# The Effect Of Fraud Specialist Role On Internal Control Using The Mediation Of Credit Card Fraud Detection (Case Study Of A State-Owned Bank)

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Abstract: This study aims to analyze the influence of the role of fraud specialists in the implementation of internal control through the mediation of credit card fraud detection in one of the state-owned banks in Jakarta. This study used a census method so that the entire population will be used as the respondents, namely fraud specialists and internal audits at one of the state-owned banks in Jakarta that specialize in handling credit card fraud. The data in this study used primary data obtained from questionnaires given to respondents. Primary data were analyzed using a structural equation model, namely Partial Least Square (PLS). The results of this study indicate that the role of fraud specialists influences the detection of credit card fraud as a mediator variable, as does the detection of credit card fraud influencing the implementation of internal control. However, the role of fraud specialists does not significantly influence the implementation of the company's internal control. There must be other supporting factors in the company.

Index Terms: Fraud Specialist, Internal Auditor, Internal Control, Credit Card Fraud, Credit Card Fraud Detection.

# 1. INTRODUCTION

The development of banking technology triggers a lot of fraud in the banking field. Fraud at banks, such as phishing (the method of password theft through the use of fake sites), identity theft, and skimming (duplicating the customer's identity by cloning the card) arise because of the technology adopted by the banks. Kumar & Sringanga (2014), explained that various types of fraud can be committed by outsiders or insiders in the banking industry, so special technology and expertise are needed for the detection effort. In implementing fraud detection, including credit card data theft, the role of reliable fraud specialists is also needed. The reliability of the fraud examiner is seen from its capability to carry out the responsibility of observing various transactions to identify and detect suspicious activity as a symptom of fraud (Mukoro et al., 2013). The ability to detect the onset of fraud by fraud specialists is expected to mitigate the risk of fraud to minimize the risk of greater losses in the future. In their research, Boritz et al., (2015) explained the risk of fraud could be identified by internal auditors but they could not translate it into audit plans to increase the likelihood of fraud being detected. This lack can be compensated by fraud specialists, who can help auditors develop audit plans that are more effective in dealing with the risk of fraud and lack of internal supervision. Several studies have linked that fraud specialists with their forensic accounting expertise are indispensable in detecting fraud and identifying fraud risks, such as Boritz et al. (2015), Asare (2017), Peterson (2015). The urgency of this research activity is to emphasize the role of fraud specialists in the implementation of internal control, especially through the detection of credit card fraud. It is driven by the high level of credit card fraud in several countries,

including in Indonesia. Data from the 2016 ACI Worldwide

Studies of Consumers show that Mexico has the highest credit

card fraud rate of 51%, followed by the United States at 46%, Brazil 46%, Australia 37%, Singapore 35%, Canada 32%, India 30%, Africa South 28%, France 28%, Spain 28%, Indonesia 25%, UK 25%, Italy 24% and Dubai 24%. It is hoped that this research can find out the method to optimize the role of fraud specialists in implementing effective internal control through efforts to detect and identify fraud risks.

## 2. LITERATURE REVIEW

# 2.1 Agency Theory (Jensen & Meckling 1976).

Principals expect that the business can achieve a maximum profit to increase the value of the company. The maximum profit can be achieved through good coordination and teamwork between the parties involved in the company. But in reality, there are differences in interests between principals & agents. It can create conflict in the company. This conflict of interest can only be resolved through managerial ownership and control. Each who has a personal interest knows if their interests can be met if the company continues to exist

## 2.2. Experiential Learning Theory (David Kolb, 1984).

The experiential learning model is a learning process that makes someone actively build knowledge and skills through direct experience. Experiential learning uses the experience as a catalyst for someone in helping them develop capacities and abilities in the learning process. There are 4 stages of experiential learning, namely the concrete experience, reflective observation, abstract conceptualization, and active experimentation stages. Furthermore, Kolb explains, in the experiential learning model, there are 4 styles in realizing it, namely assimilating (a combination of thinking and observing); concerning (a combination of thinking and doing); accommodating (a combination of feelings and actions) and diverging (a combination of feelings and observations).

## 2.3. Game Theory (Myerson, 2002)

Game Theory is defined as a study model of conflict and cooperation between rational decision-makers where the technique is used to analyze situations where two or more

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people make decisions that can affect their well-being. Game theory is a mathematical approach in formulating conflicts in various interests. This theory involves two or more players as decision-makers. Every player has a desire to win.

# 2.4. Fraud Specialist Role

Based on audit standards (PCAOB 2008; IAASB 2010a), Asare and Wright (2004) research, when an increase in fraud risk is found, the auditors are expected to seek help from the involvement of fraud specialists, such as forensic accountants, in overcoming the risk of fraud through the development of the design of methods and plans of the audit program. Fraud specialist is a profession that requires expertise in auditing, accounting, and investigative skills for situations that have legal consequences. The complexity of a law violation requires not only a professional accountant but the involvement of fraud specialists who are experienced in conducting investigations (Peterson, 2015).

#### 2.5. Credit Card Fraud Detection

In the banking industry, fraud can be defined as the use of potentially illegal means of obtaining money, assets or other property owned by banks or under bank supervision. One form of bank crimes is carding. Subramanian (2014: 1) explains, in general, the Australian Crime Commission defines credit card fraud (carding) as the acquisition of fraud and/or the use of debit and credit cards for financial gain. Card fraud can involve the obtaining of a legitimate card from a financial institution by using fake documentation (application fraud) or stealing legitimate credit and debit cards. It also involves phishing (theft of information or important data), fraud with fictitious cards (not present), making fake cards, hacking into the company's database to steal customer financial data and card skimming (duplicating customer identity by duplicating cards). Credit card fraud can be done by internal parties, such as bank employees, merchants or external parties (Olaseni, 2015). Suman & Nutan (2013) explains that the detection of credit card fraud is an act to identify fraud as soon as possible immediately after an act of fraud is committed. In carrying out efforts to detect credit card fraud, the role of all card issuing bank company personnel is required. Detection of credit card fraud is then carried out after observing a number of transactions and then identifying and classifying them into original transactions and fraudulent transactions (Trivedi, et al, 2016). In another study by Jiang, et al (2018), it suggests the need to know the cardholder's behavior patterns by analyzing the cardholder's historical transactions as a method of detecting credit card fraud. In an effort to detect the red flag, a sophisticated fraud detection system is needed. Olaseni (2015) explains the need for tool to detect high transaction coverage, which is combined with alarms. This tool can read cardholder transaction patterns that are set according to standard procedures. If there are credit card transactions that deviate from the regular pattern, according to the standard, the alarm will give a warning. This could be a powerful way of detecting card fraud.

#### 2.6. Internal Control

Urton Anderson et al., (2017) explains that internal control according to the COSO (The Committee of Sponsoring Organizations of the Treadway Commission) is a process that is influenced by the top managerial staff, the executives and other work force, intended to give sensible certifications in accomplishing related aims, with operations, commentary and

obedience There are 5 components in internal control, namely (Nzechukwu, 2016)

- Control Environment is the foundation of the internal control component, which reflects all the actions, policies and procedures of the board of directors and management regarding the importance of internal control in the company.
- Risk Assessment is the management's act of identifying and analyzing risks. The process of risk detection needs to be carried out to evaluate the potential risks that have an impact on the achievement of objectives.
- 3. Control Activities are policies and procedures that help ensuring that the necessary actions have been taken to manage risks in order to achieve company goals.
- 4. Information and Communication: policies owned by the company need to be communicated and planned properly, understood by all personnel and implemented consistently. The information system generates reports related to operational, financial and compliance with information that makes it possible to run and control the business. Information systemis not only related to data generated internally but also with external reporting information.
- 5. Monitoring: internal control system needs to be monitored (processes that assess the quality of system performance over time). This can be achieved through ongoing monitoring activities, separate evaluations or the combination of the two. Ongoing monitoring takes place during the operation. The monitoring includes routine management and supervision activities and other activities carried out by personnel in carrying out their duties.

In carrying out internal control, Internal Audit is one part of the company that functions to create added value for the organization by helping management and the board of directors to evaluate and improve the effectiveness of risk management, internal control, and corporate governance processes (Chang, 2019). Several other studies also reveal those matters, such as research by Gramling et al. (2004); Walter & Guandaru (2012); Yee et al (2008). But there are still many arguments that internal control significantly influences fraud risk. (Donelson, et al, 2017). It is important for the management with the supervision of the parties responsible for carrying out governance and the implementation of internal control by placing a strong emphasis on fraud prevention in order to reduce the chances of fraud.

# 2.7. Research Hypothesis

Based on the literature review and some previous studies, the hypothesis can be formulated as follows:

- 1. The role of a fraud specialist has a significant effect on the detection of credit card fraud.
- 2. The detection of credit card fraud has a significant effect on the implementation of internal control

# 3. RESEARCH METHOD

The method used in this study was a quantitative research method which is related to the quantification and analysis of variables to obtain results. The definition of Aliaga & Gunderson (2002) describes the quantitative method as an explanation of phenomena through numerical data collection and statistical analysis. For quantitative research used was causal quantitative because it has the aim to test hypotheses about influence, find causes or causal relations either directly or indirectly. In other words, the causal method with a quantitative

approach is used to measure the relationship between research variables or analyze variables that affect the dependent variable. (Sekaran, 2011: 158). The sampling technique used was non probability sampling with saturated sampling (census), where all members of the population are used as samples (Fink, 2002). This study used primary data, through the distribution of questionnaires and interviews with respondents, as well as secondary data in the form of reports, journals or books. The interview method carried out in this study aimed to confirm the answers to the questionnaires. The distribution questionnaires and interviews addressed to fraud specialists and internal auditors who handle credit card fraud in one of the state-owned banks. The scale used in this study was the Likert scale 1-5. There are three (3) operational variables used in the study, namely the role of fraud specialist (variable X) consisting of fraud detectors and fraud investigators; the implementation of internal Control (variable Z) consisting of the control environment, control activities, risk assessment, communication and information, monitoring; and detection of credit card fraud (variable Y) consisting of understanding red flag and the implementation of risk-based audits. All primary research data were analyzed using the Partial Least Square (PLS) structural equation modeling technique which was started by testing the parameters, followed by a validity & reliability test. The practical rules are shown in the following table.

Table 1.

Parameter of Validity & Reliability Measurement Test

Test	Parameters	Rule of Thumb		
Convergemt Validity	Loading factors	>0,50		
	Average Variance Extracted	>0,40		
Discriminant	Cross Loading	>0,60		
Validity	Communality	>0,50		
Reliability	Cronbach Alpha	>0,60		
	Composite Reliability	>0,60		
GoF: small = 0,1 GoF Medium = 0,25 & Gof Large = 0,38				

Source: Harkiolakis (2017).

The next step, if all measurement tests and parameters of the measurement model have been performed, then the Good of Fit (GoF) index and hypothesis testing will be carried out. The suitability index used in PLS-SEM was Hair 2017 standard, namely 0.1 (small GoF), 0.25 (medium GoF) and 0.36 (large GoF). After that, hypothesis testing was done with the Smart PLS 3 data processing program, and the hypothesis acceptance/rejection criteria using a probability coefficient (P) of less than 0.05 and a T-statistic greater than 1.96 (Harkiolakis, 2017)

# 4. RESULTS & DISCUSSION

#### 4.1. Results

The results of the validity and reliability test can be seen in the path diagram below.

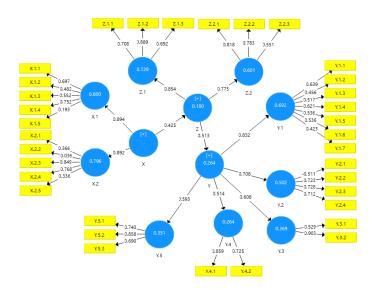
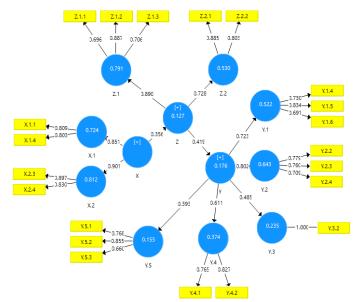


Fig 1. Path Diagram 1
Source: Processed primary data, 2019.

As shown in Fig 1, there are indicators that must be dropped because they have coefficient values less than 0.5, namely X1.2, X1.3, X2.1, X2.2, X2.5, Z2.3, Y1.1, Y1.2, Y1.3, Y1.7, Y2.1 and Y 3.1. The next step, the model was recalculated without these indicators. The results can be seen as shown in Fig 2. below.



Source: Processed primary data, 2019.

From the figure above, it appears that all loading factors are already higher than 0.50. In addition, the Cronbach alpha's values are higher than 0.60; and the Average Variance Extracted values are also higher than 0.40. This means that all research instruments can be considered valid and reliable.

TABLE 2

CONSTRUCT RELIABILITY AND VALIDITY

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
The Role of Fraud Specialist	0.706	0.821	0.537
Fraud Detector	0.660	0.787	0.649
Fraud Investigator	0.666	0.855	0.747
Application of internal control	0.710	0.789	0.565
Control Environment	0.619	0.797	0.568
Control Activities	0.610	0.794	0.562
Risk Assessment	1.000	1.000	1.000
Information communication	0.627	0.776	0.635
Monitoring	0.642	0.848	0.736
Credit card fraud detection	0.650	0.784	0.529
Red flag understanding	0.651	0.810	0.590
Implementation of risk based audits	0.605	0.833	0.714

Source: Processed primary data, 2019

From the results of the AVE values above, it can be explained that all variables have good reliability values or can be used to measure constructs. Composite reliability has a value > 0.6 or has a high-reliability value. Cronbach alpha also has a value > 0.6 for all constructs.

TABLE 3
CROSS VALIDATION OF THE INDICATORS TO THE CONSTRUCTS

	X.1	X.2	Y.1	Y.2	Y.3	Y.4	Y.5	<b>Z.1</b>	Z.2
X.1.1	0.81	0.45	0.14	0.05	0.49	-0.23	0.15	0.13	0.03
X.1.4	0.80	0.42	0.07	0.08	0.29	-0.07	0.24	0.33	0.09
X.2.3	0.60	0.90	-0.02	0.03	0.26	-0.21	0.16	0.11	0.20
X.2.4	0.31	0.83	0.02	0.14	0.26	-0.17	0.25	0.32	0.49
Y.1.4	0.33	0.27	0.73	0.26	0.23	0.08	0.12	0.21	-0.01
Y.1.5	-0.04	-0.12	0.83	0.46	-0.03	0.38	-0.08	0.41	-0.03
Y.1.6	0.05	-0.13	0.69	0.15	0.26	0.30	-0.01	0.41	0.22
Y.2.2	-0.06	-0.02	0.27	0.78	0.20	0.30	0.16	0.10	-0.02
Y.2.3	-0.06	0.11	0.19	0.76	0.21	0.32	0.08	0.12	0.02
Y.2.4	0.27	0.11	0.43	0.71	0.30	0.20	0.15	0.40	0.05
Y.3.2	0.48	0.30	0.18	0.32	1.00	0.03	0.32	0.18	0.17
Y.4.1	-0.17	-0.07	0.13	0.26	0.13	0.77	0.19	0.28	0.35
Y.4.2	-0.14	-0.27	0.41	0.31	-0.06	0.83	-0.01	0.28	-0.03
Y.5.1	0.24	0.06	0.03	0.15	0.34	0.08	0.77	0.02	0.08
Y.5.2	0.04	0.11	-0.08	0.20	0.19	0.11	0.86	0.03	0.04
Y.5.3	0.31	0.40	0.08	0.03	0.20	0.03	0.66	0.25	0.10
Z.1.1	0.41	0.32	0.27	0.27	0.29	0.13	0.05	0.70	0.09
Z.1.2	0.24	0.24	0.50	0.15	0.11	0.25	0.17	0.89	0.45
Z.1.3	0.01	-0.03	0.24	0.28	0.05	0.44	0.01	0.71	0.15
Z.2.1	0.08	0.40	0.04	-0.01	0.08	0.09	0.04	0.36	0.89
Z.2.2	0.04	0.21	0.09	0.05	0.23	0.24	0.14	0.19	0.80

Source: Processed primary data, 2019

From the table above, the indicator is declared valid if it has the highest cross loading to a given construct, compared to the other cross-loadings to their constructs. The table above shows the cross-loading for each indicator reaching> 0.6. Based on cross-loading (discriminant validity), it can be concluded that all variables have the highest correlation to the construct, compared to other constructs. Therefore, the validity requirements in this study are met and further analysis can be carried out.

**TABLE 4** R-SQUARE

Matrix	R-Square
Application of internal control	0.176
Detection of credit card fraud	0.127

Source: Processed primary data, 2019

From the table above, it can be seen that the influence of the role of fraud specialists on the detection of credit card fraud results in an R-square value of 0.127, meaning that the variability of the credit card fraud detection construct that can be explained by the role of the fraud specialist variable is 12.7% while the remaining 87.3% is explained by other variables that are not present in the research model. As for the effect of credit card fraud detection and the role of fraud specialists on the implementation of internal control, it gives an R-square value of 0.176, meaning that the variability of the construct of internal control implementation that can be explained by the credit card fraud detection and the role of the fraud specialist variables is 17.6% while the remaining 82.4% is explained by other variables that are not present in the research model. Next was to test the hypothesis where the rules are based on research by Chin (1998) and (Harkiolakis, 2017) that the hypothesis criteria is significance level (a) of 5%, determined by the following criteria:

- If t-count > t-table (1.96) then the hypothesis is accepted.
- If t-count < t-table (1.96) then the hypothesis is rejected.

Or hypothesis testing can also be determined by P-Value with criteria, namely:

- If P-Value <0.05, the hypothesis is accepted</li>
- If P-Value > 0.05, the hypothesis is rejected

**TABLE 5**PATH COEFFICIENT

• • =								
Variable	Original Sample (O)	Mean of the Sample (M)	Standard Deviation (STDEV)	T-statistics ( O/STDEV )	P Values			
$X \rightarrow Z$	0.356	0.367	0.165	2.140	0.032			
$Z \rightarrow Y$	0.423	0.403	0.206	2.057	0.010			

Source: Processed primary data, 2019

Based on the above table, it can be explained based on Chin's criteria as follows:

- 1) The t-statistic value of the role of fraud specialists is 2.140 or P-value <0.05. This means that the role of fraud specialists has a significant influence on the detection of credit card fraud, then the hypothesis is accepted.
- 2) The t-statistic value of credit card fraud detection is 2.057 or P-value <0.05. This means that the detection of credit card fraud has a significant influence on the implementation of internal control, then the hypothesis is accepted

## 4.2. Discussion

The test results on the Partial Least Square statistical analysis have shown the model used in this study. All tests of significance and assumptions on variables and indicators as the model shaper have been fulfilled, and have produced good

models. The discussion then continues to determine the relationship between the estimation results statistically with applicable practice and theory.

 The influence of the role of fraud specialists on the detection of credit card fraud

Based on the results of statistical and significance tests it is known that the role of fraud specialists has a positive and significant influence on the detection of credit card fraud. It means that the greater the role of fraud specialists, the higher the detection rate of credit card fraud or the first hypothesis is accepted. According to the interviews with fraud specialists and internal auditors, information was obtained that the use of the General Monitoring System through the Enterprise Fraud Management (EFM) application run by the fraud specialist unit succeeded in detecting 75% of potential fraud that occurred through the process of "catching" suspicious transaction data anomalies. Detection was done through a set up of system parameters, some of which are based on the number of transactions, transaction numbers, type of Merchant Category Code (MCC) or a combination of them. The achievement of the target of fraud specialists is inseparable from the experience possessed in handling potential fraud and recognizing the symptoms of red flags, as stated by David Kolb through Experiential Learning Theory in 1980. The experiential learning model is a learning process that activates a person to build knowledge and skills through experience directly, both formally and informally. In addition, these specialists must also apply Game Theory in detecting fraud. The many variations of fraud carried out by the perpetrators of fraud must be balanced with the strategies of specialists to detect fraud that occurs, through efforts to always review the parameters of transaction monitoring, following the development of fraud that occurs. Efforts to always review transaction parameters to detect fraud are consistent with research by Parvinder Singh & Mandeep Singh (2015) that customer behavior is analyzed through shopping behavior, which is divided into three profiles: Low Spending, Medium Spending, and High Spending Profiles. With K Mean Clustering, fraud is identified (analysis of type, number transaction, and place). Similar to the research of Joseph Adebisi (2016), Kumari Tiwari & Debnath (2017) and Elfrim Linda Robinson (2015) that forensic accounting sciences used by fraud specialists are a combination of statistical accounting, information technology, legal behavior skills, and human behavior. The use of forensic accounting and specialist competencies that have the instinct to identify key indicators of possible fraud is a combination of significant factors and plays a role in detecting fraud.

The effect of credit card fraud detection on the application of internal control.

Based on statistical tests, the effect of credit card fraud detection on the implementation of internal control has a positive and significant effect. This means that the higher the detection of credit card fraud, significantly and positively implements internal control will be even greater or the second hypothesis is accepted. Based on the provisions of the Financial Services Authority in Circular Letter Number 35/SEOJK.03/2017 on the standard guidelines for internal control systems for commercial banks that internal control has a definition as a monitoring mechanism established by the Bank's management on an ongoing basis, one of which is to reduce the impact of losses, irregularities including fraud and violations of prudential aspects. Bank Indonesia recognizes the high level of fraud or fraud at banks, including credit card fraud,

is caused by weak internal supervision. Therefore, Bank Indonesia requests all Banks to improve internal control by optimizing risk management and perfecting supervision in a more risk-based direction. Based on interviews with respondents, 75% of credit card fraud was successfully detected in the last 3 years through the use of the EFM (Enterprise Fraud Management) application to monitor transactions, run by fraud specialist unit. Meanwhile, a dedicated auditor representative is assigned to the Card Business division concerned. In carrying out the internal control function, the dedicated auditor conducts regular daily reviews on the division's financial statements to detect and monitor any changes in cost and transit accounts, including accounts related to credit card marketing or promotion programs. While the annual periodic review process depends on the decision of the directors outlined in the Annual Budget Plan, whether assessment is needed or not, adjusted for the level of risk. These conditions indicate that the Bank has attempted to implement an anti-fraud policy to mitigate the risk of fraud and carry out its internal control processes. The positive relationship between efforts to detect credit card fraud and the implementation of internal control can be explained through Game Theory. With the application of Game Theory, companies can analyze how fraudsters choose certain models and levels of fraud. As the feedback, the company will find ways to tackle the fraud, in order to create effective internal control. One way companies can take is to create an effective fraud detection system. (Vatsa, et.al, 2018). Another study that explains the positive influence between fraud detection and internal control is the research of John Akinyomi Oladele (2014), which says that if an internal control system is effectively implemented by banks, fraud can be detected. Furthermore, Huong Ngo Higgins' (2015) research also explains the importance of carrying out the principles of internal control to assure that fraud can be detected. Similar to Ho Tuan Vu (2016), it explains the factors that influence the effectiveness of the internal control system in Vietnam's commercial bank are the environment, risk management, information and communication, monitoring and two more factors, namely political institutions and group interests. Fraud detection has become a solution in increasing the effectiveness of internal control systems in Commercial Banks, especially in Vietnam.

## 5. CONCLUSION

Based on the research conducted and explained, the following conclusions can be drawn:

- 1. The role of fraud specialists influences the detection of credit card fraud. The detection of credit card fraud is not maximal. It caused by:
  - As a fraud detector, the role of fraud specialist is not maximal. It can be described with characteristics such as lack of risk exposure and symptoms of fraud knowledge, less in developing a plan to search fraud symptoms;
  - b. As a fraud investigator, the role of fraud specialist is not maximal as in planning, analyzing the potential crime, investigative interviews, and documentation of findings
- The detection of credit card fraud to the implementation of internal control has an influence. The detection of

credit card fraud does not have a maximum effect on the implementation of internal control, it could be caused by the understanding of red flags and the implementation of a risk-based audit is not optimal.

## 6. RECOMMENDATIONS

- Optimizing the role of fraud specialists so that they will automatically be able to improve the credit card fraud detection, namely by:
  - a. In optimizing the role as a fraud detector, we need an application of Artificial Intelligence to help banks identify fraudulent transactions, and predictive analysis to make the score level risks. Applications can detect fraud more than one type of transaction and more than one channel of data to be analyzed. Such as the use of Machine Learning algorithm that is easy to use. It could also use minimal-budgets such as the use of Excel's Active Data, a Benford Laws-based data mining concept. Excel's Active Data is an analytical tool that can help auditors/specialists to gauge whether additional investigations are needed for an indication of fraud or not.
  - b. In optimizing its role as a fraud investigator, the specialist should understand information technology, communication skills, and writing reports accurately, evidence gathering, and knowing the investigation. The capability can be obtained through experience, CFE certification training, training of forensic auditing technique, interacting communication with fraud specialists from various countries.
- 2. Optimizing credit card fraud detection efforts to improve internal controls, can be described as follows:
  - a. Understanding the symptoms of fraud by continuously updating parameters symptoms of fraud on the screen of suspicious activity, using the tools to estimate the location of the customer or verification IP address if there are multiple transactions from the same location with different information, using some detection devices and mutually coordinated as part of a strategy multilayer.
  - b. Development of audit techniques to achieve the effectiveness of internal control such as the continuous audit system. CAAT continuous auditing is an implementation of internal control based on information technology in carrying out audit functions more effectively and efficiently.
  - c. The existence of Key Performance Indicator (KPI) linkages between fraud specialists and internal auditors is expected to create the same responsibility in identifying fraud risks, preventing and detecting fraud to realize effective internal control. If there is a linkage, then the Fraud Specialist/Examiner and Internal Auditor can work in the same department. The illustration of organizational structure can be shown as follows:

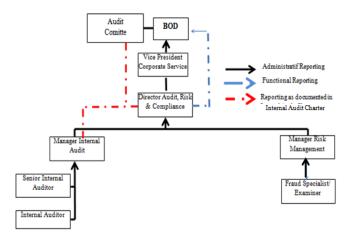
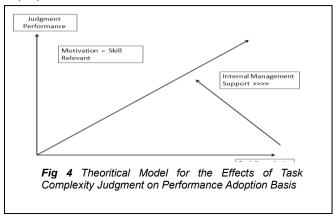


Fig 3 Proposed Organizational Structure Model

- 3. In carrying out its functions, the division of organizational structure must be arranged based on its function. As a Public Bank, it is necessary to differentiate the functions of the department that carries out government programs and the department that carries out the marketing function/profit-producing orientation, so that there is clarity in carrying out its strategy. Or it can be done also by delegating tasks that support the function of government programs to contract or outsourced workers, but still under the control of the same department.
- 4. From the regulatory side, it is important for the government to reduce political factors in the activities of government banks so that the performance of government banks will be more productive.
- 5. Especially on public banks, in future research, it is recommended to analyze the effects of comparison between the model complexity and skill task performance judgment of Bonner (1991) with the proposed model, based on this research as follows:



- 6. Based on the picture above, if the assignment of complex tasks is related to motivational and skill factors, then the condition will produce good performance judgment. It could be occurred, if there is support from management which is not dominated by political interest of government
- 7. It is also recommended to include variables of top

management support, political connection, and government intervention. Then, we can find out the effect of those variables on internal control.

## REFFERENCES

- [1] Adebisi, J F. 2016. "The Impact of Forensic Accounting in Fraud Detection and Prevention: Evidence from Nigerian Sector". International Journal of Business Marketing and Management. Vol.1 (5).
- [2] Aliaga, M., Gunderson, B. 2002. "Interactive Statistics". [Thousand Oaks]: Sage Publications
- [3] Anderson, U L., Head, M J., Ramamoorti, S., Riddle, C., Salamasick, M., Sobel, P J. 2017. "Internal Auditing: Assurance & Advisory Services, 4th Edition". Canada: The Institute of Internal Auditors Publishing.
- [4] Agustin F, R. 2014. "Audit Expectation Gap and Its Implication On Credit Decision Making". International Journal of Scientific & Technology Research. Volume 3, Issue 2, February 2014, pp. 250-257
- [5] Asare, S., Wright, A. 2004. "The Effectiveness of Alternative Risk Assessment and Program Planning Tools in a Fraud Setting". Contemporary Accounting Research. 21(2): 325-52.
- [6] Asare, S K., Wright, A M. 2017. "Field Evidence about Auditors' Experiences in Consulting with Forensic Specialist". Auditor Analysis Journal. Vol 2(1), p 69-73.
- [7] Bonner, Sarah E. and Barry L. Lewis. 1990. "Determinants of Auditor Expertise. Chicago: Blackwell Publishing.
- [8] Bonner, Sarah E. 1994. "Model of the Effects of Audit Task Complexity". Los Angeles: Elsevier Science Ltd.
- [9] Boritz, J E., Kozloski N K., Robinson L. 2015. "Are Fraud Specialists Relatively More Effective Than Auditor at Modifying Audit Programs in the Presence of Fraud Risk?". American Accounting Association Publishing. The Accounting Review Vol. 92 (3).
- [10] Chang, Y T., Chen, H., Cheng, R K., Chi, W. 2019. "The Impact of Internal Audit Attributes on the Effectiveness of Internal Control over Operations and Compliance". Journal of Contemporary Accounting & Economics. 15 (2019) 1-19.
- [11] Chaudhary, K., Yadav, J., Mallick, B. 2012. "A review of Fraud Detection Techniques: Credit Card". International Journal of Computer Applications. Volume 45 No.1, May 2012.
- [12] Chin, W W. 1998. "The Partial Least Squares Approach to Structural Modeling". Chapter 10 pp 295-333. New Jersey: Lawrence Erlbaum Associates Publisher.
- [13] Donelson, D C., Ege, M S., McInnis, J M. 2017. "Internal Control Weakness and Financial Reporting Fraud". Auditing: A Journal of Practice & Theory. August 2017, Vol. 36 pp 45-69.
- [14] Fink, A G. 2002. "How to Sample in Survey". The Survey Kit 7. New Delhi: Sage Publication.
- [15] Gramling, A A., Maletta, M J., Schneider, A., Church, B K. 2004. "The Role of the Internal Audit Function in Corporate Governance". A Synthesis of the Extant Internal Auditing Literature and Directions for Future Research. J. Account. Lit 23, 194-244.
- [16] Hair, J F. 2017. "A Primer on Partial Least Squares Structural Equation Modeling. 2<sup>nd</sup> Edition. Sage: Thousands Oaks
- [17] Harkiolakis, N. 2017. "Quantitative Research Methods: from Theory to Publication". US: Create Space Independent Publishing.

- [18] Higgins, Huong Ngo. 2012. "Learning Internal Controls from a Fraud Case at Bank of China". Forensic Accounting Research Journal. Vol 27(4), pp. 1171-1192.
- [19] Jensen, MC., Meckling, WH.1976. "Theory of Firm: Managerial Behaviour, Agency Costs and Ownership Structure". Journal of Financial Economics. Vol. 3:305-360.
- [20] Jiang, C., Song, J., Liu, G.,Zheng, L., Luan, W. 2018. "Credit Card Fraud Detection: A Novel Approach Using Agregation Strategy and Feedback Mechanism". IEEE Internet of Things Journal. Vol 5(5). October 2018.
- [21] John, A O. 2010. "The Effect of Internal Control System on Nigerian Banks". Researchgate Journal. Vol 3(6).
- [22] Kolb, D A., Boyatzis, R E., Mainemelis, C. 1984. "Experiential Learning Theory: Previous Research and New Directions". Sternberg, R. J. & L. F. Zhang (Eds), Perspectives on Cognitive, Learning and Thinking Styles (p.2-7). NJ: Lawrence Erlbaum Press.
- [23] Kumar, V., Sringanga, BK. 2014. "A Review on Data Mining Techniques to Detect Insider Fraud in Banks". International Journal of Advanced Research in Computer Science and Software Engineering. Vol 4 (12), December, 370-380.
- [24] Mappanyukki, R., Ghozali I., Yuyetta E N A., Harto, P. 2017. "The Role of the Non Assurance Service in Moderating the Effect Professional Ethics, Materiality and Risk to Audit Quality". International Journal of Civil Engineering and Technology (IJCIET). Volume 8, Issue 9, September 2017, pp. 1065-1073.
- [25] Mukoro, D., Yamusa, O., Faboyede, S. 2013. "The Role of Forensic Accountants in Fraud Detection and National Security in Nigeria". Nigeria Publishing Limited: The Change and Leadership Journal. Vol 2 (17).
- [26] Myerson, R B. 2002. "Game Theory, Analysis of Conflict". Massachussets: Harvard University Press.
- [27] Nzechukwu, O P. 2016. "Internal Audit Practice from A to Z". 1 st Edition. New York: Auerbach Publications.
- [28] Olaseni, A B. 2015. "Credit Card Fraud Detection Using Hidden Markov Model (HMM)". Ikoradu: Seminar of Computer Science Higher National Diploma Award. Department of Computer Science, Lagos State Polytechnic.
- [29] Peterson, O K. 2015. "Forensic Accounting and Fraud: A Review of Literature and Policy Implication". International Journal of Accounting and Economic Studies. Vol 3 (1), 63-68.
- [30] Public Company Accounting Oversight Board (PCAOB). 2007. "Observations on Auditors Implementation of PCAOB Standards Relating to Auditors Responsibilities with Respect to Fraud". http://pcaobus.org/Inspections/Documents/2007\_01-22\_Release\_2007-001.pdf. Diakses pada 2 Desember 2019 12: 48 WIB.
- [31] Raj, S B E., Portia, A A. 2011. "Analysis on Credit Card Fraud Detection". Methods International Conference on Computer, Communication and Electrical Technology -ICCCET2011, 18th & 19th March, 2011.
- [32] Singh, Parvinder & Mandeep. "Fraud Detection By Monitoring Customer Behaviour and Activities". International Journal of Computer Applications. Vol 11, February, 2015
- [33] Sekaran, Uma. 2014. "Research Methods for Business". Jakarta: Salemba Empat
- [34] Subramanian, R. 2014. "Bank Fraud Using Technology to Combat Losses". USA: Willey Publisher

- [35] Suman, Nutan. 2013. "Review Paper on Credit Card Fraud Detection". International Journal of Computer Trends and Technology (IJCTT): July 2013, Vol 4, No. 7.
- [36] Tiwari, K., Debnath. 2017. "Forensic Accounting: a Blend of Knowledge". Journal of Financial Regulation and Compliance. Vol. 25 Issue: 1, pp 73-85
- [37] Trivedi, I., Monika, Mridushi, M. 2016. "Credit Card Fraud Detection". International Journal of Advance Research in Computer and Communication Engineering. Vol 5 (1) January 2016.
- [38] Tuan Vu, H. 2016. "The Research of Factors Affecting the Effectiveness of Internal Control Systems in Commercial Banks-empirical Evidence in Viet Nam". International Business Research. Vol 9 (7), pp 144-153.
- [39] Vatsa, V., Sural, S., Majumdar, A K. 2018. "A Game Theoritic Approach to Credit Card Fraud Detection". India: Indian Institute of Technology Publishing.
- [40] Verwey, I G F., Asare, S K. 2016. "The Effect of Forensic Expertise and Time Pressure on Fraud Risk Assessment and Responsiveness". American Accounting Association: Forensic Accounting Research. Vol 4(1), January 2016.
- [41] Walter, OB., Guandaru, KC. 2012. "A Study to Explore Internal Auditors' Compliance with Quality Assurance Standards: A Case of State-Owned Cooperation in Kenya". Int. J.Res. Stud. Management. Vol 1(1), 109-126.
- [42] Yee, CS., Sujan, A., James, K., Leung JK. 2008. "The Perception of the Singaporean Internal Audit Customers Regarding the Role and Effectiveness of Internal Audit". Asean J Business Acc. Vol 1 (2) 147-174.