FORENSIC ACCOUNTING: A BLESSING FOR FRAUD DETECTION

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Abstract

Purpose

The jeopardy of the fraud has a very serious bad impact on the economy of the country. From financial crimes number of companies suffered around the world. The demand of forensic accounting is gradually increasing in modern business world. The purpose of this study is to examine the relationship between forensic accounting and fraud detection.

Methodology

This study used the descriptive research design by using the survey strategy. The targeted population of the research is the employees, working as professional accountant. Primary data has been collected from the sample size of (317).

Findings

In the light of results, the study concluded that there is a significant impact of forensic investigation, forensic litigation and forensic accountant investigation tenure on fraud detection in the private sector of Pakistan. Results shows that the existing independent variables has explained the dependent variable up to 32.6 %.

Implication

The practical implication of this research is that it provides the direction for professionals for taking necessary actions to avoid the fraudulent practices in the light of the results of this study. Therefore, professionals may take the decisions for the education, training, practice of forensic accounting and may demand the forensic accounting implementation in the organizations.

Novelty

This study unveils a unique link between forensic accounting and fraud detection, shedding light on the significant impact of forensic investigation, litigation, and accountant tenure in combating fraud within Pakistan's private sector.

1. Introduction

The jeopardy of the fraud has a very serious bad impact on the economy of the country. From financial crimes number of companies suffered around the world such as Enron scandal 2001, Houston based company of energy, commodities and Service Corporation where investors lost their billions of dollars, and retirement account of many employees had lost including their jobs. According to (Zeid et al., 2020) past few decades of the business world have witnessed several worrying scandals regarding the international companies that have been collapsed as the result of fraud such as financial crimes and many other reasons. These kind of scandals and financial fraud set up turning point with the traditional significance. Sayno Electric Company in Japan, One Tell in Australia, Xerox Company in the USA, Zapf Creation in Germany, Bank of Commerce in Thailand, and Parmalat in Italy are the few examples of scams (Bhasin, 2013). Moreover, bankruptcies and financial crimes was increasing in all the nations globally and increase in financial crime is considered a trigger for the credit crunch (Ryder, 2014). The situation of increased financial crime raised the need for the forensic experts who may use their investigative skills and experience to give experts view regarding litigations related to financial corruption and fraud. Now this is known as forensic accounting. Furthermore, forensic accounting is a new career arena that has expanded quickly since its commencement (Bologna & Lindquist, 1987) Forensic accounting reports come with sufficient legal evidence that are suitable to present / submit in the court of law as evidence(Fakih & El-Mousawi, 2021). Forensic accounting is an application of financial and investigative skills to find out the monetary crime, suitable to present in the court of law as evidence (Lucy et al., 2016). The term forensic accounting (FA) can be best connotes as "It is set of accounting and probing techniques use to identification or discovery of financial crimes. Its key indicator is to magnitude of financial crime. It's mainly used in tracing of funds, identification and recovery of assets and due diligence review. Such type is also used by insurance business to form damages from claims (Hayes, 2022). Fraudulent activities / events play a vital role in declining organizational performances and reputation (Hussaini et al., 2018). Fraud and corruption jointly cost thousands of billions in year to industries as well as to the economy of country and it has strong potential that damage the status of the business. Major kinds of fraud and corrupt events have been found in both private sectors however, in public sectors such kind of practices are frightening. Fraud detection begins after the occurrence of fraud events. (Karwai, 2002) revealed in the study as, after the happening of fraud it is quite problematic to the forensic accountant to reach at the foundations of fraud. The reason behind that it comprises on the complex conspiracy which has been deliberately planned by the perpetrator. It is explained by (Ramaswamy, 2005), now a days the reason behind emerging the financial fraud is the failure of corporate poor policies. This kind of problem generates with the non-serious or immoral attitude of management which causes the collapse / failure of the institution / organization.

Theoretical and empirical work have been performed out during the past few years due to the surprised fraud cases and financial shames in the corporate business world. Recent examples are WorldCom, Enron have implemented the Forensic Accounting because the general auditors are unable to detect fraud(Dr. A. O. Enofe et al., 2015). In recent times numerous frauds have been done in the both sectors (public sector and private) sector of Nigeria. (Yinus & Oladejo, 2015) exposed it is not guaranteed that the independent internal auditor work in favor of company or government. Study further discovered that fraud is performed on the direction and under the supervision of internal auditor of organizations. Although opinion of external auditor is mandatory, but still so many fraud cases are being committed on daily basis. It clearly gives direction that forensic accounting should be exercised because external and internal auditor may not have the required knowledge and skills to address and detect the modern financial crimes. This may include money laundering, embezzlement, criminal financial transaction, security fraud and contract disputes.

Application and implementation of forensic accounting are important because of fraud and material misstatement in accounting records. (Koh et al., 2009). Forensic accounting can be performed to investigate financial crimes, for litigation support and resolution of fraudulent disputes (Dada et al. 2013).In order to minimize the risk of financial and economic crimes in the world, it is needed to implement the application of forensic accounting techniques(Modugu & Anyaduba, 2013). Fraud is a deliberate action that is performed by single person or many to get illegal benefit. (Nwaze, 2012) fraud is a planned process that is carried out by individual or group with the aim to deceive others to gain the advantage. (Ehioghiren&Atu, 2016) stated that it is quite difficult to define financial crime precisely but financial crime can be described. According to Association of Certified Fraud Examinations in 2011 $3.2 trillion dollar were lost globally as a result of financial statement fraud, embezzlement of assets and corruption (ACFE, 2012). (Ozkul&Pamukc, 2012) stated the financial statement fraud as, inappropriate market value of business, preparation of financial statements and line up with budget for gaining unfair revenue by showing manipulated business values.

Forensic accounting is relatively a new field in Pakistan. The businesses are aware from the amenities of forensic accountant for instance the number of fraud cases have increased. There are number of cases in Pakistan too. One incident has been reported by the private bank that its accounts have been hacked by ATM using replicate cards and the sum of amount was over rupees ten million (Dawn, 2022). Another same nature incident happened, where the criminal(s) has looted 14 ATMs of a private organization by hacking one of ATM's tray (i.e. Rs.5000/- notes). The looted amount is unknown but the sum of amount was in millions (Propakistan, 2022). An investigation authority also affirmed that more than 100 cases were already underway with this breach. (Dwan, 2018).[1]According to dawn news, Bank of Punjab's former director has misused the authority and has committed fraud an amounting to Rs. 6.2 billion. Nowadays, fraud has become a normal life in the private sectors of Pakistan whereas, organizations hire services of internal auditors. Moreover, it is not astonishing that these frauds are being done under the observation of internal auditors. Frauds have been performed through multi-dimensional way in Pakistan. Financial fraud of 23 Pakistani companies was disclosed by World Bank. [2]According to Asian News International (ANI), 2021 (23) companies of Pakistan doing fraudulent activities to win the Electricity Distribution and Transmission Improvement project which is undertaken by (National Transmission and Dispatch Company) (NTDC) and Distribution Companies (DISCOS). [3]According to "The News International", Investigation agency of Pakistan, National Accountability Bureau (NAB) has taken into custody former Governor Gilgit Baltistan's son on account of 50 million fraud case with National Bank of Pakistan. He was involved to obtain a loan as vice chairman of the private company Silk Route by submitting fake documents. In Pakistan prevailing accounting system does not timely detect the fraudulent activities / practices, when private sector employees are engaged in these activities. Pakistan has wrapped in the flame of financial fraud and corruption which has created many difficulties in the economy of Pakistan. Financial frauds are demolishing the economy of Pakistan and creating hindrance in the pace of development. The rank of Pakistan is 140 in the corruption perception index (CPI) out of 180. It is not strange that Pakistan is facing corruption and financial fraud in the private sectors (Transparency International Report, 2021). There is a common expectation that forensic accounting can support in fraud detection. Therefore, due to these reasons mentioned above, "it's imperative to address the problem of Financial Fraud detection in the context of Pakistan which can be

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[1] Dawn News https://www.dawn.com/news/1197090
[2]Asian News International (ANI), 2021 pakistan20210721143533
[3]According to The News International https://www.thenews.com.pk/print/742713

achieved using Forensic Accounting". That can lead to study, the influence of forensic investigation on the fraud detection. Furthermore, outcomes of forensic litigation and forensic accountant investigation tenure on fraud detection needs to be addressed.

The main objective of the research is to identify the impact of forensic accounting on the fraud detection in private sectors of Pakistan in three ways. First by testing the impact of forensic investigation on fraud detection. Second, by testing the impact of forensic litigation on fraud detection and lastly by testing the impact of forensic accountant investigation tenure on fraud detection to answer the question like What is the impact of forensic investigation on fraud detection? How does forensic litigation effect on fraud detection? And How does forensic accountant investigation tenure effect on fraud detection? This study focuses on forensic accounting, and will help the researchers, students and accounting professionals to contribute their further efforts in the field of forensic accounting and will also aware the investors so that they may demand forensic accounting services from the companies where they invest in.

2. Literature Review

A Forensic accounting is described by(Lawal et al., 2020) it is the procedure of applying auditing, accounting, modern and updated exploratory skill to support in legal problems. Forensic accounting plays an important role in the legal disputes generated by the fraud activities and failure. According to (Edori D.S et al., 2020) (Onyekwelu et al., 2016)stated the forensic word means to solve a crime after finding out the evidence. (Elisha & Johnson, 2020) described as defining the fraud is as difficult as fraud identifying. Fraud is an intentional act that is done by one or a group, those accused with governance, employees or third parties containing the use of deception to attain an illegal benefit. (Karwai, 2012) describe that, in the organizations fraud is vary usually in character, method and nature. He further stated that, in today's modern business world identification of fraud is very difficult because fraud involves a deception and complex conspiracy that often concealed the actual root cause of fraud. (Nwaze, 2012) opined that it is very tricky process to predetermine the fraud. Generally, the fraud is undertaken with the aim to deceive or cheat to other persons by an individual or a group of people.

Three theories of Fraud support this study. First, Fraud Triangle Theory (Cressey, 1953) presented by an American criminologist Donald Cressey in the year of 1950 but it was published in book form in 1953 namely "Other people's money". Fraud Triangle theory is the model that enlightens the causes behind committing fraud. To recognize suspected fraud, forensic accountant depends on the theory of fraud triangle. That explains the inspiration behind fraud. The three essential components of fraud triangle theory which are as follows, first one is opportunity and second is pressure while the third and last component is rationalization. The Second is Fraud Diamond Theory (Wolf & Hermanson, 2004) which is the extension of fraud triangle theory by taking into account fourth element capability, having necessary abilities and skills to commit the fraud by persons. According to (Mackevicius & Giriunas, 2013), not every person who possessed pressure, opportunity and realization may bind the fraud; capabilities play a vital role to commit a fraud. The third one is Fraud Management Lifecycle Theory of (Wilhelm, 2004) who defined the idea of fraud management lifecycle in 2004 and developed (08) eight steps which are deterrence, prevention, detection, mitigation, analysis, policy, investigation and prosecution.

A general idea has derived from the instance of (Lawal et al., 2020). This research shows the association between Fraud detection and forensic accountant investigative tenure, forensic investigation, and forensic litigation. Forensic accounting relatively a new profession arena that has expanded quickly from the time when it's beginning. Now it is extensively demanded and is enduring to grow. Forensic accounting requires accounting expertise to explore fraud,

misappropriation and other misdeeds hidden in financial dealings. Forensic Investigation has a key role in detecting the fraud scam mostly this step takes place when the event of fraud has been done by the fraudster. Through investigation evidences are discover which has been buried in an organized way by the offender. Forensic Investigation is a part of forensic accounting. It is method of gathering proof in order to prepare the professional report or eyewitness declaration. Generally, forensic accountants begin with the investigation to collect evidence when fraud suspicions already exist. Mostly, forensic accounting investigations is use in legal events, but it is also use for compliance efforts and to stop law-breaking.(Oyedokun, 2015). Litigation is also the process of forensic accounting. It is the step of accountant's process. In this step forensic accountant participate as an expert and explain / interpret the financial documents in the court of law. This shows that forensic accountant not only discover proof and prepare reports and also make it in a presentable form so that it can be present in the court of law. Forensic Litigation support provides consultation and accessibilities to the attorneys regarding potential and present matters. It also helps to understand and represent the pending and current cases. (Bassey et al, 2017). Yinus & Oladejo (2015) exposed independent internal auditor is not guaranteed that they work in favor of company. Financial frauds are performed under the direction of the internal auditor of a company. Although opinion of external auditor is mandatory but, still so many fraud cases are being committed on daily basis. It clearly gives direction that forensic accounting should be exercised because internal and external auditors may not have the required knowledge and skills to address and detect the modern financial frauds in the specific time period. Financial frauds may include money laundering, embezzlement, criminal financial transaction, security fraud and contract disputes. Furthermore, forensic accountant will be competent in providing investigative accounting and litigation support. This will also improve the prosecution of financial cases. The Studied relationship of this study is given below.
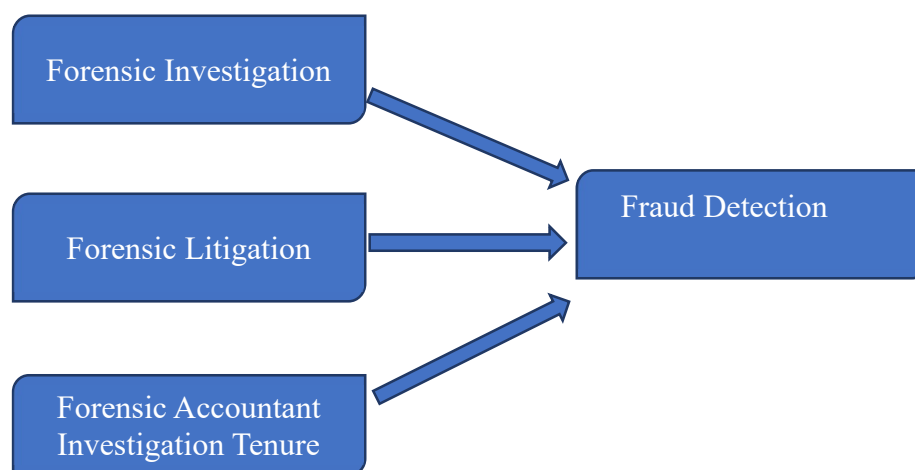

Figure 1

Nader et al., (2020) studied the impact of forensic accounting domains (i.e. litigation support and skilled witness) on financial corruption and found significant effect in the decline of corruption in Lebanon. The similar impact has been investigated by a number of other studies. Like (Joy & Alexandra, 2020) studied about forensic accounting's impact on the deduction of fraud on public and private sectors of Abuja capital of Nigeria. Findings showed that forensic accounting have a significant control of fraud deduction. In Nigeria due to the existence of corruption level as stated by the Transparency International (TI) that rank of Nigeria in corruption is 149 out of 180 in the year of 2020 therefore, the existence of forensic accounting practices are imperative.(Lawal et al., 2020) evaluate the influence of forensic accounting on fraud deduction in manufacturing industry of Nigeria. Outcomes of the

examination revealed the positive, significant result of forensic accounting regarding fraud deduction. Similarly, (MW, 2018) observed the outcome of forensic accounting on mitigation and discovering fraud. Finding of researcher showed that the practicing of forensic accounting plays an important role in discovering the fraud. To keep in view growing corruption in the context of Nigeria(Sadiq & Kasum, 2009) studied the significance of forensic accounting towards fraud in the public and private sector of Nigeria

Several studies in different countries have conducted regarding the forensic accounting. Forensic accounting and investigation are the important requirements for successful business in today's world. According to(Abdulrahman et al., 2020) UAE, conventional and Islamic bank employed forensic accountant for financial fraud and the role of forensic accountants is significant in fraud detection. The volume of the occurrence of financial frauds are on the rise due to the corruption levels in the country which directly impact their respective economies and act as an impediment to achieve growth targets due to this economy is facing a lot of problems.

Numerous researches have been done on the subject of forensic accounting role. (Hashem, 2021) has also conducted the study to find out the forensic accounting role in decreasing cloud-based accounting risk. Results shows that the forensic accounting has the imperative role in decreasing the danger of cloud-based accounting. Moreover, fraud prevention, detection, deterrence skills (FPDDS), forensic audit, investigation, interviewing skills (FAIIS), litigation, mediation, arbitration skills (LMAS) and computer assisted reviews, documents reviews (CARDR) has statistically important role to decreasing cloud-based accounting threats. (Seda &kramer, 2014) evaluate the forensic accounting composition and availability in the United States and internationally. It was found that four hundred twenty-two (422) colleges and universities of USA were offering separate forensic accounting courses, fifty eight (58) were offering forensic accounting certificate and degree program, ninety seven (97) were offering forensic accounting or specialization. While on the other hand only twenty five (25) colleges and universities of foreign were offering separate forensic accounting courses, twenty three (23) were offering forensic accounting certificate and degree program, nine (09) were offering forensic accounting or specialization. Results disclosed there is a substantial raise of forensic accounting education availability.

For future and present, financial corruption is a dangerous factor. The pace of economic development slows with the financial corruption and generate barrier for the community's welfare and prosperity. To understand the corruption sophisticated and modern way is required that is forensic accounting. (Alabdullah&Yahya, 2013) therefore, attempts this study to investigate forensic accounting impact on minimizing the financial corruption in the viewpoint of Iraq. He found that, there is an important role of forensic accounting to detect the cases of financial corruption. (Oseni&Idris, 2017) has examined the forensic accounting services effects regarding detection, prevention of fraud and financial crimes in Nigeria. Study concluded the negative impact of financial fraud and crime on the infrastructural development and human capital in Nigeria. Services of forensic accounting help to corporate organizations for the prevention and detection of financial fraud. Related to forensic accounting education studies has been conducted by(Seda & kramer, 2014) in the context of United State and internationally. Subsequently, (Zango, 2012) has done the study to check out the relevance of forensic accounting education in Nigeria. Main objectives in forensic education involve identification of fraud, investigation, fraud detection, prevention identification of firms' internal controls, roots of fraud and white-collar crime were considered. It is revealed through the results that demand and interest of forensic accounting is estimated to increase continuously.

Forensic accounting view of (Digabriele, 2008) regarding the banking industry is that forensic accounting has an important role for clearly interpreting and brief the key financial issues as an expert witness. Due to this forensic accounting principles are linked closely with accounting discipline helping the operation of banking division to detect and answer the issues.

Resultantly, forensic accounting is thrown to lead the industry for several financial fraud. Subsequently(Abdulrahman et al., 2020) investigated to check the control of forensic accounting on fraud detection and prevention in banking industry operations of UAE. With the results of the research, it came to know that forensic accounting has a major role in the UAE banking industry on the detection and prevention of fraudulent events.

An empirical study was conducted in Bangladesh by (Islam et al. 2011). It was revealed through the research as forensic accounting as a device aimed at detection of fraud have significant relevance and helps in combating against corruption and fraud in the country. Activities to control fraud and sustainable corporate governance are the main support and essential for successful growth of the business and its sustainability (Lombardi et al., 2019; Crifo et al., 2019). (Rehman&Hashim, 2020) attempted study to check out the impact of forensic accounting on sustainable corporate governance in the context of public listed companies of Oman. Study presented that it has a positive relationship with sustainable corporate governance. (Ozkul and Pamukc, 2012) stated the main objectives of the fraud in financial statement is to rise market value of the organization, to get the biased earnings by disclosing the false value. A study was conducted by the(Elisha & Johnson, 2020) to evaluate the effectiveness of forensic accounting on the financial fraud control. It has concluded on the basis of study outcomes that forensic accounting has a vital relationship on fraud detection and internal controls and improves the quality of financial statement reporting. It is stated by (Herbert et al., 2017) that the new platforms and procedures of frauds occurrence is increased with the help of emerging technology. Therefore, (Bello, 2020) attempted this study to test the forensic accounting technology impact on the detection of fraud in the aspects of Nigeria. According to (Albrect et al., 2012) pressure in form of financial, work pressure, habit and other pressures related to lifestyles encourage individual or group to for the commencement of fraud. Weakness and flaws of systems give opportunity to done fraud. (Parmudyastuti, 2014) stated ability and skills are required to the auditor while they are detecting the fraud especially in the field of forensic. Sihombing et al., (2019) studied in the perspective of North Sumatra to evaluate the consequence of forensic accounting, training, experience, workload and professional skeptic on the ability of auditors to detect fraud. Research disclosed that forensic accounting, training, experience, works load and professional skeptic have a real time effect on the ability of auditors to discover fraud with positive and significant relationship. It is articulated by(Koh et al., 2009) (Arokiasamy and Cristal, 2009; Dhar and Sarkar, 2010) dealing with the application of forensic accounting is a science to collect accounting concept and truth in the course of auditing procedures, techniques and methods to determine fraud activities which needs the amalgamation of accounting, investigative and audit skill. After that this study was organized by the (A. O. Enofe et al., 2013) to assess the forensic accounting application impact on detection of fraud in the firms of Benin City of Nigerian state Edo.

A study was carried out to evaluate forensic accounting role in fraud investigation and litigation support by the(Okoye et al., 2009). It was revealed in the light of study outcomes forensic accounting has a significant role in the investigation of fraud and litigation support. With the rise of financial accounting fraud in the worldwide economy, it has become an important topic for the industries, institution of academia and research. Study was attempted to evaluate outcome of forensic accounting regarding fraud discovery in the Nigeria by(Modugu &Anyaduba, 2013). It is indicated by the results there is an important agreement among the stakeholders regarding the helpfulness of forensic accounting in control of fraud, internal control quality and financial reporting. To examine forensic accounting role in reduction of financial crime this study was attempted by(Dr. A. O. Enofe et al., 2015) and concluded that forensic accounting has become an effective tool and also revealed that existing techniques of accounting are not fruitful to curb financial crime. Another study had been leaded by(Olubukola et al., 2021) to discover forensic accounting effect on the detection and prevention of fraud.

Results conclude that there is meaningful influence regarding forensic accounting in the avoidance and detection of fraud.

There are numerous negative effects of financial crime, fraud and corruption on the development of economy due to this it become very hard for countries to deliver necessary facilities. To check out forensic accounting relationship for discovery and prevention of fraud, research was done by (Alhassan, 2021)and found that forensic accounting have a significant role in the discovery of fraud. Another study was attempted by (Ocansey, 2017) to evaluate the forensic accounting and fighting with economic and financial corruptions in the viewpoint of Ghana which proves that forensic accounting application have an important influence in combating economic and financial fraud.

A study was conducted to investigate the need of forensic accountants and capability of auditors on forensic auditor competency and forensic accountants in the public sector of Malaysia by (Popoola et al., 2014). Additionally, this study draws the public sector auditors and accountants user's attention regarding how the fraudster deal with the fraud and for the understanding of fraud mechanisms and concluded that forensic auditor capability and forensic accountant on forensic auditor competency and forensic accountants has a vital role on reducing the fraud. The study regarding impact of forensic accounting on the industry of India was examine by (Kumar, 2021). Positive significant impression of forensic accounting was revealed.

Day by day accounting frauds are increasing also in Pakistan. Majority of accountants in the organizations are unprofessional and inexperienced and does not understand the standards of financial reporting. Due to this, accounting frauds are enhancing. Financial corruption can be hinder with the usage of forensic accounting. (Iqbal & Aslam, 2020) explored the position of forensic accounting in the perspective of Pakistan. According to them fraudulent practices, corruption in the commercial sectors of Pakistan is very common. Financial frauds perform through systematic and multi-dimensional way. Moreover, it is a new phenomenon in the context of Pakistan as there is scarce literature existed in this domain. Hence, to explained the influence of forensic accounting on detection of fraud and work is needed to be done especially in the public and private sector of Pakistan. Outcomes of the research revealed that forensic accounting has a broad scope in near future as the ratio of frauds are increasing in Pakistan. (Morgan, 2021) stated that in the year of 2017 three (03) million persons were victims and reported financial fraud in United States. As reviewed from the above literature, it is observed that, working of the developing countries such as Lebanon, Nigeria, Jordan, Iraq, UAE, Bangladesh, Oman, and Malaysia is scarce regarding the awareness and implementation of forensic accounting. The researchers of these countries recommending the forensic accounting seminar, workshop, certification, practices, addition in curriculum of academia and supervision of concern departments that will help in the detection of fraud.

Many challenges are existed in Pakistan and needed to overcome for the betterment of the country. Financial corruption is one of them (Qadri, 2003). According to Pakistan Institute of Management (PIM), fraud has become most committed crime in today's world. That is why businesses must deal with the frequently changing nature of threats. Auditors have a vital role to find out a fraud and it is essential responsibility of auditors. Pakistan is also a developing country and to evaluate the important role about forensic accounting on detection of fraud limited work has been done. Therefore, there is a dearth of forensic accounting literature in perspective of Pakistan. To hinder and overcome the fraud in the country, work is needed to be done on forensic accounting and fraud detection in Pakistan.

As reviewed the numerous articles / papers and found that, in the different countries of the world, various researches have conducted on forensic accounting and fraud detection. Researches (i.e. Abdul Rehman, 2020; Edheku & Akpoveta, 2020; Lawal et al., 2020; Seda et al., 2014; Abdullah &Yahya, 2013 and Islam et al., 2011) had conducted on the existence of

forensic accounting in academia and on the impact, implementation and role of forensic accounting in fraud detection on various domains (i.e. manufacturing industry, banking sector, hotel industry, public and private sectors) and showed the significant positive relation of forensic accounting in detecting fraud in respected countries. Fraudulent practices and corruption in the public and private sectors are very common in Pakistan (Transparency International Pakistan survey, 2017).Gap is observed that, existing accounting system does not timely detect fraudulent activities in Pakistan. As the different countries have found the positive impact of forensic accounting in fraud detection and they can hinder and detect the fraud therefore in the light of various research of different countries, this research has carried out in the circumstance of Pakistan to find out impact of forensic accounting. The following hypothesis is developed in the light of observed gap.

H1: Forensic investigation (FI)has a significant impact on fraud detection on private sector of Pakistan.

H2:Forensic litigation(FL) has a significant impact on fraud detection on private sector of Pakistan.

H3:Forensic accountant investigation tenure (FAIT)has a significant impact on fraud detection on private sector of Pakistan.

3. Research Methodology

In this study the empirical model is designed to examine whether forensic accounting aids in the fraud detection as an empirical study of private sector of Pakistan. Study is based on survey research and carried out in the light of using primary date. Primary data has been collected through the structured questionnaire. The targeted population comprises of private sector employees finance division working as professional accountants. The formula for the respondent's selection has been suggested by the (Mugenda, 2008). While this formula was developed by the (Cochran, 1963). The formula is as follows.

$$N = \frac{Z^2 * p * (1-p)}{e^2}$$

Size of sample for large population is symbolized by "**N**"

Normal distribution Z score value is symbolized as"**Z**"

Unit's proportion in sample size processing variable in the study is symbolized as " **p**". It has been set in the study at (0.5) 50%.

5% Significance level of the study is stated as in decimal (.05) and is symbolized as " **e**"

For determining size of sample from the large population the values substituted at 95 % (ninety five percent) confidence level by taking Z, score value 1.96 while significance level 5% is as mentioned.

$$N = \frac{(1.96)^2 * (0.5) * (0.5)}{(.05)^2} = \mathbf{384}$$

Econometric Formulation of Model

In order to investigate the hypothesis / research objectives the study delineates.

Fraud Detection = (Forensic Accounting, Forensic Litigation, Forensic Accountant Investigation Tenure)

Model's econometric formulation is as mentioned below.

Y is a dependent variable

X is an independent variable

Whereas :**Y** is "Fraud Detection"

$\mathbf{X} = X_1, X_2, X_3$

$X_1 = $ Forensic Accounting, it is symbolized by **FA**

$X_2 = $ Forensic Litigation, it is symbolized by **FL**

$X_1 = $ Forensic Accountant Investigation Tenure, it is symbolized by **FAIT**

$\boldsymbol{\beta eta_0}$ isconstant

Whereas, $\boldsymbol{\beta eta_1}$, $\boldsymbol{\beta eta_2}$, $\boldsymbol{\beta eta_3}$ are the model coefficient

E is error term

Fraud = βeta_0 + $\beta eta\ _1 x_1$ + $\beta eta\ _2 x_2$ + $\beta eta\ _3 x_3$ + Error. . .. . A

Fraud = βeta_0 + $\beta eta\ _1$FA + $\beta eta\ _2$FL + $\beta eta\ _3$FAIT + Error.. . . . . B

Pre-Existing Expectation Regarding the Forensic Accounting and Fraud Detection.

Forensic accounting as a tool is expected that it would have a significant positive impact regarding aids in fraud detection on the private sector of Pakistan.

3.1 Research Design

This study is quantitative in nature and used the descriptive research design by using the survey strategy to identify the control of forensic accounting regarding fraud detection in private sectors of Pakistan. Survey strategy is used for gathering and collecting the data from the individuals with definite result and end specific goal. The target population in the study is consist on those employees who are working in accounting department of private sector of Pakistan and are professional accountants & auditors. Convenient sampling technique is used to identify the target population for data collection from the private sector of Pakistan. Around 400 (four hundred) employees were administered the questionnaire for the collection of data regarding the forensic accounting and fraud detection. Only 317 (three hundred seventeen) employees has fill the questionnaire and submitted it via google form (online). The questionnaire is adapted from Lawal et al, (2020). There are structured and open-ended total 10 (ten) questions, each independent variable has (3) three questions whereas, dependent variable has (1) one question. The questionnaire has been divided into (2) two sections. The first section of the questionnaire comprises on demographics questions including name, age, gender, occupation and experience. While the second part of the research questionnaire comprises all the relevant questions about the constructs. Five-point Likert Scale is designed for collection of data. In the evaluation of results, SPSS software assisted regarding the association and impact among (FD) Fraud Detection and (FI) Forensic Investigation, (FL) Forensic Litigation and (FAIT) Forensic Accountant Investigation Tenure.

Reliability test was conducted to measures the stability of test. Descriptive test was performed by taking into account age, gender, experience, occupation, dependent variable and independent variables. Around 400 questionnaires were distributed to the employees of private sector of Pakistan who was working as a professional accountant, whereas only 317 were submitted the questionnaire which is in percentage approximately 70.25 %. Multicollinearity test was performed. Furthermore, the correlation test was run to evaluate the change in one variable in respect to the change in other variable. Regression was run to determine the statistical relationship between dependent variable and independent variable. Anova is used to check the model fitness.

4. Results and Discussion

The collected data is evaluated by its demographic and response rate. Moreover, descriptive statistics, reliability test, multicollinearity, Coefficient, Regression and Hypothesis testing is done to evaluate does forensic accounting aids in fraud detection in private sector of Pakistan.

Table 1:

Demographic Data

S.No	Category	No Of Respondents	Percentage Of Respondents
1	**Gender**		
	Male	275	86.75 %
	Female	42	13.25 %
2	**Age**		
	25 To 30 Years	77	24.29 %
	31 To 35 Years	124	39.11 %
	36 To 40 Years	68	21.45 %
	41 To 45 Years	34	10.72 %
	46 To 50 Years	11	3.47 %
	Above 5o Years	3	.96 %
3	**Occupation**		
	Student	11	3.47 %
	Professional	306	96.53 %
4	**Experience**		
	1 To 5 Years	84	26.50 %
	6 To 10 Years	148	46.69 %
	11 To 15 Years	64	20.19 %
	More Than 15 Years	21	6.62 %

Above mentioned data clearly reveals that the proportion of male respondent is higher in the category of gender. The male respondent figures were 275 (two hundred seventy five) which is 86.75 % from the total sample size of 317 (three hundred seventeen). While on the other hand the figure of female respondents were 42 (forty two) which is 13.25 % out of total respondent 317 (three hundred seventeen). In the category of age there were 77 (seventy seven) respondents of age from 25 to 30 years which is 24.29 %, 124 (one hundred twenty four) respondents were at the age of 31 to 35 years having 39.11 %, 68 (sixty eight) respondents was between age bracket of 36 to 40 years which is representing 21.45 % , between the age of 41 to 45 there were 34 (thirty four) respondents which is 10.72 %, 11 (eleven) respondents were at the age of 46 to 50 having 3.4 % and only 3 (three) respondent were above the age of 50 year which is representing 0.96 % of the total sample. In Category of occupation 11 (eleven) respondents were the student which represent the 3.47 % of total sample size and 306 (three hundred six) respondents were the professional who are working in the accounting department of private sector of Pakistan and accountancy and audit profession which represent the 96.53 %. In experience category there were 84 (eighty four) respondents who have the experience of 1 to 5 years represent 26.50 % of the total sample size, whereas, 148 (one hundred forty eight) respondents have an experience of 6 to 10 years representing 46.69 %, moreover, there are 64 (sixty four) respondent having 11 to 15 years working experience represent 20.19 % and 21

(twenty one) respondents working experience is above 15 years which represent the 6.62 % of the sample size.

4.1 Response Rate

To evaluate a true picture of the study respondent response rate plays a significant role because response rate reveals the appropriateness about the procedures of the study. It is described by (Bailey, 2000) that, 50 % respondents response rate are adequate whereas, 60 % response rate of respondents measured good and up to 70 % or higher response rate are measured very good. The researcher received the response rate 79 % to evaluate does forensic accounting aids in fraud detection in private sector of Pakistan which is consider very good while, no response rate is 21 %. Total 400 (four hundred) structured questionnaire were send via google form to samples of the population of private sector of Pakistan for the collection of date out of which 317 (three hundred seventeen) were fill and submitted online which represents the 79 % response rate but 83 respondent did not submit the structured questionnaire which representing 21 % no response rate.

Response rate are summarized in the below mentioned table.

Table 2:

Response Rate

Description	Total Respondents	In Percentage (%)
Submitted	317	79 %
Not-Submitted	83	21 %
Total	**400**	**100 %**

Table 3:

Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AGE	317	1.00	6.00	2.3281	1.11645
GENDER	317	1.00	2.00	1.1325	.33956
OCCUPATION	317	1.00	2.00	1.9653	.18331
EXPERIENCE	317	1.00	4.00	2.0694	.85402
FI	317	1.00	5.00	4.0589	.46920
FL	317	1.00	5.00	3.8696	.66389
FAIT	317	1.00	5.00	4.0410	.54804
Finfraud	317	1.00	5.00	4.2587	.64824
Valid N (listwise)	317				

The above mentioned table has performed the statistical rest related to all variables (dependent variable is (FD) and independent variable are (FI), (FL) and (FAIT)) which has been incorporate in the study. Total 317 (three hundred seventeen) respondents has responded for the answer of questionnaire, which have been taken into the evaluation / examination of results. Results of descriptive statistics revealed that the mean value of fraud detection is 4.2587 % with the value of standard deviation 0.64824 %, while forensic investigation have a 4.0589 % value of mean with 0.46920 % value of standard deviation, forensic litigation mean value is 3.8696 % with the 0.66389 % value of standard deviation and forensic accountant investigation tenure's mean value is 4.0410 % with the 0.54804 % value of standard deviation.

4.2 Reliability Test

It is expressed by (Long & Ervin, 2000) that, when the linear regression model assumptions are taken into consideration and follow accurately than (OLS) method produce the unbiased & efficient estimates of (beta, error term etc.) parameters. To keep in view the assumption of linear regression model the scholar have conducted the following tests as : reliability test and multicollinearity test on the fraud detection which is dependent variable and forensic investigation, forensic litigation, forensic accountant investigation tenure which are independent variables.

Reliability measure the consistency or stability of test and also aids to access the goodness of a measure. It is express by (Sekran, 2006) if the value of Cornbach's alpha exactly (one) its mean reliability is higher while value comes minimum 0.7 it is recommended. On the other hand (Velicer& Fava, 1998) stated and recommend if the value of Cornbach's alpha comes at least between 0.400 and 0.700.

The reliability result is as under.

Table 4:

Reliabiity Statistics

Reliability Statistics

Cronbach's Alpha	N of Items
.848	10

The findings of the reliability test showed in the above mentioned table that fraud detection (FD), forensic investigation (FI), forensic litigation (FL) and forensic accountant investigation tenure (FAIT) have a Cornbach's alpha coefficient value 0.849 which is higher from the minimum acceptable / recommended value of reliability and show good internal consistency in the light of (Sekran, 2006) recommendation / suggestions.

4.3 Multicollinearity

Multicollinearity is an un-acceptable if independent variables establish a higher level of inter-correlation among them and this effect between independent variables can't be separated. (Garson, 2012) stated that rule for multicollinearity is as, if VIF value will be greater from 4 (VIF > 04) there will a problem of multicollinearity problem among the independent variables, if the value of VIF comes under or up to the value of 4 it means there is no existence of multicollinearity. Whereas some scholar recommends the VIF value up to 5 and are more lenient regarding the cut off value of VIF. If the value fall under 5 or up to 5 there is no problem, if it exceeds from the value of 5 in such case there is a multicollinearity existence. However, (O Brien, 2007) propose regarding the rule of VIF that, it should be evaluated on the basis of contextual and by taken the other factor into consideration that effect variance of regression coefficient.

Table 5:
Coefficients

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.112	.279		3.988	.000		
FI	.493	.083	.357	5.909	.000	.591	1.692
FL	-.101	.052	-.104	-1.965	.050	.771	1.297
FAIT	.381	.074	.322	5.148	.000	.550	1.818

The scholar adopted the threshold of VIF value in this study is 4. The results of the multicollinearity test in this study disclosed that the first independent variable forensic investigation have a value of VIF 1.692, whereas, second independent variable forensic litigation have a VIF value 1.297 while, the last independent variable forensic accountant investigation tenure have a value of VIF 1.818 which clearly reveal in the light of VIF rule which the study have adopted that, there is no existence of multicollinearity problem among the independent variables.

Correlation
Table 6:
Correlations

Correlations

		FI	FL	FAIT	Finfraud
FI	Pearson Correlation	1	.392**	.629**	.519**
	Sig. (2-tailed)		.000	.000	.000
	N	317	317	317	317
FL	Pearson Correlation	.392**	1	.460**	.184**
	Sig. (2-tailed)	.000		.000	.001
	N	317	317	317	317
FAIT	Pearson Correlation	.629**	.460**	1	.499**
	Sig. (2-tailed)	.000	.000		.000
	N	317	317	317	317
Finfraud	Pearson Correlation	.519**	.184**	.499**	1
	Sig. (2-tailed)	.000	.001	.000	
	N	317	317	317	317

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

Results of the correlation mentioned in the above table reveals that there is a positive association between variables. The value of r > 0 whereas, the degree of correlation between the variables defining medium correlation because the correlation value is in the range of 0.300 to .0600 therefore, this is a moderate degree of correlation.

4.4 Regression

According to (Kothari, 2004) regression test was run to determine the statistical relationship between dependent variable and independent variable. It focusses specifically regarding changes in relationship of dependent variable with the changes of independent variables.

Table 7:

Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.571[a]	.326	.320	.53460

Above table results shows that the value of R is the value of correlation as mentioned in table as .571 mean there is the existence of an interim degree of correlation between the variables. Regression analysis shows the relationship between the value of R = .571 and R square = .326. This mean 32.6 % of variation in the FD (independent variable) be described by the FI, FL and FAIT (independent variables). Rest of the percentage which is 67.4 % can be defined by taken other independent variables into consideration or which are outside of the model.

Table 8:

Anova

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	43.334	3	14.445	50.542	.000[b]
Residual	89.454	313	.286		
Total	132.789	316			

Above mentioned table results shows that the model is fit to this study. The value of F statistic is 313 = 50.542, p < 0.05. These values point out in the light of prediction of regression model that the variables are momentous.

Hypothesis Testing

To examine the effect of regression relationship between the dependent variable fraud detection and independent variables Forensic Investigations, Forensic Litigation and forensic accountant investigation tenure, the regression equation was carried out by using the standardized coefficient beta. Moreover, t-test of these standardized coefficient beta in regression model was also carried out. The results are presented in the Table below.

Table 9:
Hypothesis testing

Variable	Coefficient Beta	Standard Deviation	t value	Significance Value
Forensic Investigation (FI)	.357	.083	5.909	.000
Forensic Litigation (FL)	-.104	.052	-1.965	.050
Forensic Accountant Investigation Tenure (FAIT)	.322	.074	5.148	.000

The results disclosed that the forensic investigation has a positive and significant impacts on fraud detection in the private sector of Pakistan with beta coefficient 0.357 and significance value (p-value) 0.000 which is less than 0.05 (p-value < 0.05). Similarly, the forensic accountant investigation tenure has a positive and significant influence on fraud detection on the private sector of Pakistan with beta coefficient 0.322 and significance value (p-value) 0.000 which is less than 0.05 (p-value < 0.05). The results of the second hypothesis disclosed that the forensic litigation has a negative influence on fraud detection on the private sector of Pakistan with beta coefficient -0.104 and significance value (p-value) 0.050 which is equal to 0.05 (p-value = 0.05).It show that companies don't prefers to litigation due defamation, reputation of organization and lengthy process of courts.

Selection, assessment and explanation of all the dependent and independent variables in the study is supported through the literature review. One dependent variable and three independent variables were carefully chosen to carry out the study. Fraud detection is used as dependent variable while other three forensic investigation (FI), forensic litigation (FL) and forensic accountant investigation tenure (FAIT) is used as independent variables. Impact of forensic investigation (FI), forensic litigation (FL) and forensic accountant investigation tenure (FAIT) is examined on the fraud detection (FD). Primary data is used after getting the answer from (317) three hundred seventeen respondents working in the accounting department of private sector of Pakistan. After getting the data from the respondents test were run such as demographic, response rate, descriptive statistics test, reliability test, multicollinearity test, coefficient test, regression test and hypothesis test.

As in the light of study findings it has revealed that there is a need of forensic accounting in the private sector of Pakistan for the detection of fraud. The finding of the study also disclosed that forensic accounting as a instrument has a positive significant impact on fraud detection. Further, it has revealed that there is a significant association between forensic accounting and fraud detection in the private sector of Pakistan. To boost / enhance the economy of the country it is highly necessary for the private sector to make a better policies regarding the fraud detection and implement these policies. It is important for the private sector organization of Pakistan to monitor the financial fraudulent activities. To prevent and hinder the fraudulent activities the organizations use most common form of communication with their employees which is circulars / office orders. But despite of these activities there is a severe need to implement the forensic accounting practices within the organization.

5. Conclusion and Recommendations

It has been revealed in the study that forensic accounting as a device for the fraud detection has a significant impact in private sector of Pakistan. Moreover, there is a positive substantial association that exists among the forensic investigation (FI) and fraud detection (FD). Its mean that if the forensic investigation practices increase this will lead to increase in

fraud detection. There is also significant association among (FL)forensic litigation and (FD) fraud detection which means that with the increase of forensic litigation practices it will lead to increase in fraud detection. There is also an important association between forensic accountant investigation tenure (FAIT) and fraud detection (FD). This explained that, increase in (FAIT) forensic accountant investigation tenure, will increase (FD) fraud detection.

Therefore, this study recommends the followings. This research will be more significant if there will be an induction of more independent variables. With this induction of other independent variables, the result of the research will further explain the dependent variable (fraud detection). As in this research the existing independent variables has explained the dependent variable up to 32.6 %. It means there is a further gap of 67.4 % which may be enlightened by other independent variables. In addition, it is pointed out here that proper mechanism for suitable penalties must be imposed if the fraud is detected. Highlight the fraudster and punished the culprits. Similarly, procedure for implementation of forensic accounting should be developed and appropriate trainings & guidance should be planned and conducted with reference to modern era. To implement proper forensic accounting techniques which are being deployed in the developed countries for the purpose of detection of fraud. For the stability of the country economy forensic accounting practices are useful for the eradication of financial fraud from the private sector of Pakistan.

Declaration:

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