

## Malaysian Government Officials Induced in Public Procurement Fraud through the Lens of Fraud Diamond Analysis

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### ABSTRACT

*Public procurement fraud by government officials has resulted in a sizeable loss of public funds, subsequently smearing a bad reputation of a local institution in the eyes of the public. The appropriate parties and the government as the trustees of public funds should tackle the presence of the propelling elements in driving government officials to engage in fraudulent behaviour. Besides, they should also ensure to eradicate, or at the least, prevent the problem from worsening. Therefore, this study attempted to determine the effect of fraud diamond analysis on public procurement fraud. Fraud Diamond is measured by perceived pressure, rationalisation, opportunity, and capability. The researchers gathered primary data through a survey using 165 questionnaires distributed to the government officials of all 27 ministries at the Federal level. Several statistical techniques such as descriptive statistics, correlation, and regression analysis were used to analyse the data from the survey. Four hypotheses were developed, and the findings showed that perceived pressure, perceived rationalisation, and perceived capability significantly influenced public procurement fraud by government officials, hence being accepted. In contrast, the perceived opportunity was rejected. This study aids academics, legislators, lawmakers, sociologists, psychologists, and those engaged in financial crime scene investigation, such as authorities and regulators, to understand the reason behind the fraudulent behaviour of fraudsters.*

*Keywords: Capability; fraud diamond theory; opportunity; procurement fraud; pressure; rationalisation*

### INTRODUCTION

According to the Organisation for Economic Co-operation and Development (OECD) (2021a, 2021b), public procurement is the process of deciding what needs to be bought and who is the best person or organization to buy it. Public procurement guarantees that what is deemed necessary is supplied at the right position, at the right moment, at the best price, and that all these are fair and open. This statement is aligned with Fazekas and David-Barrett (2015), where the government's purchase of goods and services, including construction, maintenance, supply of materials contracts, and government acquisition of goods and services, is performed through public procurement. Based on the above, public procurement is the process of spending public funds through various means such as works or supplies and services by the appropriate parties, which is usually the ruling government for the benefit of the public.

In the same guideline, OECD (2021a, 2021b) added that appropriately applied public procurement procedures can enhance productive economic systems, efficient public sectors, integrative societies and economies and trusted institutions. Hence, a well-designed public procurement system can contribute to the achievement of pressing policy objectives, such as environmental protection, innovation, job creation as well as small and medium-sized business development. Despite the sophisticated system, procurement fraud still exists.

Procurement fraud is one of the most common types of fraud committed by managers, and the primary victims are businesses and their shareholders. Businesses lose billions of dollars each year as a result of failing to pay vendors fair market value for services and goods. Malaysia too has its fair share of procurement fraud, where the infamous Datuk ran a cartel that dominated government contracts worth RM3.8 billion. Concerning the same issue, Dermawan (2021) reported that a senior government official who received RM300,000 worth of payment for each piece of information routed to the syndicate's leader was nabbed. As the investigation continues, anticipated to be arrested are the government officials in connection with the "project tender cartel". The Malaysian Anti-Corruption Commission (MACC) would pay attention to corruption in the procurement, enforcement and 'grand corruption' sectors involving the highest or high-profile levels. In terms of revenue, since 2020, project tender cartels issues have caused the government to suffer huge losses of hundreds of millions. MACC has also accused a businessperson of pioneering government projects and taking the rights of others. In addition, several government officials involved in the project's operation and the meat cartel issue were also arrested on suspicion of corruption. Touching on "grand corruption", which is corruption and abuse of power involving individuals with high-scale power, MACC informed that they were cunning and difficult to track. Cases of non-compliance, irregularities and fraud in

government procurement persist although compliance with Government Procurement Policy (GPP) is mandated by regulations. Complying with procurement standards by law does not necessarily succeed in the implementation of procurement best practices (Mohd Rezal et al. 2016).

Additionally, Mohd Roslan Ismail and Mohd Fairuz Md Salleh (2022), found that fraud often occurred in the management of government procurement by quotations and tenders, the majority of which consist of government officials. In a report published by Sivanandam et al. (2020), 184 government officials of several ministries from 2012 to 2018 were found guilty and penalized accordingly concerning 564 punitive issues found in Auditor-General's Reports. Prime Minister's Department (2019) reported that the public sector had been the most vulnerable to corruption, based on the corruption trend in Malaysia from 2013 to 2018. The public sector showed a more alarming rate of 63.30 per cent compared to the vulnerability rate of 17.06 per cent in the private sector. The MACC (2021) revealed that from 998 arrests made, 467 (46.8 per cent) government officials were arrested in 2020 due to corruption cases in comparison to 572 of 1,101 total arrests or 50.4 per cent in 2019 and 416 of 894 total arrests or 46.0 per cent in 2018. In the same report, MACC revealed that half of the corruption cases in the country involved civil servants over the past six years. Furthermore, MACC added that based on the arrest statistics from 2015 to 2020, a total of 5,652 arrests were made, and 2,683 or 47.5 per cent were civil servants.

Nonetheless, in the research diaspora, the academic research which applies the Fraud Diamond in their conceptual paper, which gathered literature reviews on Fraud Diamond Theory concerning public procurement fraud, Rustiarini et al. (2019) suggested further research in this area. Putra and Rahayu (2019) applied Fraud Diamond Theory in their study on the management of rural funds contributed by the Government of Indonesia in the District of Demak, Indonesia, whilst (Azmi et al. 2017) applied the same theory to study the e-Procurement fraud in the government sector. Mudith Sujeewa et al. (2020) researched employee fraud in the public sector, leveraging Fraud Diamond Theory. Therefore, due to the above arguments, it is vital for this research to be conducted on Malaysian government officials induced in public procurement fraud through the lens of Fraud Diamond Analysis which is represented by perceived pressure, perceived rationalisation, perceived opportunity, and perceived capability.

The researchers gathered primary data through a survey using 165 questionnaires distributed to the government officials of all 27 ministries at the Federal level. Four hypotheses were developed, and the findings showed that perceived pressure, perceived rationalisation, and perceived capability significantly influenced public procurement fraud by government officials, hence being accepted. In contrast, the perceived opportunity was

rejected. The findings of this research were able to explain many fraud incidences related to occupational fraud in the public sector, even though they focused on public procurement fraud. The findings would be useful in terms of benefiting academics and researchers and contributing value to the scant research on occupational fraud in public procurement, particularly studies that apply the Fraud Diamond Theory, which is currently lacking. As a result, this study may serve as a point of reference and a stimulant for future research on public procurement fraud in Malaysia.

The remainder of this paper is structured as follows. The following section briefly explains the theory, literature review and hypotheses development. The third section describes the research methodology. This study's results are reported in the fourth section, and its conclusions and implications are presented in the final section.

#### THEORY, LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

##### RESEARCH FRAMEWORK

A theoretical framework consists of ideas and definitions, as well as references to pertinent scholarly literature. It is used to organise the current theory for any topic. The theoretical framework must demonstrate comprehension of relevant ideas and concepts to the subject of research study and the larger fields of knowledge under consideration (Asher 1984). Abend (2008) supports the idea, which asserts that theories are developed to explain, predict, and comprehend occurrences and frequently to question and extend current knowledge within the constraints of crucial boundary assumptions. Lynham (2002) further corroborated that a theoretical framework is used to narrow the scope of pertinent data by focusing on key variables and setting the framework within which the researcher will analyse and interpret the data. In contrast, Cooper and Schindler (2014) suggested the hypothesis provides a direction for the study, whereas (Sekaran & Bougie 2016) highlighted that those hypotheses are formed based on an analysis of the variables, including other research done on the same topic.

In non-academic contexts, the phrases theory and hypothesis are frequently used interchangeably. However, in academic research, the distinction between theory and hypothesis is critical, as theory is a well-established concept formed to explain some part of the natural world. In contrast, the hypothesis is a precise, testable prediction about what you anticipate during the study (Cherry, K. 2020). This research examines the relationship between independent variables (IV) and dependent variable (DV) by incorporating the elements of the Fraud Diamond Theory of perceived pressure, perceived rationalisation, perceived opportunity, and perceived capability as a

construct to form hypotheses for further verification. It is important to study in depth to prove that past findings are valid and still applicable for future studies, specifically, the relationship of perceived pressure (IV1), perceived

rationalisation (IV2), perceived opportunity (IV3) and perceived capability (IV4) towards the public procurement fraud (DV). The research framework is visualised below.

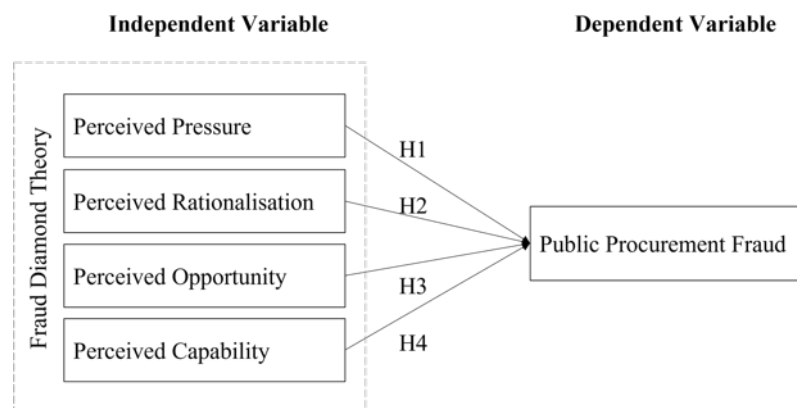


FIGURE 1. Research framework

The Fraud Diamond Theory elements concentrate simultaneously on the relationship between individuals and organizations, not just individual or organizational behaviour. The Fraud Diamond Theory is meant to accommodate specific organizational and psychological variables. This allows a good understanding of social processes, which suggests that the organization influences an individual's behaviour and vice versa. If attention focused on personal or group behaviour, it would ignore organizational sociology and thus impact the outcomes of fraud prevention frameworks (Davis & Pesch 2013). Several unique characteristics of public procurement provide opportunities for fraud to be conducted by a person with pressure, capability, rationalization, and opportunity, which could be explained by applying the Fraud Diamond Theory.

Perceived pressure is represented by the first leg of the Fraud Diamond. This is the driving force behind the crime in the first place. The majority of people require some coercion to commit a crime. This pressure does not have to make sense to outside observers, but it must exist (Wolfe & Hermanson 2004). The second element is perceived opportunity, which describes how the crime may be perpetrated. There must be an opportunity to commit the act. Typically, in the case of fraud, a transitory scenario exists in which the act can be committed without a substantial risk of being caught. The rationalisation of a person contemplating an unethical act is rationalizing his or her thoughts. Since fraudsters do not regard themselves as criminals, they must justify their actions to make the frauds acceptable and legitimate. Certain individuals may believe they are simply borrowing the stolen goods or requiring the money more than the "large" firm from

whom they are stealing. Perceived opportunity opens the door to fraud, and motivation and perceived rationalisation can draw the individual towards it. However, the person should have the capacity to comprehend the situation as an opportunity by taking a stroll through it, not once but repeatedly over time. The critical question for the seriousness of the issue is whether an opportunity exists that could turn an instance of exploitation into a reality.

Numerous studies found a positive relationship between perceived pressure and fraud. In their research paper, Mohamed et al. (2021) suggested that even honest employees are capable of fraud in an atmosphere that places overwhelming pressure on them. The higher the incentive or pressure, the more likely an employee would commit fraud. This idea is supported by Ross (2016), that suggested that a person or group of individuals inside an organization can be compelled to commit fraud. Usually, the motivation for doing so stems from economic pressure and a need. Thus, pressure somehow contributed to the motive behind one's action in committing fraudulent acts.

There are several prior studies conducted to prove this leg of the Fraud Diamond Theory as an influential factor to commit fraud. Pressure could be associated with personal financial needs due to the escalating cost of living and spending beyond one's financial capability. This is proved by Husin (2020), who suggested that greed is the drive to accumulate wealth quickly, the proclivity to spend more than one's monthly salary, and the desire to live lavishly regardless of the legitimacy of the source of funds. The idea then is further supported by a statement that employees earning low pay may also engage in dishonest behaviour at work out of desperation to cover living expenses (Mohd Saim et al. 2018).

In comparison, some of the studies found insufficient evidence to support the relationship between perceived pressure and fraud. A study by Said et al. (2017) found that pressure does not influence employee fraud occurrence in the banking industry in Malaysia. In addition, Zulaikha et al. (2016) discovered that financial pressure has no positive correlation with fraud conduct. Her reasoning for this conclusion is that financial incentives for procurement committees are highly regulated in Indonesia, making it difficult for the committee to commit fraud. Nevertheless, most of the prior research revealed that individuals may be subjected to pressures based on their circumstances and life events and how they perceived it, resulting in the decision involving a fraudulent act. Certainly, perceived pressure can influence employees to commit fraud. Therefore, the following hypothesis is proposed:

H<sub>1</sub> There is a significant relationship between perceived pressure and public procurement fraud by Malaysian government officials.

Past researchers had come out with numerous research findings to support the relationship between perceived rationalisation and fraud. As research conducted by Ross (2016) supported this idea by explaining that rationalizing illegal actions allows people to avoid feeling guilty and to believe that they maintain an ethical code and are substantiated in their behaviour. In sum, rationalisation is a self-persuasion endeavour or reasoning developed by an individual to alleviate the feelings of guilt, uncertainty, doubt, and unease they had before, during, and after engaging in any dishonest conduct. The concept was then further backed by a remark from other authors that employees may perceive that they have been treated unfairly if they have become exhausted from performing duties assigned to them in place of only a fixed wage (Husin 2020). Frequently, those who commit fraud believe they are working honestly but are undervalued in their jobs and are not recognized by their superiors through promotions or exemplary service awards (Husin 2020). Occasionally, the rationale does not stem largely from those who are attempting to justify themselves. The intention to commit fraud may have an impact on their decision.

In comparison to the above finding, research by Mudith Sujeeva et al. (2020) on employee fraud in public sector entities in Sri Lanka showed that rationalisation does not contribute to the misconduct of public sector officials in Sri Lanka. Their research suggested that perceived rationalisation negatively correlates with employee fraud in public sector organizations in Sri Lanka. The preceding research vastly indicated that a variety of rationalisation scenarios in defence of their fraudulent action, and their perception of these situations, might have a significant impact on their decision to commit fraud. Certainly, perceived rationalisation can influence employees to commit fraud. Thus, the following hypothesis is proposed:

H<sub>2</sub> There is a significant relationship between perceived rationalisation and public procurement fraud by Malaysian government officials.

According to Rustiarini et al. (2019), when space and time converge, opportunities for procurement fraud would then increase. Briefly stated, the opportunity is the chance or platform that allows fraudsters to move and carry out their fraudulent activity. Similar to pressure and rationalisation, the opportunity is a situational likelihood that cannot be calculated to ascertain the extent to which a person may decide to commit fraud. Internal control can significantly reduce the opportunity for fraud by a person to an absolute bare minimum. Prior research found the significant contribution of perceived opportunity with fraud which is explained by findings from Said et al. (2017), namely inadequate system control, insufficient monitoring, a lack of job segregation, or a lack of management authorization may contribute to the possibility of employee fraud. Hence, the aforementioned studies suggested that a weak control environment in the establishment flourishes the occurrence of fraud.

Moreover, fraud opportunity could be attributed to the inability to implement monitoring activities and risk assessment by an organization and weak government capacity such as inefficient audit functions as recommended by OECD (2016). In addition, Zahari et al. (2021) found that the fundamental awareness of fraud is what distinguishes a person from being an ethical or dishonest person. He then suggested that awareness and fraud education could deter the possibility of fraud. Contradictory to the above positive correlation of perceived opportunity with fraud, research by Ismail et al. (2018) found that the procurement procedure is the sole vehicle of oversight that substantially impacts public sector procurement concerns whilst the internal auditor's function has no impact on procurement issues. Their research suggested that the internal auditor's function is negatively correlated with procurement non-compliance and fraud. This finding suggested that an annual review by Auditor's General Department in the public sector does not resolve the issue of public procurement in Malaysia. Hence, the following hypothesis is proposed:

H<sub>3</sub> There is a significant relationship between perceived opportunity and public procurement fraud by Malaysian government officials.

Past studies on fraudulent behaviours have found an interaction between capability and fraud occurrence. In support of the idea, Kassem and Higson (2012) found that the fraudster must be able to seize the opportunity presented to them to commit fraud. Hence, to put it another way, the capacity to transform a fraud plan into an actual act refers to the unique advantages that an individual possesses that can aid him in carrying out the plan. Similar to pressure, rationalisation, and opportunity, capacity is a set of social and psychological characteristics

that cannot be scaled to predict a person's likelihood of committing fraud.

On the other hand, the capability to commit fraud could be exploited by the authoritative power held by an individual. This idea was corroborated by the finding that the position/function of the individual in the organization provides a chance to exploit opportunities for fraud that no one else has (Wolfe & Hermanson 2004; Husin 2020). In addition, Rustiarini et al. (2019) recommended that when leaders request direct-reporting subordinates to carry out fraudulent behaviour, they will attempt to persuade and convince them that the fraud is acceptable. In further explaining the characteristics of capability, acquired skill and competencies, an individual should be taken into consideration. Lokanan (2015) concluded that technical abilities refer to an individual's capacity to conduct an act. This idea is also backed by the finding that a person with power and capacity will appear calm and controlled and not feel as awful about lying to others.

In contrast, according to Tuan Mat et al. (2019), in analyzing whether seniority (position within the organization) had a significant effect on employees' intentions to commit fraud, the study found a negative correlation between position and fraud. This suggests that the capability of the employees does not influence them to commit fraud. The finding is substantiated by several studies conducted by KPMG Malaysia (2009), KPMG US (2011), KPMG-SMU Singapore (2014), and ACFE (2014). In addition, research by Mudith Sujeewa et al. (2020) on employee fraud in public sector entities in Sri Lanka shows that capability does not contribute to the misconduct of public sector officials in Sri Lanka. Based on the above arguments, the following hypothesis is proposed:

- H<sub>4</sub> There is a significant relationship between perceived capability and public procurement fraud by Malaysian government officials.

## RESEARCH METHOD

### DATA COLLECTION

Based on Public Service Department (2018), the total of public servants in Malaysia in 2021 was approximately 1,600,000. However, only 294,412 government officials work at the federal level. Since this study aims to study determinants of public procurement fraud, the concerned group should be government officials involved directly with the procurement process and procedure. This study used convenience sampling, whereby the government officials working in the Treasury/Procurement Department in all 27 ministries were the targeted respondents.

SurveyMonkey (2019) stated that the margin of error is a fraction of a percentage that informs the researchers how much they can expect the survey's outcome to reflect the general population's view. The smaller the margin of

error, at a given level of confidence, the closer they are to having the exact answer and sampling confidence level as a percentage that shows how self-assured they can be that a response in a certain range will be selected by the population. From a population of 294,412, with a margin error of 5 per cent and a confidence level of 95 per cent, the sample size identified for this research is 384. Survey questions in the form of an electronic questionnaire were sent to 384 selected respondents who could provide the information required to fulfil the purpose of the study. Based on a sample size of 384, 165 questionnaires were returned and usable at the end of the data collection timeframe.

The questionnaire is customized to investigate the determinants of public procurement fraud issues in the Malaysian government. The questionnaire was self-developed through a literature review and distributed to the employees at all levels who work in Procurement Division in all ministries. The electronic questionnaire developed using Google Forms was sent to the respondents through email, messaging applications, i.e., Whatsapp, Telegram, and social media, i.e., Twitter, Facebook etc. It has been highlighted as the best method to reach targeted respondents. The survey instrument is divided into three (3) sections. The first section of the survey includes standard questions about the respondents' demographic information. The second section of the survey instrument is about the dependent variable. To achieve this, respondents are given a list of ten (10) statements or situations about public procurement fraud. The third section of the survey instrument is about the four (4) independent variables consisting of seven (7) items accordingly. Moreover, this section could determine if respondents are familiar with and have knowledge of these significant factors, which could lead to public procurement fraud. In general, respondents were asked to rank using the Likert Scale of 1 (strongly disagree) to 6 (strongly agree) according to their agreement or disagreement with the prescribed statement or situation on the factors contributing to public procurement fraud.

In this research project, a pilot test was conducted to prevent respondents from receiving false and inconsistent data. A pilot test for this study was conducted on 8 November 2021, which involved the Chief Secretary, Chief Assistant Secretary and Assistant Secretary of all 27 ministries. The pilot test is an integral part of a good research study design since it involves a sample of 30 questionnaires to ensure that the respondents comprehend the questionnaire and interpret it in the same way. Furthermore, the pilot test aids in the improvement of the research instrument before the in-depth investigation.

### RELIABILITY ANALYSIS FOR THE PILOT TEST

The output from Statistical Package for the Social Sciences (SPSS) showed that each portion of the questionnaire provided an alpha value of more than 0.70, indicating acceptable internal consistency among the

data. According to Sekaran & Bougie (2016), reliabilities less than 0.60 are considered poor, while the 0.70 range is acceptable, and those over 0.80 are good. Thus, the results of the pilot research were trustworthy, as evidenced by

this finding. Ultimately, all 30 responses are included in the final analysis because the pilot research questionnaires make no additional modifications. Table 1 summarized the alpha value for each area of the questionnaire.

TABLE 1. Cronbach's coefficient alpha values for pilot study

Category	Number of Items	Cronbach's alpha
Public procurement fraud	10	0.79
Perceived pressure	7	0.91
Perceived rationalisation	7	0.85
Perceived opportunity	7	0.74
Perceived capability	7	0.90

## RESULTS AND DISCUSSION

### DEMOGRAPHIC ANALYSIS

This study gathered a total of 165 respondents of which 53.9 per cent of the respondents are between the age of 31 to 40 years. Female respondents dominated as the majority of approximately 66.7 per cent compared to 33.3 per cent

being male. Moving on to the academic qualifications, the greatest number of respondents, approximately 44.2 per cent, hold bachelor's degrees. This study also revealed that the majority of the respondents have more than nine years of working experience. In terms of job position, management and the professional group are the majority (59.4%) followed by the support group (40%).

TABLE 2. Demographic analysis

Profile	Description	Frequency	
Age	21 – 30 years old	19	11.5
	31 – 40 years old	89	53.9
	41 – 50 years old	45	27.3
	51 – 60 years old	12	7.3
Gender	Male	55	33.3
	Female	110	66.7
Qualification	SPM	16	9.7
	STPM/ Diploma/ Matriculation	33	20.0
	Bachelor's degree	73	44.2
	Master's degree	40	24.2
	Ph.D./ Doctorate	1	0.6
	Professional certificate	2	1.2
Years of service	Below one year	3	1.8
	One to three years	16	9.7
	Three to five years	7	4.2
	Five to seven years	8	4.8
	Seven to nine years	6	3.6
	More than nine years	125	75.8
Service group	Support group	66	40.0
	Management and professional group	98	59.4
	Top management group	1	0.6

## RELIABILITY ANALYSIS

Based on the 165 questionnaires completed by public officials who handle public procurement processes in

each ministry, the SPSS programme was used to compute the reliability of the data. The alpha value for each section of the questionnaire is summarised in Table 3.

TABLE 3. Cronbach's coefficient alpha values for reliability analysis

Category	Number of Items	Cronbach's alpha
Public procurement fraud	10	0.79
Perceived pressure	7	0.92
Perceived rationalisation	7	0.89
Perceived opportunity	7	0.67
Perceived capability	7	0.94

Based on the output from SPSS of the reliability analysis conducted, each section of the variables in the questionnaire provided an alpha value of more than 0.70. It indicated an acceptable internal consistency among the data (Sekaran & Bougie 2016) except for perceived opportunity, whereby the result of alpha is 0.67, which is considered questionable according to Gliem and Gliem (2003). According to research use, a high value of alpha protects against certain objects being unique in the sense that they cause responses that are distinct from those elicited by the other items (Cortina 1993). If an instrument is meant to provide a variety of things generating answers that are all aligned with the same construct, it makes

sense to want to avoid this situation as much as possible. The technique pointed to in (Mun et al. 2015) eliminates items reported to significantly reduce aggregate alpha values. Hence, Item 1 in the questionnaire with the statement "Awarding government projects through direct tender have opened up opportunities for government officials to commit fraud" is identified as one question that would significantly increase the alpha value of the Perceived Pressure element. By removing Item 1 from the questionnaire, the Cronbach alpha has increased to 0.72. Table 4 depicts the alpha value for each section of the questionnaire after removing 1 item from Perceived Opportunity.

TABLE 4. Adjusted cronbach's coefficient alpha values for reliability analysis

Category	Number of Items	Cronbach's alpha
Public procurement fraud	10	0.79
Perceived pressure	7	0.92
Perceived rationalisation	7	0.89
Perceived opportunity	6	0.72
Perceived capability	7	0.94

## DESCRIPTIVE STATISTICS

Table 5 below presents the respondents' perception of public procurement fraud based on ten (10) items presented. Descriptive statistics for public procurement fraud revealed an overall mean score of 5.67 (SD = 0.700) for Item 1 and 5.61 (SD = 0.729) for Item 2. This shows a strong agreement received from the respondents to the situation or statement that public procurement fraud committed by government officials is a criminal action

against the government (Item 1) and the people (Item 2). In contrast, the analysis also revealed an overall mean score of 1.70 (SD = 1.904) for Item 7 and 1.52 (SD = 0.954) for Item 6. This signifies a strong disagreement from the respondents on the situation or statement that they are acquainted with corrupted government officials engaging in public procurement fraud in their ministry (Item 6) or other ministries (Item 7).

TABLE 5. Descriptive statistics for public procurement fraud

No	Item	Mean	SD
1	I believe that the public procurement fraud committed by government officials is a criminal action against the government.	5.67	0.700
2	I believe that the public procurement fraud committed by government officials is a criminal action against the people.	5.61	0.729
3	I believe that public procurement fraud is committed by the top management of the ministries.	3.33	1.520
4	I believe that public procurement fraud committed by a government official is a norm in this ministry.	2.01	1.235
5	I believe that public procurement fraud committed by a government official is a norm in any other ministry.	2.36	1.302
6	I have known government officials who are engaging in public procurement fraud in this ministry.	1.52	0.954
7	I have known government officials who are engaging in public procurement fraud in other ministries.	1.70	1.094
8	I believe that the government is not putting enough effort to curb the issue of public procurement fraud by government officials.	3.58	1.704
9	I believe that an alarming number of public procurement frauds committed by government officials is a serious issue.	4.52	1.587
10	I believe public procurement fraud committed by government officials is easier to do and left untraced nowadays than in previous years.	2.73	1.440

The descriptive statistics for perceived pressure revealed an overall mean score of 4.12 (SD = 1.678) for Item 6 and 3.92 (SD = 1.628) for Item 4, as shown in Table 6. This shows a slight agreement received from the respondents to the situation or statement that threats from political/ influential persons (Item 6) and the influence of a luxurious lifestyle (Item 4) will force government officials to commit fraud. In contrast, the analysis also

revealed an overall mean score of 3.24 (SD = 1.511) for Item 3 and 3.31 (SD = 1.556) for Item 7. This signifies a weak disagreement received from the respondents on the situation or statement that the pressure to fulfil the demands of loved ones (Item 3) and the overpowering situational pressure (Item 7) will force government officials to commit fraud.

TABLE 6. Descriptive statistics for perceived pressure

No	Item	Mean	SD
1	The increasingly challenging pressures of life will force government officials to commit fraud.	3.44	1.520
2	The rising cost of living will force government officials to commit fraud.	3.47	1.552
3	The pressure to fulfil the demands of loved ones will force government officials to commit fraud.	3.24	1.511
4	The influence of a luxurious lifestyle will force government officials to commit fraud.	3.92	1.628
5	Pressure from superiors will force government officials to commit fraud.	3.78	1.705
6	Threats from political/ influential persons will force government officials to commit fraud.	4.12	1.678
7	If the situation is very compelling, government officials are willing to commit fraud to solve the problem.	3.31	1.556

Table 7 below displays the descriptive statistics for perceived rationalisation revealing an overall mean score of 1.61 (SD = 1.151) for Item 7 and 1.26 (SD = 0.633) for Item 5. This shows a strong disagreement from the respondents to the situation or statement that they are willing to commit fraud as an act of protest and convey

frustration (Item 6), and wrongdoing is justified because top officials also do the same thing (Item 5). Mean scores for all seven items presented to respondents showed a strong disagreement with the statement or scenario related to rationalisation or justification for government officials to commit fraud.



TABLE 7. Descriptive statistics for perceived rationalisation

No	Item	Mean	SD
1	It is not wrong for government officials to commit fraud to take an act of revenge for the unfair treatment in the ministry.	1.25	0.589
2	It is not wrong for government officials to commit fraud to compensate for unclaimed overtime.	1.22	0.567
3	It is not wrong for government officials to commit fraud to compensate for the imbalance in promotion opportunities.	1.24	0.554
4	It is not wrong for government officials to commit fraud if the practice is already a traditional practice in a ministry.	1.19	0.528
5	It is not wrong for government officials to commit fraud because top officials also do the same thing.	1.26	0.633
6	It is not wrong for government officials to commit fraud because co-workers also do the same thing.	1.22	0.530
7	If government officials feel they are unappreciated at work, they are willing to commit fraud as an act to protest and convey frustration.	1.61	1.151

Perceived opportunity revealed an overall mean score of 5.14 (SD = 1.005) for Item 2 and 4.99 (SD = 1.102) for Item 4, as indicated in Table 8. This shows an agreement received from the respondents to the situation or statement that the awareness and knowledge of fraud and its impact on the country (Item 2) and the separation of responsibilities and functions of government officials

involved in public procurement (Item 4) help to prevent government officials from engaging in fraud. Mean scores for all six items presented to respondents showed an agreement with the statement or scenario related to the opportunity for government officials to commit fraud presented upon them.

TABLE 8. Descriptive statistics for perceived opportunity

No	Item	Mean	SD
1	Background checks and screening of suppliers/ contractors bidding for government project tenders could eliminate the opportunity for government officials to commit fraud.	4.48	1.395
2	The awareness and knowledge of fraud and its impact on the country help to prevent government officials from engaging in fraud.	5.14	1.005
3	The annual audit process by the National Audit Department for projects and activities carried out by the ministry can prevent government officials from engaging in fraud.	4.92	1.142
4	The separation of responsibilities and functions of government officials involved in public procurement (procurement and treasury) can prevent the occurrence of fraud.	4.99	1.102
5	The absence of public procurement laws enshrined in Malaysia such as the UnCITRAL Procurement Model Law (Model Law 2011) has been one of the reasons government officials commit fraud.	3.80	1.406
6	The shift in procurement from manual to electronic methods (eProcurement) has helped to reduce the potential for fraud among government officials.	4.72	1.151

Table 9 presents the descriptive statistics for perceived capability revealing an overall mean score of 3.77 (SD = 1.610) for Item 7 and 3.67 (SD = 1.704) for Item 6. This shows a slight agreement received from the respondents to the situation or statement that the government official who committed public procurement fraud can control their stress (Item 7) and is capable of constantly lying

(Item 6). In contrast, the analysis also revealed an overall mean score of 3.27 (SD = 1.646) for Item 2 and 3.45 (SD = 1.621) for Item 5. This signifies a slight disagreement from the respondents on the situation or statement that public procurement fraud is committed by a public official of a higher ranking (Item 2) or possesses a persuasive personality (Item 5).

TABLE 9. Descriptive statistics for perceived capability

No	Item	Mean	SD
1	Government officials with certain abilities can commit fraud without having to worry about the crime being exposed.	3.57	1.733
2	High-ranking government officials tend to commit fraud.	3.27	1.646
3	Government officials who have expertise in a particular field or matter are more likely to abuse that advantage to commit fraud.	3.53	1.647
4	Government officials with narcissistic personalities are more likely to commit fraud because they believe the fraud they commit cannot be tracked.	3.50	1.644
5	Government officials with a persuasive personality can more successfully convince others to go along with the fraud.	3.45	1.621
6	To avoid detection, government officials who commit fraud must be able to lie convincingly and must keep track of the overall story.	3.67	1.704
7	The government officials who committed the fraud can control their stress, as committing the fraudulent act and keeping it concealed can be extremely stressful.	3.77	1.610

## CORRELATION ANALYSIS

Pearson product-moment correlation was run to determine the relationship between independent variables; perceived pressure, perceived rationalisation, perceived

opportunity, and perceived capability with the dependent variable, public procurement fraud, as depicted in Table 10.

TABLE 10. Pearson's coefficient correlation results

Variable	Public Procurement Fraud	Perceived Pressure	Perceived Rationalisation	Perceived Opportunity	Perceived Capability
Public Procurement Fraud	1				
Perceived Pressure	0.534**	1			
Perceived Rationalisation	0.367**	0.224**	1		
Perceived Opportunity	0.034	0.185*	-0.009	1	
Perceived Capability	0.554**	0.663**	0.245**	0.213**	1

Note: \*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

There was a strong, positive correlation between perceived pressure and public procurement fraud, which was statistically significant ( $r = .534$ ,  $n = 165$ ,  $p = .000$ ). This result indicated that perceived pressure strongly contributed to procurement fraud in a positive direction. The presence of pressure will greatly increase the likelihood of public procurement fraud among public officials. Next, there was a moderate, positive correlation between perceived rationalisation and public procurement fraud, which was statistically significant ( $r = .367$ ,  $n = 165$ ,  $p = .000$ ). This result indicated that perceived rationalisation slightly contributed to procurement fraud positively. The presence of rationalisation will slightly increase the likelihood of public procurement fraud among public officials but with a very minimal effect.

Then, there was a weak, positive correlation between perceived opportunity and public procurement fraud, and it was statistically insignificant ( $r = .034$ ,  $n = 165$ ,  $p = .660$ ). This result indicated that perceived opportunity weakly contributed to the procurement fraud in the

positive direction but was not statistically proven as  $p > 0.5$ . Hence, there is insufficient evidence to show the correlation between perceived opportunity against public procurement fraud. Finally, there was a strong, positive correlation between perceived capability and public procurement fraud, which was statistically significant ( $r = .554$ ,  $n = 165$ ,  $p = .000$ ). This result indicated that perceived capability moderately contributed to procurement fraud in a positive direction. The capability will greatly contribute to the likelihood of public procurement fraud among public officials.

Multicollinearity (correlation between predictors) is assessed before executing the regression analysis. The tolerance and variance inflation factors can be used to detect multicollinearity. To determine the correlation between predictor variables, variance inflation factors (VIF) are used to quantify how much the variance of predicted regression coefficients is inflated when predictor variables are not linearly connected. If the tolerance value is less than 0.2 or 0.1 and the VIF value

is ten or greater, multicollinearity is a concern. According to Sekaran and Bougie (2016), multicollinearity is a frequently seen statistical phenomenon in which the

correlation between two or more independent variables in a multiple regression model is relatively high.

TABLE 11. Regression analysis: collinearity diagnostics

Model	Collinearity Statistic	
	Tolerance	VIF
(Constant)		
Perceived Pressure	0.546	1.831
Perceived Rationalisation	0.931	1.074
Perceived Opportunity	0.854	1.171
Perceived Capability	0.528	1.893

Note: Dependent Variable: Public Procurement Fraud

Table 11 tabulated the collinearity statistics results of variables. The results reveal that no multicollinearity exists between variables. The collinearity analysis test on whether the data met the assumption of collinearity indicated that multicollinearity was not a concern (Perceived Pressure Scores, Tolerance = 0.54, VIF = 1.83; Perceived Rationalisation, Tolerance = 0.93, VIF = 1.07; Perceived Opportunity Scores, Tolerance = 0.85, VIF = 1.71; Perceived Capability, Tolerance = 0.52, VIF = 1.89).

#### MULTIPLE REGRESSION ANALYSIS

According to Field (2013), multiple regression is an extension of simple regression in which an outcome is predicted by a linear combination of two or more predictor variables. The form of the model is:  $Y_i = (b_0 + b_1X_{1i} + b_2X_{2i} + \dots + b_nX_{ni}) + \epsilon_i$  in which the outcome is denoted as Y, and each predictor is denoted as X. Each predictor has a regression coefficient b associated with it, and b<sub>0</sub> is the value of the outcome when all predictors are zero (p.1013). This study aims to study the relationship between four independent variables: perceived pressure, perceived rationalisation, perceived opportunity and

perceived capability on the dependent variable, and public procurement fraud.

Tabachnick and Fidell (2007) explain the residual scatter plots to provide for visual analysis of the assumption of homoscedasticity between projected dependent variable scores and prediction errors. The key advantage is that the assumption can be read and assessed in a single glance, allowing any violations to be detected quickly and simply. According to Tabachnick and Fidell (2007), residuals (the difference between the achieved and anticipated DV scores) and residual variance should be the same for all predicted values (homoscedasticity). If this is true, the assumption is satisfied, and the scatter plot takes on the (approximate) shape of a rectangle; scores will be concentrated in the centre (around the 0 points) and scattered in a rectangular pattern. Simply said, points will be randomly distributed along a horizontal line. Any regular pattern or grouping of scores, on the other hand, is regarded as a violation. Figure 2 below depicts a random displacement of scores into a rectangle form with no grouping or systematic structure. The graph demonstrates that the assumption of homoscedasticity is satisfied.

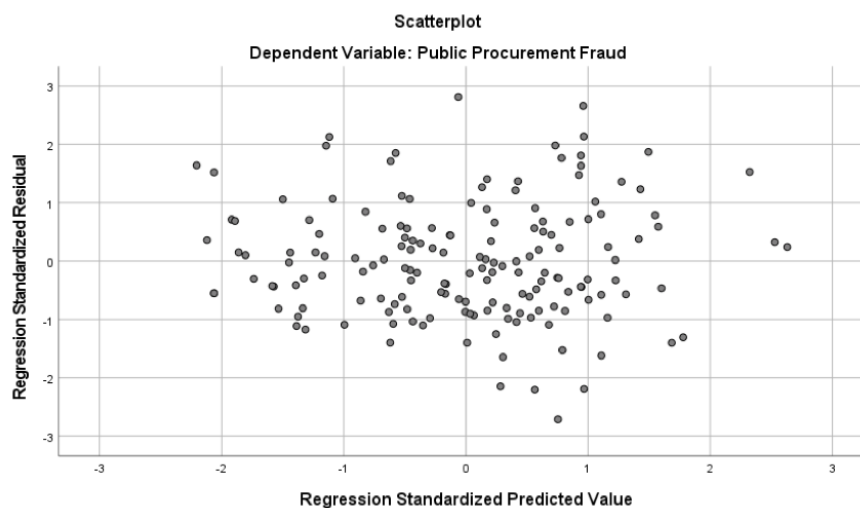


FIGURE 2. Scatter plot of residuals versus predicted values

To test the research questions formulated at the inception of the research, the result of regression analysis for coefficient as depicted in Table 14 explains the significant association between each of the independent variables with public procurement fraud.

The hypothesis analysis is conducted to test if there is a significant relationship between perceived pressure and public procurement fraud by Malaysian government officials (H<sub>1</sub>). Based on the findings, perceived pressure significantly predicted public fraud procurement,  $F(4,160) = 28.022$ ,  $p < 0.001$ , which indicates that perceived pressure plays a significant role in shaping public procurement fraud. These results direct the positive effect of the perceived pressure; hence Hypothesis 1 (H<sub>1</sub>) is accepted. The finding of this study is consistent with the previous studies by OECD (2007), Dellaportas (2013), Neu et al. (2013), Ross (2016), Mohd Saim et al.

(2018), Husin (2020) as well as Mohamed et al. (2021) that pressure is significantly and positively correlated with fraud.

Next, the hypothesis tests if there is a significant relationship between perceived rationalisation and public procurement fraud by Malaysian government officials (H<sub>2</sub>). Based on the findings, perceived rationalisation significantly predicted public procurement fraud,  $F(4,160) = 28.022$ ,  $p < 0.001$ , suggesting that perceived rationalisation contributed to public procurement fraud. Thus, Hypothesis 2 (H<sub>2</sub>) is accepted. The finding of this study is supported by the previous studies conducted by Blackburn et al. (2011), Klenowski (2012), Stadler and Benson (2012), Budiman et al. (2013), Satar (2019), Hassan (2020) as well as Husin (2020) that rationalisation is significantly and positively correlated with fraud.

TABLE 12. Regression analysis: coefficients

Model	Unstandardized Coefficients		Standardize Coefficient	t	Sig.
	B	Std. Error	B		
1 (Constant)	2.096	0.300		6.978	0.000**
P. Pressure	0.016	0.046	0.281	3.450	0.001**
P. Rationalisation	0.314	0.089	0.222	3.531	0.001**
P. Opportunity	-0.082	0.059	-0.086	-1.381	0.169**
P.Capability	0.172	0.043	0.331	4.020	0.000**
R	0.642				
R square	0.412				
Adj. R square	0.397				

\* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

Note: a. Dependent Variable: Public Procurement Fraud

b. Predictors: (Constant), Perceived Capability, Perceived Opportunity, Perceived Rationalisation, Perceived Pressure

The hypothesis analysis was performed to test if there is a significant relationship between perceived capability and public procurement fraud by Malaysian government officials (H<sub>4</sub>). Based on the findings, perceived capability significantly predicted the public fraud procurement,  $F(4,160) = 28.022$ ,  $p < 0.001$ , which indicates that perceived capability contributed to the fraudulent activities related to the public procurement fraud ( $b = .172$ ,  $p < 0.001$ ), thus H<sub>4</sub> is accepted. The finding of this study is aligned with the previous studies conducted by Wolfe and Hermanson (2004), Dorminey et al. (2010), Carney (2010), Lokanan (2017), Rustiarini (2019), and Husin (2020) that capability is significantly and positively correlated with fraud.

On the contrary, the hypothesis put to the assessment that there is a significant relationship between perceived opportunity and public procurement fraud by Malaysian government officials (H<sub>3</sub>). Based on the findings, perceived opportunity significantly predicted public fraud procurement,  $F(4,160) = 28.022$ ,  $p < 0.001$ . However, the results of coefficients indicate that perceived rationalisation is statistically proven to show a negative

relationship with public procurement fraud ( $b = -.082$ ,  $p > 0.001$ ). In conclusion, Hypothesis 3 is rejected. The finding of this study is coherent with the previous studies conducted by Ismail et al. (2018), Putra (2019) as well as Anindya and Adhariani (2019) that opportunity is insignificantly correlated with fraud. In conclusion, three hypotheses were accepted based on the fraud diamond analysis, and one hypothesis was rejected. This suggests that perceived pressure, perceived rationalisation, and perceived capability influenced government officials in committing public procurement fraud, whilst perceived opportunity does not affect public procurement fraud by government officials.

In answering the first research objective, perceived pressure was found to have a significant influence on public procurement fraud. This finding is supported by Ross (2016) and Mohamed et al. (2021), stating that an employee could be motivated to commit fraud due to the overwhelming pressure acted upon them. In complement to these research findings, research by Mohd Saim et al. (2018) and Husin (2020) also found that financial pressure

could steam up the motivation to commit fraud due to the escalation cost of living and spending beyond one's financial capability due to employees earning low pay. In addition, Dellaportas (2013), Neu et al. (2013) and Husin (2020) suggested that the surrounding of the preparator may contribute to pressure, such as supporting the family, a load of debts and the need for luxury items. Pressure to commit fraud may arise from the superiors or those holding authority, as found by OECD (2007) and Mohd Saim et al. (2018). Last but not least, if the situational pressure is too overwhelming and the perpetrators could not find any other avenue to resolve it, the perpetrator could turn to committing fraud as the last avenue to resolve the problem, as suggested by OECD (2007).

In the meantime, to address the research's second objective on perceived rationalisation was found to have a significant influence on public procurement fraud. Blackburn et al. (2011), Hassan (2020) and Husin (2020) supported this finding, suggesting that employees with low salary pay or when employees perceived themselves as unfairly treated with only fixed wages were prone to commit fraud. The research also suggested that employees who committed fraud believe that they have been working wholeheartedly but are still undervalued by their employer. On the other hand, a rationalisation would come in due to the surroundings as found by Klenowski (2012), Stadler and Benson (2012), Budiman et al. (2013) and Satar (2019), who found that poor accountability of organisation and the presence of working culture that allows fraud nurtures the fraud. Hence, the perpetrator rationalises their crime by redirecting the blame to the organisation.

Next, this study found that perceived capability significantly influenced public procurement fraud. This finding is supported by Wolfe and Hermanson (2004) and Dorminey et al. (2010). They elaborate that fraudsters need certain traits of capability or personality to commit fraud, such as a robust ego, a high level of confidence, determination to succeed at any cost and confidence that they will not get caught. Moreover, Wolfe and Hermanson (2004), Rustiarini (2019) and Husin (2020) also added that capability could be exploited by the authoritative power possessed by the fraudster, such as position and function in the organization. Apart from that, the acquired skills and competencies of an individual also contributed to a higher chance of fraudulent acts, as per research by Wolfe and Hermanson (2004), Lokanan (2018) and Carney (2010).

Lastly, the perceived opportunity had an insignificant influence on public procurement fraud. Ismail et al. (2018) supported this finding, stating that fraud related to public sector procurement has no substantial impact on the internal auditor's function. Thus, the annual review by Auditor's General Department on the public sector is not significantly helping the public sector reduce public procurement fraud occurrences. This finding is further supported by Anindya and Adhariani (2019) who suggested that there are limited possibilities for fraud to

be perpetrated in an agency-based corporate structure, which may explain why opportunity substantially does not impact employees to conduct fraud. Furthermore, Mohamed et al. (2010) and Putra (2019) found that the internal control mechanism is not significant in terms of association with fraud incidents, indicating a negative correlation between good governance and fraud occurrences. This research answered three out of four research questions where perceived pressure, perceived rationalisation and perceived pressure significantly plays a role in shaping public procurement fraud.

## CONCLUSION

The fraud diamond analysis is a paradigm that is frequently used in accounting and psychology to explain why an employee chooses to commit workplace fraud. The concept is that to combat fraud, it is vital not only to recognize that it occurs but also to determine how and why it occurs. From time to time, the news reported by the media on the arrest of government officials, from low-rank officials to high-profile individuals who were involved in scandals related to public funds, triggered public concern about the government's commitment to overcoming this issue. Apart from tainting a bad reputation on the nation's image, both to international and local viewers, this problem of fraudulent action by government officials also corrodes the public trust in the local institution on the government's ability to plan and spend the public fund diligently. This erosion of trust will cause the reluctant behaviour of taxpayers to fulfil their duty to pay taxes as a result of losing confidence. Public procurement fraud committed by public officials had caused massive losses to the public fund and indirectly tarnished the reputation of a public institution to the public. The presence of thrusting factors explained in this study had proven to foster public officials' fraudulent behaviour, and this malignancy needs to be addressed and rectified accordingly by the stakeholders.

The findings of this research would be useful for academicians for their future studies and would benefit the policymakers, legislators, authorities, regulators, and anyone involved in financial crime scene investigation because they will seek to discover the underlying motivations and activities that motivate individuals to commit these white-collar crimes. As for the Ministries, it will provide an understanding of the situational aspect associated with opportunities and will allow the government to work on strategies or approaches to improve the internal control system to lessen the likelihood of fraud occurring in the future. There are certain limitations to the current study. First, there is a constraint in the survey's distribution since the sample for this research was drawn from public officials in every ministry, regardless of the budget allocated in each ministry. Even though the samples represented all ministries in Malaysia, the non-uniform and non-standard numbers of respondents representing each ministry may

have an impact on the study's results. A Ministry with a high allocation of public funds for public infrastructure projects would have a different procurement procedure and framework related to the procurement of works compared to the ministry, which has a bigger allocation of supply and services. Hence, the perception of the elements contributing to fraud might have a different spectrum following the type of procurement. Secondly, this study is only limited to the public official at the federal level. The public official involved in this study was limited to those working at the ministry level. Thus, data collected for this study is good to explain the public procurement fraud that happened in the ministry. However, public procurement fraud is also reported happening at the state and federal agencies. Thus, the contributing factor in explaining public procurement fraud at the state and federal agencies might differ from the federal level.

Further research on this topic of study is strongly advised. Based on previous research and this research itself, factors contributing to procurement fraud in the public sector are dynamic. They could not conclusively be explained in the same research. It will be a significant and beneficial contribution to academicians, practitioners, government, and related organisations if the research on occupational fraud in general or public procurement fraud is specific. Hence, the current study suggests that future studies gather an equal number of respondents from each ministry to leverage the findings. This is important to ascertain the common understanding in the ministry of any issue. Aside from balancing the number of respondents from each ministry, by focusing on the specific ministry that received a huge budget allocation, future researchers would benefit more as they could conduct in-depth studies in certain aspects of the ministries' activities. Furthermore, future research could focus on public officials from state and federal government agencies. The procurement procedures and approval for state government and federal government agencies are slightly different from the ministry level, hence could possess unique characteristics and opportunities for procurement fraud.

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