

## The Effect of Internal Control and Fraud Triangle on Fraud Behavior in Online Transportation

(Case Study of Gojek Surakarta Company)

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#### **ABSTRACT**

This study aims to analyze the effect of internal control and fraud triangle on fraud behavior at Gojek Surakarta Company. The population in this study are Gojek Bike drivers in Surakarta with a sample of 66 respondents. The sampling technique is convenience sampling. The data analysis technique in this study uses Multiple Linear Regression. The results of the research on the first hypothesis indicate that internal control has a positive effect on fraud behavior. It indicates that Gojek online drivers pursue bonuses or points so that the internal control at Gojek online is getting better, so drivers are increasingly looking for ways to make fictitious orders so that they are not detected by the company's system. The second hypothesis is rejected, the fraud triangle has no effect on fraud behavior.

**Keywords:** Internal Control, Fraud Triangle and Fraud Behavior.

## 1. INTRODUCTION

Online motorcycle taxi services (ojol) have become a popular service business in Indonesia. Currently, innovation in business is shuttle services or motorcycle taxis, which are initially carried out in a conventional way (by waiting the customer at the port) to become internet-based motorcycle taxis, namely online motorcycle taxis (ojol).

For people of lower economic class who do not have private vehicles, public transportation is the only option for them. The use of public transportation for the lower class really needs to be addressed, because every Indonesian citizen has the right and carries out his obligations. In fact, even though they have paid taxes to the government, they are not getting their right. So, this raises a polemic. This news has always been an endless stream of actual news. The government should be more responsible in dealing with this problem.

The advantage of online motorcycle taxis (ojol) is that they can empower unemployed people. [1] Many unemployed people have jobs. In terms of social status, the job of being a motorcycle taxi driver, which is previously a lower-class job, is now a middle-class job that is in great demand by the public. The problem of punctuality finally arises due to the impact

of traffic jams in urban areas, especially big cities like Jakarta. Many parties are disadvantaged, such as workers and school children who are late for work and school [2].

Gojek is an online-based transportation service provider that was first established in Bandung. Gojek is available to fulfill the needs of people in urban areas, a solution to avoid traffic jams, for foreigners who don't have private vehicles, such as students or company employees. With Gojek, everyone can travel easily. The Gojek application can be downloaded on smartphones that have IOS and Android operating systems. In addition, the Gojek application utilizes electronic media, so that it can facilitate access for ordering motorcycle taxi services. Gojek will pick up customers and take them to their destination according to the customer's order listed on the application on the smartphone. Not only for shuttles, Gojek also provides various other services such as Gofood which can deliver food from anywhere according to customer orders. Then there is Gomart, which is one of Gojek's services that is ready to spend on the daily needs of consumers and there are still many features provided by Gojek Indonesia.

The existence of Gojek can improve the welfare of the community's economy. For those who work as Gojek drivers, they can have additional

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income for those who have smartphones by utilizing applications found on the IOS and Android operating systems. Advances in information and communication technology can encourage motorcycle taxi drivers to earn income easily. In addition, motorcycle taxi drivers easily receive and complete orders. The existence of Gojek also has a good impact on the unemployed or freelance community. In addition, Gojek can also be a side job for students as additional pocket money. Gojek drivers are not limited by working hours. In addition, the amount of income also depends on the completion of the number of orders. The income of each driver per day can be influenced by several things such as the number and distance traveled in order completion, bonuses, cash commissions, working hours, and costs incurred. Working with flexible hours allows many people who want to join to become Gojek drivers. Even employees or permanent employees in a company change professions to become Gojek drivers. Although it is very easy for the community to carry out their activities, there are still some unscrupulous drivers who commit fraudulent acts by utilizing advanced technology. along with the development of globalization of the world economy, modern information and communication technology, and other factors make this crime or fraud easier to commit.

fraud is a general term and includes all human ingenuity ways designed and carried out by individuals, to gain advantage against other individuals with false representations. The term includes all ways of trickery, cunning, and unjust acts that deceive others. It is aware that taking action benefits the perpetrator but harms the victim psychologically.

fraud is an act that is deliberately carried out to generate illegal financial gains. Fraud is deceiving others, usually by claiming unfairly[3]. in a broad sense, fraud is consciously taking actions that should benefit the perpetrator but harm the victim psychologically or in another sense [4].

Fraud cases still occur in a company in Indonesia. One of the cases of fraud or fraud in Indonesia occurred in the Gojek company. The case of fraud at the Gojek company occurred in the field and is carried out by several Gojek drivers who are proven to have used fake GPS applications and made fictitious orders. According to the Head of the Investigation Sub-Directorate of the Ministry of Communications and Informatics,[5], there are many findings in the field related to fraud committed in online transportation services. The findings show that around seven out of nine online motorcycle taxi drivers have used fake GPS.

It also happened in South Tangerang City. This fictitious order fraud was carried out by unscrupulous drivers who used fake GPS applications. The application can be downloaded on the Play Store using an Android phone. Within a day, the perpetrators commit fraudulent fictitious orders to break into 30 points on the Goride service so that they get a bonus of Rp. 200,000.00 and 21 points to the Gocar service with a bonus of Rp. 400,000.00.

This action has been carried out by the perpetrators for 4 months so that the Gojek company suffered a loss of Rp. 500,000,000.00. According to Gojek's Senior Manager of Corporate Affairs [6], the actions of this group of perpetrators are very

detrimental to drivers who have been honest in the field. But this is not a system breach. But a good system is misused. So, it's abuse of the system. This action not only harms us but also Gojek drivers who are honest.

Several theories explain the potential for fraudulent acts. One of the theories is the fraud triangle proposed by Cressey in 1953. According to Cressey (1953) there are three basic factors that make a person behave fraudulently, namely pressure, opportunity, and rationalization.

Another factor that influences fraud is internal control. that internal control is a process carried out by the company and one of its operating units that seeks to minimize the possibility of irregularities and illegal or fraudulent actions [7]. Internal controls help to protect the funds, provide efficient and effective asset management and proper clearance.

The objective of this study is to determine and analyze the effect of the internal control fraud triangle on fraud behavior at Gojek Surakarta Company.

## 2. LITERATURE REVIEW AND HYPOTHESES

## 2.1. Internal Control

Internal control is a process carried out by the board of directors, management and other personnel, designed to minimize the possibility of errors, irregularities, and illegal acts related to the effectiveness and efficiency of operations, reliability of internal and external reporting, and compliance with laws, regulations, and applicable internal policies. Effective internal control helps organizations to overcome and make adjustments needed to obtain optimal results [9].

There are several indicators that affect internal control. the indicators that affect internal control are the control environment, risk assessment, control activities, information and communication, and monitoring [10].

#### 2.2. Fraud Triangle

The fraud triangle is very useful, because it can help us to understand how someone is involved in fraud. Many scams today are perpetrated by more than one person. In fact, most frauds, especially financial statement frauds, are collusive, i.e. involving the actions of more than one perpetrator[11].

The fraud triangle was developed by through a study of the reasons for committing fraud. Fraud triangle is a theory that describes three conditions that cause fraud. The conclusion of this research is that there are several factors of fraud, namely pressure, opportunity, and rationalization.

### 2.3. Fraud Behavior

Cheating is a deliberate act to gain an unfair or unlawful advantage. Cheating is a deliberate deviation from the truth for the purpose of persuading others. This is to give legal rights.

Fraud is the misrepresentation of facts with the aim of causing others not to do so financially. Fraud is a crime intended to make illegal financial gains. Fraud is to deceive others, usually by claiming unfairly. In a broad sense, fraud is consciously taking actions that should benefit the perpetrator but harm the



victim psychologically or in another sense. there are three indicators to successfully commit fraud, perpetrators usually have to complete three steps, that are performing the action (the act), hiding the action (concealment), and converting the results for their own benefit or the benefit of others (conversion) [12].

#### 2.4. Previous Studies

the factors that influence student academic cheating behavior using the fraud diamond concept (pressure, opportunity, rationalization, and ability). The results showed that rationalization had a significant positive effect on academic cheating behavior. Meanwhile, pressure, opportunity, and ability have no effect.

the influence of internal control, the fraud triangle on fraudulent behavior at PT Gojek Bandung. The results of this study indicated that the fraudulent behavior that occurs at PT Gojek Bandung will depend on the internal control carried out by PT Gojek Bandung[. Because the better the internal control is carried out, it will reduce the fraudulent behavior carried out by the Gojek driver . In addition to internal control, the fraud triangle also affects the fraudulent behavior of Gojek drivers. The regression results show that if the fraud triangle is increasing, then the fraud behavior at PT Gojek Bandung will also increase.

analyzed internal control in overcoming order fraud in online-based transportation, namely the existence of order fraud caused by several factors. These factors were analyzed using the fraud triangle theory. The results of the study stated that the three variables of the fraud triangle (pressure, opportunity, and rationalization) had an effect on the existence of order fraud.

researched Online-Based Transportation Order Fraud at PT. Gojek Bandar Lampung. The results of the research and discussion were in accordance with the objectives of the research carried out by the average method. The average fraud order pressure value had the lowest value. This research showed that there is pressure from the entity in achieving the targets or points determined by ethics, drivers stick to their responsibilities as partners. The average opportunity value (opportunity) got a value in second place. This study showed that the opportunity occurs due to the opportunity that can be done by Gojek drivers because of the lack of supervision from the management. The average competency value for fraud orders had the largest value, which is in the first order. This study showed that fraud occurs because there is an opportunity where someone must have access to assets or have a fraud scheme.

## 2.4. Hypotheses

# 2.4.1. The Effect of Internal Control on Fraud Behavior

internal control will run effectively when the core components of internal control are implemented properly and correctly in the organization to provide certainty to the achievement of organizational goals [13]. The various explanations above show that internal control must be carried out in accordance with organizational procedures and policies through a system that has been designed in such a way and needs to be monitored properly and correctly. This is necessary because it can reduce the level of fraud,

including abuse of authority and misrepresentation of financial statements. It also means that effective internal control can make a positive contribution to fraud prevention. [14] that fraud that occurs in organizations is usually caused by weak control by the management. In addition, fraud is also caused by three components which are usually referred to as the fraud triangle, namely incentives/pressures, opportunities, and attitudes. The results of the study which stated that internal control had a negative effect on fraudulent behavior were carried out by approximately two supporting journals.

## Hypotheses 1: Internal control has a negative effect on fraud behavior.

2.4.2. The Effect of the Fraud Triangle on Fraud Behavior

that fraud is a dishonest act by employees that results in personal benefits for the perpetrators [15]. The fraud triangle refers to three factors that contribute to fraudulent behavior by employees, namely opportunity, financial pressure, and rationalization. the fraud triangle shows that there are three interrelated elements that allow someone to commit fraud, namely the motives or pressures that encourage someone to commit fraud, opportunities that allow individuals to commit fraud, and the ability to rationalize fraudulent behavior [16].

research state that the fraud triangle has no effect on fraud behavior [17].

Hypotheses 2: Fraud triangle does not have a positive effect on fraud behavior

#### 3. RESEARCH METHOD

## 3.1. Type of the Research

The type of research used in this research is quantitative w\*ith a descriptive and verification approach. The approach used in this study is a descriptive and verification approach which aims to explain and analyze the variables of internal control, fraud triangle, and fraud behavior. The verification method is used to determine whether there is an influence of internal control and the fraud triangle on fraudulent behavior.

### 3.2. Population and Research Sample

The population which is the whole of the elements that have one or more characteristics or characteristics in common according to Dajan (1984). The population in this study are Gojek Bike drivers in Surakarta as many as 340 Gojek drivers, while the sample is 66 respondents.

The sampling technique is based on convenience sampling, namely the selection of samples by determining subjects who meet the research criteria to be included in the study for a certain period of time, so that the number of respondents can be met [18]. Determinants of sample criteria are very helpful in research to reduce bias in research results, especially if there are variables (control or confounders) that turn out to have an influence on the variables that we examine.

## 3.3. Variable Operational Definition

#### 3.3.1. Dependent Variable

The dependent variable is the variable that is influenced or which is the result because of the independent variable [19]. The dependent variable in



this study is fraudulent behavior in online transportation.

This variable is measured using a closed questionnaire given to Gojek Bike drivers in Surakarta which is adopted [20] with the following indicators:

- 1. Make a fictitious order,
- 2. Using a fake GPS to make it look like you're doing the pick-up even though it's still in place,
- 3. Using the Trick Mod Delay so that more orders come in,
- 4. Using the Auto Bid application, and not rejecting but ignoring orders.

## 3.3.2. Independent Variabel

The independent variable is a variable that affects the dependent variable. In this study, internal control (X1) where this variable is measured using a closed questionnaire adopted [21] with indicators:

- 1. Control Environment
- 2. Risk Assessment
- 3. Control Activities

The fraud triangle variable (X2) is measured using a closed questionnaire with the following indicators:

- 1. Pressure
- 2. Opportunity
- 3. Rationalization

Measured using a questionnaire with a Likert scale of 1-4, namely: Strongly Disagree (1), Disagree (2), Agree (3), Strongly Agree (4). The researcher do not use the middle value or the "don't know/undecided/neutral" option to avoid questionable answers. The indicators of pressure, opportunity, and rationalization variables refer to Titi Aditiawati (2018).

#### 3.4. Data Analysis Technique

The data analysis technique used in this research is multiple linear regression. Multiple linear regression analysis is an analysis that is used simultaneously to examine the effect of two or more independent variables on one variable depending on the interval scale so that the following formula is used

 $PF = \alpha + \beta_1 PI + \beta_2 FT + e$ 

Description:

PF= Fraud behavior

**Table 1. Multiple Linear Regression Test Results** 

3.6.1	Statistic	Test t	
	The t	toot on	

The t-test analysis tool is used to determine the effect of each independent/independent variable on the dependent variable. To find out how the influence generated by the independent variable on the dependent variable is carried out through several steps.

Based on the results of table 1, it is known that the internal control with t arithmetic value (12.378) is greater than t table (1.997) or can be seen from the significance value of 0.000 < = 0.05. Therefore, H1 is accepted, meaning that the internal control variable has an individual effect on fraud behavior.

 $\alpha = Constant number$ 

 $\beta_1$  = Internal control regression coefficient

 $\beta_2$  = Fraud Triangel regression coefficient

PI = Internal Control FT = Fraud Triangel

### 3.5. The Result of the Study

This research method uses multiple linear regression which has passed the normality, multicollinearity, and heteroscedasticity tests. This test uses a multiple linear regression model testing with SPSS is briefly presented as follows (Table 1).

Multiple linear regression equation as follows:

$$PF = 0.191 + 0.529(PI) + 0.134(FT) + e$$

From the regression results above, it can be explained as follows:

- 1. The constant value of the fraud behavior variable is 0.191, which means that if the independent variables (internal control and fraud triangle) are assumed to be zero, it will increase fraud behavior.
- 2. The coefficient value of the internal control variable is 0.529 with a positive result on the internal control variable indicating that the higher the internal control, the higher the fraud behavior.
- 3. The coefficient value of the fraud triangle variable is 0.134 with a positive result on the fraud triangle variable indicating that the higher the fraud triangle, the higher the fraud behavior.

Variable	В	T count	siq	
(Constant)	0,191	0,223		
Intern Control	0,529	12,378	0,000	H1 accepted
Fraud Triangle	0,134	1,510	0,136	H2 rejected
F count	189,361	R Square	0,857	
p-value	0,000	Adjusted RSquare	0,853	

Source: Processed Primary Data, 2021

#### 3.6. Hypothesis Test

To find out the results of this study, a relationship or regression modeling was made of all the variables used in this study. The formulas or regression models obtained are: It is known that the fraud triangle with t arithmetic value (1.510) is smaller than t table (1.997) or it can be seen from the significance value 0.136 > 0.05. Therefore, H2 is rejected, it means that the fraud triangle variable has no individual effect on fraud behavior.



#### 3.6.2. F Test

This test is intended to test whether the regression model with the dependent variable and the independent variable has a statistical effect. Based on Table 1, it can be seen that the calculated F value is 189.361 and F table can be seen from table F at a significance level of 0.05 with df1 (number of variables- 1) = 2-1 = 1. The formula df2 is n-k-1; where n is the number of data, k is the number of variables, independent. Df2 = 66-2-1 = 63. The results obtained for F table df1=6 and df2=84 are 4.00. The test criteria are based on significance if F count > Ftable, which is 189.361 > 4.00 and the significance value =  $0.000 < \square = 0.05$ . It means that Ho is rejected, thus the regression model used is feasible or fit.

## 3.6.3. Coefficient of Determination $(\mathbb{R}^2)$

The coefficient of determination is a test tool used to determine how much the ability of the independent variables to explain the dependent variable. The higher the R2 value in a regression or the closer to 1, the better the regression results. By using the help of the SPSS computer program in the test, the results are obtained as shown in Table 1.

The calculation results for the R2 value obtained in the multiple regression analysis obtained the coefficient of determination with an adjusted-R2 of 0.853. It means that 85.3% of variable variations can be explained by internal control variables and the fraud triangle, while the remaining 14.7% is influenced by other factors outside the model studied.

#### 3.7. Discussion

## 3.7.1. The Effect of Internal Control on Fraud Behavior

The results of the t-test of 12,378 and significant 0.000 <0.05, it means that internal control has an effect on fraud behavior so that H1 is accepted. This positive effect shows that if internal control increases, fraud behavior will increase, it is contrary to the existing theory. It is due to the situation where online Gojek drivers want to pursue bonuses or points so that the better the internal control on Gojek online, the drivers are increasingly looking for ways to make fictitious orders so that they are not detected by the company's system. Such behavior will be detrimental to honest and good companies, customers and drivers. To prevent it, the Gojek online company should evaluate the drivers every month so that the fraudulent behavior can be addressed immediately.

internal control has an influence on fraud. Effective internal control can address the risk of fraud to the organization. In addition, effective internal control can also protect assets from theft and prevent distorted results.

Effective internal control is also important for parties outside the organization. that a company is expected to have internal controls that identify, analyze, and respond to certain risks [22]. Management should make an informed assessment of the specific areas where fraud may occur and their potential impact. Fraud detection and management has become a very important element in the internal control framework. which states that internal control has an effect on fraud behavior.

#### 3.7.2. Effect of Fraud Triangle on Fraud Behavior.

The results of the t-test of 1.510 and significant 0.136> 0.05, it means that the fraud triangle has no effect on fraud behavior, thus H2 is rejected. In other word, the fraud triangle is very useful for understanding how someone is involved in fraud. Fraud occurs because they have low incomes and have the opportunity to commit fraudulent acts. Thus, a deliberate act to gain an unfair advantage or violates the law.

that fraud is a dishonest act by employees that produces personal benefits for the perpetrators. The fraud triangle refers to three factors that contribute to fraudulent behavior by employees, namely opportunity, financial pressure, and rationalization. the fraud triangle shows that there are three interrelated elements that allow someone to commit fraud, namely the motive or pressure that drives someone to want to commit fraud and the ability to rationalize fraudulent behavior.

#### 4. CONCLUSION

The conclusion of this study is that internal control has an effect on fraud behavior so that the first hypothesis is accepted. Fraud triangle has no effect on fraud behavior so that the second hypothesis is rejected.

#### RESEACHER'S CONTRIBUTION

This study aims to analyze the effect of internal control and fraud triangle on fraud behavior at Gojek Surakarta company. The results of this study are expected to provide input to the Gojek company in Surakarta in particular and in Indonesia in general so that they can monitor the Gojek Online drivers and evaluate the internal control system that exists at Gojek company in Surakarta. This research is also expected to strengthen previous research related to internal control, fraud triagle, and fraudulent behavior, and can be useful as reference material and additional data for further researcher.

## **DEDICATION**

Praise and gratitude to Allah SWT, supervisors, and parties who have provided assistance and input both material and non-material so that the author can complete this article properly. Finally, the writer realizes that the writing of this article is far from perfect. Therefore, the authors ask for constructive criticism and suggestions from readers to improve this article and hopefully it will be useful for all of us.

#### REFERENCES

- [1] Apriani, N., Edy Sujana, S. E., Sulindawati, N. L.G. E., & SE Ak, M. 2017. Pengaruh Pressure, Opportunity, dan Rationalization terhadap Perilaku Kecurangan Akademik (Studi Empiris: Mahasiswa Akuntansi Program S1 Universitas Pendidikan Ganesha). JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha, 7(1).
- [2] Ahmad Alif Arrafi Ubaidillah, N. F. 2019. Pengaruh Pengendalian Internal dan Fraud Triangle terhadap Perilaku Fraud (Studi Pada PT Gojek Bandung). 13(2), 126–146.
- [3] Çaliyurt, K., & Idowu, S. O. (Eds.). 2012. *Emerging Fraud: Fraud Cases from Emerging Economies*. Springer Science & Business Media.



- [4] Cherry, B., & Jacob, S. R. 2016. *Contemporary Nursing: Issues, Trends, & Management*. Elsevier Health Sciences.
- [5] Cressey, Donal R. 1953. *Other People Money, A Study in The Social Psychology of Embezzlement*. Montclair: Patterson Smith.
- [6] Gottschalk. O. 2018. Fraud Investigation: Case Studies of Crime Signal Detection. Routledge.
- [7] Leksono, R. B., & Herwin, H. 2017. Pengaruh Harga Dan Promosi Grab terhadap Brand Image yang Mempengaruhi Keputusan Pembelian Konsumen Pengguna Transportasi Berbasis Online. Jurnal Riset Manajemen Dan Bisnis (JRMB) Fakultas EkonomiUNIAT,2(3)381–390.https://doi.org/10.36226/jrmb.v2i3.72
- [8] McKinney, J.B. 2015. Effective Financial Management in Publicand Nonprofit Agencies. ABC-CLIO.
- [9] Moeller, R.R. 2014. Executive's Guide to COSO internal Controls: Understanding and Implementing the New Framework. John Wiley & Sons.
- [10] Molida, R. 2011. Pengaruh Financial Stability, Personal Financial Need dan Ineffective Monitoring pada Financial Statement Fraud dalam Perspektif Fraud Triangle. Program Sarjana Fakultas Ekonomi Universitas Diponegoro.
- [11] McKinney, J.B. Financial Management Public and Nonprofit Agencies. ABC-CLIO.
- [12] Moeller, R.R. 2014. Executive's Guide to COSO internal Controls: Understanding and Implementing the New Framework. John Wiley & Sons.
- [13] Nuryuliza, S., & Triyanto, D. N. 2019. Pengaruh Fraud Triangle terhadap Kecurangan Laporan Keuangan (studi Empiris Pada Perusahaan Sektor Pertambangan yang Terdaftar di Bursa Efek Indonesia Periode 2015 2017). eProceedings of Management,6(2).

- [14] Nufus, H. 2018. Pola Komunikasi Driver Gojek pada Customer di Kota Bandar Lampung (Studi pada PT. Gojek Di BandarLampung).
- [15] Suarcaya, I. B. K., Prayudi, M. A., Herawati, N. T., & Ak, S. E. 2018. Pengaruh Kesesuaian Kompensasi, Pengendalian Internal, dan Perilaku Tidak Etis Terhadap Kecenderungan Kecurangan (Fraud)(Studi Kasus Pada Persepsi Pegawai Koperasi Simpan Pinjam (KSP) se-Kecamatan Buleleng). Jimat (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha, 8(2).
- [16] Sugiyono. 2017. Metode Penelitian Bisnis (Pendekatan Kuantitatif, Kualitatif, dan R & D). Bandung: Alfabeta.
- [17] Titi Aditiawati 2018. Pengaruh Pengendalian Internal dan Fraud Triangle terhadap Perilaku Fraud (Studi pada PT Gojek Bandung. Jurnal Riset Akuntansi dan Perbanka.3(2)
- [18] Ubaidillah, Ahmad Alif Arrafi dan Nurul Fatimah. 2019. Pengaruh Pengendalian Internal dan Fraud Triangle Terhadap Perilaku Fraud(Studi pada PT. Gojek Bandung). Jurnal Riset Akuntansi dan Perbankan. Volume 13Nomor 2, Agustus 2018, hal. 200-217.
- [19] Vallabhaneni,2015:297;Gottschalk2018:200;Idowu 2012:150) Menurut (Wells 2018:4;Pope et al 2013:172; Salinger 2005:443.
- [20] Vallabhaneni, S. R. 2015. Wiley CIA Excel Exam Review 2015 Focus Notes, Part 2: Internal Audit Practice. John Wiley & Sons.
- [21] Wolhuter, K. 2015. Geometric Design of roads Handbook. CRC Press.
- [22] Zahara, A. 2017. Pengaruh Tekanan, Kesempatan, dan Rasionalisasi terhadap Tindakan Kecurangan (Fraud) (Survei padaNarapidana Tindak Pidana Korupsi diLembaga Pemasyarakatan Kelas II A Kota Pekanbaru). (Doctoral dissertation, Universitas Negeri Padang.