

International Social Science & Educational Conference 2025

Navigating Change: Rethinking Social Science and Education in the 21st Century

Virtual Conference, 08 Nov 2025

Organiser: CLM Publishing Resources
Conference Series 2025

Determinants of Fraud Occurrences in Small and Medium-sized Enterprises (SMEs) Employees in Malaysia: Questionnaire Validation

**Wan Nur Shawatul Aswal Zulkefle¹, Hafizah Mat Nawi^{2*},
Mohd Abdullah Jusoh³, Asma' Rashidah Idris⁴**

**Corresponding Author*

¹ Department of Accountancy and Business, Tunku Abdul Rahman University of Management and Technology, Kampar, Malaysia

² Faculty of Defence Studies and Management, National Defence University of Malaysia, Kuala Lumpur, Malaysia

³ Faculty of Defence Studies and Management, National Defence University of Malaysia, Kuala Lumpur, Malaysia

⁴ Faculty of Business and Management, Universiti Teknologi Mara, Rembau, Malaysia

wannur@tarc.edu.my, hafizah.matnawi@upnm.edu.my, mohdabdullah@upnm.edu.my, asmar440@uitm.edu.my
Tel: +6018-6602805

Abstract

The purpose of the study is to create and validate a framework for the determinants of fraud occurrences in SMEs employees in Malaysia. The questionnaire was developed based on the existing measurement scales from the literature. The respondents of the study consist of SMEs employees in Malaysia. A purification process was carried out using SPSS 29.0, employing scale reliability tests and Exploratory Factor Analysis (EFA). The results indicated that the measurement instrument is both reliable and valid. This study contributes to theory extension and testing by verifying the conceptualisation and operationalisation of constructs.

Keywords: Fraud; Small and medium enterprises; Exploratory factor analysis; Fraud hexagon theory

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DOI: <https://doi.org/10.21834/e-bpj.v10iSI37.7613>

1.0 Introduction

Fraud can be viewed as a premeditated attempt to mislead another party by one individual or a group of individuals to achieve an improper advantage (Sow et al., 2018). Fraud has become a global issue that jeopardizes the sustainability of all types of organizations, be the large or small organizations. The ability to understand and manage fraud risk gives a better chance for Small and Medium-Sized Enterprises (SMEs) to sustain themselves in the industry. There has been little discussion about the fraud issue in SMEs (Zulkefle et al., 2022). Sow et al. (2018) provided an overview of the fraud risk in SME but emphasized more on fraud prevention instead of fraud determinants. It is important to note that before any attempt is made to minimize fraud and manage the risk effectively, the business needs to identify the causes of fraud occurrence and what leads to the fraudulent behaviour (Avortri & Agbanyo, 2021; Vousinas, 2019).

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Therefore, the objective of this study is to create and validate a framework for measuring constructs in the context of the determinants of fraud occurrences among SME employees in Malaysia. A reliable and valid framework exposing the causes of fraud would signal to the management where to put precautions to reduce the risk of fraud.

2.0 Literature Review

2.1 Theoretical reviews

Theories of fraud aim to understand the motivations and conditions driving fraudulent activities. Cressey's fraud triangle theory, introduced in 1953, identifies three main elements: pressure, opportunity, and rationalization, which together enable fraud. While foundational, the theory has been criticized for being insufficient in addressing the complexity of modern fraud, particularly organized crime, and multiple perpetrators. Researchers have expanded the fraud triangle to include additional factors. For example, fraud diamond adds capability, emphasizing the role of skills or traits in committing fraud. Besides, the fraud pentagon incorporates arrogance. In addition, the fraud hexagon theory builds on the fraud diamond by adding ego and collusion, which evolves into six drivers: pressure/stimulus, opportunity, rationalization, capability, ego, and collusion (Vousinas, 2019). These extended models aim to provide a more comprehensive understanding of fraud, addressing criticisms of the fraud triangle's limitations.

2.2 Determinants of fraud occurrences:

Pressure, also referred to as stimulus or incentives, is a key factor driving individuals to commit fraud, encompassing both financial and non-financial burdens. These pressures stem from financial needs, lifestyle aspirations, work-related challenges, and external expectations (Avortri & Agbanyo, 2021; Vousinas, 2019). Several studies pointed out the significant relationship between stimulus/incentives/pressure and fraud occurrences (Avortri & Agbanyo, 2021). Besides, Alfarago et al. (2023) discovered pressure as a major factor for fraud occurrences.

Opportunity is perceived as a weakness in the organization's control system that allows fraudsters to break free without being caught. This could happen as a result of poor internal control and an inability to practice adequate disciplinary actions. The status and power of the people within the company also provide opportunities. Numerous studies on fraud in organisations have been conducted, and the general conclusion is that opportunity has a significant relationship with the occurrence of fraud (Awalluddin et al., 2022). Besides, Othman & Ameer (2022) stated that opportunity is positively related to employee fraud.

Rationalization is a process of justifying fraud. Since many fraudsters do not see themselves as criminals, but rather as innocent, regular people, they must develop an argument to defend their actions. It is also possible for people to rationalize their fraudulent actions by redefining offences to exclude their actions. It is indicated that rationalization was discovered to be positively related to employee fraud (Avortri & Agbanyo, 2021). Besides, poor remuneration, which may serve as justification and rationalization for criminal behaviour has also been identified as a significant cause of fraud (Yaylali, 2025).

Capability is often used to describe the personal attributes and skills that are important in determining whether fraud will happen in the circumstances of stimulus/pressure, opportunity, and rationalization. Opportunity opens the door, and incentive and rationalization persuade the potential fraudster in the direction of the open doorway, but the person must also be capable of walking through it. A significant relationship has been discovered between capability and fraud (Othman & Ameer, 2022). Hasna & Novianti (2024) also found that capability had a positive influence on the incidence of financial statement fraud among construction firms listed on the Indonesia Stock Exchange. Likewise, Avortri & Agbanyo (2021) found that capability is the dominant factor influencing fraud occurrences.

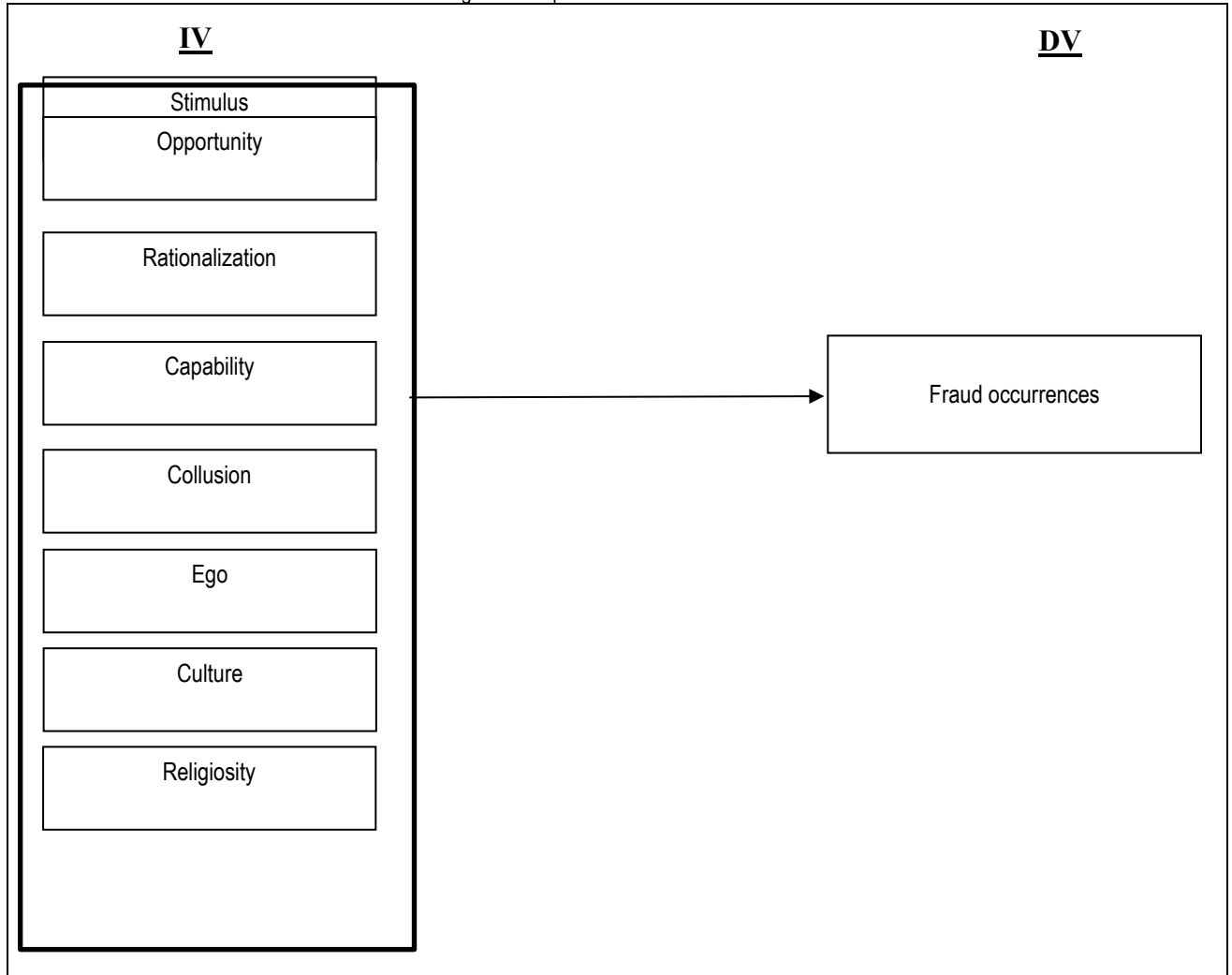
Collusion refers to a dishonest agreement or compact between two or more individuals, for one party to commence an action against the other for some bad intention. Fraud is much harder to stop once collusion exists among employees or between employees and a third party. Once fraud has begun, truthful employees may be drawn in as an unethical culture evolves, and a fraudulent environment becomes well-established (Wahyulistyo & Cahyonowati, 2023). Besides, Mat Husin et al. (2023) stated that poor monitoring and an inefficient documentation process allow for the misappropriation of assets, especially when several people collaborate to commit fraudulent activity. In addition, Aviantara (2021) asserts that collusion can influence fraudulent financial reports.

Ego is the result of a person's desire and his conscience's willingness to fulfil his desire. Ego is also closely tied to self-esteem, where individuals with high self-esteem are often driven to maintain their reputation or social status, even at the cost of engaging in unethical behaviour (Wahyulistyo & Cahyonowati, 2023). Lan & Rao (2025) also proposed a model, that identified the importance of ego as a crucial motivation for committing fraud. Likewise, Koomson et al. (2020) discovered that ego has a significantly positive significant relationship to asset misappropriation. Therefore, individuals tend to misappropriate assets at work because of their strong egos and the desire to maintain such egos.

Culture, defined as a group's shared values, beliefs, and practices, influences behaviour and decision-making. Hofstede (1991) described culture as the "software of the mind," which is unconscious, and proposed a five-dimensional framework that includes power distance, uncertainty avoidance, individualism/collectivism, masculinity/femininity, and long-term orientation to explain cultural variations. The collectivism/individualism dimension is particularly significant in understanding organizational behaviour and ethical decision-making. Collectivist cultures prioritize group welfare, loyalty, and cohesiveness, whereas individualist cultures emphasize personal goals and autonomy (Hofstede, 1991). Research indicates that cultural dimensions influence the likelihood of fraud (Chung et al., 2021). However, findings on the impact of individualism and collectivism on fraud risk remain mixed, necessitating further investigation (Avitasari, 2022).

Religiosity refers to the degree of an individual's commitment to religious beliefs and practices, encompassing aspects such as affiliation, activity, and corresponding beliefs (Shim, 2021). The relationship between religiosity and fraud has been explored in multiple studies. Sharma et al. (2022) found that religiosity significantly reduces fraudulent behaviour. In addition, studies show that employees with strong religiosity exhibit better compliance with organizational rules, ethical behaviour, and conflict resolution skills (Mahesa et al., 2025). Conversely, some researchers argue that religiosity does not directly prevent fraud, particularly when external pressures or opportunities to commit fraud are present (Utomo et al., 2021). The proposed research framework is presented in Figure 1.

Figure 1: Proposed Research Framework



3.0 Methodology

3.1 Research design

This study employs a descriptive research design that systematically collects, analyzes, prepares, and presents data within a conceptual framework. A cross-sectional research design has been chosen to explore the determinants of fraud occurrence in SME employees in Malaysia.

3.2 Participants of the pilot study

The questionnaire underwent a formal pilot phase among SME employees in Perak, Malaysia. Employees working in SMEs are chosen, regardless of their specific role since this study aims to capture a broad perspective on fraud occurrences across various levels and functions within SME. Questionnaires were distributed online through a Google Form Link and in person at SMEs' offices and stores. The participants were given a cover letter stating the introduction of the study, a consent form and a complete set of questionnaires. They were briefly informed of the survey's objective and assured that their responses would be kept strictly anonymous and confidential. Voluntary participation was administered throughout the study and informed consent was collected from each participant. The pilot study managed to collect data from 50 participants.

3.3 Development of the Measurement of Questionnaire Design

To achieve the research objectives, questionnaires were developed containing 71 items, organized into 11 sections based on past literature and the fraud hexagon theory. In the cover letter of the questionnaire, there was a thorough introduction stating the researcher's identity and the study's goal in full detail. The use of questionnaires in various study settings is made possible by the translation and adaptation of scales into different languages (Hall et al., 2014). For this reason, the questionnaire in this study was first translated. Since the fraud occurrence items obtained from the literature were defined in English, the translation was done early in the study. Procedures for reliability and validity were carried out for the current investigation due to the dual versions. An academic translator converted the original literary works from their original English versions into Malay. A second bilingual academic translator independently cross-checked both versions to confirm that the Malay and English survey instruments held and reflected the same intended meaning. Two final versions of the questionnaire, i.e., in Malay and English, were reconciled and made available. All constructs in the questionnaires utilize a 5-point Likert scale for measurement, where 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neither Agree nor Disagree", 4 = "Agree", and 5 = "Strongly Agree".

3.4 Content/Face Validation

In this study, both validity and reliability are given significant attention, especially when considering the suitability of an instrument. Content validity was gathered by a panel of experts comprising academicians (three lecturers from two local universities in Malaysia) and two experts from industry, with expertise in fraud research reviewing the translated version of the questionnaire. The academics were chosen because they frequently served as judges of a measurement scale in earlier investigations, and the industry experts were chosen as they were very knowledgeable about the subject, and determined whether the measures turned out to be logically legitimate (Hadi et al., 2020). Subsequently, face validity has been conducted with the two SME employees to check whether the questionnaire looks like it measures what it is supposed to measure (Lim, 2024). Using feedback from the experts, the study reviewed the questions accordingly. The questionnaire was then amended for the last time before being distributed for a pilot survey. In total, 71 items were finalized. The amended and final version of the instrument was tested in a pilot survey aimed at refining the measurement items and improving both construct reliability and validity.

3.5 Scales of Measurement

The scales of measurement adopted in this study were constructed in two ways. First, a review of the literature was conducted to select the constructs. Second, the identified constructs were integrated to ensure clarity and conciseness.

3.6 Assessment of questionnaire: item purification

The purification of the data from the literature includes assessing scale reliability and exploratory factor analysis (EFA). The information was gathered using 71 items to measure nine constructs. The survey employed Cronbach's Alpha to assess the reliability and internal consistency of the items. After establishing data reliability, the study conducted an EFA since the researcher had no expectations of the number or nature of the factors (Taherdoost et al., 2014). Sample size (N) = 50 is considered as a reasonable absolute minimum for using the EFA (de Winter et al., 2009). Although the sample size was limited to 50 respondents, scholars suggest that this is an adequate minimum for EFA (de Winter et al., 2009; Hogarty et al., 2005). Principal component analysis with varimax rotation was used. The appropriateness of the data was confirmed through the Kaiser–Meyer–Olkin (KMO) measure (above 0.5), Bartlett's Test of Sphericity (below 0.05), and communalities (above 0.5). Besides, the number of factors to extract is determined based on the eigenvalues above 1.0 (Pallant, 2020).

4.0 Findings

Table 1 reports the findings of the reliability analysis and EFA. The findings show that Cronbach's alpha values for all constructs exceeded 0.70, confirming strong internal consistency and reliability. Internal consistency reliability was further supported by the coefficient alphas ($\alpha > 0.70$ for all constructs) and by Pearson inter-correlations, which demonstrated significant associations at the 0.001 level. Item-to-total correlations also exceeded the threshold value of 0.35, providing additional evidence of reliability. The EFA result for each construct demonstrated that items grouped clearly on one factor which confirms the unidimensionality of all constructs. Sampling adequacy was verified through the Kaiser–Meyer–Olkin (KMO) test, with values more than 0.60, and Bartlett's Test of Sphericity, which was significant ($p < 0.05$) for each construct. These results confirmed that the data were suitable for factor analysis and that the correlation matrices were factorable (Pallant, 2020). Overall, fourteen (14) items were deleted due to the low value of communalities and factor loadings (below 0.5 for both). Overall, these results confirm that the measurement instrument is both reliable and valid, providing a robust foundation for assessing the determinants of fraud occurrence in SME. The detailed statistical findings are summarized in Table 1.

Table 1: Results of the pilot study (EFA & Reliability analysis)

Items	Loading	KMO	Bartlett's Test of Sphericity	Eigen Value	% of Variance	Cronbach Alpha
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			Approx. Chi- Square	df	Sig.			
Pressure (PRE)		0.674	118.112	15	0.000	2.851	47.523	0.772
PRE_3	Tension and frustration	0.663						
PRE_4	Unable to meet the target set	0.680						
PRE_5	Work pressure	0.769						
PRE_6	Insufficient of salary	0.641						
PRE_7	Costly daily expenses	0.590						
PRE_9	Increasing costs of living	0.774						
PRE_1	Key performance indicators (e.g., targets).	Deleted						
PRE_2	Different tasks simultaneously	Deleted						
PRE_8	Supporting family financially	Deleted						
Opportunity (OPP)		0.707	247.681	21	0.000	3.849	54.986	0.859
OPP_1	Sufficient documentation	0.671						
OPP_2	Proper record of transactions	0.847						
OPP_3	Separation of roles	0.758						
OPP_4	Proper supervision	0.769						
OPP_5	Well documented policies	0.598						
OPP_6	Proper records of resources	0.765						
OPP_7	Proper supervision of organization's facilities	0.757						
Rationalization (RAT)		0.749	93.243	15	0.000	2.989	49.808	0.790
RAT_2	Borrow the firm's asset	0.630						
RAT_3	Using firm's assets as reward	0.777						
RAT_4	Using firm's assets for personal purposes	0.751						
RAT_5	Using the firm's asset for a good purpose	0.862						
RAT_7	Gift from a customer as a gesture of good services	0.560						
RAT_8	Using firm's funds and paying them back later	0.607						
RAT_1	Helping family members or loved ones who need financial aid	Deleted						
RAT_6	Discretion in performing job	Deleted						
RAT_9	Taking money from the government is acceptable	Deleted						
Capability (CAP)		0.740	151.945	6	0.000	2.959	73.721	0.874
CAP_2	Ability to multitask	0.620						
CAP_4	Influenced situations in the workplace	0.911						
CAP_5	Access to resources of the firm	0.914						
CAP_6	Ability to deal with stress	0.948						
CAP_1	Ability to convince staff	Deleted						
CAP_3	Ability to solve the problems	Deleted						
Collusion (COL)		0.705	423.240	21	0.000	4.721	67.437	0.918
COL_1	Private agreements	0.906						
COL_2	Secret collaboration	0.657						
COL_3	Act for a mutual benefit	0.739						
COL_4	True purpose is concealed	0.802						
COL_5	Deceive stakeholders.	0.929						
COL_6	Informal agreements	0.759						
COL_7	Shared benefit	0.916						
Ego (EGO)		0.724	107.855	10	0.000	2.966	59.328	0.819
EGO_4	Self-esteem suffers from something unethical	0.759						
EGO_5	Self-esteem depends on moral principles	0.888						
EGO_6	Self-respect on moral principle	0.788						
EGO_7	Boost of self-respect on moral principles	0.749						
EGO_8	Loss of self-respect on wrong action	0.648						
EGO_1	Care of what others think	Deleted						
EGO_2	Influence on what others think	Deleted						
EGO_3	Care of negative opinion	Deleted						
Religiosity (REL)		0.810	190.369	21	0.000	4.255	60.779	0.877
REL_1	Good and bad deeds have consequences	0.808						
REL_3	Books about religion or faith	0.784						
REL_4	I am very religious	0.751						
REL_5	Believe in God	0.865						
REL_6	Religion is very important	0.784						
REL_7	Go to place of worship regularly	0.621						
REL_8	Spiritual values are more important	0.821						
REL_2	Religious classes	Deleted						
REL_9	Religious people lead to better country	Deleted						
Culture (CUL)		0.779	209.836	15	0.000	3.591	59.850	0.854
CUL_1	Prioritizing group interest	0.677						

CUL_2	Stick with group through difficulties	0.937							
CUL_3	Group welfare is more important	0.625							
CUL_4	Group success is more important	0.807							
CUL_5	Pursue goals considering group welfare	0.917							
CUL_6	Group loyalty should be encouraged	0.610							
Fraud Occurrences (FO)			0.854	340.512	36	0.000	5.397	59.963	0.911
FO1	Take resources from the organization	0.612							
FO2	Conduct personal work during working hours	0.730							
FO3	Not complying with the policies	0.836							
FO4	Using firm's assets for personal purposes	0.773							
FO6	Take cash/cash equivalent for personal use	0.722							
FO7	Acceptable to create a fictitious revenue/income	0.817							
FO8	Acceptable to hide the expenses	0.857							
FO9	Acceptable to hide revenues/income	0.876							
FO10	Acceptable to create fictitious expenses	0.709							
FO5	Using internet service of the office for personal purposes	Deleted							

Source: Developed by the authors for the current study

5.0 Discussion and Conclusions

This study identified and confirmed factors that influence fraud occurrences among SMEs employees in Malaysia. The theoretical framework, operationalisation of constructs, and methodological approach adopted in this study establish a strong foundation for future inquiry. Firstly, the study demonstrates that a comprehensive understanding of fraud occurrences requires the consideration of stimulus/pressure, opportunity, rationalization, capability, collusion, ego, culture, and religiosity. Secondly, the findings in the present pilot study suggest that these constructs are valid, reliable, and applicable to SMEs employees, thus supporting the construct validity of the existing scales. Thirdly, the findings presented in this study on factors that determined fraud occurrence complement recent empirical research (Said, Alam, et al., 2018; Utomo et al., 2021). This study is not without limitations. The pilot survey relied on a relatively small sample of 50 respondents, which, while sufficient for initial scale purification, limits generalizability. Future studies should apply this validated instrument to larger and more diverse samples across industries and regions.

6.0 Acknowledgement

The National Defence University of Malaysia funded this work. The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

7.0 Paper Contribution to Related Field of Study

The validated research framework offers clear utility for both practitioners and policymakers. For practitioners, particularly SME owners and auditors, the framework offers new insight into managing risk which may give a better chance for SMEs to sustain in the industry. For policymakers, the framework highlights critical areas where regulatory interventions and support mechanisms are needed. Regulators may also use the framework to design targeted anti-fraud policies, allocate resources for SME capacity-building, and benchmark organizational compliance with anti-fraud standards.

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