

Corruption prevention in organizational clustering in Indonesia: through the role of the HU-model in detecting corruption

Haryono Umar

Department of Accounting, Perbanas Institute, Jakarta, Indonesia

Rahima Purba

Department of Accounting, Panca Budi Development University, Medan, Indonesia

Magda Siahaan

Department of Accounting, Trisakti School of Management, Jakarta, Indonesia, and

Siti Safaria, Welda Mudiar and Markonah Markonah

Department of Accounting, Perbanas Institute, Jakarta, Indonesia

Abstract

Purpose – This paper aims to test the effectiveness of the Haryono Umar (HU)-model used in corruption prevention strategies through corruption detection as a tool for detecting corruption because the mode of corruption is increasingly dynamic and complex by focusing on the causes of corruption: pressure, opportunity, rationalization, capability and lack of integrity.

Design/methodology/approach – The research uses multiple regression methods, classification and regression trees and the HU-model application system developed by researchers. The research sample uses secondary data from financial reports on the Indonesia stock exchange according to organizational clustering (such as red, grey and green areas).

Findings – The research result showed that of the 470 sample companies, there were 445 companies, or 98.9%, in the red cluster (indicated corruption), 19 companies, or 4.04%, in the green clusters or not indicated corruption and six companies, or 1.28%, were included in the grey cluster or potential corruption. By knowing the cluster of an organization, efforts to prevent corruption can be made effective and efficient. Implementing the HU-model proves that the amount of pressure, the abundance of opportunities, the ease of rationalization and the high level of position and authority strengthen the drive for corruption if there is a lack of integrity.

Research limitations/implications – Each internal organization can use this model independently and find conditions related to corruption so that they can immediately take action to prevent it.

Originality/value – The application of the HU-model is a discovery in preventing corruption by focusing on the possibility of corruption occurring in each organization through organizational clustering.

Keywords HU-model, Detecting corruption, Corruption prevention, Organizational clustering

Paper type Research paper



1. Introduction

Indonesia has determined that corruption is an extraordinary crime, so it must be handled in extraordinary ways. As an implementation of this policy, Indonesia issued Law Number 31 of 1999 in conjunction with Law Number 20 of 2001 concerning Corruption Crimes and followed by Law Number 30 of 2003 concerning the Corruption Eradication Commission (KPK), which Law later amended – Law Number 19 of 2019 concerning the KPK.

Corruption occurs in many sectors that affect people's lives, such as public services, essential services, procurement of government goods and services, licensing and position determination, from regional government to central government, starting from state-owned companies/regional-owned companies (SOEs/ROEs) to the private sector. Transparency International has stigmatized Indonesia as a corrupt country. It has been in the red category for quite a long time, so it is very unprofitable for Indonesia, especially for its place in the world economy. Empirical data shows that corruption cases are related to the management of state and regional finances, especially in the implementation of procurement of government goods and services, state spending and burden management. Law enforcement officials have handled over 70% of corruption cases (KPK, Prosecutor's Office and Police) in recent years. There are several significant cases, such as the corruption case in the construction of the 4 G Base Transceiver Station Tower, with state losses reaching 8tn rupiah and various other cases (CNBCIndonesia, 2023).

Corruption is a national problem that is very detrimental to national development and is still widespread in managing state and regional finances, especially in implementing government goods and services. Apart from the procurement of goods and services, corruption also occurs in connection with bribery, extortion, gratification related to permits, budget management, exploitation of natural resources, the buying and selling of positions and buying and selling influence displayed by several executives, legislative and judicial officials. Therefore, efforts to eradicate and prevent corruption must be carried out extraordinarily and as effectively and continuously as possible.

One effort is to detect corruption, which is very difficult because there is minimal evidence of the perpetrators' actions, and they cover each other together and agree. However, signals of deviant behaviour can be seen in individual, organizational and external behaviour. Signs of individual behaviour can be seen in changes in lifestyle, usually leaning towards a more luxurious lifestyle. For organizational signs, some situations or conditions are not conducive due to a weak internal control environment. Conditions that could be more conducive can be characterized by oddities or anomalies in the financial reports; in addition, there are many complaints from outside the company, suppliers, partners, etc. Statement of Auditing Standards No. 70 Auditing Standards (SA) Section 316 by IAPI (2013) states that deviations are triggered by pressure or encouragement and an opportunity to commit fraud.

The factors that encourage fraud are presented by Cressey (1953) with a basic approach called the fraud triangle, which has the components of pressure, opportunity and rationalization. In 2004, Wolfe and Hermanson introduced the fourth factor, capability, which became the fraud diamond. Furthermore, Umar (2016) developed research and added a fifth factor that causes corruption, namely, loss of integrity. It is explained that there are five causes of corruption: opportunity, pressure, rationalization, capability and lack of integrity. So that efforts to detect corruption can be carried out effectively and efficiently, a detection tool is needed, namely, the Haryono Umar (HU)-model (Umar, 2020). This model is structured based on the components of opportunity, pressure, rationalization, capability and lack of integrity, with secondary data that must be collected by the auditor and included in the model/application table. This data must be collected by the detector (detecting officer). It is comprehensive secondary data, which is then included in the formula.

This research implements this model, encouraging organizations to be cleaner and more concrete in preventing corruption. The hope is that this research can contribute to knowledge about eradicating corruption through corruption prevention strategies through this corruption detection tool. Empirical data shows that many agencies have been unable to detect corruption because it is difficult. That was realized after law enforcers revealed that corruption cases were in the public spotlight and occurred repeatedly. This research is an implementation of the HU-model application carried out on 470 companies in Indonesia; this can be seen in the research methodology section after the literature review description. The next Session (4) presents the results before Session (5), discusses and concludes the research, and discusses implications and future research that can be carried out further.

2. Literature review

2.1 Corruption

[Johnson et al. \(1999\)](#) state, “There is no such thing as a small fraud – it is a large fraud in the process of growing up”. All types of fraud look normal, and some are astonishingly large scale. Fraud or corruption that looks small is still extensive corruption growing and, therefore, needs serious attention. Corruption is a crime that occurs in the congregation; it cannot be committed by one person or one group alone but requires cooperation or collusion so that it takes root, covers each other up and hides various pieces of evidence so that it is challenging to uncover. In other words, fraud and corruption are an iceberg phenomenon, meaning that whether it has been revealed or what has not been revealed is only visible on a small part of the surface. What is still hidden is as big and tall as a fantastic volcano.

Let us look at several cases in organizations. It begins with a non-permanent employee collaborating with an external party, where a non-permanent employee can become an employee without going through the recruitment procedures that apply to a company. This seemingly small recruitment behaviour continues continuously, becoming a habit no one cares about. Another case occurred at the giant company British Telecom, where since the beginning of the second quarter of 2017, there have been rumours of accounting fraud at the company. This giant British company experienced accounting fraud in one of its business lines in Italy. This scandal impacted the public accountant Price Waterhouse Coopers (PwC), a well-known public accounting firm that includes the Big Four. The fraud that occurred failed to be detected by PwC, which was even successfully detected by the whistleblower, followed by forensic accounting by Klynveld Peat Marwick Goerdeler. The fraud occurred because British Telecom increased the company’s income through fake contract extensions, invoices and fake transactions with vendors and occurred since 2013 to obtain bonuses.

The strategy for eradicating corruption in Indonesia is regulated by including repressive, preventive, monitoring, supervision and coordination. The eradication of corruption in the current decade has seen more enforcement activities, so it has been carried out aggressively. That is in line with ([Siahaan et al., 2023a, 2023b](#)) findings. Based on the facts, corrupt practices have increased in quantity and quality. Efforts to eradicate corruption do not have a deterrent effect on corruptors and would-be corruptors. A survey from the Indonesian Survey Institute states that in the past two years, corruption has continued to increase and grow from central to regional, city to village and local to transnational scale ([Umar and Purba, 2018](#)).

Considering its terrible impact, corruption must be prevented from appearing in the country’s economic industry. The role of supervision is vital to continuously carry out risk assessments and detect various potential embryos of corruption in financial services organizations and the national banking industry. The national banking industry must understand the various factors driving fraud to carry out effective prevention. The book *Corruption the Devil* by [Umar \(2016\)](#) states that five factors encourage fraud: opportunity,

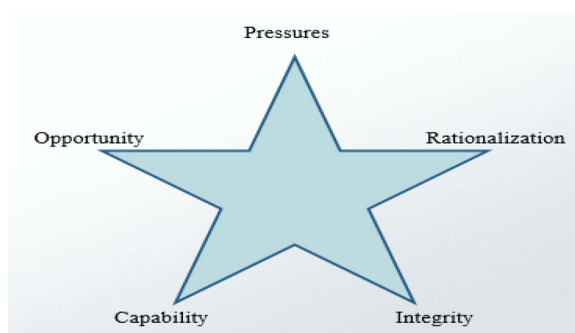
pressure, rationalization, authority and loss of integrity, which is called the fraud star, as seen in Figure 1.

These five factors that cause fraud must be stopped as early as possible by carrying out risk assessments and fraud detection in implementing supervision in the national banking and financial services industry. The causes of fraud or corruption were first introduced by Cressey (1953), who called it the Fraud Triangle because it consists of three elements: pressure, opportunity and rationalization. Furthermore, Wolfe and Hermanson (2004) introduced the fourth-factor driving fraud to its capability. Finally, Umar (2016) introduced the latest model to encourage corruption, fraud star, whose fifth element is lack of integrity.

Fraud star is a model of the causes of corruption by paying significant attention to the loss of integrity as the leading cause of corruption. Siahaan *et al.* (2019) said that the elements of opportunity, pressures, rationalization, capability and integrity impact the occurrence of fraud (misappropriation of assets). As previously explained, corruption occurs because power is misused or authority is not exercised by its mandate. This abuse of power is carried out to obtain personal or group gain and is usually followed by a violation of the law. This inappropriate practice is carried out by parties who no longer pay attention to excellent and correct standards and only prioritize their interests or those of their group. In such conditions, the perpetrators of corruption and other violations have lost the integrity that should be upheld as well as possible under any circumstances, whenever and wherever. Corruption occurs apart from open opportunities, pressure, rationalization and the power it carries (Cressey, 1953; Yusof *et al.*, 2013) and is also triggered by integrity.

2.2 Corruption prevention

Corruption prevention activities carried out so far include reviewing State Administration Asset Reports, gratification reporting, monitoring policies, coordination and supervision. The implementation of prevention is carried out through dissemination and outreach and is not related to corruption cases. Corruption prevention should be carried out to prevent the factors that cause corruption to occur. Prevention is carried out against the emergence of opportunities, pressure, rationalization, capability and loss of integrity. For this reason, corruption detection is needed so that prevention activities are by the emergence of the causes of corruption.



Source: Umar (2016)

Figure 1. Fraud star

Corruption suppression strategies are one of the efforts that can be made to eradicate corruption in addition to prevention, monitoring, supervision and coordination. Repression is necessary to build justice and provide a deterrent effect so that other potential perpetrators think twice about doing the same thing. However, not all corruption problems are solved by being repressive. On the other hand, we know corruption by needs and greed. Instead of condoning corruption carried out of necessity, there are better steps to take than stern action for the time being. The eradication of corruption, which has been carried out aggressively so far, has not had a deterrent effect on corrupt people. Therefore, it is necessary to make other, more comprehensive and practical efforts to prevent the recurrence of dirty practices and criminal acts of corruption. We must also pay attention to the root of the problem and why this happened so we can improve the system as a preventive measure. One preventive step is bureaucratic reform and implementation of sound governance principles.

Due to the problem of corruption, which has become increasingly widespread recently, efforts to eradicate corruption are not enough just to take action (arresting and imprisoning corruptors), but it is necessary to find the root of the problem so that it can be prevented before the corruption grows and takes root. In this regard, the government is the party that has the most capability to sponsor efforts to eradicate corruption holistically, efficiently and effectively. Therefore, it is necessary to prepare a corruption eradication system that includes the following:

- Government organizations must be able to prevent, ward off and quickly detect incidents of corruption through a series of preventive corruption activities. This prevention must be implemented through system development and various programmes and activities to be effective. With prevention efforts, it is hoped that organizations can be free from the risk of corruption that always lurks in every aspect of the organization. The many officials who stated that they were involved in corruption cases on the pretext of not understanding could be overcome by building efforts to prevent corruption. Officials must not state that they do not understand the regulations and ask for dispensation to be released from sanctions when they commit deviations.
- Apart from that, every government agency must also prepare a system to detect and reveal the facts of incidents and follow up by applicable regulations, often called investigation and enforcement activities. Repressive efforts should be the last resort if various preventive efforts have been implemented, but employees or officials still carry out corrupt actions. However, sometimes repressive efforts are effective in preventing various deviations in the future. Conversely, if there is no repression, employees and officials will ignore various invitations to prevent acts of corruption.
- Every government organization must continuously educate and increase understanding related to developing an anti-corruption spirit (areas free from various acts of corruption, no matter how small). That is necessary, considering that many government employees and partners still need to understand the regulations and their various activities, which contain the risk of corruption. For example, many still need help understanding or (do not want to understand) the forms of gratification and their obligation to reject and report any gratification they receive. Corruption prevention efforts prevent the causes of criminal acts of corruption through corruption detection.

2.3 *Detecting corruption*

The increase in corruption requires the implementation of new strategies for prevention through the detection of corruption. [Kumaat \(2011\)](#) states that:

Detecting corruption is an effort to obtain sufficient early indications regarding fraud, while at the same time narrowing the space for fraud perpetrators (i.e. when the perpetrator realizes that the practice has been discovered, it is too late to avoid it).

In order for corruption detection activities to run effectively and efficiently, it is necessary to be equipped with tools to detect corruption so that acts of corruption that were previously wholly dark will be revealed so that they become apparent, remembering that corruption is usually a very closed condition, because the perpetrators of corruption will try to cover each other up through nepotism and collusion. Hence, it is challenging to spot corruption detection, considering that the perpetrators try to cover up their actions.

According to [Simmons and Elkins \(2004\)](#), fraud occurs, among other things, through the presentation of information (reports) that are not of good quality, namely, irrelevant, invalid, inaccurate, not timely or not full disclosure ([Umar and Br. Purba, 2020](#)). The corruption detection is not easy to carry out, considering the perpetrators because there are efforts to cover up the irregularities committed by corruptors. Besides that, there is a need for a capable internal organization to help detect fraud or corruption ([Menon, 2023](#); [Siahaan et al., 2023a](#)). Furthermore, fraud detection, according to [Karyono \(2013\)](#), is an action that determines whether fraud occurred, who the perpetrator is, and who the victim is. The auditor's ability to detect fraud or fraud is a form of an auditor's ability or expertise to find and reveal a form of deviant action that is carried out intentionally and results in a misstatement of a financial report so that it can impact the company's losses. The important thing that an auditor must have to detect fraud is the ability to recognize and quickly identify the possibility and causes of fraud.

An auditor's responsibility in detecting fraud is outlined in SA Section 316 regarding the consideration of fraud in financial statement audits. SA Section 316 states that the auditor must specifically assess the risk of material misstatement in the financial statements as a result of fraud and must pay attention to this risk estimate and design the audit procedures to be implemented, where the audit procedures may be changed if there is a risk of fraud ([Brazel et al., 2015](#)). Apart from that, in SA section 317 regarding the actions that the auditor must take if the client is proven to have committed an act of violation of the law, namely, the auditor must collect information on the form and nature of the deviation that occurred, the conditions in which the deviation occurred, and the impact of the deviation on the financial statements.

With these various complexities, it is believed that one of the detection tools that are starting to be implemented in Indonesia, such as the HU-model, is one of the answer tools in implementing corruption detection, which is used to determine whether or not there are indications of corruption in the object being detected. For this reason, the data needs to be broken down to the smallest size (indicator) to collect information that will be regressed in the model. This model's multiple linear regression equation is as follows: $Y = -0.709 + 0.177 \text{ Pressure} + 0.089 \text{ Opportunity} + 0.038 \text{ Rationalization} + 0.017 \text{ Capability} + 0.821 \text{ lack of integrity}$ where the results will be three regions or clusters that can detect clusters of acts of corruption that occur, whether they are included in the cluster not indicated by green corruption, grey or indicated by red corruption.

3. Methodology

This research uses secondary data from companies listed on the Indonesia stock exchange. The data collected by the auditor is then arranged based on the components in the HU-model. Empirical data in an organization is formulated into measurements of opportunities, pressure, rationalization, capability and loss of integrity. This model development method is carried out comprehensively on various causes of many financial crime cases, such as budget management, organizational management, authority management, supervisory functions, governance functions and good governance, to find the causes of corruption in an agency.

This model application system has received copyright or intellectual property rights (Hak Kekayaan Intelektual) in Indonesia for implementation. It helps find out whether organizations are suspected of being corrupt. From this application system, organizational clustering results will be obtained. The clustering is based on the data entered into the application system. There are three clusters, namely:

- (1) There is no indication of corruption in the green cluster.
- (2) There are some indications of corruption in the grey cluster.
- (3) There is an indication of corruption in the red cluster.

Data analysis was carried out using the classification and regression tree (CART) method programme to form a prediction model for the classification of corruption detection. The data analysis model used is an econometric model with analysis techniques using a least squares model. The software used to carry out data analysis is Statistical Calculator (STATCAL). The STATCAL software provides various data visualization features and CART methods.

This research started in 2019 and will continue in 2023 using the HU-model application system, which was first tested for its effectiveness in detection. The research began with collecting primary data in questionnaires sent to government agency units within the Ministry of Education and Culture, Research and Technology, both at the central and regional levels. The government agencies in the research sample include echelon one unit at the centre, echelon two and three units at the centre and regions. Besides that, the research sample is state universities throughout Indonesia. Secondary data collection was also carried out using an application built by the research team, making the data collection process more accessible, considering that the secondary data that had to be collected consisted of 104 data with 52 formulations or formulas.

Next, the HU-model test was conducted again by collecting 376 data. The data sources are collected from districts, cities, provinces, ministries, SOEs and state universities. The test results show that most agencies fall into the red and grey clusters. Only a few are included in the green cluster. This latest research strengthens the model as a valid, efficient and effective tool for detecting corruption. Results at this stage are the results of developing a tool to detect corruption as a final model created by what is desired to detect corruption so that it can be used in preventing corruption. This research in 2023 is the final stage to test the model's accuracy as a valid, efficient and effective tool for detecting corruption. At this stage, the results of developing a tool to detect corruption are outlined in this study as a final model created according to the desired level of detecting corruption so that it can be used to prevent corruption.

4. Results and discussion

HU-model is a model found from research to detect indications of corruption that have been carried out over the past four years with five independent variable factors, namely, pressure, opportunity, rationalization, ability and lack of integrity. The research began in 2020, 2021, 2022 and 2023. For the 2020 research, 2019 questionnaire data was distributed to government employees in the state civil service, private employees and lecturers in the North Sumatra and Jabodetabek areas. In 2021, data from 2021 was used. 2020 was obtained by distributing questionnaires to employees of the Ministry of Education and Culture (Kemendikbud) Jakarta, in 2022 using secondary data from 2021 obtained from the Financial Supervisory Agency (BPK), and finally in 2023 using secondary data from 2022 from SOEs and limited liability companies – spread throughout Indonesia. From the results of data processing using the statistical package for the social sciences (SPSS) software, each

year, the HU-model equation is the same; it has not changed. That can be seen from the equation in each year with the following model: Journal of Money
Laundering
Control

$$\text{Year 2020 : } Y = -2.106 + 0.177X_1 + 0.089X_2 + 0.038X_3 + 0.017X_4 + 0.821X_5$$

$$\text{Year 2021 : } Y = -2,106 + 0,089Op + 0,177Pr + 0,038Rat + 0,017Cap + 0,821LoI$$

67

$$\text{Year 2022 : } Y = -2,106 + 0,089Op + 0,177Pr + 0,038Rat + 0,017Cap + 0,821LoI$$

That means that the HU-model is robust and patent; in other words, it is firmly concluded that these numbers have been determined as coefficients of each variable influencing corruption. The data used from year to year is very different; some are in the form of questionnaires (primary data), and some are in the form of secondary data. The companies that are the objects of research are very different. Some are government agencies; some are private.

HU-model testing in 2023 using SOEs/ROEs and limited liability company data for 470 companies. The data processing results show constant changes, but everything else remains the same. Data processing using SPSS and the results are presented in [Tables 1 to 2](#) below:

Table 1. Collinearity statistics

Model	Unstandardized coefficients		Coefficients ^a		Sig	Collinearity statistics	
	B	Std. error	Beta	t		Tolerance	VIF
1 (Constant)	−0.709	0.001		−769.672	0.000		
Pressures	0.177	0.000	0.114	513.100	0.000	0.969	1.032
Opportunity	0.089	0.000	0.101	451.207	0.000	0.967	1.034
Rationalization	0.038	0.000	0.036	160.275	0.000	0.966	1.035
Capability	0.017	0.000	0.026	114.315	0.000	0.962	1.039
Integrity	0.821	0.000	0.976	4.371.844	0.000	0.965	1.036

Note: ^aDependent variable= corruption

Source: Authors' own work

Table 2. Average score of corruption factors causing

Cause of corruption (<i>fraud star</i>)	2019	2020	2021	2022
Pressure	1,727,064	1,635,321	1,662,844	1,538,991
Opportunity	2,440,367	2,518,349	2,279,817	2,155,963
Rationalization	2,271,468	2,335,963	2,404,679	2,410,917
Capability	2,266,055	2,224,771	2,082,569	206,422
Lack of integrity	1,229,358	1,275,229	128,972	1,259,259

Source: Authors' own work

$$Y = -0,709 + 0,177 Pr + 0,089 Op + 0,038 Ra + 0,017 Cap + 0,821 LoI$$

Y = Detect corruption.
Op = Opportunity.
Pr = Pressure.
Ra = Rationalization.
Cap = Capability.
LoI = Lack of integrity.

The explanation of the multiple linear regression equation is as follows:

- (1) Opportunity used is a three-dimensional measurement consisting of:
 - Industrial characteristics are proxied by REC; and
 - Monitoring effectiveness is proxied by IND or BDOU.

The opportunity to influence acts of corruption is 8.9%. Please pay attention to opportunities so those with evil intentions of corruption do not continuously exploit them. Opportunities that support the implementation of a criminal act of corruption can be in the form of system weaknesses that allow them to be penetrated and misused by those with evil plans to commit corruption:

- (2) Pressure has four indicators, including:
 - financial stability, projected with CHANGE;
 - projected external pressure with LEV;
 - personal financial needs projected with OSHIP; and
 - projected financial targets with return on assets.

Meanwhile, pressure contributed to acts of corruption by 17.7%. The corruption was driven by the perpetrators' need for lifestyle, daily and other needs. Apart from that, the human nature that is never satisfied in the form of greed is increasingly shown by the number of officials (governors, regents, mayors, ministers, members of the People's Representative Council, etc.) caught red-handed by law enforcers:

- (3) Rationalization is measured by two dimensions, such as:
 - Capital expenditures are projected using CAPEX;
 - Profitability proxied by TATA; and
 - Audit opinion is proxied by OPNAD.

In carrying out their duties, rationalization also encourages corruption by 3.8%. Rationalization is an essential means for the occurrence of a criminal event. If we think that pressure is fire and opportunity is gasoline, then the rationalization is oxygen, which allows the fire to grow bigger. Without oxygen, combustion cannot occur:

- (4) Capability is measured using two dimensions, including:
 - The term of office is proxied by (tour of duty) TOD board of directors (BOD); and
 - The term of office is proxied by the chief executive officer (CEO)'s TOD.

Capability only encourages someone to commit acts of corruption by 1.7%. In many cases of sting operations [Red Handed or Operasi Tangkap Tangan (OTT)] carried out by the Corruption Eradication Committee, the KPK always involves central and regional

government officials, SOEs/ROEs directors, members of the People's Representative Council and the judiciary who has enormous authority. Corruption occurs because the perpetrator has abused the position and authority entrusted to him. Abuse of authority has harmed state finances with a motive for personal or group gain:

(5) Lack of integrity is measured by two dimensions, including:

- Projected level of conservatism with $CONNACCit = NIit - CFOit$

Using the HU-model proves that the most significant factor influencing correction is the lack of integrity. Lack of integrity influences corruption of 82.1%. Lack of integrity is the primary and significant driver of various incidents of criminal acts of corruption in an organization. In various sting operations (OTT) activities carried out by the KPK, almost all of them were essential officials ranging from ministers, governors, regents, mayors, members of the People's Representative Council, chairman of the constitutional court, chairman of the Regional Representative Council, as well as various essential officials from various professions who logically are already well off from an economic and financial perspective.

It collected data on 470 companies that were processed using the HU-model application. The data in the form of ratio data is then processed using the application for opportunities with indicators of industry nature and supervision effectiveness; pressure with indicators of financial stability, external pressure, personal financial needs and financial targets; rationalization with indicators of capital expenditures, profitability, audit opinion, capability with indicators of BOD and CEO tenure; and lack of integrity with indicators of the level of conservatism. The average score of the factors causing corruption based on data collected from 470 sample companies can be seen in [Table 2](#).

The clustering of organizations with or without indications of corruption follows the following division:

- A cluster is not indicated as corrupt (green) if the corruption detection value is >3.66 ;
- Gray cluster if the corruption detection value is between $2.33 < \text{value}$; and
- A cluster is indicated as corrupt (red) if the corruption detection value is <2.33 .

The organizational clustering of the 470 sample companies studied was processed and described by the HU-model application in [Table 3](#).

The descriptive statistical data shows that the average of each variable from year to year is relatively the same, both the dependent variable, namely, corruption detection, and the independent variables (opportunity, pressure, rationalization, capability and lack of integrity). Furthermore, the research results on corruption detection are in three categories: green, red and grey. Green indicates that no corruption was detected, red indicates that corruption was detected and grey has the potential to be induced by corruption. The clustering of the 470 companies sampled showed that there were 445 companies, or 98.9%, in the red cluster (indicated corruption), 19 companies, or 4.04%, in the green cluster or not

Table 3. Organizational clustering

	Green No indication of corruption	Gray Potentially indicative of corruption	Red Indicated corruption
Company	19	6	445

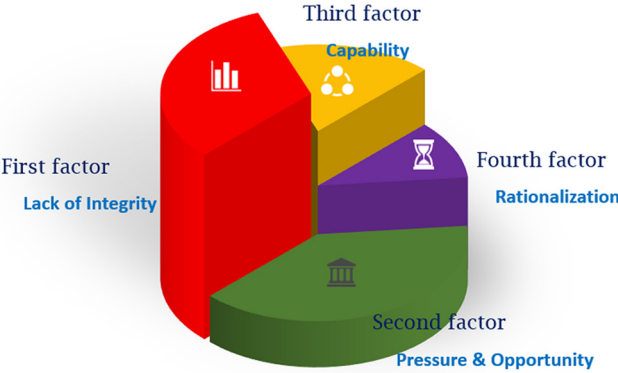
Source: Authors' own work

indicated corruption and six companies, or 1.28%, in the grey cluster or has the potential for corruption. The data in the graph below, where the research results also show that:

- The main factor that determines the incidence of corruption is lack of integrity.
- Pressure and opportunity are the second factors determining the incidence of corruption detection.
- The third factor that determines the incidence of corruption detection is capability.
- The minor factor is rationalization.

The factors that cause corruption from fraud star components processed (Umar, 2016) come into view in [Figure 2](#):

- The main component determining the incidence of corruption detection is a lack of integrity. Lack of integrity is a significant driver for an organization's criminal act of corruption. In various cases handled by the Corruption Eradication Committee, it appears that the perpetrators were important officials from various professions who were logically well-off from an economic and financial perspective. That means that corruption occurs among these people by accepting offers of bribes, engineering, manipulation, mark-ups, mark-downs and fictitious things that occur because their integrity is at a shallow point.
- Pressure and opportunity are the second components that determine the incidence of corruption detection. Deviations driven are usually by needs felt to be urgent by the perpetrators, such as officials and staff (employees). Various studied modes in many corruption cases; what triggers them to commit corruption is usually an urgent material need. Driven by this need, there is internal and external pressure on them to obtain wealth illegally. Pressure from external sources can be in the form of superiors, leadership policies or other parties. Meanwhile, the internal pressure that originates includes desire and greed. This pressure is not always related to money but to non-financial factors (Murdock, 2008). Pressure unrelated to finances includes terrible attitudes and habits in a person, such as gambling habits, going on a spree, a lifestyle that does not suit his profile and greed. Likewise, a great desire to obtain wealth illegally will not be realized without opportunity. Usually, corruption occurs



Source: Processed from data

Figure 2. HU-model

in an agency due to the organization's lack of concern about the potential for developing its intentions among insiders, which is due to neglecting situations that are not governance. Opportunities will arise due to possible system weaknesses, weak supervision or other conditions.

- The third component determines the incidence of corruption detection capability. Almost all of the cases of sting operations carried out by the Corruption Eradication Committee were related to officials such as Ministers, Governors, Regents, Mayors, People's Representative Council members and others. That proves that corruption occurs due to abuse of authority by officials for personal and crony interests. Corruption occurs because the perpetrators have the authority (power) due to their position. The three previous causes can only be realized with the authority to execute them.
- The fourth component is rationalization. The third variable, namely, rationalization, often occurs in a person's ability to tolerate many mistakes he has made. Let us say that pressure is fire, and opportunity is gasoline, so rationalization is oxygen, which blows the fire to burn even more. Without oxygen, combustion cannot occur. Perpetrators tolerate many deviations as a form of rationalization for their actions to appear correct and justified even though they cannot be justified. There are many forms of rationalization, such as the lack of salary received, others doing the same, just this once and so on. Employees in government agencies are tolerant of accepting gratuities, extortion or bribes because their salaries are insufficient.

Lack of integrity poses a startlingly large percentage of the risk of corruption, or it could be said that lack of integrity is the main factor that causes corruption because integrity is closely related to a person's moral and ethical values. Weak morals and ethics, dishonesty, abuse of authority, personal interests above public interests, avoidance of accountability, weakening of the supervisory system and damage to organizational culture can cause this lack of integrity. As we know, when corruption occurs, it is influenced by inner and outer containment. Outer containment comes from external factors such as pressure, opportunity, rationalization, capability and arrogance. Meanwhile, inner containment comes from the perpetrator's internal self, such as personal integrity. What is still easy to detect is outer containment, while what is challenging to detect is inner containment, namely, integrity. If a person has integrity, regardless of pressure, opportunity, rationalization or ability that influences him, he will not commit corruption. On the other hand, if he lacks integrity, even though there is no pressure, opportunity, rationalization or ability, he will try to commit fraud or corruption.

The research results prove that it is based on a survey of cases, such as a government official who held a position and committed a criminal act of corruption. If we analyze further the reasons or factors that make these government officials commit corruption. It turns out that it cannot be said to have pressure or rationalization because these government officials have enormous wealth and a decent economic or social life. However, they still commit corruption, such as gratification and blackmail, because they have lost their moral integrity. Thus, the lack of integrity is one of the leading causes of corruption because it damages the moral and ethical foundations that should be the guideline in carrying out duties and responsibilities in the public and private sectors. Overcoming the corruption problem requires improving individual integrity and strengthening monitoring and law enforcement systems.

5. Conclusion

Fraud is a financial crime driven by several factors, such as deception, deviation, abuse and manipulation. [Umar \(2016\)](#) said, “When power holders abuse their power for their personal and group interests, the perpetrators of corruption have lost their good values”. The most decisive cause of these evil acts is a lack of integrity and values. Given the difficulty of detecting corruption, it is necessary to implement tools specifically designed to detect it, such as the model. Through the implementation of this model, we can see whether the detected entities fall into the red cluster, the grey cluster or the green cluster. This model also supports the implementation of the Republic of Indonesia Law on Corruption Crimes and the Ratification of the United Nations Convention Against Corruption. Indonesia has shown commitment to fighting corruption at the national and international levels.

This research shows that the main trigger for corruption is a lack of integrity. Lack of integrity is caused by the perpetrator experiencing a conflict of interest. Among the five causes, lack of integrity is the highest, at 82.1%, compared to others. Therefore, organizations should focus on increasing the integrity of employees in various ways. Lack of integrity can be a factor causing corruption in various situations, such as lack of ethics, the nature of constantly feeling inadequate, weak morals, lack of self-awareness as a victim of corruption, lack of self-awareness of being involved in corruption, lack of awareness that corruption can be prevented and eradicated, lack of awareness of integrity. In other words, corruption occurs because individuals violate moral and ethical norms and use their power and position for personal gain without considering the impact on society or the institutions they serve. A person will not commit fraud or corruption without integrity despite external influences such as pressure, opportunity, rationalization or capability. The opposite also applies; if there are no external factors but someone’s lack of integrity, they will commit fraud or corruption.

One country, the USA, separates the judiciary from government power to avoid conflicts of interest, which will give rise to the seeds of corruption. Judges are given large enough salaries so they are not tempted to seek other incentives from bribes or gratuities. That will affect their independence in handing down sentences on the cases they handle. Judges are also prohibited from holding other civil or military positions to prevent conflicts of interest and loss of neutrality in carrying out their duties. [Association of Certified Fraud Examiners \(ACFE\) \(2022\)](#) stated that there will be “Initial detection of occupational fraud”, which shows that efforts to detect and prevent fraud in the work environment will also be increasingly emphasized. As we know, ACFE is an institution that specializes in fraud prevention and detection, providing information and resources for organizations and governments to overcome fraud problems. To eradicate corruption more effectively and efficiently in Indonesia and internationally, studies related to corruption by the ACFE and Transparency International can use this model.

5.1 Implications

Contribution to corruption prevention. Indonesia should start cultivating the value of integrity. The first thing that can be done is for every organization to detect which company is in the corruption cluster, red, grey or green, to improve internal integrity immediately. With the results of this research, prevention efforts will be directed at the primary component that encourages acts of corruption, namely, loss of integrity. Therefore, the Indonesian Government’s efforts to build an Integrity Zone are brilliant. Integrity Zones in every organization must be built with information and data according to conditions in the field. Accurate information and data can be obtained through corruption detection using the HU-model, which is supported by an application for data collection.

5.2 Future research

It is hoped that this application will be developed in the future because, faced with increasingly sophisticated crime today, especially digital developments, the rise of cybercrime invites economic actors, especially auditors, to develop capable detection tools. It is hoped that further research can develop the application of the model used in this research or apply the application of this model specifically in the private sector or public sector without ruling out the possibility of involving internal organizational functions such as internal auditors or risk management.

References

- Association of Certified Fraud Examiners (ACFE) (2022), *Occupational Fraud 2022: a report to the nations*, Association of Certified Fraud Examiners, pp. 1-96.
- Brazel, J.F., Jones, K.L., Thayer, J. and Warne, R.C. (2015), "Understanding investor perceptions of financial statement fraud and their use of red flags: evidence from the field", *Review of Accounting Studies*, Vol. 20 No. 4, pp. 1373-1406.
- CNBCIndonesia (2023), "Kasus korupsi BTS Rp 8 triliun kominfo seret petinggi kadin", available at: www.cnbcindonesia.com/tech/20230615215954-37-446395/kasus-korupsi-bts-rp-8-triliun-kominfo-seret-petinggi-kadin
- Cressey, D.R. (1953), *Other People's Money*, Wadsworth Publishing Company, Belmont.
- Institut Akuntan Publik Indonesia (IAPI) (2013), *Standar Profesional Akuntan Publik*, Salemba Empat.
- Johnson, S., Kaufmann, D. and Zoido-Lobaton, P. (1999), *Corruption, Public Finances, and the Unofficial Economy*, World Bank Publications, p. 2169.
- Karyono (2013), *Forensic Fraud*, Andi.
- Kumaat, V.G. (2011), *Audit Internal*, Erlangga.
- Menon, R.E. (2023), "From crime prevention to norm compliance: anti-money laundering (AML) policy adoption in Singapore from 1989–2021", *Journal of Money Laundering Control*, Vol. 26 No. 1, pp. 69-92, doi: [10.1108/JMLC-12-2021-0134](https://doi.org/10.1108/JMLC-12-2021-0134).
- Murdock, H. (2008), "The three dimensions of fraud: auditors should understand the needs, opportunities, and rationalizations that lead individuals to commit fraudulent acts", *Internal Auditor*, Vol. 65 No. 4, pp. 81-83.
- Siahaan, M., Umar, H. and Purba, R.B. (2019), "Fraud star drives to asset misappropriation moderated by internal controls", *Journal of Southwest Jiaotong University*, Vol. 54 No. 4, pp. 1-10, doi: [10.35741/issn.0258-2724.54.4.24](https://doi.org/10.35741/issn.0258-2724.54.4.24).
- Siahaan, M., Suharman, H., Fitrijanti, T. and Umar, H. (2023a), "When internal organizational factors improve detecting corruption in state-owned companies", *Journal of Financial Crime*, doi: [10.1108/JFC-11-2022-0292](https://doi.org/10.1108/JFC-11-2022-0292).
- Siahaan, M., Suharman, H., Fitrijanti, T. and Umar, H. (2023b), "Will the integrated GRC implementation be effective against corruption?", *Journal of Financial Crime*, Vol. 30 No. 1, pp. 24-34, doi: [10.1108/jfc-12-2021-0275](https://doi.org/10.1108/jfc-12-2021-0275).
- Simmons, B.A. and Elkins, Z. (2004), "The globalization of liberalization: policy diffusion in the international political economy", *American Political Science Review*, Vol. 98 No. 1, pp. 171-189.
- Umar, H. (2016), *Corruption the Devil*, Penerbit Universitas Trisakti, Jakarta.
- Umar, H. (2020), *Detecting Corruption, HU-Model*, Universitas Trisakti.
- Umar, H. and Br. Purba, R. (2020), "HU model: incorporation of fraud star in detection of corruption", *International Journal of Economics and Management Studies*, Vol. 7 No. 12, pp. 1-8, doi: [10.14445/23939125/ijems-v7i12p101](https://doi.org/10.14445/23939125/ijems-v7i12p101).

- Umar, H. and Purba, R.B. (2018), "Management determinants among the relation of corruption, accountability, and performance", *International Journal of Civil Engineering and Technology*, Vol. 9 No. 9, pp. 768-773.
- Wolfe, D.T. and Hermanson, D.R. (2004), "The fraud diamond: considering the four elements of fraud", *CPA Journal*, Vol. 74 No. 12, pp. 38-42.
- Yusof, M.K., Khair, A. and Simon, J. (2013), "Fraudulent financial reporting: an application of fraud models to Malaysian public listed companies", *Journal of Global Macro Trends*, Vol. 2 No. 4, pp. 144-160, doi: [10.1353/jda.2014.0042](https://doi.org/10.1353/jda.2014.0042).

About the authors



Haryono Umar is a Professor in economics accounting at the Perbanas Institute. Specifically, he has much involvement in the field of forensics, both in terms of the academic side of the tri dharma of higher education (teaching, research and community service) as well as actual practice in eradicating and preventing criminal acts of corruption. In the academic world, he generated many products and publications on a national and international scale related to fraud, corruption and forensics. Likewise, in practice, he consistently demonstrated an anti-corruption spirit during every service period. He served as Chairman of the Corruption Eradication Commission from 2007 to 2011. In government, he also gave his colour in building anti-corruption supervision when he officiated as Inspector General of the Ministry of Education and Culture from 2012 to 2015. The good thing is that it received optimal support from the ministry leadership at that time, so it became a reference for many parties in building a clean and anti-corruption government. Currently, Haryono Umar is serving as Deputy Chancellor at the Perbanas Institute. Haryono Umar has produced many publications indexed by Scopus, Web of Science and others. Haryono Umar said that the division (classification) of fraud into three forms, fraudulent financial reporting, misappropriation of assets and corruption, can only be applied to the private sector. Meanwhile, if this happens in the public sector (there is power as a mandate carried out by the community), there is only one category used, namely, corruption. Haryono Umar has won many awards, including the 2020 MURI record, Bintang Mahaputera Utama, which he received in 2015 from the State, and Satya Lencana from the President.



Rahima Br Purba is a Doctor of Accounting from the University of North Sumatra who is now active as Chairman of the Master's Program in Accounting at Panca Budi Medan University. She is an active lecturer and practitioner of the Audit Committee and the Risk Committee of Bank Sumut Pension Fund in the Field. She is also active in professional associations such as the Indonesian Association of Accountants (IAI) of the North Sumatra Territory as well as other scientific and academic associations. In connection with the development of science, she followed a lot of research grants and dedication from Ristekdikti. The research that is often done relates to the public sector. Current research is linked to government audits and corruption, as evidenced by scientific journals published in several accredited and reputable international magazines. Rahima Purba is the corresponding author and can be contacted at: rahima@dosen.pancabudi.ac.id



Magda Siahaan is a lecturer at Trisakti School of Management, Trisakti, Jakarta, Indonesia. Besides that, she is also a researcher related to internal organizations, especially governance, audit and fraud, after Magda started her career as a company employee who provided experience as an added value in pursuing her current career as a lecturer and researcher. Even though she departed from a different school, namely, Physics, for her, all knowledge is not wasted and can be used as a reference concerning other sciences.



Siti Safaria is a Graduated doctoral studies from Jakarta State University (UNJ) in 2014, majoring in Human Resource Management. Perbanas Institute's permanent lecturer since 1989 lecturing human resource management and organizational behavior. Member of the Indonesian Management Forum (FMI) Jakarta branch, Research Member at Management Alliance of Doctoral Sciences in Management (IKADIM), having certification of BNSP majoring in Human Resource Management. She is also engaged in a number of researches and managers of the Perbanas Institute's Journal of Banking Management Accounting Research (JRPMA).



Welda Mudiar was born in Jakarta, September 21, 1975. Middle School V in Ciledug, High School 1 in west Sudimara, Cidedug and Hang Tuah 1 High School in SESCOAL Jakarta. She is an active lecturer at the University of Budi Luhur Jakarta. Majoring in Computerization Accounting from 1994 to 1998.



Markonah is a permanent lecturer of the Institute of Banking Finance and Informatics of Perbanas since 2015, former permanent employee at STIE Tri Bhakti Bekasi, in Department of Functional Lecturer Chief, and has received a Dictation Grant in 2017 Doctoral Dissertation Grants and the 2022 Grants for Graduate Research.