
Bankers' Perception on the Roles of Whistleblowing: Demographic Evidence from Malaysia

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Abstract —The purpose of this study is to develop a reliable and valid construct for roles of whistleblowing and to assess the association between respondents' demographic characteristics and their perception on whistleblowing. The fraud triangle and deontology theories underpin the development of the survey instrument. Survey questionnaires were administered to 553 respondents in the Malaysian financial sector using face to face data collection procedure. A total of 334 questionnaires were usable for the final analysis. Cochran's method was adopted for sample size determination. The data collected were cleaned and issues on reliability, validity and normality of distribution were resolved. The confirmatory factor analysis (chi square = 4.15; GFI = 0.90; CFI= 0.91; NFI = 0.89; TLI = 0.89; RMSEA = 0.10), normality (skewness < 1.50) and reliability (Cronbach alpha = 0.90; composite reliability = 0.92; average variance extracted = 0.54) results were convincing. Subsequently, a one way ANOVA was employed to test for significant associations between the respondents' demographic characteristics and their perception on the roles of whistleblowing. It was found that respondents' age ($p = 0.01$), position ($p = 0.01$) and working experience ($p = 0.03$) had significant bearings on their perception of the roles of whistleblowing within the Malaysian financial sector.

Keywords - demographic characteristics, confirmatory factor analysis, fraud, perception, whistleblowing

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I. Introduction

Better understanding of issues shrouding fraudulent activities would be of great value to many stakeholders, such as the academia, the business community and policy makers. These stakeholders will in turn make better informed decisions in their battle to combat fraudulent practices, a scourge to society at large. This study intends to give normative guidance to the people who are working in financial institutions on the roles of whistleblowing. The managers need to understand the roles of whistleblowers so that they will be able to manage internal disclosure more efficiently, bringing in positive advantages while avoiding the negative consequences. The financial sector will be aware of the association between different demographic profiles (i.e. work experience, gender, age, marital status and educational level) and the roles of whistleblowing. Beyond that, the results of this study aims to underscore the practical implications of the theories which can be extended to other applications in management and social sciences.

Fraud has been a world-wide problem for many years and it affects not only the victims, but also organisations in a very broad spectrum. The Association of Certified Fraud Examiners (ACFE) found that United States (US) organisations lost 7% of their annual revenues to fraud, which indicated a stunning loss of US\$994 billion (Ramamoorti & Dupree, 2010). The ACFE (2012) reported that whistleblowing accounted for 50.9% of fraud prevention and detection mechanism. The motivation of this study is to address the current problems of reluctance of whistleblowing (Buckley et al., 2010; Lee & Fargher, 2012) which if ignored, will severely affect organisations especially in the financial sector. If whistleblowing is disregarded, 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). According to Bierstaker et al. (2006), the shareholders will suffer from financial losses which will lead to erosion of confidence from potential investors if whistleblowing is dismissed. Primarily, the whistleblowers, who are the good Samaritans, should assist to prevent these calamities from occurring. For that, employees should be made aware of their whistleblowing roles. Secondly, the financial institutions will also need information on which demographic characteristics can influence an individual's whistleblowing roles.

II. Research Objectives and Questions

There are two objectives in this study. The first objective is to develop a reliable and valid construct for roles of whistleblowing which could be used by future researchers. The measurement of a whistleblowing construct can contribute to the limited body of knowledge. Secondly, there is a need to study whether or not the difference in the respondents' demographic factors influence perception on the roles of whistleblowing. There are two research questions derived from the objectives.

RQ1: What is a reliable and valid construct for the roles of whistleblowing?

RQ2: What is the association between financial institution employees' demographic attributes and their perception on the roles of whistleblowing?

III. Literature Review

Near & Miceli (1985) define whistleblowing as a disclosure by organisation members of illegal, immoral, or illegitimate practices under the control of their employers, to a person or organisations that may be able to effect action. Many studies have been conducted to discuss the roles of whistleblowing. The literature of Sims & Keenan (1998) reviewed the work of other researchers and found that individuals believed that by being whistleblowers, their roles were to help their organisations and colleagues, as well as to prevent future damage. The interview of Myobi (2008) also found that whistleblowers could use all available procedures to rectify problematic behaviours such as criminal behaviour or corruption. A whistleblower is expected to act loyally by alerting top management of wrongdoings (Sims & Keenan, 1998). In addition, Noor Alam (2011) stated that no matter how whistleblowing is defined, the end objective is to expose wrongdoings. The reporting of wrongdoings and unethical actions are the roles of a whistleblower (Somers & Casal, 2011). However, according to Myobi (2008), before pursuing the wrongdoer, a whistleblower must have proper evidence to support his or her accusations. Locus of control and self-efficacy are two main whistleblower intentions in the literature of Chiu (2002); which can also be considered as roles of a whistleblower. The literature of Myobi (2008) explained that the problem of unethical and unlawful behaviors like corruption and fraud should not be tolerated because it causes harm to the society. A whistleblower's roles are to show a sense of responsibility and to act in good faith. Yekta et al. (2010) further elaborated that an act of reporting wrongdoing refers to good faith disclosures which may prevent substantial danger to life, health and safety. In previous studies (Buckley et al., 2010; Mesmer & Viswesvaran, 2005), individuals in their survey stated that whistleblowing is done because of a sense of responsibility towards the company. Alexander (2004) concluded that whistleblowers should play the role of being aware of changes in patterns of colleagues, preventing failures in governance and out righting criminal behaviour at the workplace. Consistent with the views of other scholars, the literature of Buckley et al. (2010) also summarised that whistleblowers can add value to their organisations, advance their career by behaving in an ethical manner and show a sense of responsibility towards their organisation if they whistleblow to prevent and detect wrongdoings in the organisation they are working in. Finally, sometimes external whistleblowing to the central banks is required if no action is taken by the management. Misappropriations like money laundering if found, should be reported to the central bank according to Shanmugam & Thanasegaran (2008).

The second part of this literature review is concerned about associating employees' demographic attributes and their roles of whistleblowing. Previous studies have found females to be more ethical than males (Mesmer & Viswesvaran, 2005). Conversely, the empirical results of Liyanarachchi & Adler (2011) suggested that males and older people have a higher probability to whistleblow compared with females and younger accountants. This was an extension to Sims & Keenan (1998) who elaborated that men are more likely to blow the whistle if fraud is encountered. Equally important, the study of Kaptein (2011) examined the relationship of control variables and reporting to management and found significant relationship between control variables (gender, age and hierarchical level) and reporting to management using structural equation modelling. On the contrary, Ahmad et al. (2012) found no relationship between demographic factors (gender, age and tenure) and the whistleblowing behavior of internal auditors. This inconsistency in findings needs further corroborative evidence to confirm previous results.

IV. Underpinning Theories

The fraud triangle theory was developed by Cressey (1953). The fraud triangle theory has been used by previous researcher in the study of whistleblowing (Hermawati, 2013). This theory is based upon a sequence of interview with 200 embezzlers. In his findings, Cressey (1953) explained the three common traits, which are known as perceive opportunity, pressure and rationalisation, also referred to as 'the fraud triangle'. The PriceWaterhouseCoopers Global Economic Crime Survey (2009) reported that pressure (68%), opportunity (18%) and rationalisation (14%) are the factors of fraud. The theory also states that among the typical failures in internal control systems that can lead to opportunities are mainly lack of segregation of duties, failure to inform employees about rules, lack of an audit trail, lack of authorisation, lack of physical control, ineffective accounting records, ineffective supervision, breakdown of procedures and lack of access to information. Among the pressures that may lead to fraud are high personal debts, personal financial losses, underpaid staff and family problems. Rationalisations are always associated with the feelings of being underpaid, being overworked and feeling of low self esteem (Hillison et al., 1999). After understanding the fraud factors better, the employees will be more aware of their roles of whistleblowing when they are able to assess the red flags of fraud.

Another underpinning theory in the development of instrument is the deontology theory. The philosophy of deontology emphasises on doing the right thing and is evaluated by the rightness of an action (Shawver & Clements, 2008). The statistical analysis of their study clearly justified that there is a moderate relationship between the notion of deontology and whistleblowing. The significant relationship between whistleblowing and deontology is the main reason this study chooses this theory to explain the roles of whistleblowing. Deontological notions place high emphasis on dignity, equality, and obligations because deontology theory looks at inputs rather than the outputs (Staveren, 2007). This is because the deontology theory requires people to have the qualities of honesty, integrity, trust and confidence. These are basically the characteristics, roles and behaviours that are required from a whistleblower.

V. Research Methodology

The audit, operation and risk management departments of the Malaysian financial institutions were selected since they are very active in the monitoring of whistleblowing roles and assessing the risk of fraud from time to time. The initial research instrument was content validated through a series of interviews with six subject matter experts from the industry and academia. The transcriptions from the interviews were evaluated in a thematic analysis by the researchers. There were 22 items to measure whistleblowing in the first draft of questionnaire. The panel had a close look at the role of whistleblowing section in the draft survey questionnaire. They were informed that the instrument was constructed based on established literature. Their comments were free to reword, scrap, combine or add new items to the list in the questionnaire so that manager, auditors and executives in financial institutions understood was the measurement was all about. After taking the comments of the panel into account, the revised instrument had 26 items to measure whistleblowing. Subsequently, the revised research instrument was pilot tested on 55 respondents with 40 usable responses using quantitative methodology. Quantitative analyses were performed (Cronbach alpha = 0.87; KMO = 0.74) in the pilot test to substantiate the preliminary reliability and validity of the measurement of whistleblowing. The final research instrument was then ready for administration. The methodology of using research assistants was used in this study because it provides the benefits of obtaining high response rate. There were nineteen research assistants employed in this study for the purpose of hand delivering questionnaires and collection of data. This study adopted a face-to-face distribution of data to respondents to improve the response rate. The research assistants distributed 553 sets of

questionnaires to the respondents and obtained usable replies of 334 sheets of questionnaires which is equivalent to a 60% response rate.

The requirement to perform a structural equation modeling or a confirmatory factor analysis is to have at least 300 usable responses (Maydeu-Olivares & Bockenholt, 2005). Obtaining 334 usable responses in this study is sufficient to perform a confirmatory factor analysis (CFA). For every sheet of questionnaire, a cover letter was given. Treating the data confidentially is the primary responsibility of the researchers. Privacy of the respondents will be guarded tactfully at all times. Moreover, personalised data will not be disclosed to others as data provided may be sensitive. The data collection process was conducted continuously for two months. The sampling frame of this study comprises employees working in ten financial institutions. One way of determining the sample size in a quantitative survey where it is not feasible to know the exact population is to use Cochran's method by estimating the variance of scaled and categorical variables (Bartlett et al., 2001). This study used a seven-point Likert scale to measure the variables. Some indices from the pilot study were used to determine the sample size for the eventual data collection. The literature of Bartlett et al. (2001) stated that Cochran's method is suitable for continuous data which uses a sevenpoint Likert scale and where the pilot study data could be used in estimating the required sample size for the eventual data collection process. The computation of sample size could be obtained from Table 1 and it is done according to the recommendations provided by previous studies (Krejcie & Morgan, 1970; Bartlett et al., 2001). Table 2 subsequently provides participants' demographic information.

Table 1: Sample Size Determination Using Cochran's Method

t-value of alpha of 0.05 for sample size of more than 120	1.96
Standard deviation of indices obtained from pilot study	2.52
Likert scale	7.00
Margin of error is acceptable	0.03
Sample size	553

Table 2: Participants' Demographic Information

Demographic Variables	Frequency (n=334)	Valid percentage (%)
Gender:		
Male	167	50.0
Female	167	50.0
Age:		
18-25 years old	80	24.0
26-30 years old	94	28.1
31-35 years old	62	18.6
36-40 years old	49	14.7
41-45 years old	31	9.3
46-55 years old	18	5.4
Status:		
Single	156	46.7
Engaged	16	4.8
Married	149	44.6
Divorced	10	3.0
Widowed	3	0.9

Position:		
Lower level management	99	29.6
Middle level management	164	49.1
Top/Senior management	37	11.1
Professional/Consultant	29	8.7
Others	5	1.5
Qualification:		
Certificate at tertiary level	35	10.5
Diploma	103	30.8
Bachelors Degree	149	44.6
Masters Degree / Masters in Philosophy	29	8.7
Doctoral Degree / PhD	4	1.2
Professional Qualifications	8	2.4
Others	6	1.8
Department:		
Operations	183	54.8
Internal audit	44	13.2
Combination of operations and internal audit	18	5.4
Risk management/compliance	65	19.5
Others	24	7.2
Working Experience:		
1-5 years of work experience	147	44.0
6-10 years of work experience	83	24.9
11-15 years of work experience	41	12.3
16-20 years of work experience	46	13.8
21-25 years of work experience	13	3.9
26-30 years of work experience	4	1.2

VI. Methodological Review on Confirmatory Factor Analysis

The root mean square error of approximation (RMSEA) justifies the accuracy of a model fit. This is because the RMSEA indices will indicate whether the parameters chosen will fit the population covariance matrix. According to some researchers, the cutoff point recommended for this statistic is below 0.10 (Chinda & Mohamed, 2008). The Tucker Lewis index (TLI) and normed fit index (NFI) are very much interrelated (Hooper et al., 2008). Both these statistics are concerned about measuring the relationship between the interest model and the null model. Hooper et al. (2008) recommended a lenient viewpoint where figures which are as low as 0.80 are acceptable for TLI. Singh (2009) has recommended that NFI is to be acceptable if it is between 0.60 and 0.90. Previous researchers had identified the 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). Chi square is used to assess the degree of match between the observed model against the data collected (Singh, 2009). Another important index in the CFA is known as the goodness of fit index (GFI) where the figure obtained should be greater than 0.90 as stressed by Hooper et al. (2008). Finally, comparative fit index (CFI) should be equal to the discrepancy function adjusted for the sample size which is above 0.90 as suggested by Chinda & Mohamad (2008).

VII. Analysis and Discussion

According to Lei & Wu (2007), structural equation modelling could be used in two situations namely in measuring a model or creating a path. This study has measured an individual construct using a confirmatory factor analysis. A confirmatory factor analysis was employed to provide answer to the first research question. Fig. 1 describes the confirmatory factor analysis readings which measure the roles of whistleblowing.

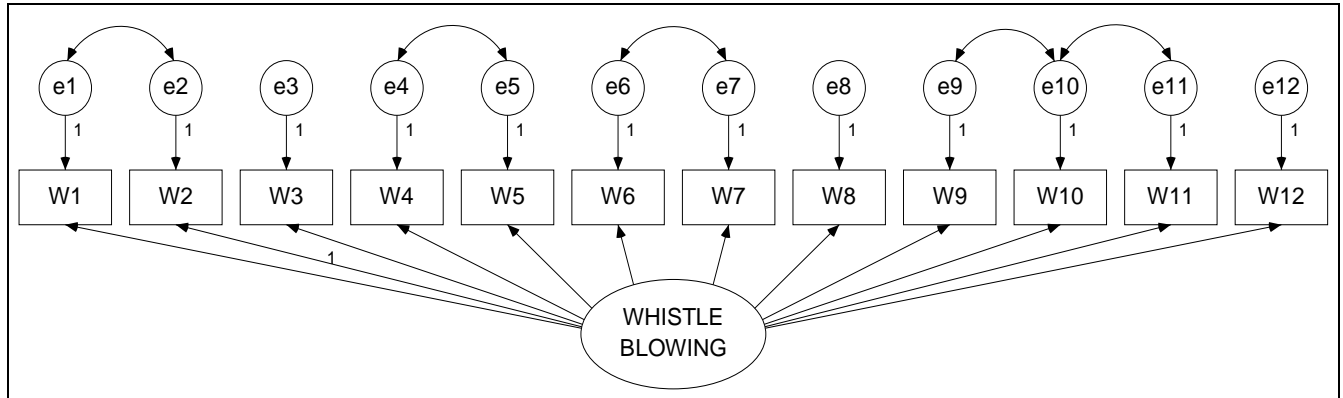


Figure 1: confirmatory factor analysis for the roles of whistleblowing

The relevant indices from the CFA are reported in Table 3 below. All the observed figures fall within the recommended range. The indices obtained from the CFA in this study (**Chi Square = 4.15; GFI = 0.90; NFI = 0.89; TLI = 0.89; CFI = 0.90; RMSEA = 0.10**) could be compared to previous studies. The indices (chi square = 2.37; RMSEA = 0.04; CFI = 0.88; GFI = 0.86; IFI = 0.89) for CFA in the study by Zhang et al. (2008) are fairly comparable to this study. In another study by Kaptein (2011), the CFA indices reported (CFI = 0.98; GFI = 0.97, IFI = 0.98; NFI = 0.98; SRMR = 0.035) to measure reporting through hotlines (whistleblowing) to a large extent match those of this research. Assessment of normality for the 12 items representing whistleblowing generated a range of Skewness (min = - 1.24 to max = - 0 .56) and Kurtosis (min = 0.21 to max = 2.29) which suggest that the items are normally distributed. For a normal distribution, Kurtosis should be between 0 and 3 (Lei & Lomax, 2005) and skewness should be between -2 to +2 (Weinberg & Abramowitz, 2002). The CFA verifies that the construct for the roles of whistleblowing is valid and normal.

Table 3: Confirmatory Factor Analysis Indices for Roles of Whistleblowing

Validity Indices	Observed	Recommended	References
Chi Square	4.154	Between 2.00 and 5.00	(Wheaton et al, 1977; Tabachnick & Fidell, 2007)
Goodness of fit index (GFI)	0.902	Above 0.90	(Hooper et al., 2008)
Normed fit index (NFI)	0.891	Between 0.60 to 0.90	(Singh, 2009)
Tucker Lewis index (TLI)	0.885	Above 0.80	(Hooper et al., 2008)
Comparative fit index (CFI)	0.914	Above 0.90	(Chinda & Mohamad, 2008)
Root mean square error of approximation (RMSEA)	0.097	Below 0.10	(Chinda & Mohamad, 2008)

Convergent validity is measured by examining the composite reliability and the average variance extracted from the measures (Hair et al., 1998). From the analysis performed in this study, the observed results (**composite reliability = 0.92; average variance extracted = 0.54**) justify the convergent validity and reliability of the instrument. Moreover, the internal consistency (**Cronbach alpha = 0.90**) is also assured

(Zikmund et al., 2010). The measures for reliability in this study are above 0.80 as recommended by Zikmund et al. (2010) and the average variance extracted is above 0.50 as suggested by Hair et al. (1998). Collectively, the aforementioned indices suggest that the construct for the roles of whistleblowing is valid and reliable. After all the rigorous process undertaken to establish a novel measurement for whistleblowing, only 12 items were found to be representative as could be seen in Table 5. This satisfactorily provides answer to the first research question. This study has adopted the one way analysis of variance (ANOVA) to provide answer to the second research question which is to assess the association between the employees' demographic attributes and their perception on the roles of whistleblowing. Table 4 portrays the one-way ANOVA statistical results. The significance level is set at 10% based on the recommendation by Zikmund et al. (2010).

Table 4: One-Way ANOVA of Respondents' Demographics towards the Roles of Whistleblowing in the Malaysian Financial Sector.

Demographic	ANOVA	Welch	Brown-Forsythe
Age	0.01*	0.01*	0.01*
Working experience	0.03*	0.04*	0.04*
Gender	0.83	0.83	0.83
Marital status	0.27	0.16	0.17
Position	0.01*	0.05*	0.03*
Academic qualification	0.71	0.88	0.77
Working department	0.95	0.95	0.94

* Significant p-value

The perception on the roles of whistleblowing is influenced by three of the demographic attributes (age, working experience and position). Table 4 shows that an individual's age ($p = 0.01$), working experience ($p = 0.03$) and position ($p = 0.01$) have significant associations with the respondents' perception on the roles of whistleblowing within the Malaysian financial sector. Complementary to the one way ANOVA results, the Welch and Brown-Forsythe test results were also significant for age, working experience and position, further strengthening the argument in favour of the associations. From the post hoc tests conducted, it was found that people who are above 40 years old do have better perception on whistleblowing and strongly believe that they should perform their whistleblowing roles to prevent misappropriation as compared to people in their 20s and 30s. Consistent with the first finding, individuals who have working experience of above 15 years believe in performing their whistleblowing roles to improve governance as compared to people who have working experience of less than 5 years. Finally, middle level managers and professionals are different than others because they believe in their whistleblowing roles as evident from the post hoc tests.

This study fills the gap in the literature by examining the association between the roles of whistleblowing and employees' demographic attributes by using the fraud triangle and deontology theories. Secondly, financial institutions must educate the lower level managers and also people who are in their 30s to be aware of the need to whistleblow to prevent unethical behaviours. Whistleblowing can also be related to the deontology theory. The argument is affirmed that ethical decisions should be made based on the rightness of actions rather than the consequences. Everything a person does should be supported by ethical reasoning. Thus, to whistleblow against a wrongdoing can be considered as freedom of doing the right thing. Fraud reduces the net profit of an organisation. The loss here is translated into opportunity costs of better salary, bonus and commission of the employees. Misconducts must be reported according to the deontology theory. Other demographic attributes (gender, marital status, academic qualification and working department) have no significant associations with the respondents' perception on the roles of whistleblowing. This satisfactorily provides answer to the second research question. The next part of this study will present the validated instrument for the use of managers and future researchers.

VIII. Recommendation for Future Studies

This quantitative study has finally achieved its objective by developing a valid and reliable instrument for the roles of whistleblowing. Moreover, a discussion on the associations between demographics and whistleblowing was also provided and the results were linked to the underpinning theories. Future researchers are recommended to study the relationship between whistleblowing and other factors (such as tone from the top and culture). Other than that, this study can be replicated in different countries and industries. A qualitative methodology to fill in the literature gap is recommended. The end output of this paper, which is the validated instrument is presented in Table 5. Whistleblowing needs more attention from future researchers and managers to build a better world without frauds and misappropriations.

Table 5: Recommended Instrument to Measure the Roles of Whistleblowing

Roles of Whistleblowing	
Whistleblowing is the disclosure by organisation members of illegal, immoral, or illegitimate practices under the control of their employers, to a person or an organisation that may be able to effect action. The following are suggested roles of a whistleblower.	
W1	I will report wrongdoing due to the intention of helping other people.
W2	I will display the extent to which I believe that I can control events (locus of control).
W3	I will protect the wider society's interest to control the environment they are living in.
W4	I will show a sense of responsibility towards the organisation.
W5	I will be aware of changes in behavioral patterns among colleagues.
W6	I will attempt to rectify criminal behavior at workplace by reporting it.
W7	I will act loyally by alerting the top management of observed wrongdoing.
W8	I will prevent potential future damage to the organisation.
W9	I will ensure disclosure of information on issues related to health violations.
W10	I will ensure disclosure of information on issues related to safety violations.
W11	I will ensure disclosure of information on issues related to environmental damage and degradation.
W12	I will report to oversight authority under certain legislation such as the Central Bank

IX. Practical Implications and Conclusion

This study offers three practical contributions. Firstly, following from literature review and analysis conducted in this paper, bankers must give emphasise on the importance of whistleblowing to reduce fraud. The banking institutions should focus on improving the internal reporting mechanism. With proper whistleblowing channel and intentions explained in this study, whistleblowers can help prevent future damages and this matter will inculcate a strong ethical work environment with highlight on good governance. Second, this study intends to give normative guidance to bankers. Bankers that understand the intentions of whistleblowing will be able to manage internal disclosure more efficiently, bringing in positive advantages while avoiding the negative consequences. Internal whistleblowers who know their roles can assist auditors to bring an end to fraudulent behavior in the banking sector. Fraud may not allow commercial banks to perform well as this may hinder the growth of the Malaysian economy. Effective monitoring of bank fraud with code of ethics is necessary. Unfortunately, a clear code of ethics cannot stand alone. It will be only effective if bankers and auditors participate in honesty reporting of wrongdoings. Promoting ethical values can boost the confidence of investors and shareholders. This brings us to the third implication. Every bank should have a proper avenue for whistleblowing so that employees can report wrongdoings to the human resource department, legal department or the internal audit department without any fear. Avenues like anonymous telephone hotlines, bank website, bank email address and external anonymous telephone hotlines must be implemented in every bank or organisation. In conclusion, the roles of whistleblowers should be clearly communicated to every employee via manuals or emails. Banks must clearly indicate that whistleblowing intentions can facilitate in preventing and detecting fraud. Whistleblowing is becoming more imperative in the financial institution in today's competitive environment due to the great power it can provide. It is also noted that much misconduct has caused whistleblowing to rise. Thus, more training should be provided to the society to create more awareness on their

roles as whistleblowers. People should understand their roles better so that accountability can be put into place and wrongful misconducts can be reduced.

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