



Fraud detection of financial statement by using fraud diamond perspective

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Abstract

The proof to detect fraud of financial statements by using fraud diamond that had been done on manufacturing companies listed on the Indonesia Stock Exchange in 2012-2015 as many as 12 companies. Sampling technique used purposive sampling method based on certain criteria. Dependent variable was fraud of financial statement with profit management proxy, independent variable was fraud diamond, consisting of 7 variables, namely financial stability, external pressure, financial targets, nature of industry, ineffective monitoring, change in auditor and capability. Data analysis used multiple linear regression. The result of the research showed that: 1) Financial stability, external pressure auditor change, financial target, rationalization and effectiveness of supervision had a negative effect on the indication of financial statement fraud 2) the ability had significant positive effect on the indication of financial statement fraud. The number of samples were 60 observations that was considered unsatisfactory as well as the secondary data that used to predict that fraud which was a limitation.

Keywords: Financial Statement Fraud; Fraud Diamond

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1. Introduction

The importance of financial statement information could describe the condition and performance of the company for internal and external parties. Good quality information was beneficial to a large number of users in economic decision-making. Profit information was used by investors or other interested parties as an indicator of the efficient use of funds embedded in the company embodied in the rate of return and the indicator for the increase in prosperity. The existence of information asymmetry and the tendency of external parties (investors) might pay more attention to profit information as a parameter of company performance, would encourage management to manipulate in showing earnings information, called earnings management.

1.1. Fraud detection of financial statement and fraud diamond perspective

Economic and information technology progress encouraged the emergence of new fraud actors to gain the maximum profit. Fraud, in order to follow up the various frauds, the accounting field developed a forensic accounting that aimed to look for evidence of irregularities or fraud so that it could mobilize the perpetrator to the court table, so that forensic accounting was used when it was believed that in an agency there were indications of the perpetrators of crime (corruption, fraud, etc.).

According to Cressey's theory (1953), there are three conditions that are always present in the action of fraud namely pressure, opportunity and rationalization that it called as fraud triangle. These three conditions are risk factors for the emergence of fraud in various situations. Several studies related to fraudulent financial statements and fraud triangle had been widely practiced. (Laila and Marfuah, 2015), the results were summarized as follows: 1) Financial stability (ACHANGE) and external pressure (LEVERAGE) had a significant positive effect on financial statement fraud. This indicated that companies with high financial instability and high external pressure, management had a higher potential for financial statements fraud. 2) Effective monitoring variable (IND) had a significant negative effect on financial statement fraud. These results indicated that the greater the proportion of independent audit committees, the more effective monitoring of the peasants would decrease the potential for management to commit financial statements fraud. 3) The personal financial need variable (OSHIP), financial target (ROA), nature of industry (RECEIVABLE) and rationalization (AUDCHANGE) did not significantly affect of financial statement fraud, it meant that the four variables were not able to detect the potential fraud occurring within the manufacturing company.

(Daniel and Hardika, 2015), the results of this study indicated that pressure variables were proxied by financial stability, external pressure, and financial targets, opportunities proxied by monitoring and ineffective industry traits; Rationalization was proxied by auditor turnover and the ability proxied by changes of the board of directors. However, in this study it was evident that the variables of pressure with the proxy of financial stability, external pressure and financial targets, opportunity variables, industry traits, monitoring variables and rationalization proxied auditor changes the results were not effective and did not

affect financial statements fraud while the variable ability with the replacement of the vice- positive results and significant effect on financial statements fraud.

(Rahman and Anwar, 2014). Efforts to prevent fraud were seen from bankers' perceptions of the effectiveness of prevention and detection of technical fraud at Malaysian Islamic banks. The findings indicated that software / application protection as the most effective component of fraud prevention techniques. Meanwhile, bank reconciliation, password protection and internal control review and improvement were the most effective techniques when assessing independently. Research in Indonesia on fraud detection had been done previously by (Sukirman and Maylia, 2013) which showed that financial stability (ACHANGE), external pressure (LEV) and financial target (ROA) and nature of industry (RECEIVABLE) had no effect on fraud. Only one variable that affects fraud was audit report which was a proxy of rationalization.

In 2016 the US Securities and Exchange Commission (SEC) imposed sanctions on Ernst & Young LLP (EY) of US \$ 11.8 million, which had failed to audit oil companies that did the income tax accounting trick to raise earnings. Then the SEC also imposed a fine of US \$ 1 million to a company providing energy services. Lime Energy Co ., And four executives for accounting fraud, by acknowledging earnings faster than they should. (Warta Ekonomi, 2017).

A survey by KPMG Malaysia, that fraudsters in 2013 increased to 50% previously 34%, the largest number of fraudsters came from employees These employees were found to be among people who were not included in the company system. The second category of fraudsters were the customer, followed by management, each category representing 18%, the other fraudsters identified were service providers (8%) and suppliers (6%). Furthermore, the report also highlights that the theft of outbound funds was the highest reported fraud category by 67% in 2013 compared to a 57% survey in 2009. Second place, theft of physical assets by 58%, followed by the theft of incoming funds by 34%. In individuals, the most common types of fraud were cash theft and cash receipts (26%), followed by fake invoices (16%) and inventory thefts (13%) (KPMG Malaysia, 2013).

Based on the phenomenon and the results of the study, the researchers tried to re-test the empirical fraud detection of financial statements through fraud diamond analysis. It was expected that the results of research could provide theoretical development and could assist policy making.

1.2. Study hypotheses

Management got pressure to generate high return from asset management and high return for investors, so management utilized financial statements as a tool to cover the condition of financial stability was not good through fraud. For that reason the hypothesis: *H1. Financial stability had positive affecte on the occurrence of financial statement fraud*

The higher the company's targeted ROA, the more vulnerable the management would be profit manipulation that became one form of fraud. For that reason the hypothesis to be tested was: *H2. Financial target had positive affecte on the occurrence of financial statement fraud*

Increased leverage could be attributed to a greater likelihood of committing a breach of a credit agreement with lower ability and lower ability to obtain additional capital. For that reason the hypothesis to be tested was: *H3. Financial Pressure had a positive effect on the occurrence of financial statement fraud.*

Fraud could be minimized through good oversight, an independent audit committee was believed to improve monitoring effectiveness. For that reason the hypothesis to be tested was: *H4. Effectif monitoring had positive effect on the occurrence of financial statement fraud.*

The research about raud explained that a large number of fraud in their samples were conducted within the first two years of the auditor's tenure, in the case of the Enron Company of the United States proving that the auditor failed to detect Enron's profit manipulation: *H5. Auditor Change had positive affect on the occurrence of financial statement fraud.*

The accrual principle related to management decision making and provided insight into rationalization in financial reporting. the accrual total ratio variable could be used to describe the rationale related to the used of the accrual principle by management. For that reason the hypothesis tested was: *H6. Rationalization had positive affect on the occurrence of financial statement fraud.*

The positions of CEOs, directors, or other divisional heads were the determinants of fraud, relying on his position that could influence others and with his ability to exploit circumstances that facilitate his fraudulent actions. In addition, Wolfe and Hermanson (2004) also stated that the ability as one of the fraud risk factors behind the occurrence of fraud concludes that changes to the board or CEO may indicate the occurrence of cheating hypothesis: *H7. Capability positively affects the occurrence of financial statement fraud.*

2. Literature review

2.1. Agency theory

Agency theory uses three assumptions about human nature, namely: (1) human beings are generally selfish, (2) human beings have limited the power of thinking about the bounded rationality and (3) avoid risk (risk averse) (Maudy, 2013). The nature of the three causes of human-generated information to other humans has always questioned the reliability and information conveyed not in accordance with generally accepted provisions that the company's actual condition or better known as asymmetric information (Ujjiyantho and Scouting, 2007). This provided an opportunity or opportunity for managers to manage revenue.

2.2. Fraud

Fraud according to the Association of Certified Fraud Examiners (ACFE) was an unlawful act committed intentionally with a specific purpose such as manipulation, giving false statements or other forms of acts committed by certain parties either from within the organization or from outside the organization to benefit private or specific groups that directly or indirectly might harm others. Uniform Occupational Fraud Classification System, The ACFE (Association of Certified Fraud Examiner, 2000) divides fraud into three

typologies of action: Corruption, Asset Missappropriation, and Fraudulent Misstatement. While the Fraud Trigger Factor According to Oversights Systems Report on Corporate Fraud (2007), the main reasons for the occurrence of fraud were: 1) The existence of pressure to meet the needs (81%) 2) To gain profit (72%), 3) did not consider what doing was fraud (40%)

Some basic concepts of fraud prevention and detection, First was fraud triangle. This concept was also called Cressey's Theory because it appeared to be because of research conducted by Donald R. Cressey in 1953. Cressey's research was published under the title *Other's People Money: A Study in the Social Psychology of Embezzlement*. This Cressey study generally explained the reason why people fraud. There are three elements of fraud triangle, among others: Opportunity (Opportunity), Rationalization (rationalization), and Pressure (pressure). Second, Fraud diamond is a new view of the phenomenon of fraud proposed (Wolfe and Hermanson, 2004). Wolfe and Hermanson say that: "many frauds would not have happened without the right person with the capabilities of the details of fraud". Fraud diamond is a form of refinement of the theory of fraud triangle (Cressey, 1953). The elements of the fraud diamond were in fact the same as the elements contained in the fraud triangle but in the fraud diamond added the capability element as a refinement.

In the study of Nursani and Irianto (2014), Wolfe and Hermanson (2004) describe the properties related to the elements of capability that are very important in the personal perpetrators of fraud are: 1). Positioning, a person's position or function within an organization can provide the ability to make or take advantage of opportunities for the fraud. 2). Intelligence and creativity, the perpetrator of this fraud has sufficient understanding and exploits the weaknesses of internal control and to use the position, function, or access authorized for the greatest gain. 3). Confidence / Ego, the individual must have a strong ego and great confidence that he will not be detected. Common personality types include someone who is driven to succeed at all costs, selfish, self-confident, and often self-love (narcissism). 4). Coercion, a fraudster can force others to commit or hide cheating. 5). Deceit, successful fraud requires effective and consistent lies. To avoid detection the individual must be able to lie convincingly and must track the story as a whole. 6). Stress Individuals should be able to control stress because doing fraud and keeping it hidden can be very stressful.

Financial statement fraud was a social and economic problem that attacks the country. This lead to a decline in market value and lead to affect the company in bankruptcy and could harm the state and increased attention to acts of financial statements fraud. Some cases of fraud in financial statements, accounting scandals could damage the image and confidence of investors to be reinvested in financial markets. Increasing cases of fraud in the financial statements in the world led to various parties speculating that management has committed fraud over financial statements (Skousen et al., 2009).

2.3. Fraud prevention

According to (CAQ, 2010), organizations use two strategies to reduce fraud risk, First by blocking potential fraud by having a strong ethical tone at the top and a proactive fraud management program and Second by detecting activities fraud that have occurred. Meanwhile, some controls such as whistleblower programs could be used to prevent fraud by their presence and at the same time could help to detect incidents fraud. There were many fraud prevention and detection strategies that could be utilized to reduce the likelihood of

bank fraud taking place. Like the current technological era, fraud had become very complex and even more difficult to detect, the techniques used to overcome it should also be sophisticated, as highlighted below: ethical training, inventory observation, fraud hotline, password protection, continuous auditing, increased role of the audit committee, check references to employees and data mining.

Albrecht and Zimbelman et al. (2012) found technological progress had led to proactive fraud detection techniques that analyze data and transactions to isolate symptoms fraud such as trends, figures and other related anomalies While Bierstaker et al. (2006) concluded firewalls, password protection and computer viruses, often used to combat fraud. However, despite high ratings in terms of effectiveness; discovery sampling, continuous auditing, digital analysis software and data mining less frequently used by accountants for anti-cheating techniques.

2.4. Financial statement disadvantages

Financial statement fraud was intentional or indirect in the reporting of financial statements in which the financial statement was not presented in accordance with generally accepted accounting principles. It was a deliberate negligence or material nature that might affect the decision to be taken by the parties concerned (Wells, 2011). Financial Statement Fraud covers several modes, including (Rezaee, 2002):

1. Falsify, alter, or manipulate financial records (financial records), supporting documents or business transactions.
2. Deliberate deletion of events, transactions, accounts, or other important information as a source of financial statement presentation
3. False and deliberate application of accounting principles, policies and procedures used to measure, recognize, report and disclose economic events and business transactions.
4. Intentional deletion of information to be conveyed and disclosed regarding such principles and accounting policies used in financial reporting.

2.5. Earning management

Scott (2015) defines earning management as an option performed by managers in determining accounting policies to achieve certain objectives. Under these conditions managers present financial statements with a view to concealing the actual state of financial statements by increasing or reducing reported earnings over a unit using the selection of an accounting policy. In the agency relations principal did not have enough information about the agent performance. Agent had more information about the capacity of the self, the work environment, and the company as a whole. As a result there was information imbalance (information asymmetric) owned by principal and agent. Motivation that encouraged management to earn earning management, among others as followed: bonus motivation, contract motivation, political motivation, tax motivation, CEO turnover (Initial Public Offering (IPO) and capital market motivation.

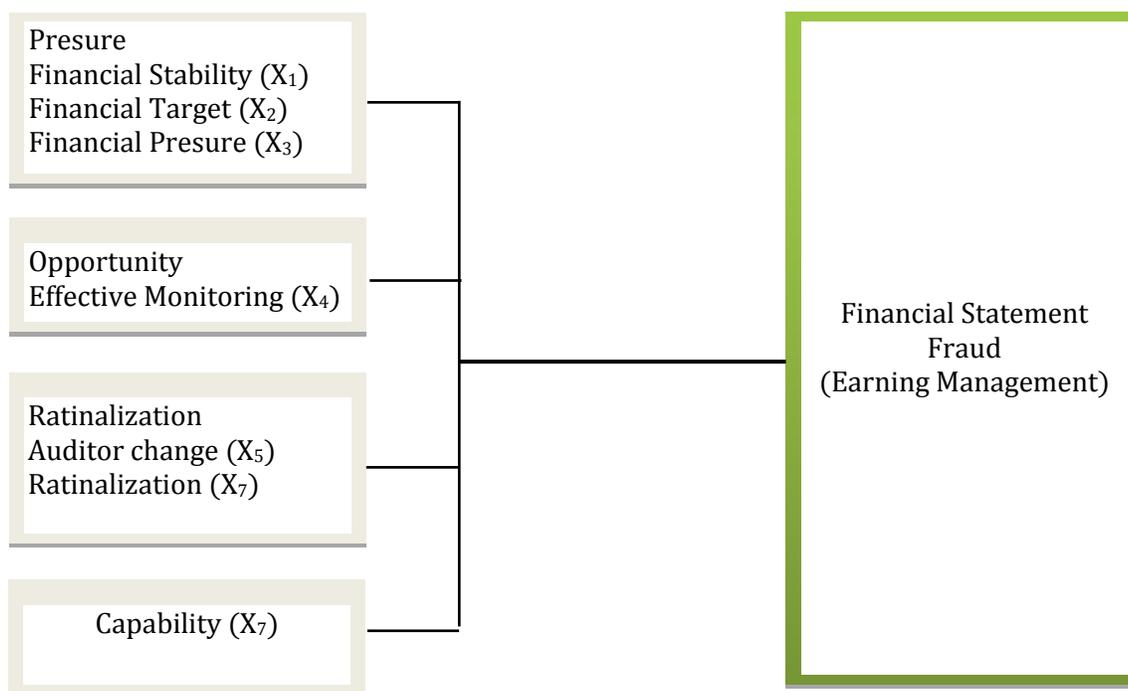


Figure 1. Framework of thinking

3. Methodology

The population in the study was a manufacturing company that registered on the Indonesia Stock Exchange. The sample in this research was a manufacturing company that met the sample criteria that was equal to 60 observations. Sampling method used purposive sampling method. The data in this study used the data of financial statements that had gone public listed in Indonesia Stock Exchange (BEI) in 2012-2016. Data obtained from electronic media such as data audited financial statements and company annual reports were sampled listed on the BEI. The dependent variable was financial statement fraud produced with earnings management as measured by the modified Jones model. Earnings management (DACC) was measured using discretionary accrual calculated by excluding total accruals (TACC) and nondiscretionary accruals (NDACC).

Discretionary accruals (DACC) were the abnormal accrual rates derived from the management policy to engineer earnings as desired. This calculation model was formulated as followed:

1. to measure the discretionary accruals first calculate the total accrual for each firm i in year t with Jones modification method that was: $TAC_{it} = Ni_{it} - CFO_{it}$ Description: TAC_{it} = Total accrual Ni_{it} = Net Profit CFO_{it} = Cash Flow Operation
2. the total accrual (TAC) value was estimated by OLS regression equation: $TAC_{it} / A_{it-1} = \beta_1 (1 / A_{it-1}) + \beta_2 (\Delta Rev_t / A_{it-1}) + \beta_3 (PPE_t / A_{it-1}) + e$
3. to use the above regression coefficient, the non discretionary accrual (NDA) values could be calculated: $NDA_{it} = \beta_1 (1 / A_{it-1}) + \beta_2 (\Delta Rev_t / A_{it-1} - \Delta Rect_t / A_{it-1}) + \beta_3 (PPE_t / A_{it-1})$

4. Discretionary accrual (DA) could be calculated as follows: $DA_{it} = TAC_{it} / Ait - NDA_{it}$

Description: DA_{it} = Discretionary Accruals of company i in period to t NDA_{it} = Non Discretionary Accruals firm i in period t TAC_{it} = Total accrual of company i in period t $Niit$ = Company net profit i in period t CFO_{it} = Cash flow from operating activity company i in period t $Ait-1$ = total assets of firm i in period t-1 ΔRev_t = change of company's income i in period t to PPE_t = fixed assets of company at period t $\Delta Rect$ = Change of receivable company i in period to ϵ = error

Independent variable in this research as followed:

1. Financial Stability, proxied with ACHANGE which was the ratio of asset change for two years
2. Financial Target was proxied with Return on asset (ROA).
3. External Pressure, proxied leverage ratio (LEV) was ratio ratio between total debt and total assets.
4. Effectife Fraud Monitoring was proxied by the ratio of the number of independent board of commissioners (BDOUT).
5. Auditor Change was proxied rationalization with (ΔCPA / change public auditor) as measured by dummy variable in which if there was a change of auditor then given code 1. If there was no change of auditor then given code 0.
6. Rationalization, in turn with TATA = Δ working capital - Δ cash- Δ current tax payable- depreciation and amortization. Total Asset Working capital = current asset- current liabilities
7. Capability, proxied capability by using the CEO's turn with the assumption that the CEO's turnover occured before the CEO's term ends and the CEO was fired by the company. This CEO change was measured by the dummy variable in which if there was a change of CEO of the company then given the code 1. If there was no change of CEO then given the code 0.

The relationship between discretionary accidents and fraud triangle proxies was tested using a model appropriate for the research of Skousen et al. (2009) in Sihombing (2014). Hypothesis test was done by multiple regression, that was:

$$DACC_{it} = \beta_0 + \beta_1 ACHANGE + \beta_2 LEV + \beta_3 ROA + \beta_4 RECEIVABLE + \beta_5 BDOUT + \beta_6 \Delta CPA + \beta_7 \Delta DCHANGE + \epsilon_i$$

4. Results and discussions

4.1. Preliminary analysis

The following was a descriptive statistics table which described the general picture of the data seen from the minimum, maximum, mean and standard deviations of each variable to be tested. The financial stability variable had a minimum value of -0.25 while the overall average was 0.2114 with the standard deviation of 0.24563. the financial pressure variable had a minimum value of 0.15 while the overall average of 0.8300 with a standard deviation of 0.29875. Financial target had a minimum value of 0.12, the overall average was

0.0036 with a standard deviation of 0.2321. Effectiveness monitoring had a minimum value of -0.67, an overall average of 0.4509 with a standard deviation of 0.56342. Auditor change was in minimum value of 0.00 overall average of 0.7184 with standard deviation 0.55463. Rationalization had a minimum value of 0.12, an overall average was of 0.1818 with a standard deviation of 0.33675. Capability had a minimum value of 0.00, 0.7184 all average with standard deviation of 0.5463 and variable financial statements fraud had a minimum value of -0.43 and all average 2.1126 with a standard deviation of 3.37342. This meant that all variables used in the research were able to predict the independent variable to the dependent variable.

4.2. Hypothesis testing

Referring to table 2, the adjusted R Square of 0.536 meant 53.6% of the changed in financial statements fraud were caused by pressure, opportunity, rationalization and ability while the rest was caused from other factors. With the standard error of the estimate was 4.32451.

Simultaneous Significance Test

Based on the anova test (F test) in table 3, the calculated F value obtained was 0.353 with significance of 0.876, it showed that all independent variables had significant influence on financial statements fraud.

Individual Parameter Significance Test

Based on table 4, the test results of the significance of the individual meters (t test), it could be explained as followed:

1. Constant value was positive 0.875, indicating variable of financial stability, external pressure, financial target, rationalization, supervisory effectiveness, auditor change and ability would increase financial report fraud.
2. Variables of financial stability, external pressure, financial target pressure had been marked negative regression coefficient -3.118, this meant if increasing pressure value of 1 unit with other assumption of variable that would decrease financial statement fraud of 3,118.
3. The probability variables proxies the effectiveness of regression control was negative coefficients at -523, it meant that if the value of opportunity rised 1 unit, with other assumptions the variable would still reduce fraud financial statements of 0.523.
4. The variables of auditor changes to rationalization had negative regression coefficient marked -2,224, this meant that if the value increased by 1 unit of rationalization with the assumption that other variable was fixed then would decrease financial statements fraud of 2224.
5. Variable ability variable had been marked with positive regression coefficient of 3.124, meant if increasing ability value of 1 unit with the assumption other variables would still reduce financial statements fraud of 31124.

4.3. Regression Analysis

Based on data processing, and answer the problem formulation, then the following regression analysis using SPSS Version 23. Regression equation that formed in this research was:

$$Y = 0875 - 3.118X_1 - 0.523X_2 - 2.224X_3 - 3.124X_4 + \varepsilon$$

1. The first hypothesis showed the value of t -0.341 with regression coefficient -3.112 and probability value 0.665, it could be concluded that pressure variables by proxy financial stability, external pressure and financial target could be a negative effect on the financial statements fraud.
2. The second hypothesis showed the value of t -0.164 with regression coefficient of -0.078 and probability value of 0.545 could be concluded that the probability of proxies effectiveness oversight had negative effect on the financial statements fraud.
3. The third hypothesis showed that the value of t -0.398 with regression coefficient -1,875 and probability value of 0.698, it could be concluded that the variables of rationalization and the change of auditor were negatively affect the financial statements fraud.
4. Fourth hypothesis showed that t value of 0,554 with regression coefficient of 3. 145 and probability value 0,597 to variable Ability with the rotation of the director's rotation had a positive effect on the financial fraud.

5. Conclusion and recommendation

The research conclusions were as followed: 1) Financial stability proxied with total assets (ACHANGE) did not affect the indication of the occurrence on financial statement fraud. 2) Financial targets proxied with ROA ratios had a significant positive effect on the indication of the occurrence on financial statement fraud. ROA 3) External Pressure proxied with LEV ratio did not affect the indication of the occurrence on financial statements fraud. 4) Effectife monitoring proxied with proportion ratio of board of commissioner (BDOU) had a significant negative effect on indication of occurrence on financial statement fraud. 5) Auditor Change (Δ CPA / Change Public Auditor) as measured by the dummy variable had no effect on the indication of the occurrence on financial statement fraud. 6) The Rationalization proxied with total accrual to total asset (TATA) had a significant positive effect on the indication of the occurrence on financial statement fraud. 7) Capability had a positive effect on the indication of the occurrence on financial statement fraud.

Limitations of the Research: 1) The data used in this study using secondary data taken from the financial statements that provided less accurate results to prove the existence of cheating in the company 2) The sample in this study only included manufacturing companies with a sample of 12 companies listed on the Indonesia Stock Exchange from 2012 to 2016 to 60 companies annual report.

Suggestions that could be given for further research included: 1) using other independent variables such as personal financial need variables (opportunity personal) opportunity could be used variable nature of industry (state of the industry) and variable organizationa structure. 2) using pressure element divided into internal and external pressure, then an external Pressure using an external pressure variable was proxied LEV ratios in which the firm might return the amount of debt using the exchange rate against the dollar associated with the development of the global economy and the interest rate.

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Appendices

Appendix A-1

Table 1. Descriptive Statistics

	N	Range	Min	Max	Mean	Stand Dev	variance
	Statistic	statistic	Statistic	statistic	Statistic	Std error	Statistic
Fin_Stab	60	.87	-.25	.98	.2114	.08124	.24563
Fin_Presure	60	1.56	.15	1.76	.8300	.08943	.29875
Fin_Target	60	.85	.12	.32	.0036	.04033	.02321
Eff_Mon	60	4.56	-.67	3.95	.4509	.99869	.56342
Aud_Change	60	1.03	.00	1.00	.7184	.14586	.55463
Rationalization	60	1.23	.12	1.56	.1818	.14897	.33675
Capability	60	1.34	.00	1.00	.7184	.14586	.55463
Kec_Lap. Keu	60	15.78	-.43	13.48	2.1126	3.20142	3.37342
Valid N (listwise)	60						

Appendix A-2

Table 2. Test Coefficient of Determinant (R2)

Summary Model^b

Model	R	R Square	Adjusted R. Square	Std. Error of The Estimate	Change Statistic					Durbin Watson
					Square Change	F Change	df1	Df2	Sig F Change	
1	.304 ^a	.092	-.536	4.32451	.092	.243	26	33	.865	2.653

Appendix A-3

Table 3. Simultaneous Significance test (Test Statistic F)

Anova^b

Model		Sum of Square	Df	Mean square	F	sig
1	Regression	10.875	26	3.798	0.353	0.876 ^a
	Residual	125.863	33	18.626		
	Total	136.738	59			

Appendix A-4

Table 4. Significance test (statistic test t)

Understandarized Coefficients		Standarized Coefficients	95% Confidence Interval for B				Correlation			Collinearity Statistics	
B	Std Error	Beta	T	Sig	Lower Bound	Upper Bound	Zero Order	Partial	Part	Tolerance	VIF
.875	3.235		.245	.698	-7.559	9.996					
-3.118	3.232	-.322	-	.564	-	8.978	-.069	-.169	-	.467	2.234
			.487		11.542				.198		
-.523	.447	-.102	-	.772	-1.003	.967	.201	-.078	-	.712	1.874
			.231						.068		
-2.224	2.587	-.176	-	.654	-8.555	6.898	-.167	-.198	-	.997	1.113
			.398						.165		
3.124	7.115	.421	.613	.603	-8.675	16.534	.189	.2886	.245	.423	2.564

Appendix A-5

Table 5. Regression Analysis

Variabel	Regression Coefficients	Standar Error	Value Statistic t	Probability
Pressure	-3.112	4.664	-0.341	0.665
Opportunity	-0078	0.537	-0.164	0.545
Rationalization	-1.875	3.432	-0.398	0.698
Capability	3.145	5.447	0.554	0.597