Research Paper

Auditors' Perceptions of the Effectiveness of Fraud Prevention and Detection Methods

Indian Journal of Corporate Governance
10(2) 118–142

sagepub.in/home.nav
DOI: 10.1177/0974686217738683
http://ijc.sagepub.com

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Abstract

Fraud has emerged as an undesirable offshoot of human greed and pressure to perform in growing corporate world. It has led to erosion of stakeholders' confidence across the globe. Now, they see the annual reports and other corporate filings with scepticism. Despite increasing instances of fraud, the anti-fraud mechanism of the business organisations is not up-to-date. The present study aims to examine the effectiveness of fraud detection and prevention methods used by corporate sector. A survey of 336 auditors seeking their perception about effectiveness of various anti-fraud methods has been conducted. The findings reveal that corporate governance is the most effective tool against fraud. Use of information technology, timely audit, regular inspection and corporate policies and procedures, also, play a vital role in curbing fraudulent practices in an organisation. Thus, the findings suggest that expenditure on effective anti-fraud methods should not be viewed as an expense; instead, it must be considered as an investment as it saves from the potential losses due to fraud and damage to business stability, revenue and image.

Keywords

Corporate fraud, auditors' perception, fraud prevention, fraud detection, India

Introduction

Corporate fraud is viewed as a serious threat to the business and its stakeholders in the era marked by rising economic crimes and regulatory pitfalls. The problem

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is even worse in an emerging economy like India where the checks and balances are weak. PricewaterhouseCooper (PwC) *Global Economic Crime Survey 2016—An Indian Perspective* depicts the gravity and pervasiveness of corporate fraud through a survey that reports about 25 per cent of organisations in India are directly or indirectly influenced by economic crime. Corporate fraud involves huge money and triggers adverse snowball effect on various sections of the society. The business organisations need to be proactive rather than being reactive for plugging in the gaps that result in fraudulent practices. Corporate fraud is not a new phenomenon. Way back in the year 2001 the collapse of Enron, one of the largest bankruptcies in corporate history, unveiled the disorder in corporate sector which was further sparked by other widely known fraud cases, namely WorldCom, Satyam, Chit fund scam and, currently, the Kingfisher fiasco. According to a report by Thought Arbitrage Research Institute based on the analysis of Indian fraud companies during the year 1997–2012, the average size of fraud was ₹2820 million before 2009 (Satyam scam took place in 2009) and has increased to ₹5020 million thereafter, thus reinforcing the need of understanding and developing the corporate fraud prevention and detection mechanisms.

Fraud has come to light as one of the most expensive crime in the whole corporate world. Estimated fraud loss to a typical firm is 5 per cent of its revenues which may result into global fraud loss of around $6.3 billion (Association of Certified Fraud Examiners [ACFE], 2016). Moreover, median fraud loss caused to an organisation is $150,000 including loss of at least $1 million to 23.2 per cent of cases under investigation. Advances in information technology and changes in business environment have led to growth of fraud. It is omnipresent and resides in every type of organisation irrespective of its size, nature and location (PwC, 2016). ACFE (2016) reported the same amount of median loss for small and large firms across world. Though median loss for both the categories is equivalent, overall impact on small firms is disastrous. Fraud can be defined as any intentional act committed to deceive others in order to gain advantages that recipients otherwise are not legally authorised or entitled to have. Indian Auditing and Assurance Standards, *The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements*, defines 'fraud' as 'an intentional act by one or more individuals among management, those charged with governance, employee, or third parties, involving the use of deception to obtain an unjust or illegal advantage'. Fraud within a business organisation is known as corporate fraud which may be committed by corporate officers or employees for or against the business organisation. It is classified in two parts, that is, financial statement fraud and assets misappropriation. Financial statement fraud includes intentional omission and distortion of facts in the financial statement by preparers (Omar & Din, 2010). It includes a presentation of false numbers and information and is mostly committed by the managers, whereas asset misappropriation includes theft and embezzlement of assets and is generally committed by employees of the organisation.

Detection of fraud is not always incidental or confessed as Ramlinga Raju did in case of Satyam scam. So, there is need of proper procedures and control mechanisms to combat corporate fraud.

An organisation must develop a four-point anti-fraud framework consisting of knowledge, prevention, detection and action as shown in Figure 1.

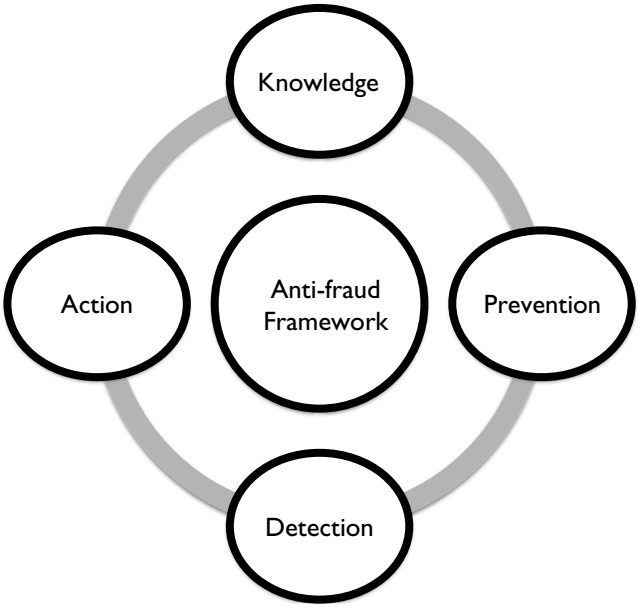

Figure 1. Quadra Anti-fraud Framework

Source: Albrecht et al. (2012).

The first two categorisations, namely, knowledge and prevention, consist of proactive measures to combat fraud, whereas detection and action are post-mortem measures. To combat fraud, first, one must be familiar about what it actually is, why it takes place, its consequences and its methods. After acquainting oneself with roots of fraud, prevention measures and monitoring should be adopted to ensure its non-occurrence. It helps to remove the footprints of potential fraud and ensures good quality financial reporting (Razaee & Riley, 2010). However, merely relying on prevention will not curb the fraud completely as fraud is very creative in nature and may take place in any form. Every new fraud case consists of some unique element, resulting into failure of existing prevention methods. So, one needs to pay proper attention on detection methods also (Bolton & Hand, 2002).

Different methods such as statutory audit, efficient corporate governance, internal control, whistle blowing, fraud investigator and many more help in detecting fraud. Once fraud or material misstatement comes into light, there is utmost need to take stern actions, such as dismissal from company, demotion, civil or criminal action, oral or written caution, reporting to law enforcement officer against the wrongdoer. Such actions will create a sense of fear for committing fraud.

Fraud may be committed by an employee with or without collusion with outsiders. However, managers are primarily responsible to curb the same. It is surprising to note that most of the frauds causing huge losses to the organisations

are committed by top managers and are difficult to uncover (ACFE, 2016) as managers have knowledge and control over internal system of the organisation (Deloitte, 2014). Even audited financial statements have impaired the stakeholders' confidence, specifically investors. Nowadays, regulatory bodies (Institute of Chartered Accountants of India) and legislations (Companies Act, 2013) are paying attention on the issue concerning auditors' responsibility towards fraud detection. Their professional liability has been converted to personal liability under the purview of Companies Act, 2013 (Deloitte, 2014), and now auditors are required to report any material misstatements or fraud.

It is bitter reality that financial audit is a mere procedural formality and auditors simply assure that financial statements are reasonably according to accounting standards. On the other hand, whistle blowing is gaining popularity in India due to presence of multinational companies. But security remains a major concern for whistle blowers. ACFE (2014) noticed that most of the fraud cases reveal some indicators of fraud potentiality and timely attention to such indicators would have helped to minimise many corporate disasters.

Growing incidents of cybercrime depict that information technology is emerging as favourite tactic for fraudsters to reach their destination. Therefore, digital security measures, such as encryption and password, are building their own place as effective fraud tools. However, a report by PwC (2010) revealed that 48 per cent of Indian companies under survey are lacking skill and knowledge of information technology tools related to internal audit. This brings forth a question, 'what is the best method to detect and prevent fraud within a corporate organisation?' This question is drawing attention of regulatory bodies as well as researchers due to widening fraud incidents and their sore impact on corporate world and society at large. Thus, the present study seeks to understand the perception of the person who is in the main line of defence against corporate fraud, namely, an auditor.

A careful view by auditors during audit is the demand of today's regulatory environment as their responsibility has been increased for fraud detection specifically in Indian scenario. They have been surveyed to investigate their perception of effectiveness of various fraud prevention and detection methods in the present study. The rest of the article is structured as follows: the second section deals with literature review, followed by research methodology, results and discussion, and finally concludes the findings of the study and provides future research directions.

Review of Literature

A business organisation has to face varied types of risks such as environmental, political and market risk. Fraud risk is mammoth having its existence all over the world. The Kroll Global Management Report (2013) stated that 80 per cent of Indian executives surveyed were affected by different kind of frauds such as vendor, supplier or procurement fraud and the trend is being expected to increase in future (Deloitte, 2014). Such corporate frauds account for huge loss to an organisation in both monetary as well non-monetary terms. It leads to business downfall,

loss of shareholders' wealth, confidence and much more. It is impossible to quantify losses caused by fraud in absolute terms. Further, it drives stakeholders, demand for adoption of zero fraud tolerance policy by the business organisation. It is an astonishing fact that internal employees are responsible for most of the fraud cases (ACFE, 2014, 2016). Therefore, organisation must gear up to combat fraud. The starting step is the introduction of ethical and sound corporate governance. Indian companies are also paying attention to proactively curb fraud rather than being confined merely to legal compliance. They are investing in monitoring programmes to safeguard themselves against economic crimes (Dinesh Anand, Partner and Leader, Forensic Accounting Services in a survey report by PwC in 2016). Despite the benefits of the proactive measures adopted by organisations, fraud remains unrevealed in the background. Therefore, detection techniques need to be paid proper attention and uncovering of fraud should be followed by further stern actions. Prevention techniques avoid potential fraud while detection techniques help to uncover in case if preventive methods fail. Proper prevention also helps in efficient detection (ACFE, 2014). Both the methods of prevention and detection should be implemented parallel (Rahman & Anwar, 2014). Corporate fraud literature has focused on numerous anti-fraud methods of which red flag has been the centre of attraction of most of the researchers on fraud detection and prevention such as Hillison, Pacini and Sinason (1999) and Albrecht, Albrecht, Albrecht and Zimbelman (2012). Red flags are warning signals, indicating presence of potential fraud and are an effective tool against corporate fraud (Gullkvist & Jokipii, 2013; Mangala & Kumari, 2016). Also, in the digital era, poor enforcement of country's anti-fraud law is perceived to be the important reason for increasing cybercrime (PwC, 2016). Active fraud detection methods such as surveillance equipment and internal audit reduce the duration to identify fraud and consequent losses rather than those detected by passive methods like accidental discovery. However, Deloitte (2012) opined fraud prevention is the result of proper implementation of all fraud prevention controls, spreading awareness among employees about these controls and fixation of their roles and responsibility in fraud prevention. Regardless of these varying opinions, the truth is that fraud is continuously taking place, despite measures taken against it. Just a single technique cannot be relied upon (Rahman & Anwar, 2014). One should use a combination of anti-fraud mechanisms such as audit, code of conduct, whistle blowing, fraud risk assessment, anti-fraud professionals' services, reference check, data mining, firewall and anti-fraud policies and training to fight against fraud.

Internal and Continuous Audit

Razaee (2005) called internal audit as the first line of defence against fraud as auditors are well acquainted with organisational environment and internal control structure. Moreover, they are responsible for internal supervision and ensure compliance with different laws and regulations. Previous research has proved the effectiveness of internal audit as a tool of fraud control. Presence of internal auditors increases chances of fraud detection (Burnaby, Howe & Muehlmann, 2011;

Coram, Ferguson & Moroney, 2006). They are in the best position in prevention, deterrence besides detection of fraud (Hillison et al., 1999). Also, Deloitte (2012) found that 53 per cent of fraud cases in banking sector have been identified by internal audit. It is an effective tool against internal as well external fraud (PwC, 2016). To gain maximum form the internal auditors, the company needs to employ internal auditors permanently rather than outsourcing them (Coram et al., 2006). Moreover, internal auditors are increasingly focusing on continuous audit in order to assess and mitigate risk on real-time basis. Continuous auditing is the technology-driven capability which includes use of information technology for the collection of audit evidence on a frequent or continuous basis throughout the accounting period (KPMG, 2008).

External Audit

Popular fraud cases (e.g., Satyam Computers Limited) have shown that fraud remains uncovered despite audit being done by one of the big four audit firms. Failure of external auditors caused regulators to take strict actions to fill audit expectation gap. As per Companies Act, 2013, auditors are required to report fraud or material misstatements either to management or audit committee and central government. In the 19th century, fraud detection was considered as the primary objective of external audit (Alleyne & Howard, 2005). Later the emphasis has shifted to providing only a reasonable assurance that financial statements are free from any kind of material misstatement. Auditors are not able to detect fraud due to time pressure (Krambia-Kaparis, 2002). External auditors play very significant but secondary role in fraud detection (Kassem & Higson, 2012). Auditors are more likely to encounter fraud in case of high-risk environment like manufacturing firm (Krambia-Kaparis, 2002).

Code of Conduct

It reflects an organisation's ethical culture, ambitions and tone of the top (ACFE, 2014). It is an indication of character of a company and shows organisations commitment to combat fraud. An ethically strong organisation will not be hesitant to implement anti-fraud mechanism (Ceonen, 2008). Carpenter and Reimers (2005) and Law (2011) stated that strong tone of the top effectively reduces fraud probability. Regular monitoring and good corporate governance ultimately result fraud reduction (Salleh & Othman, 2016).

Internal Control System

Internal controls are adopted to secure the assets of company, improving the reliability of its accounting records, and for preventing and detecting fraud.

Poor internal control system has been found to be a main casual factor for any fraud case to occur (Brennan & McGrath, 2007; Siregar & Tenoyo, 2015). Prior research has verified effectiveness of strong internal control system as a tool to control fraud (Bierstaker, Brody & Pacini, 2006; Caplan, 1999; Ziegenfuss, 1996). It indicates operational efficiency of business organisation, confidence in annual reports and compliance with various applicable laws (Mohd-Sansui, Mohamed, Omar & Mohd-Nassir, 2015). Reinforcing such system minimises risk of collusion among employees (Peltier-Rivest & Lanoue, 2011), thus abating risk of material misstatement and fraud by employees (Caplan, 1999).

Fraud Risk Assessment

Fraud risk assessment is an important tool for prevention and detection of fraud. PwC survey report (2011) found 14 per cent of fraud cases could be identified by risk assessment. Moreover, PwC (2016) revealed that the presence of various red flags such as lavish lifestyle, fake bills, missing documents and disputes with vendors may indicate risk of potential fraud. In the year 2016, uncovered fraud of Kingfisher Airlines, perpetrated by master mind Vijay Mallaya, resulted in a loss of ₹90,000 million to 19 banks. The loss could have been avoided or at least minimised if concerned banks had timely taken actions against wilful defaulter and had not granted loans to a continuously loss-making company. Fraud risk assessment helps auditors in performing brainstorming session in order to provide reasonable assurance about accuracy of financial statements. Focus over red flags is not required on behalf of auditors alone but other parties, such as management and employees, should also keep their eyes open. Risk assessment instructions should be explicitly defined to effectively assess the presence of fraud (Knapp & Knapp, 2001) and a formal approach in this direction should be preferred in place of ad hoc approach (Singleton & Singleton, 2010). Such assessment should be made as per size, goal and complexity of business and requires continuous update to be effective.

Whistle Blowing

To combat fraud, there is need of support from employees within an organisation. Implementation of whistle blowing makes staff aware and responsible (PwC, 2008). It is a well-designed mechanism to report suspected fraud to directors, audit committee or outsiders (Peltier-Rivest & Lanoue, 2011). Whistle blowing through an easy and economic method (Deloitte, 2012), but in most cases, employees fear to report fraud due to threat to their position and life. They should be provided security and assurance. Anonymous hotline can be used. Further, corrective actions should be taken at the earliest to encourage employees to report fraud and ensure efficient operation of the system (Miceli & Near, 1984).

Forensic Accounting Services

Increasing frauds and failure of auditors to detect them have given wings to the growth of forensic accounting (Razaee & Burton, 1997). Forensic Accountants, with the combination of accounting, auditing and investigative skills (Renzhou, 2011), present complex data into simple language (Singleton & Singleton, 2010). They use own investigative procedures for documentation and evidence collection to analyse criminal character of a fraudulent act (Gottschalk, 2010). While performing investigation, they cannot rely upon internal or external auditors (Crumbley & Apostolou, 2005). Each item being examined is checked with suspicious mindset. Perpetrators due to fear of being caught by forensic accountants commit less fraud (Chi-Chi & Ebimobowei, 2012). Therefore, the role of forensic accountants should be participative rather than consultative. In developed economies, forensic accounting has got its deserving place, but in developing countries like India, it is still progressing (Mangala & Kumari, 2015). However, an appreciable effort in this regard has been done by Earnest and Young (EY) and ACFE (Western Region Chapter) by launching the 'Forensic Trailblazer Award' to honour the best forensic talent in India.

Reference Check of Employees

Before making final selection, reference check should be done in order to obtain knowledge about past behaviour and character of the prospective employee. Past behaviour provides an indication of one's integrity. Poor integrity leads to probabilities of involvement into fraud (Dorminey, Fleming, Kranacher & Riley, 2012). It will help to find out repeat offenders (Bierstaker et al., 2006).

Data Mining

Data mining makes use of past data of fraud to build a framework in order to identify fraud risk (Gupta & Gill, 2012). It shows pattern and trends by examining company's reports to discover unknown or unique patterns that may indicate potential fraud (Zhou & Kapoor, 2011). It consists of different techniques such as decision tree, genetic programming and neutral networking. Zhou and Kapoor (2011) and Gupta and Gill (2012) found data mining an effective tool to combat fraud. Also, Bierstaker et al. (2006) studied the perception of accountants on various fraud detection and prevention methods and found data mining as one of the most effective tools. However, it can be used effectively in small organisations (Rahman & Anwar, 2014) as use of it in large organisations makes the programming complex.

Firewall

Firewall is an important technique to secure the access of internal organisational information by of external parties (Desai, Richards & Embse, 2002). It puts hardware or software constraints between the networks and takes decision whether to send information ahead or not (Desai et al., 2002). It is an effective tool against occurrence of fraud (Bierstaker et al., 2006; Rahman & Anwar, 2014).

Fraud Control Policies

Fraud control policies aim to prevent and detect fraud. Managers should deliver and be committed to zero tolerance fraud policy which would significantly reduce the amount of fraud (Gottschalk, 2010). Mere formulation and implementation of such policies is not enough but there is a need of proper follow-up. Moreover, timely and stern actions should be taken for success of such policies.

Anti-fraud Training

Employees are key resource for any organisation and act as important tool to control fraud. Often, employees found themselves confused between fraud and error (Deloitte, 2012). Moreover, to control fraud one should be aware about what and why of fraud. So, employees should be imparted proper training to make them aware about difference between fraud and related concepts, red flags and reporting of any suspicious element (Razaee & Riley, 2010). The organisations must make deliberate efforts to sensitise the employees about their role in making an organisation fraud free.

International Monetary Fund has declared India as a worth investing country even when some famous world economies like China are facing economic downturn (PwC, 2016). There is need to curb evils like fraud to continue on the growth path without any hindrance. Since the auditors are the first line of defence against fraud and clean audited reports perpetrate a sense of fraud free environment among different stakeholders in the financial market. Their views on effectiveness of fraud prevention and detection methods are relevant. Moreover, auditor analyses financial statements for material misstatements (as per Statement of auditing 240 i.e. *The Auditors' Responsibilities relating to Fraud in an Audit of Financial Statements*, is an auditing standard issued by ICAI, India) and probable fraud (as per Companies Act, 2013). They work across various industries and across various lines that may be taxation, project management and evaluation, internal audit, law compliances and risk management. Therefore, they are in best position to opine about effectiveness of various anti-fraud mechanisms. Literature review depicts that only a few studies focus on practitioners' perception regarding anti-fraud tools in India. Therefore, the present study investigates auditors' perception who have professional scepticism and competence to speak out their mind on fraud-related issues.

Methodology

In order to achieve the aim of the present study, survey method has been used. Survey offers a good mean to understand psychological characteristics of any group of the population[3] and would be better to understand their opinion about anything. Also, various studies such as Razaee and Burton (1997), Knapp and Knapp (2001), Bierstaker et al. (2006) and Gullkvist and Jokipii (2013) considering perception of various group of respondents rely on survey technique. Audit professionals have been selected as the target audience. It is due to the fact that auditors have been considered as main line of defence against fraud and expected by various stakeholder to uncover any possibility of fraud. So, the final respondents include audit professionals having a minimum of 1 year of audit experience. For the selection of respondents, random sampling technique has been used. The data have been collected through self-structured questionnaire which has been categorised into two parts. The first part aims to seek demographic information about respondents, such as gender, age, experience, audit firm type and status, and in the second part, respondents are asked to mark their perception about the level of effectiveness of various methods to detect and prevent corporate fraud on a five-point Likert scale ranging from one for 'most ineffective' to five for 'most effective'. Although studying perception is subjective phenomenon, the ultimate objective of the present research is to get a general opinion of practicing auditors on effectiveness of fraud detection and prevention methods. The questionnaire has been developed after rigorous review of various research studies, namely, Beasley, Carcello and Hermanson (2000), Knapp and Knapp (2001) and Bierstaker et al. (2006). The questionnaire consists of 31 fraud prevention and detection methods which have been adapted from various research studies as shown in Table 1. The survey instrument was filled using drop off method (by hand delivery and collection) as well as through mail survey. Efforts have been made to collect most of the questionnaire through personal visit as it has its own importance of being directly connected with respondents and to understand their opinion in an in-depth manner. Also, consent was taken about their readiness to be part of the survey either telephonically or during personal visit in the beginning. However, personal connect with some of the respondents was not possible; hence they were surveyed through e-mail. In order to collect data through mail survey, the willingness of the potential respondents to be a part of the mail survey was sought through an email. Email addresses were collected from Institute of Chartered Accountants of India [ICAI] website, LinkedIn and Directory of CA professionals. Only on getting an affirmative response, questionnaires were mailed to the participants. It helped in enhancing the response rate and reliability of the data. Finally, the questionnaire in English was sent to 571 respondents through personal visit or mail survey. Personal visit was made to 265 practicing auditors. Of those visited, 233 responses were received of which 225 were finally found usable. For mail survey, the consent was sought from 1963 chartered accountants (CAs) through email of which 306 respondents accepted to become a part of the survey. Finally, the response from 44.12 per cent respondents was received of which only 111 responses were complete in all respect and used for

the analysis as shown in Table 2. Data have been analysed using Predictive Analytics Software (version 18). Different statistical techniques like Cronbach's alpha to ascertain reliability, descriptive statistics and factor analysis to construct factors have been applied. Factor analysis helps to reduce various methods of fraud prevention and detection to a small number of constructs, representing relationship among several interrelated variables.

Table 1. Literature Sources of Fraud Prevention and Detection Methods

No.	Fraud Prevention and Detection Methods	Notation	Source
1	External audit	M1	Ghazali, Rahim, Ali and Abudin (2014), Siregar and Tenoyo (2015), Bierstaker et al. (2006)
2	Internal audit	M2	Beasley et al. (2000), Bierstaker et al. (2006)
3	Continuous audit	M3	Bierstaker et al. (2006)
4	Surprise audit	M4	ACFE (2014)
5	Independence of audit committee	M5	Beasley et al. (2000), ACFE (2014)
6	Effective corporate governance mechanism	M6	Bierstaker et al. (2006)
7	Corporate code of conduct	M7	Ghazali et al. (2014), Bierstaker et al. (2006)
8	Strong internal control system	M8	Ghazali et al. (2014), Siregar and Tenoyo (2015), Bierstaker et al. (2006)
9	Whistle-blowing policy	M9	Bierstaker et al. (2006), KPMG (2012)
10	Reference check of employees	M10	Siregar and Tenoyo (2015), Bierstaker et al. (2006)
11	Using forensic accounting services	M11	Bierstaker et al. (2006), KPMG (2012)
12	Anti-fraud training to employees	M12	Bierstaker et al. (2006), ACFE (2014), Ghazali et al. (2014)
13	Fraud risk assessment by management/auditor	M13	Knapp and Knapp (2001), Siregar and Tenoyo (2015)
14	Dedicated anti-fraud department/team	M14	KPMG (2012), ACFE (2014)
15	Segregation of duties	M15	Peltier-Rivest and Lanoue (2011)
16	Physical cash verification	M16	Bierstaker et al. (2006)
17	Ratio analysis	M17	Bierstaker et al. (2006), Gupta and Gill (2012)
18	Bank reconciliation	M18	Bierstaker et al. (2006)
19	Third party balance confirmation	M19	Recommended by Expert

(Table 1 Continued)

(Table 1 Continued)

No.	Fraud Prevention and Detection Methods	Notation	Source
20	Management supervision	M20	ACFE (2014)
21	Surveillance equipment like CCTV camera	M21	Bierstaker et al. (2006)
22	Document examination	M22	ACFE (2014)
23	Data mining	M23	Zhou and Kapoor (2011), Siregar and Tenoyo (2015)
24	Password protection	M24	Bierstaker et al. (2006)
25	Firewall	M25	Bierstaker et al. (2006)
26	Virus protection	M26	Bierstaker et al. (2006)
27	Encryption	M27	Desai et al. (2002), KPMG (2012)
28	Enforcement of country's anti-fraud law	M28	ACFE (2014), Deliotte (2014)
29	Role of media	M29	Brennam and McGrath (2007)
30	Accidental discovery of fraud	M30	KPMG (2012), Hassink et al. (2010), Ghazali et al. (2014), Siregar and Tenoyo (2015)
31	Confession by fraudster	M31	ACFE (2014, 2016); Satyam case

Source: Authors' compilation.

Table 2. Sample Statistics

Method	Sent	Received	Response Rate (Per cent)	Usable
Drop off	265	233	87.925	225
Mail survey	306	135	36.986	111
Total	571	368		336

Source: Authors' analysis.

Results and Discussion

Demographic Characteristics

Demographic characteristics of the sample respondents have been described in Table 3. Out of the sample of 336 practicing chartered accountants, 289 respondents (86.00 per cent) are male, whereas 47 respondents (representing 14.00 per cent) are female. Respondents' age ranges from 21 to 74 years, with mean age of 31.85 years. Most of the respondents, representing 66.40 per cent, are practicing in partnership firm, 25.90 per cent in sole proprietorship and 7.70 per cent in limited liabilities partnership. 72.00 per cent are engaged in both internal and external audit. With respect to total audit experience, more than half of the respondents have experience from 1 to 5 years. Whereas, about 40 per cent auditors have more

than 5 years of experience. In total, 68.80 per cent are in full-time practice and 28.60 per cent are paid assistants. Moreover, 17.00 per cent are practicing at international level, 52.10 per cent at national level, 22.30 per cent at regional level and rest at local level. In addition, vast majority of the auditors, representing 73.50 per cent have experienced some kind of fraud or material misstatement during their audit career.

Table 3. Demographic Characteristics of Respondents

Variable	Frequency (Total 336)	Percentage (per cent)
Gender		
Male	289	86.00
Female	47	14.00
Audit Firm		
Partnership	223	66.40
Sole proprietorship	87	25.90
LLP	26	7.70
Audit Category		
Internal audit	30	8.90
External audit	64	19.00
Both	242	72.00
Experience (Years)		
1 to 5	198	58.90
5 to 15	67	19.90
More than 15	68	20.2
Missing	3	0.9
Status		
Full-time COP	231	68.80
Part-time COP	9	2.70
Paid assistance	96	28.60
Area of Operation		
International	57	17.00
National	175	52.10
Regional and other	75	22.30
Local	29	8.60
Fraud Experience		
Yes	247	73.50
No	89	26.50

Source: Authors' analysis.

Factor Analysis

In order to ascertain applicability of factor analysis, one needs to check sample adequacy and ensure that items should not correlate with each other too loosely. To ascertain whether sample size is adequate or not, Kaiser–Meyer–Olkin (KMO) test is used and higher the KMO value signals higher the possibility of extraction of factors from the dataset (Field, 2009). The KMO value of the present data is 0.835 (Table 4) which is commendable (Field, 2009) and verifies that the sample size is adequate to run factor analysis. Moreover, KMO value of individual items are more than 0.548 which are greater than the acceptance criteria of 0.5 (Field, 2013). Further, Bartlett's test of sphericity is computed to examine variable correlation. Bartlett's test (chi-square (325) = 2835.271, $p < 0.1$) gives the significant results indicating that factor analysis is applicable on the data.

Table 4. KMO and Bartlett's Test

Suitability Test Statistics		Test Value
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.834
Bartlett's Test of Sphericity	Chi-square	2718.301
	df	435
	Sig.	0.000

Source: Authors' analysis.
Note: df—degree of freedom; Sig.—significance level.

On the total 31 methods of fraud detection and prevention considered under the present study, factor analysis has been applied to extract factors using principal component analysis with orthogonal rotation (varimax). On the basis of criteria specified by Neil (2008), the item with factor loading less than 0.40 or communality values less than 0.3 has been excluded. In this way, only one item, namely, surprise audit, has been removed due to poor communality value. However, the item internal control system has the factor load 0.371, thus unable to meet the standard set by Neil (2008), but it has been included due to considerable importance paid by previous researchers, regulators and practitioners. All the more Klein et al. (1994) has suggested that item with factor loading more than 0.3 is moderately good. The number of factors was determined by priori determination. Eigenvalue of all the resultant factors is more than one. Finally, 30 methods clustered into seven factors have been derived which accounted for 52.837 per cent the total variance (Table 5). The extraction has been conversed in seven iterations. The extracted factors are labelled, according to their group nature, as inspection (factor 1), information technology (IT) (factor 2), policies and procedures (factor 3), corporate governance (factor 4), audit (factor 5), external (factor 6) and other methods (factor 7) with 10.259 per cent, 9.604 per cent, 8.439 per cent, 7.095 per cent, 4.840 per cent, 5.928 per cent and 6.672 per cent total variance explained, respectively. Gliem and Gliem (2003) stated that Cronbach's alpha ranges from zero to one and the closure it is to one implies a higher level of internal consistency. However, alpha value less than 0.5 is not acceptable. All the extracted factors show an acceptable level of reliability.

Table 5. Auditors' Perception towards Effectiveness of Fraud Detection and Prevention Methods

Factor	Item	Rotated Factor Loading	Item Mean	Factor Mean (SD/T value)	Factor Variance	Cumulative Variance	Cronbach's Alpha Value	Factor Rank
Corporate governance	M5	0.770	4.268	4.215 (0.525/147.213*)	10.259	10.259	0.685	1
	M6	0.768	4.113					
	M7	0.62	3.967					
	M8	0.371	4.512					
Inspection	M18	0.677	4.002	4.078 (0.517/144.510*)	9.604	19.863	0.756	4
	M22	0.654	4.113					
	M19	0.631	4.315					
	M16	0.619	4.244					
	M20	0.558	4.036					
	M21	0.516	3.962					
	M17	0.504	3.872					
Information technology	M25	0.802	4.140	4.158 (0.590/129.160*)	8.439	28.302	0.809	2
	M26	0.766	4.056					
	M27	0.695	4.289					
	M24	0.662	4.274					
	M23	0.400	4.030					
Policies and procedures	M12	0.718	3.643	3.979 (0.536/134.920*)	7.095	35.397	0.695	5
	M14	0.632	3.965					
	M10	0.609	3.804					
	M13	0.460	4.232					
	M11	0.449	3.982					
	M9	0.430	4.045					

(Table 5 Continued)

(Table 5 Continued)

Factor	Item	Rotated Factor Loading	Item Mean	Factor Mean (SD/T value)	Factor Variance	Cumulative Variance	Cronbach's Alpha Value	Factor Rank
Audit	M3	0.752	4.086	4.141 (0.498/152.974*)	4.840	40.237	0.523	3
	M2	0.634	4.196					
External methods	M29	0.707	3.259	3.696 (0.715/94.827*)	5.928	46.165	0.562	6
	M1	0.604	3.935					
	M28	0.598	3.896					
Other methods	M30	0.716	3.452	3.668 (0.684/ 98.274*)	6.672	52.837	0.570	7
	M15	0.688	4.176					
	M31	0.598	3.375					

Source: Authors' analysis.

Note: Figure in parentheses shows standard deviation/one sample *t* value. *Significant at 1 per cent level.

The complex nature of fraud piercing every type of organisation and becoming trans-border has necessitated a dire need to focus attention over anti-fraud platform to defeat such risk. The first and foremost initiative in this regard should be taken by management. The top management is responsible to set the tone to other employees. Thus, they need to be committed to zero tolerance fraud policy and adopt positive attitude towards internal control system. The present study found corporate governance as most effective factor to mitigate fraud hence has been ranked one. The statements included in this factor are M5, M6, M7 and M8 with factor loadings range from 0.770 to 0.371. Consistent with the results of prior research, such as Beasley et al. (2000), Mohd-Sansui et al. (2015) and Siregar and Tenoyo (2015), the present study found that strong and ethical corporate governance significantly reduce fraud occurrence. Mere presence of audit committee will not curb fraud but there is a need to provide them independent status. Moreover, respondents opined while answering the survey questionnaire that managers are themselves the cause of most of the frauds. Thus, it may be inferred that if managers are committed to non-fraud activities then employees would not dare to indulge in fraud. The findings emphasise on adoption of an ethical code of conduct dictating clean fraud policy within organisations. Further, internal control system has been perceived as one of the most effective tools to combat fraud in line with Rahman and Anwar (2014) and Mohd-Sansui et al. (2015). The results suggest timely review of internal control system otherwise fraudsters will find loopholes in the present system and turn their bad intention into fraudulent activities.

In the digital era, most of the transactions right from ordering of goods and services to making of payment and delivery are completed online. Such online transactions are susceptible to cybercrime. Cyber-attack took place in the year 2016 in India of making ATM clones affecting 3.2 million debit card holders of India's biggest five banks, namely State Bank of India, Axis Bank, HDFC Bank, ICICI Bank and Yes Bank and using the same to withdraw money illegally raises a question mark on cyber security in India. But IT-related methods though effective are less popular in the opinion of accounting professionals and certified fraud examiners (Bierstaker et al., 2006). Zhou and Kapoor (2011) opined that with seamlessly increasing evolutionary financial fraud, computer-assisted fraud detection will be more efficient with specialised knowledge. In consonance with finding of previous research, such as Bierstaker et al. (2006) and Halbouni, Obeid and Garbou (2016), information technology has been found as an effective tool to combat fraud; hence it occupies second rank. There are five items M25, M26, M27, M24 and M23 which are heavily loaded on this factor with loadings from 0.802 to 0.400. In the line of Desai et al. (2002), the present study found encryption and firewall as effective anti-fraud tools having mean value of 4.289 and 4.140, respectively. It protects the organisational information's access to unauthorised persons. The findings show that data mining (mean = 4.030) has been perceived as an effective tool against fraud. It will help auditors to identify and detect fraud risk even if perpetrated by management (Gupta & Gill, 2012). Following the track of Bierstaker et al. (2006), password and virus protection have also been perceived as effective methods with mean value of 4.274 and

4.056, respectively. The study suggests that the IT-related methods play a vital role in protecting an organisation against fraud. Therefore, there is need of continuous vigilance on advances and emerging trends in IT so as to remain updated and thus protected.

Audit within business organisations has been ranked third in terms of auditors' perception regarding fraud prevention and detection. It includes two methods M2 and M3 with factor loading of 0.752 and 0.634, respectively. Both the internal and continuous audit method with mean value 4.196 and 4.141 were found effective against fraud prevention and detection. This finding of the study has been supported by previous research, namely Ziegenfuss (1996), Beasley et al. (2000) and Bierstaker et al. (2006). Internal auditors have an edge over their external counterparts due to superior access to corporate information and their round the clock presence in the organisation (Hillison et al., 1999). With the advent of information technology, continuous audit is being embraced by managers as well as internal auditors within an organisation. It helps in real-time check of financial information. Hence, the problem of post-mortem of financial information is no longer a problem (KPMG, 2008).

Inspection has been ranked as fourth consisting seven variables, namely, M18, M22, M19, M16, M20, M21 and M17, with factor loadings ranging from 0.677 to 0.504. Bank reconciliation statement and surveillance equipment play a crucial role against fraud. This finding supports the assertion of Bierstaker et al. (2006). The present study found financial ratios as less effective, extending the findings of Kaminski, Wetzel and Guan (2006) who examined the limited ability of ratios to predict fraud. Timely bank reconciliation and physical cash verification ensure safety of cash from being stolen and debug accounting errors (Rahman & Anwar, 2014). Both the methods have been found effective representing mean value of 4.002 and 4.244, respectively. Further, document examination (mean = 4.113) has been perceived as an effective anti-fraud method. ACFE (2016) found preparation of false document as one of the most common method to put fraud out of sight.

Corporate policies outline the organisational intention and communicate its ethics and commitment towards zero fraud tolerance. In the present study, policies and procedures stand fifth in the ranking with six items labelled as M12, M14, M10, M13, M11 and M9 with factor loadings in the range of 0.718–0.430. Fraud risk assessment by management/auditors has been found significant with mean 4.232. Managers, audit parties and other stakeholders must assess fraud resulting in increased attention on fraud clues. Clear instructions about fraud risk assessment result into effective risk assessment (Knapp & Knapp, 2001). The results show that use of forensic accounting services (mean = 9.982) has been perceived as an effective method against fraud occurrence in agreement with results of Bierstaker et al. (2006). Increasing fraud has augmented the demand for forensic accountants (Prabowo, 2013); still forensic accounting is in nascent stage in India. Employing persons with forensic specialisation would help to curb crime. Forensic skills will enhance auditors' capability of tracing fraud instances and consequently enhance their role and responsibility as practicing auditors. Knowledge, information and intelligence play a crucial role in curbing crime (Gottschalk, 2010). Despite this, the concern cited by respondents is worth noting that knowledge of

fraud and anti-fraud methods may lead to commitment of fraud. Anti-fraud training has been perceived as less effective tool with mean value of 3.643. Further, employees must be aware of when to suspect fraud, methods of committing fraud and the procedures of reporting. Thus, anti-fraud training would make an employee more vigilant and aware about the dangerous impact of fraud on the company, society and themselves.

External methods has been ranked six in order of effectiveness including external audit, enforcement of country's anti-fraud law and role of media with factor loadings ranging 0.707–0.598. Notable point is that external audit is a statutory requirement for companies but auditors fail to comply with relevant key auditing standards and discover fraud accidentally (Hassink, Meuwissen & Bollen, 2010). Also, it has been found less effective in the present study (mean = 3.935), supporting the findings of Knapp and Knapp (2001) stating that sampled companies got clean opinion from firm's auditors despite the presence of financial statement fraud. Ziegenfuss (1996) found in a survey of United State local government that only 4 per cent of the fraud cases have been detected by external auditors. Moreover, previous fraud cases have confirmed that merely relying on audit report would not assure the absence of fraud. It may be attributed to the fact that auditors are forced not to report fraud even if noticed due to need to maintain clients. Moreover, auditors may not go for exhaustive audit due to time limitation. Some of the respondents have clearly expressed such concern during survey. Audit firms as well as companies being audited should ensure that auditor must not work under pressure, nor be restricted by management and must be given incentives to probe deep into fraud. Government has also passed different acts to curb fraud in India such as Whistle-blower Protection Act, 2011 and Companies Act, 2013. Also, investigation agency, namely, Serious Fraud Investigation Office (SFIO), has been empowered with statutory status. There is need of strict enforcement of anti-fraud laws. Respondents have commented over poor enforcement of anti-fraud laws in India, inducing fraudsters to fraud without fear of punishment. The regulatory bodies are required to refocus and enforce the laws which are presently mentioned in books (Brennan & McGrath, 2007). Media is yet another tool to prevent and detect fraud as it exerts moral pressure on the potential perpetrators. At times media in its investigative role may help in unearthing fraud. The results indicate that media is not as an effective anti-fraud tool as other tools are. This might be due to the reactive role of media in highlighting fraud rather than its proactive role.

Other methods with three items M30, M15 and M31 and loadings from 0.716 to 0.598 have been perceived as least effective and hence ranked seventh. The current study found that accidental discovery of fraud is less effective with mean value of 3.452, similar to the assertion of Siregar and Tenoyo (2015). With regard to confession by fraudster, respondents argued that there are very few cases in which the perpetrator of fraud makes a confession as happened in case of Satyam Computer Services Limited. When fraudsters are sure of being caught only then they may confess. Managers try to hide fraudulent transactions into other transactions to the extent possible. Further, segregation of duties (mean = 4.176) has been

found as an important tool to control fraud, supporting the finding of Peltier-Rivest and Lanoue (2011).

Conclusion

No organisation is immune to fraud and the gloomiest reality is that most of the frauds are perpetrated by managers or employees within the organisations, whereas external parties are least likely to commit it (Deloitte, 2014). Kroll (2015) found presence of at least one insider in every fraud case. There are numerous reasons for fraud occurrence such as financial pressure, habit, greed, poor internal control and poor supervision. It does not occur instantly and takes a big bath form. Typically, a fraud case takes 18 months to get revealed after its commencement (ACFE, 2014). The longer the period to uncover fraud, the larger the loss in terms of money, legal cost and image of the organisation. Anti-fraud tools should be used in all types of organisations irrespective of size and type. Fraud has become a universal and omnipresent phenomenon giving a wakeup call to the regulators, managers and auditors for moral policing. Therefore, the present study investigated perceptions of auditors, who are much acclaimed as skilled and independent professionals, towards effectiveness of fraud prevention and detection methods. The study found corporate governance with a statistically significant mean value of 4.215 as the most effective factor in prevention and detection of fraud. Corporate governance variables like independence to audit committees and proactive internal control system have been perceived by the auditors as most effective in plugging in unnoticed loopholes in the system which may become a root cause of fraud in future. Strong corporate governance and ethical code of conduct build up a positive work environment and prevent occurrence of fraud. IT-related methods such as data mining and use of firewalls, with a mean value of 4.158, prove to be next most effective methods to sterilise an organisation from fraud. The results, further, reveal that internal and continuous audit, timely inspection, implementation of ethical anti-fraud policies, improving external auditors' independence and strict enforcement of anti-fraud laws would also play a vital role in mitigating fraud risk.

The study brings forth certain specific recommendations that emerge from in-depth analysis of auditors' perceptions towards effectiveness of fraud detection and prevention methods.

First, companies not only should focus on implementation of mandatory corporate governance norms but should strive to strengthen the entire corporate governance framework in terms of independence of audit committees and build strong internal control system.

Second, emphasis should be placed on installation and up gradation of IT-related methods such as firewalls, data encryption and data mining. This helps in real-time monitoring of voluminous data and identifies any unusual trend or anomaly and forewarns the system against the potential threat.

Third, audit, inspection, policies and procedures also play a vital role in corporate fight against fraud. An appropriate fraud risk management system must be devised to identify, assess and manage fraud risk.

Further, the present study opined that one must not rely on the fact that fraud would come to existence accidentally. Only few fraud cases are discovered accidentally. Although it may not be feasible for companies to adopt all the methods at one time, they may check for effectiveness and efficiency of these methods in their organisation and perform cost-benefit analysis simultaneously. Such adoption needs to be proactive rather than reactive so that fraud loss can be reduced to zero or at least brought down to minimum level. One must remember mere implementation of such methods is not enough to subdue fraud but strict actions need to be taken against wrong-doers. It is wise to be forearmed to counter corporate fraud in the current globally fraudulent environment. Mere assigning responsibility to a particular individual or team will not work but it requires equal participation of various parties such as board of directors, audit committee, fraud team, auditors and management at all levels. Organisations must focus on self-regulation rather than waiting for enforcement of law.

The findings of the current study need to be interpreted in the line of its limitations. Though the best practices have been adopted to ensure reliability and validity of the questionnaire, it is the prime issue of concern in any primary study using questionnaire as research instrument. Moreover, perception is a subjective study in itself still efforts have been made to get a fair opinion of practicing chartered accountants. Despite the above limitation, the present study provides prescriptive opinion of the auditors who are the main line of defence against fraud. Their opinion may prove useful to corporate houses, practitioners, researchers and other stakeholders. Organisations may consider the application of effective anti-fraud tools to safeguard against the huge loss caused by fraud. There is need to make strong corporate governance mechanism as if managers are committed against fraud would present a strong sense among employees for not to commit fraud. Further, modern area is a digital area so the present study results IT-related methods as effective and needs to be focused. Moreover, the results provide regulators with practitioners' perspective about methods to curb fraud. This would help them to make more realistic anti-fraud laws. Further, as the auditors have opined that implementation part of law is weak in India, the Indian government should take action to sensitise various stakeholders and take relevant measures to implement the existing fraud laws in their true spirit. The academia needs to update the curriculum in professional institutions and universities by incorporating anti-fraud education as an integral part of existing syllabi.

Since fraud seems to be omnipresent, future research may focus on exploring new techniques to prevent and detect fraud. There is plenty scope of further research to examine the impact of nature of industry, firm size, level of debt and other company-specific variables on effectiveness of fraud prevention and detection methods. Moreover, effectiveness of various anti-fraud methods across various countries may also be investigated. Moreover, effectiveness of various anti-fraud methods across various industries and across various countries may be studied. Also, perception of various other stakeholders such as managers and

fraud investigators may be examined to get 360° view about corporate fraud. Respondents from government and semi-government agencies like comptroller and auditor general (CAG) of India may be included.

Note

1. Retrieved 10 June 2017, from https://www.tbs-sct.gc.ca/cee/pubs/meth/pem-mep04-eng.asp

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