

# The Intervening Effects of Whistleblowing in Reducing the Risk of Asset Misappropriation

Mohamad Afzhan Khan Bin Mohamad Khalil<sup>1</sup>, Anuar Bin Nawawi<sup>2</sup>, Nurmazilah Dato' Mahzan<sup>3</sup> (1. Open University Malaysia, Malaysia; 2. Universiti Teknologi MARA, Malaysia; 3. University of Malaya, Malaysia)

**Abstract:** The main objective of this study is to examine the intervening role of whistleblowing in preventing and detecting fraud in order to reduce the risk of asset misappropriation. A review of the literature was undertaken with the aim of crafting the research instrument based on the fraud triangle theory. Qualitative pretesting and quantitative pilot testing were conducted prior to the final data collection exercise. Out of the 553 questionnaires distributed in the final data collection regime, 334 were usable replies and this merits a structural equation modelling to be performed. A confirmatory factor analysis was undertaken on the independent, dependent and mediating variables prior to the assessment of the final model. The results of the structural equation model (Chi square = 2.17; RMSEA = 0.06; CFI = 0.85; TLI = 0.84; NFI = 0.76; PGFI = 0.64) were convincing based on the suggestions from previous studies. This study found that whistleblowing has a partial mediating effect on the relationship between the independent variables (internal control system and professional scepticism) and the risk asset misappropriation. Moreover, it was discovered that there is a full mediation effect of whistleblowing on the relationship between code of ethics and the risk of asset misappropriation.

Key words: asset; fraud; whistleblowing

JEL codes: G3, G5, M42

# 1. Motivation and Objective of the Study

The gravity of fraud cases can be seen by the sheer statistics and the adverse consequences of fraud. For example, the Association of Certified Fraud Examiners (2012) in their latest study reported that asset misappropriation is getting from bad to worse. Skimming (203 cases), cash larceny (152 cases), billing (346 cases), expense reimbursement (201 cases), cheque tampering (165 cases), payroll (129 cases) and cash register disbursement (50 cases) were among the types of asset misappropriation reported in that global survey. This study is motivated by the need to shed more light on the risk of asset misappropriation, a major form of fraud in many organizations, and the reluctance to whistleblow by those few capable of doing so (Buckley et al., 2010; Lee & Fargher, 2012; Read & Rama, 2003). Asset misappropriation can severely affect organizations, in particular those

Mohamad Afzhan Khan Bin Mohamad Khalil, MBA, Business School, Open University Malaysia; research areas/interests: fraud, auditing, accounting, corporate governance and business ethics. E-mail: afzhankhan@oum.edu.my.

Anuar Bin Nawawi, Ph.D., Faculty of Accountancy, Universiti Teknologi MARA; research areas/interests: fraud, auditing, accounting, corporate governance and business ethics. E-mail: anuar217@salam.uitm.edu.my.

Nurmazilah Dato' Mahzan, Ph.D., Faculty of Business and Accountancy, University of Malaya; research areas/interests: fraud, auditing, accounting, corporate governance and business ethics. E-mail: nurmazilah@um.edu.my.

operating within the banking sector. If whistleblowing is ignored, there will be problems of theft of asset, falsification of sales data, inflated claims from suppliers, manipulation of inventories and overstatement of revenues (Somers & Casal, 2011). Shareholders will suffer from financial losses which will lead to erosion of confidence from potential investors (Bierstaker et al., 2006). Pieces of empirical evidence have shown that internal control system (Sengur, 2012), code of ethics (Wesel, 2009; Yekta et al., 2010), professional scepticism (Masruri & Zahro, 2013) and technology tools (Grabosky, 2007) solely are not sufficient to prevent and detect fraud. The mediated role of whistleblowing is necessary. Organisations must be aware of the roles of whistleblowing and how it can help other mechanisms to reduce fraud. The main objective of this study is to examine the intervening role of whistleblowing in preventing and detecting fraud in order to reduce the risk of asset misappropriation. Information from this study can be helpful in minimizing the allocation of time, resources utilized and cost incurred to combat asset misappropriation.

### 2. Review of Empirical Studies and Research Gaps

Poor internal control is one of the top factors contributing to fraud in Malaysia (KPMG, 2009). The weaknesses of internal control system have been researched in a very large scale by previous studies (Dorminey et al., 2010; Hermawati, 2013; Kassem & Higson, 2012; Rae et al., 2008). There are few studies that have analyzed the relationship between internal control systems and fraud without the effect of whistleblowing (Bierstaker et al., 2006; Coram et al., 2008). Thus, the first research gap identified is the need to include whistleblowing. Numerous researchers have advocated the use of code of ethics as a means to prevent fraud (Bierstaker et al., 2006; Domoro & Syed Agil, 2012; Masruri & Zahro, 2013; Rae et al., 2008; Sengur, 2012; Wesel, 2009; Yekta et al., 2010). A number of researchers (Okpara, 2003; Yekta et al., 2010) have examined the relationship between ethics and whistleblowing. The causal relationship between code of ethics and reporting wrongdoings could be extended to examining fraud to create the second research gap of this study. The mediating effect of whistleblowing on the relationship between professional scepticism and fraud is the third gap that is to be narrowed down by this study. Haugen & Selin (1999) discussed the common technological controls such as passwords, firewalls and encryptions to detect fraud through their qualitative study. Their study was extended by Bierstaker et al. (2006) by conducting mean analysis to explain the effectiveness of technology tools in preventing fraud. In the banking environment, Usman & Shah (2013) through their review of literatures have elaborated on the significant effect of technology in reducing fraud. Subsequently, results from the questionnaires, personal interviews, and document review conducted in a study by Njanike et al. (2009) on 13 commercial banks showed that ineffective technological controls may lead to unethical behaviour. However, all of the studies above have not linked technology controls and whistleblowing.

#### 3. Research Methodology

A literature review was first done to develop the initial research questionnaire. Subsequently, the questionnaire was pretested in a series of interviews with six experts. Thematic analysis was then conducted to analyze the information gathered from the interviews. Thereafter, a quantitative pilot study among 55 bankers was conducted. From the pilot study, factor analysis and reliability tests were performed on all the respective constructs. Several items were removed from the measurement of the six constructs in the pretest and pilot test stages. The final survey instrument was then administered to 553 bankers out of which there were 334 usable

responses. Systematic simple random sampling and face to face data collection methodology were used in this study. The data were collected with the help of nineteen research assistants. Prior to the structural equation modelling, a Mann Whitney test was conducted to ensure that there was no non-response bias. Cronbach alphas were calculated on all the six constructs and all the indices were above 0.80, implying reliability (Zikmund et al., 2010). The normality of distribution of the constructs was determined using the Kurtosis measurements and the indices for all the constructs were within the recommended ranges of Lei & Lomax (2005). Finally, confirmatory factor analysis (CFA) was performed on all the constructs and the results were convincing. Structural equation modelling (SEM) was then performed. During the assessment of non response bias, reliability, normality and confirmatory factor analysis, several items were deleted in every construct to ensure that the remaining items were valid and reliable for a model assessment. The respective constructs employed in this study are disclosed and summarized in Table 1 below.

Table 1         Constructs Employed in This Study		
Independent Variables	<ol> <li>(1) Internal Control System</li> <li>(2) Code of Ethics</li> <li>(3) Professional Scepticism</li> <li>(4) Technology Tools</li> </ol>	
Mediating Variable	Whistleblowing	
Dependent Variable	Risk of Asset Misappropriation	

# 4. Review on the Principles of Mediation

Table 2	Principles of	Full Mediation by	Kenny & Baron (1986)
---------	---------------	-------------------	----------------------

First test : $X \xrightarrow{c} Y$	Explanation: The first test between independent (X) and dependent variable (Y) must be significant (c)
Second test :	
X EQUATION 3	<ul> <li>Explanation:</li> <li>The following must take place in the second test which is the final model:</li> <li>(1) There is evidence of a significant linear relationship (a) between the independent variable (X) and the mediator (M) in equation (1).</li> <li>(2) There is evidence of a significant linear relationship (b) between the mediator (M) and the dependent variable (Y) in equation (2).</li> <li>(3) Equation (3) is no longer significant (c') in the model. The relationship of X and Y diminishes when M is introduced in the model.</li> </ul>

The pioneer methodologists who contributed to the literature on the principles of mediation are Kenny & Baron (1986). Their method has been reviewed and discussed in many studies. Several other methodologists (Hair et al., 2010; Iacabocci et al., 2007; Little et al., 2007) have discussed and supported the principles of mediation by Kenny & Baron (1986). There are certain empirical conditions for mediation that must be met. According to Kenny & Baron (1986), two tests must be conducted in the process of mediation assessment. Consistent with their view, Hair et al. (2010) have also supported this methodology. Table 2 will further assist in describing the mediation principles. In light of the discussion on the principles of mediation, it is to be noted that there have been some disagreements between methodologists in recent studies. According to Iacabocci et al. (2007), if there is no relationship between the independent variable (X) and dependent variable (Y), then mediation test should not be performed. In contrast, other methodologists like Rucker et al. (2011) view it differently. Based on the discussion of Rucker et al. (2011), it is justified that focusing on the significance level in the first test can impede research.

The main reasons discussed in their literature are (1) evidence for full mediation will discourage researchers from examining indirect effects which can hinder theory development (2) the notion of partial mediation is less impressive than full mediation and this is unwarranted in any research.

# 5. Underpinning Theory and Conceptual Framework

The fraud triangle theory has been widely used by previous researchers in the study of fraud prevention (Dorminey et al., 2010; Hillison et al., 1999; Mironiuc et al., 2012; Sitorus & Scott, 2008; Skousen et al., 2009) and whistleblowing (Hermawati, 2013; Lee & Fargher, 2012). The PwC Global Economic Crime Survey (2009) reported that pressure (68%), opportunity (18%) and rationalization (14%) are the factors of fraud. Whistleblowing should be a catalyst rather than enabler in the prevention and detection of fraud. Whistleblowing is designed to only improve individual and collective behaviour of people working in a company rather than directly fighting fraud (Bunget et al., 2009). The following Figure 1 depicts the conceptual framework of this study.



Figure 1 Conceptual Framework

#### 6. Direct Effect Assessment

The direct effect assessment between the independent and dependent variables is first conducted. According to Kenny & Baron (1986), the direct effect assessment needs to be conducted prior to performing a structural equation modelling. This is the first test that should be performed to determine whether mediation exists or otherwise as explained in Table 2 earlier in this study. The significance values and strength of relationships in terms of Beta are disclosed in Table 3 below. As could be seen, the direct effects between the independent variables (internal control system, code of ethics and professional scepticism) and the dependent variable (risk of asset misappropriation) are significant. The p-values of all the significant associations fall below 0.10 (Zikmund et al., 2010). The result of the direct analysis is quite similar to previous studies (Coram et al., 2008; Masruri & Zahro, 2013). Coram et al. (2008) reported that organizations with good internal controls may detect asset misappropriation. Previous studies have performed a number of analyses on professional scepticism (Charron & Lowe, 2008; Masruri & Zahro, 2013). Charron & Lowe (2008) explained that people who exhibit high levels of professional scepticism are in a better position to detect fraud. In this study, the only association which is not significant is between technology tools and the risk of asset misappropriation (p-value = 0.46). Nonetheless, technology tools were still included in the structural equation modelling analyses following the view of Rucker et al. (2011). Moreover, some other methodologists advocate the inclusion of all variables in the model regardless of

their significance in order to control for confounding (Bursac et al., 2008). According to Pearl (2012), the hypothesized model should be subjected to a test "of the entire system of variables", irrespective of whether the tested part bears any relationship to the resulting claims. These views seem to depart from the conventional principles developed by Kenny & Baron (1986). However, in this study, the departure from the conventional principles is minimal judging by the fact that it only affects one construct which is technology tools. Thus, despite the rigidity proposed by Kenny & Baron (1986), this study takes the view that it is important to test all the constructs in a simultaneous model to examine relationships.

No	Hypotheses Statement	Beta estimate	P-value	Interpretation
H1(a)	There is a direct effect of internal control system on the risk of asset misappropriation	-0.24	0.01	Supported
H1(b)	There is a direct effect of code of ethics on the risk of asset misappropriation	-0.19	0.02	Supported
H1(c)	There is a direct effect of professional scepticism on the risk of asset misappropriation	-0.21	0.01	Supported
H1(d)	There is a direct effect of technology tools on the risk of asset misappropriation	-0.04	0.46	Not supported

Table 3	Summarv	of the	First	Hypothesis
Tuble 5	Summary	or the	Inst	rypoincois

# 7. Structural Equation Modelling Assessment

Figure 2 portrays the SEM assessment performed to satisfy the research objective of this study. Table 4 reports the indices from the assessment. The discussion of the results will follow suit. This study will uphold the view of Zikmund et al. (2010) in providing a cutoff threshold of the significance level of 10% (p < 0.10).



Figure 2 Structural Equation Model

Equation 1 (cross referenced with	h Table 2)		
Mediating Variable	Independent Variables	Beta Estimates	P-value
Whistleblowing	Internal Control System	0.70	0.01***
Whistleblowing	Code of Ethics	0.34	0.01***
Whistleblowing	Professional Scepticism	0.10	0.03**
Whistleblowing	Technology Tools	-0.03	0.55 <sup>NS</sup>
Equation 2 (cross referenced with	h Table 2)	÷	
Dependent Variable	Mediating Variable	Beta Estimates	P-value
Asset Misappropriation	Whistleblowing	0.20	0.08*
Equation 3 (cross referenced wit	h Table 2)		
Dependent Variable	Independent Variables	Beta Estimates	P-value
Asset Misappropriation	Internal Control System	-0.34	0.01***
Asset Misappropriation	Code of Ethics	-0.08	0.28 <sup>NS</sup>
Asset Misappropriation	Professional Scepticism	-0.12	0.05**
Asset Misappropriation	Technology Tools	0.10	0.09*

Table 4         Indices from the Structural Equation Mo	odelling
---	----------

Note: \* Significance level < 0.10; \*\* Significance level < 0.05; \*\*\* Significance level < 0.01; NS Not Significance

Table 5 Summary of the Second Hypothesis

No	Hypothesis Statement	Results	Interpretation
H2(a)	There is a relationship between internal control system and the risk of asset misappropriation when mediated by whistleblowing.	Partial Mediation	Supported
H2(b)	There is a relationship between code of ethics and the risk of asset misappropriation when mediated by whistleblowing.	Full Mediation	Supported
H2(c)	There is a relationship between professional scepticism and the risk of asset misappropriation when mediated by whistleblowing.	Partial Mediation	Supported
H2(d)	There is a relationship between technology tools and the risk of asset misappropriation when mediated by whistleblowing.	No Mediation	Not supported

### 8. Findings and Discussion

The indices for model fit in this study are shown in Table 6. Justifications and benchmarks are also provided from previous studies to defend the structural equation model used in this study. All indices fall within suggested range. The results of the structural equation model (Chi square = 2.17; RMSEA = 0.06; CFI = 0.85; TLI = 0.84; NFI = 0.76; PGFI = 0.64) are convincing based on the recommendations provided by previous studies as could be seen from Table 6. The model fit is first confirmed before any discussion is made on the hypothesis testing. According to Little et al. (2007), there should be at least one of any two situations that must be observed to confirm a partial mediation. In the first situation, the Beta value for the relationship between the independent and dependent should be reduced with the inclusion of the mediating variable for a partial mediation to take place. Alternatively, in the second situation, the p-value must be less significant in the relationship between the independent and dependent and dependent when the mediating variable is included in the model.

In the structural equation analysis conducted, there are significant relationship between internal control system and whistleblowing (Beta = 0.70, p = 0.01), moderately significant relationship between whistleblowing and the risk of asset misappropriation (Beta = 0.20, p = 0.08) and significant negative relationship between internal control system and the risk of asset misappropriation (Beta = -0.34, p = 0.01) as shown in Table 4. As

such, a partial mediation can be concluded in this case because Beta is reduced from -0.24 (direct test) to -0.33 (mediating test) implying that the strength of internal control system and the risk of asset misappropriation becomes less prevalent when the mediating variable (whistleblowing) is incorporated in the model. These results indicate that although an internal control system could prevent and detect the risk of asset misappropriation, the control system will work better if it is intervened by whistleblowing. Hypothesis H2(a) is thus supported in this study. Proper authorization for wage and overtime, proper documentation and proper authorization system according to limit are forms of internal control that could detect the risk of asset misappropriation such as manipulating payroll records, diverging wages, and overstating hours worked and overcharging banks expenditure for personal gain. It is also recommended that appropriate staff rotation policy, mandatory leave policy and cross referencing for potential employees as part of internal control mechanisms that could prevent the creation of phantom employees, manipulation of payroll records and stealing of cash from the organization. The role of whistleblower as rectifying criminal behaviour at the workplace is important because criminal behaviour such as theft, gambling and drug abuse could serve as red flags of fraud.

Index	Observed Range from this study	Desired range recommended by authorities
Root Mean Square of Error Approximation (RMSEA)	0.06	Hair et al. (2010) suggested indices below 0.10
Comparative Fit Index (CFI)	0.85	Javali (2011) indicates that 0.82 is acceptable fit.
Tucker Lewis Index (TLI)	0.84	Hooper et al. (2008) have recommended a more lenient viewpoint whereby figures which are as low as 0.80 should be acceptable
Normed Fit Index (NFI)	0.76	Singh (2009) has recommended that NFI is to be acceptable if it is as low as 0.60 to as high as 0.90
Chi Square	2.17	Range of acceptable chi square from as high as 5.0 (Wheaton et al., 1977) to as low as 2.0 (Tabachnick and Fidell, 2007).
Parsimony Goodness of Fit Index (PGFI)	0.64	Hair et al. (2010) recommended indices above 0.50

Table 6 Confirmation of Model Fit

In the structural equation analysis conducted, there is a significant relationship between whistleblowing and code of ethics (Beta = 0.34, p = 0.01), moderately significant relationship between whistleblowing and the risk of asset misappropriation (Beta = 0.20, p = 0.08) and an insignificant negative relationship between code of ethics and the risk of asset misappropriation (Beta = -0.08, p-value = 0.28) as shown in Table 4. The assessment clearly justifies that there is a full mediation of whistleblowing in intervening the relationship between code of ethics and the risk of asset misappropriation. This is because; the relationship between the code of ethics and the risk of asset misappropriation cease to be significant with the inclusion of whistleblowing in the model assessment as proposed by the authorities (Hair et al., 2010; Kenny & Baron, 1986). However, in the direct effect assessment, without the inclusion of the mediating variable, the relationship between the code of ethics and the risk of asset misappropriation is significant (Table 3). This implies that without a whistleblowing mechanism in place, the code of ethics cannot be used to prevent and detect fraud. In light of the above assessment, hypothesis H2(b) is supported in this study. The structural equation model findings in this study concur with the literature of Wesel (2009) who strictly discussed that code of ethics cannot stand alone to fight fraud and corruption. The whistleblowing role of helping other people and reducing future damage could be considered as an intervention factor between professionalism and fraud detection (e.g., conspiracy between buyers and suppliers, unlawfully permitting special prices and unethically granting business to suppliers for personal gain). This is because the value of professionalism ensures that employees who whistleblow disregard the relationships, financial interest and elements of collectivism when performing their official duties of uncovering misconduct in the banking sector.

The act of being fair and providing quality auditing justifies the behaviour of helping other people. The behaviour of helping other people then ensures that acts of misconduct such as corruption and collusion are brought to the light of justice. The behaviour of being objective impacts the assessment of evidence persuasiveness in auditing for fraud. Objectivity is important in maintaining public confidence and this ensures that there is no personal relationship between auditors, clients, suppliers and buyers which could possibly lead to a potential conflict of interest. That is why having an opinion which is free from bias is a necessity in preventing and detecting asset misappropriation. Only then can collusion between buyers and sellers and giving privilege prices to chosen individuals could be avoided in the banking sector.

Whistleblowers must realize that they have a role of alerting top management of observed wrongdoings and should come forward to report wrongdoings. Another contribution of this study is that it has extended the conceptual model of Yekta et al. (2010). However, the findings of this study are not consistent with what has been reported by Yekta et al. (2010) who reported an insignificant relationship between code of ethics and reporting wrongdoings (p value = 0.20). The SEM assessment conducted for this study extends the knowledge gained from previous studies (Domoro & Syed Agil, 2012; Masruri & Zahro, 2013) that directly regressed ethics and fraud without studying the mediation effect of whistleblowing.

From Table 4, it could be seen that there is a significant relationship between professional scepticism and whistleblowing (Beta = 0.10, p = 0.03), moderately significant relationship between whistleblowing and the risk of asset misappropriation (Beta = 0.20, p = 0.08) and a significant negative relationship between professional scepticism and the risk of asset misappropriation (Beta = -0.12, p = 0.05). The assessment provides support for partial mediation because when whistleblowing is incorporated in the model as an intervening effect between professional scepticism and the risk of asset misappropriation, the significance level is reduced from p = 0.01(Table 3) to p = 0.05 (Table 4) indicating a lesser strength between the independent variable and dependent variable when mediating variable is taken into account. Thus, hypothesis H2(c) is supported in this study. Among the possible ways of being sceptical when auditors are in doubtful or curious situations are to conduct unannounced inventory observations and testing some low risk accounts (Mckee, 2006). This is because auditors have a responsibility of reporting or whistleblowing if they find any wrongdoings. This then reduces the risk of asset misappropriation such as falsification of physical inventories, theft of properties, theft of low risk accounts such as tools, supplies, waste and scrap materials. Internal auditors, fraud investigators, risk managers and compliance officers in banks spend so much of their time gathering sufficient information and evidence against fraudulent practices such as forgery of cheques, theft of cash, over-claiming of expenses, falsification of accounting records and managerial reports. All the efforts will be gone to waste if they do not realize that they have a whistleblowing role of alerting the top management.

Finally, hypothesis 2(d) is rejected in this study because there is no significant relationship between whistleblowing and technology tools (Beta = -0.03, p = 0.55) based on the principles of Kenny & Baron (1986). The result in this section is consistent with the findings of KPMG (2009). Their survey indicates that information technology can be a liability instead of an advantage to fraud prevention measures. The survey reported abuse of passwords or privileges (71%), manipulation of the weaknesses in the information technology systems (36%), lack of segregation of duties (21%) and hacking (14%). Consistent with the conclusion provided by Behling et al. (2009), this study considers that technology controls are not always sufficient to reduce misappropriations. This is

due to the fact that technology tools are not widely used by the banking sector as they are often expensive and deemed redundant.

#### 9. Implications

With the SEM assessment conducted in this study, the main objective of examining the mediating role of whistleblowing in preventing and detecting fraud in order to reduce the risk of asset misappropriation has been met and detailed discussion has been provided to narrow down the literature gaps. This study offers two managerial implications. The study of KPMG (2009) revealed that unethical behaviour in organizations leads to reputation damage (86%) and loss of employees' morale (78%). The study of Somers & Casal (2011) found out that 45% of employees prefer not to blow the whistle because they believe that no action will be taken after the whistleblowing is done. However, in this study, the opinion of Somers & Casal (2011) is disputed. This study suggests that whistleblowers do play a major role in preventing unethical behaviour. This should be a wakeup call to all auditors, risk managers and compliance officers to whistleblow in preventing losses due to asset misappropriation in the banking sector. One managerial implication in this study is that every bank should provide a channel for whistleblowing. The code of ethics communicated to employees must be accompanied by whistleblowing policy that specifies the roles of and protection of whistleblowers. Another managerial implication of this study is that the banking sector must consider investing in a more robust internal control system and the hiring of people with professional scepticism. This is because greater surveillance and managerial diligence in the internal control system are needed to decrease employee related fraud.

#### **References:**

Association of Certified Fraud Examiners (2012) Survey.

- Behling S., Floyd K., Smith T., Koohang A. and Behling R. (2009). "Manager's perspectives on employee information technology fraud issues within companies/organizations", *Issues in Information System*, Vol. 10, No. 2, pp. 76-81.
- Bierstaker J. L., Brody R. G. and Pacini C. (2006). "Accountants' perceptions regarding fraud detection and prevention methods", *Managerial Auditing Journal*, Vol. 21, No. 5, pp. 520-535.
- Bowlin K., Hobson J. L. and Piercey M. D. (2013). "The effects of auditor rotation, professional scepticism, and interactions with managers on audit quality", working papers series, Social Science Research Network, retrieved on March 31, 2013, available online at: http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1914557.
- Buckley C., Cotter D., Hutchinson M. and O'Leary C. (2010). "Empirical evidence of lack of significant support for whistleblowing", *Corporate Ownership and Control*, Vol. 7, No. 3, pp. 275-283.
- Bunget O. C., David S. and Maria I. (2009). "Ethics and internal audit: Whistleblowing issues", retrieved on December 31, 2011, available online at: http://mpra.ub.uni-muenchen.de/17312/.
- Bursac Z., Gauss C. H., Williams D. K. and Hosmer D. W. (2008). "Purposeful selection of variables in logistic regression", retrieved on August 18, 2013, available online at: http://www.scfbm.org/content/3/1/17.
- Charron K. F. and Lowe D. J. (2008). "Scepticism and the management accountant: Insights for fraud detection", *Management Accounting Quarterly*, Vol. 9, No. 2, pp. 9-16.
- Coram P., Ferguson C. and Moroney R. (2008). "Internal audit, alternative internal audit structures and the level of misappropriation of assets fraud", *Accounting and Finance*, Vol. 48, pp. 543-559.
- Domoro O. M. O. and Syed Agil S. O. (2012). "Ethics and corruption empirical study in the Libyan police force", *Australian Journal* of Basic and Applied Sciences, Vol. 6, No. 6, pp. 353-357.

Dorminey J. W., Fleming A. S., Kranacher M. J. and Riley R. A. (2010). "Beyond the fraud triangle", CPA Journal (July), pp. 16-24.

Grabosky P. (2007). "The Internet, technology, and organized crime", Asian Journal of Criminology, Vol. 2, No. 2, pp. 145-161.

Hair J., Anderson R. and Babin B. (2010). Multivariate Data Analysis (7th ed.), Prentice Hall.

Haugen S. and Selin J. R. (1999). "Identifying and controlling computer crime and employee fraud", Industrial Management & Data

Systems, Vol. 99, No. 8, pp. 340-344.

- Hermawati L. M. (2013). "The influence of fraud triangle upon the existence of financial statement fraud", retrieved on January 11, 2014, available online at: http://www.savepageaspdf.com/c8ac50ce9e0348da989370c9b1e5c92e/PAPER%20FRAUD% 20TRIANGLE%20MURTANTO%20AND%20LUTFIANA%20(Final).htm.
- Hillison W., Pacini C. and Sinason D. (1999). "The internal auditor as fraud-buster", *Managerial Auditing Journal*, Vol. 14, No. 7, pp. 351-363.
- Hooper D., Coughlan J. and Mullen M. R. (2008). "Structural equation modelling: Guidelines for determining model fit", *Electronic Journal of Business Research Methods*, Vol. 6, No. 1, pp. 53-60.
- Iacobucci D., Saldanha N. and Deng X. (2007). "A meditation on mediation: Evidence that structural equations models perform better than regressions", *Journal of Consumer Psychology*, Vol. 17, No. 2, pp. 139-153.
- Javali S. (2011). "A structural equation model of the determinants of health care in the surveyed households in rural of Dharwad District, Karnataka State, India", retrieved on June 08, 2013, available online at: http://www.webmedcentral.com/article\_view/1698.
- Kassem R. and Higson A. (2012). "The new fraud triangle model", Journal of Emerging Trends in Economics and Management Sciences, Vol. 3, No. 3, pp. 191-195.
- Kenny D. A. and Baron R. M. (1986). "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51, No. 6, pp. 1173-1182.
- KPMG (2009). KPMG Fraud Survey 2009 Report, Malaysia.
- Lee G. and Fargher N. (2012). "Companies' use of whistleblowing to detect fraud: An examination of corporate whistleblowing policies", *Journal of Business Ethics*, Vol. 114, No. 2, pp. 283-295.
- Lei M. and Lomax R. G. (2005). "The effect of varying degrees of non-normality in structural equation modeling", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 12, No. 1, pp. 1-27
- Little T. D., Card N. A., Bovaird J. A., Preacher K. J. and Crandall C. S. (2007). "Structural equation modeling of mediation and moderation with contextual factors", in: T. D. Little, J. A. Bovaird & N. A. Card (Eds.), *Modelling Contextual Effects in Longitudinal Studies*, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 207-230.
- Masruri A. M. and Zahro N. I. (2013). "Corruption awareness, ethical sensitivity, professional scepticism and risk of corruption assessment: Exploring the multiple relationship in Indonesian case", retrieved on June 10, 2013, available online at: http://wbiworldconpro.com/uploads/malaysia-conference-2013/management/438-Ashari.pdf.
- McKee T. E. (2006). "Increase your fraud auditing effectiveness by being unpredictable!", *Managerial Auditing Journal*, Vol. 21, No. 2, pp. 224-231.
- Mironiuc M., Robu I. B. and Robu M. A. (2012). "The Fraud Auditing: Empirical study concerning the identification of the financial dimensions of fraud", *Journal of Accounting and Auditing: Research & Practice*, Vol. 2, pp. 1-13.
- Njanike K., Dube T. and Mashayanye E. (2009). "The effectiveness of forensic auditing in detecting, investigating, and preventing bank fraud", *Journal of Sustainable Development in Africa*, Vol. 10, No. 4, pp. 405-425.
- Okpara J. O. (2003). "Can corporate ethical codes of conduct influence behavior? An exploratory study of financial managers in a developing economy", presented at the Academy of Business & Administrative Sciences (ABAS), pp. 1-12, retrieved on January 11, 2013, available online at: http://www.sba.muohio.edu/abas/2003/brussels/okpara\_ethical %20codes%20 of %20conduct%20 and%20employeebehavior.pdf.
- Pearl J. (2012). "The causal foundations of structural equation modeling", retrieved on August 18, 2013, available online at: http://ftp.cs.ucla.edu/pub/stat\_ser/r370.pdf.
- PwC Global Economic Crime Survey (2009).
- Rae K., Subramaniam N. and Sands J. (2008). "Risk management and ethical environment: Effects on internal audit and accounting control procedures", *Journal of Applied Management Accounting Research*, Vol. 6, No. 1, pp. 11-30.
- Read W. J. and Rama D. V. (2003). "Whistle-blowing to internal auditors", *Managerial Auditing Journal*, Vol. 18, No. 5, pp. 354-362.
- Rucker D. D., Preacher K. J., Tormala Z. L. and Petty R. E. (2011). "Mediation analysis in social psychology: Current practices and new recommendations", *Social and Personality Psychology Compass*, Vol. 5, No. 6, pp. 359-371.
- Sengur E. D. (2012). "Auditors' perceptions of fraud prevention measures", Evidence From Turkey, Vol. 14, No. 1, pp. 128-138.
- Singh R. (2009). "Does my structural model represent the real phenomenon?: A review of the appropriate use of structural equation modelling (SEM) model fit indices", *The Marketing Review*, Vol. 9, No. 3, pp. 199-212.
- Sitorus T. and Scott D. (2008). "The Roles of collusion, organizational orientation, justice avoidance and rationalization on

commission of fraud: A model based test", Review of Business Research, Vol. 8, No. 1, pp. 132-147.

- Skousen C. J., Smith K. R. and Wright C. J. (2009). "Detecting and predicting financial statement fraud: the effectiveness of the fraud triangle and SAS No. 99", *Advances in Financial Economics*, Vol. 13, pp. 53-81.
- Somers M. and Casal J. C. (2011). "Type of wrongdoing and whistle-blowing: Further evidence that type of wrongdoing affects the whistle-blowing process", *Public Personnel Management*, Vol. 40, No. 2, pp. 151-164.

Tabachnick B. G. and Fidell L. S. (2007). Using Multivariate Statistics (5th ed.), Pearson Education, Upper Saddle River, NJ.

- Usman A. K. and Shah Mahmood Hussain (2013). "Critical success factors for preventing e-banking fraud", *Journal of Internet Banking and Commerce*, Vol. 18. No. 2, pp. 1-16.
- Wesel C. C. (2009). "International business ethics and anti-corruption: A code of ethics cannot stand alone", retrieved on December 31, 2011, from http://www.gowlings.com/resources/PublicationPDFs/WesselC\_CodeofEthics\_Aug09.pdf.
- Wheaton B., Muthen B., Alwin D. F. and Summers G. (1977). "Assessing reliability and stability in panel models", *Sociological Methodology*, Vol. 8, No. 1, pp. 84-136.
- Yekta Z. A., Ahmad Z. A. and Kaur A. (2010). "Corporate code of ethics and reporting wrong doing in private sector organizations in Malaysia", *International Journal of Business and Management*, Vol. 5, No. 7, pp. 84-91.
- Zikmund W. G., Babin B., Carr J. and Griffin M. (2010). *Business Research Methods* (8th ed.), Australia, South-Western, Cengage Learning.