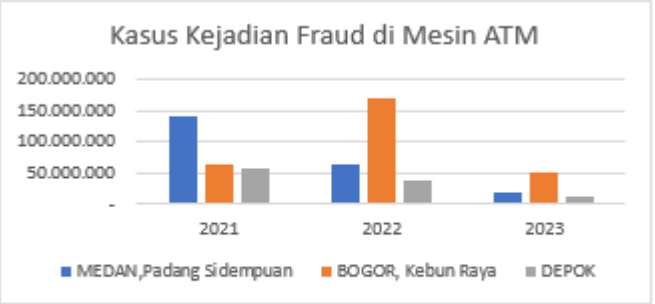
3. RESULT AND DISCUSSION

RESULT

The results of research obtained by conducting interviews with senior fraud officers, fraud staff, investigation supervisors, and investigation managers at XY Company from March to September 2024. The interviews revealed that ATM frauds such as skimming, card trapping, and jackpotting are still prevalent at XY Company. To address these issues, improvements will be made through the Six Sigma method, with the following stages:

Define, the problem is clearly identified. The focus is on understanding the types of fraud that occur on ATM machines, such as skimming, card trapping, and jackpotting. This stage is carried out by identifying and selecting the problems of fraud by defining what factors cause fraud at ATMs. Based on the interview results, the main problems identified at XY Company are related to ATM fraud incidents. According to Mr Rian as a resource person, the purpose of risk management is to be able to compensate for losses from sources; and to identify fraudsters. Meanwhile, the main factor causing fraud according to Mr Rian is the existence of pressure, which is mainly economic pressure that can encourage perpetrators to commit crimes in the form of fraud. In addition, the existence of an opportunity or opportunity to commit fraud can also cause someone to commit the act.

Measure, measure the problems that have been defined by collecting and analysing the data obtained, namely by verifying the measurements and looking for all the causes that exist by minimising fraud.



Gambar 4. 5 Grafik Kasus Kejadian Fraud di Mesin ATM
Sumber: Data dikelola oleh penulis (2024)

From the data on cases of fraud on ATM machines above, it shows that the highest case of fraud occurred in 2021 in the Medan area which reached a value of IDR 180,000,000 (one hundred and eighty million Rupiah), the ATM was broken into by external fraudsters. Then the second highest case occurred in 2022 in the Bogor area with a value of IDR 160,000,000 (one hundred and sixty million Rupiah). While the lowest area where fraud occurred was in the city of Depok, which was worth IDR 60,000,000 (sixty million Rupiah).

Analysis, this stage is done by analysing and identifying the causes of the main problem and finding the root of the problem. Namely by analysing through fishbone diagrams (cause-and-effect diagrams) and Pareto analysis. Factors from the causes of fraud, namely there are 3 types of fraud such as fraud skimming, cardtrapping and jackpotting.

Skimming is a technique of stealing ATM or credit card data by copying information from the magnetic stripe on the card using a device called a skimmer.

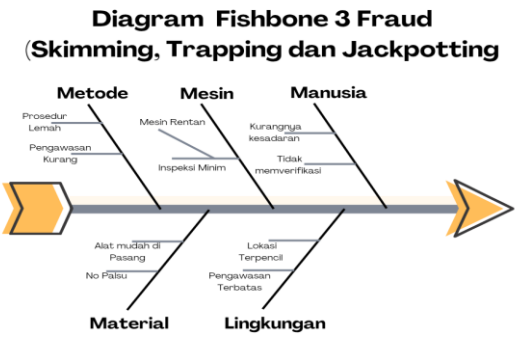
Card trapping is a fraud method where the victim's ATM card is stuck in the ATM machine due to a trap installed by the perpetrator.

Jackpotting is a type of cyberattack against ATMs where the perpetrator infects or hacks the ATM system to dispense large amounts of money as if the machine ‘hit a jackpot’.

Improve, this stage is carried out by improving the process to eliminate the factors that cause the root of the problem, namely making improvements by conducting FGDs (Forum Group Discussions) and studying the results of improvements. FGDs were conducted with 4 (four) resource persons from XY Company. Explanation of improvements made in fraud skimming, card trapping, and jackpotting techniques along with the development of technology and security systems Therefore, users and banking service providers must continue to be vigilant by using chip cards, OTP, biometric authentication, and routinely checking ATMs before use. For example, banks must improve security at ATM machines, for example by providing security on duty or conducting periodic or routine checks on existing ATM machines and ensuring that all anti-skimming devices are properly installed on ATM machines.

Control, this stage supervises or controls the performance of the process and knows the results achieved, namely by standardising the improvement solution made in the Pareto Diagram so that it can become a guideline for further work and making a final report and determining the next performance improvement plan.

A fraud analysis using fishbone diagrams of the three types of fraud can be described as follows: Skimming is a method of stealing ATM card data by copying information from the card's magnetic tape using a special device called a skimmer. The stolen data is then used to make illegal transactions. Based on the research, skimming that occurred at XY Company caused a loss of around IDR 19,401,000. Fraud jackpotting is a very dangerous form of fraud because it involves hacking the ATM system using malware or malicious software. At XY Company, jackpotting fraud occurred on several ATM machines between October 2022 and January 2023, causing losses of up to IDR 2,176,000,000. The root cause of this jackpotting problem lies in the weakness of the software system used by the ATM machines and the lack of monitoring of potential cyber threats.



DISCUSSION

Based on the three types of fraud discussed in this study, there are several main factors that are the root causes of fraud, including a less than optimal security system, lack of customer awareness and education, and lack of supervision and security on ATM machines. So the results of this research analysis can be concluded that fraud that occurs on ATM machines in XY Company is caused by a combination of weaknesses in the security system, low customer awareness, and lack of physical supervision of ATM machines. Therefore, this research is very important to evaluate the risk management strategies that have been implemented and propose more effective solutions to prevent fraud in the future. Solutions that can be implemented include improving ATM security technology, customer education, and strengthening banking supervision and regulation. The main factors that are the root causes of fraud in this study include suboptimal system security, lack of awareness and education for customers, and lack of supervision and security on ATM machines. According to Al-Khater et al. (2021), weaknesses in ATM system security significantly increase the risk of skimming and hacking incidents, emphasizing the need for enhanced security protocols.

4. CONCLUSION

Conclusion from this study, it is found that fraud on ATM machines at XY Company is caused by the main factors that trigger fraud on ATM machines, namely weaknesses in the security system, low customer awareness of the mode of operation of criminals, and limitations in monitoring suspicious transactions. The impact of this fraud not only causes financial losses for banks and customers but also reduces the level of public trust in banking services. To overcome this problem, XY Company has implemented various risk management strategies, such as installing anti-skimming devices, monitoring transactions regularly, and improving ATM security systems. However, there are still gaps that allow criminals to adapt to the existing system, so the strategies implemented must be continuously updated and developed. By combining the strengthening of technology-based security systems, increasing customer awareness through education, and stricter supervision, it is expected that the risk of fraud on ATM machines can be reduced.

Suggestions and recommendations obtained from this research focus on evaluations for XY Company such as the need to update the ATM machine security system with more sophisticated technology, conduct stricter real-time monitoring of transactions at ATMs, conduct regular audits of the entire network owned, and establish good cooperation with the authorities to take action against fraudsters. In addition, advice is also provided for customers with the need to increase self-awareness of the fraud mode, namely by learning the characteristics and how to avoid fraud at ATMs.

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