PREDICTION OF MANAGERIAL FRAUD IN PUNJAB NATIONAL BANK

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Abstract

The Indian banking industry has seen various governance scams in the recent years. In the last 3 years, there has been a loss of thousands of crores due to various scams. This paper pertains to the managerial fraud which happened in Punjab National Bank in 2018. This paper also aims to find out the predictive ability of financial and corporate governance variables to detect fraud so that such fraud doesn't happen in the future. In this paper we found out that it is not easy to predict the managerial fraud in the case of Punjab National bank with the help of financial and governance variables seeing together as the success rate is around half. Also, individually financial variables proved to be better indicator of managerial fraud as compared to Governance variables as seen in the case of Punjab National Bank Scam. Need of the hour is to have a better and more stringent monitoring policy so as to avoid such frauds or scams in future.

KEY WORDS- Banks, Fraud, Financial ratios, Corporate Governance variables, Logistic Regression.

JEL Classification : G21, G34, O16, H83

INTRODUCTION

Prior to liberalization, Reserve Bank of India played role of regulator of the financial sector. Liberalisation implied a substantial shift in the role of RBI from regulator to facilitator. As a result RBI facilitates the free play of the market forces and leaves the banks to decide their own policies. Banking sector in India has shown multidimensional growth. During this period, many cases of frauds and corruption have been prominently reported in the media since 2015.According to a report of RBI,6800 cases of Bank frauds amounting to rupees 71500 crores have been detected in the year 2018-19.

This paper aims to analyse the various aspects of Bank frauds. However, our study is primarily confined to one of the famous Bank fraud case involving Punjab National Bank[i]. Punjab National Bank was hit by a massive fraud amounting to approx. Rs. 13,000 crore orchestrated by celebrated jeweler Mr. Nirav Modi and his uncle Mr. Mehul Choksi, in which they used fake PNB guarantees

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to obtain loans from overseas branches of Indian banks like the Hong Kong branches of Allahabad Bank and Axis Bank. They pulled off the heist in connivance with some employees[ii] of the Brady House branch of the bank. By the time the fraud was discovered in early 2018, they had already defaulted on the loans they had been taking from overseas branches of Indian banks fraudulently for the past six years or so, putting all these piled up liabilities on Punjab National Bank.

One of the major developments after the fraud was uncovered was that the Reserve Bank of India ordered the discontinuance of the issuance of Letters of Undertaking, the primary instruments used by Modi and Choksi to defraud the bank. Another major development was the Fugitive Economic Offenders Act, 2018 passed by the Government of India in July 2018, which primarily gives the government the power to seize the assets of those who flee the country to escape legal prosecution. Numerous assets owned by Modi and Choksi have been seized by the Enforcement Directorate, while the government is trying to get their extraditions as soon as possible.

REVIEW OF LITERATURE

A number of studies have been done in the field of managerial frauds in a bid to understand them and the reasons behind their occurrence. Let us go through some of the papers that have dealt with the issue of managerial frauds.

Ghosh (1992) reported three major reasons contributing to frauds in banking sector which were leniency by the operating and the authorized staff, over confidence in the customers who were involved in frauds and the third party fraudsters who took the advantage of leniency in banking system.

Hillison et al. (1999) showed that frauds committed by employees depends on the employee's personal situation and work pressure due to financial credits or losses on personal ends, societal pressure and low satisfaction from the current job. It found that around 95% of the total reviewed cases were due to the financial difficulties, job pressure and social pressure at the personal end of the fraudsters.

Uzun et al. (2004) examined the impact of different features of the board of directors as well as other corporate governance features on the occurrence of corporate frauds in the US during the period 1978 to 2001. The study found that the structure of the board's oversight committees as well as board composition is significantly correlated with instances of occurrence of corporate fraud.

Willson (2006) laid emphasis on the various causes responsible for frauds in the banks of Singapore which include lack of supervision by management, improper assignment of duties between the staff, lack of compliance in following policies and less control on banking activities and lack of proper control of management on routine working.

Fairchild (2009) studied the impact of auditor tenure on the gravity of managerial fraud, in which two contradictory effects were considered – the "learning curve" effect: when the auditor tenure increases, the ability of the auditor to detect instances of fraud also increases, thereby reducing the incentives for managers to commit fraud; and the "loss of independence" effect: as the tenure increases, the auditor could also grow more sympathetic towards the management, thereby increasing those incentives.

Khanna & Arora (2009) reviewed the presence of frauds in banking industries and studied the reasons responsible for frauds in banking sector. The study revealed that the main causes for banking frauds were lack of employee trainings, work pressure on staff, market competition and lower adherence to the RBI policies issued for prevention of frauds. The study suggested that anti-fraud mechanism is to be followed and RBI policies should be strictly followed.

Bruner et al. (2010) reported experimental evidence suggesting that the quantum of fraud as well as the level of efforts put in by the fraudsters is positively correlated with the level of equity in the context of equity-based compensation. This reinforces or at least conforms to the theory that equity-based compensation has had the side effect of creating a motive for managers to commit frauds.

Dyck et al. (2010) studied all reported cases of fraud in big US companies during the period 1996 to 2004 in order to identify the most effective mechanisms that could detect corporate fraud. The study found that detection of fraud does not depend upon standard corporate governance factors such as auditors, investors, SEC etc. alone but rather takes a whole variety of non-traditional factors as well, such as media, employees, industrial regulators etc.

Zona et al. (2012) examined and framed the antecedents of corporate scams in terms of interactions of CEO's personal characteristics or traits with cohesion among stakeholders and corporate strategy. For this, the study delved into the case of the Italian bank, Banca Popolare di Lodi which was embroiled in a corporate scam in the year 2005, contributing to better understanding the complex dynamics behind occurrence of corporate scams.

Kingsley (2012) in his study gave various reasons for frauds in Nigerian banking sector as financial obligations on individuals, work pressure on employees, insecurity in jobs, complicated legal formalities, high poverty ratio, maintaining standard of living, wrong commitment by the managers and competition in banking sector.

Boumediene (2014) tries to detect and predict managerial fraud in the financial statements of Tunisian banks. The outcome of this study was that financial statements helped in detecting managerial fraud in Tunisian banks. The conclusion was that the financial ratios could be used to detect the managerial fraud in the banks.

Bhasin (2015) threw some light on the growth of frauds in the Indian Banking sector and showed that around 60% of the fraud cases occurred due to very limited rotation of responsibilities of employees, fake and false documentation and less control over the account management. It also revealed that near 45% of the total fraud cases were committed by the managerial level employees.

Vousinas (2016) found internal audit as best tool for better management. The study put emphasis on the role of internal audit in the handling of bank frauds. It also highlighted the anti-fraud methods to control the bank frauds.

There is an increasing interest in analysing reasons of managerial frauds and their impact on various aspects of corporate governance. However, not much headway has been made in the direction of ways to predict and prevent managerial frauds from happening. This leaves room for us to understand the recent fraud at Punjab National Bank and the underlying reasons thereof, and analyse whether managerial frauds can possibly be predicted.

HYPOTHESIS DEVELOPMENT

The papers reviewed above have primarily delved into reasons behind occurrence of frauds. Financial ratios could be used to detect the managerial fraud in banks, according to Boumediene (2014); whereas Vousinas (2016) held that internal audit could be very useful in handling bank frauds. Looking at the above examples, it is realised that the impact of financial ratios as well as corporate governance variables in prediction of managerial frauds need to be studied, using the case of Punjab National Bank. Therefore, following hypothesis were developed for the purpose of our study:

H01: The financial ratios of the bank have no impact on Managerial fraud

H02: The corporate governance variables of the bank has no impact on Managerial fraud

METHODOLOGY

The aim of this paper is to study the scam which happened in Punjab National Bank. We also try to find out the predictive ability of key financial and governance variables. We have taken 14 financial variables which indicates the performance, business and growth of the banks (Salem Lotfi Boumediene (2014)); (Ravisankar et al. (2011). Whereas, 6 Corporate governance variables are taken for the study which may impact managerial frauds (Vikramaditya S. Khanna et al (2013)); Christopher J. Skousen et al (2008); Vermeer (2003). The Reserve Bank of India (RBI) is the regulatory body for banks in India. It uses the financial ratios to check the performance of the banks. Security Exchange Board of India (SEBI) also regulates the banks which are listed in Stock Exchange. SEBI takes care of the governance aspects of these banks in order to ensure high efficiency and credibility in banking's performance.

In this study we have taken sample of 28 banks. To study Corporate Governance variables (22 variables), an in-depth analysis of annual reports of 28 banks were done. The data has been collected through content analysis from the annual reports and relevant excerpts have been added in the data set. If there was compliance, the score of one was assigned to sub variables or zero was assigned in the case of non-compliance. Whereas, the financial variables (14 variables) were collected from Prowess, the Centre for Monitoring Indian Economy (CMIE) database and some of the financial variables were collected from annual report due its absence in prowess database.

Out of 28 banks, 8 banks were excluded due to large number of missing data as it could have given inaccurate result. (Little, Roderick J., Donald Rubin. 2002; Enders, Craig. 2010)

Thus, the final sample was of 20 banks from the year 2009 to 2018. Data for ten years has been pooled and statistical tools have been applied on the pooled data of 200 observations for corporate governance and financial variables. There are 12 banks where no managerial fraud was detected or fraud amount was less than 100 crores which has been assigned 0. There are 8 banks whose managers were involved in scam and they have been assigned 1.

This final sample which consisted of 20 Indian banks both nationalised and private banks had market capitalisation of above 10,000 Crore as on 1st January, 2019. These banks covered more than 95% of the total market capitalisation of all banks listed in BSE.

Table 1: Variables in the study.

S.NO.	VARIABLE	DEFINITION
	Financial Variables	
1	TAPE*	Total Assets Per Employee
2	LDR*	Net Loan to Deposit Ratio
3	NIM*	Net Interest margin
4	ROA*	Return on Assets
5	EQA*	Equity Capital to Assets
6	PLPE *	Profit/Loss Per Employee
7	CAR*	Capital Adequacy ratio
8	IIWF *	Interest income as percentage to working fund
9	NOIIWF *	Non-Interest income as percentage to working fund
10	BPE *	Business per employee
11	CDNI*	Cash dividend to Net Income
12	ER*	Efficiency ratio
13	NNNA*	Net NPA to Net Advance
14	OPWF*	Operating profit as percentage to working fund
	Corporate Governance Variables	
1	WBLOW*	Whistle Blower Policy
2	PENALTY*	Penalty means penalty imposed on banks by RBI or SEBI
3	COMM**	It stands for Committee which includes Remuneration Committee, Risk Management Committee and Shareholder's grievance committee.
4	REPODIS**	It stands for Report and disclosures and it includes Disclosure of grievance, related party disclosure and accounting treatment.
5	BODAC**	It signifies Board of director and audit committee. Various components of Board of Director and Audit committees are taken like composition, meeting, remuneration, code of conduct etc.
6	AWARD**	Award includes awards received for Corporate Governance and other recognitions.

*- Absolute values
**- Compilation of score of various sub variables is done to make an Index.

The models

The McAteer (2009) methodology is adapted in this paper. Below is the dependent variable Y i.e. Fraud/ Non fraud banks (dichotomous variables) 1 is assigned for fraud banks and 0 for non-fraud banks.

Models for Hypothesis I

Model A- Impact of performance ratio of bank on managerial fraud

This model analyses the impact of independent variables in the performance ratio like Total Assets per employee (TAPE), Cash dividend to Net Income (CDNI), Efficiency ratio(ER), Net Interest Margin (NIM), Return on Assets (ROA) and Loan deposit Ratio (LDR) on the dependent variable that is Occurrence of managerial fraud or no fraud in banks

The equation for the above model is-

Y1 = f (Total Assets per employee, Cash dividend to Net Income, Efficiency ratio, Net Interest Margin, Return on Assets, Loan deposit Ratio) –Eq (1)

Where, Y1 represents the dependent variables, i.e., Banks with Managerial fraud (assigned 1) & Banks without Managerial fraud (assigned 0))

Result of Model A

The model explains the relationship between performance ratio and managerial fraud in the banks. It is observed that two variables i.e. Cash dividend to Net Income(CDNI) and Net Interest Margin(NIM) are significantly impacting/predicting managerial frauds in the banks. They both are significant at 5% level of significance.

Table2: Logistic regression result for Model A.

		B	S.E.	Wald	Bootstrap Sig. (2-tailed)	Exp(B)
Step 1[a]	TAPE	.007	.006	1.316	.284	1.007
	CDNI	11.093	4.527	6.005	**.010***	65706.313
	ER	.007	2.201	.000	.996	1.007
	LDR	1.979	1.843	1.153	.175	7.235
	ROA	-.497	.314	2.516	.148	.608
	NIM	-.685	.306	5.006	**.045***	.504
	Constant	.970	1.265	.588	.473	2.637

Source: SPSS Output.

*p<.05

From the Beta Coefficient it can be observed that there is positive relationship between Cash dividend to Net Income(CDNI) and fraud. Whereas, there is a negative relationship between Net Interest Margin and fraud.

Model B- Impact of growth ratio of bank on managerial fraud

This model analyses the impact of independent variables in the growth ratio like Equity Capital to Assets(EQA), Net NPA to Net Advance (NNNA) &Total Assets per employee (TAPE) on the dependent variable that is Occurrence of managerial fraud or no fraud in banks.

The equation for the above model is-

Y1 = f (Equity capital to assets, Net NPA to Net Advance, Total Assets per employee) -Eq. (2)

Where, Y1 represents the dependent variables, i.e., Banks with Managerial fraud (assigned 1) & Banks without Managerial fraud (assigned 0))

Result of Model B

The model explains the relationship between growth ratio and managerial fraud in the banks.

It is observed that two variables i.e. Net NPA to Net Advance (NNNA) & Total Assets per employee (TAPE) are significantly impacting/predicting managerial frauds in the banks. They both are significant at 5% level of significance.

Table3: Logistic regression result for Model B.

		B	S.E.	Wald	BootstrapSig. (2-tailed)	Exp(B)
Step 1[a]	EQA	24.016	27.320	.773	.354	26925726383.5732
	NNNA	.150	.065	5.389	**.017***	1.162
	TAPE	.013	.005	6.703	**.001***	1.013
	Constant	-1.937	.475	16.625	.001	.144

Source: SPSS Output.

*p<.05

From the Beta Coefficient it can be observed that there is positive relationship between Net NPA to Net Advance (NNNA) &Total Assets per employee (TAPE) to Managerial Fraud.

Model C- Impact of capital ratio of bank on managerial fraud

This model analyses the impact of independent variables like Equity capital to assets ratio and Capital Adequacy Ratio on the dependent variable that is Occurrence of managerial fraud or no fraud in banks. The equation for the above model is-

Y1 = f (Equity capital to assets, Capital Adequacy Ratio) -Eq. (3)

Where, Y1 represents the dependent variables, i.e., Banks with Managerial fraud (assigned 1) & Banks without Managerial fraud (assigned 0)

Result of Model C

The model explains the relationship between capital ratio and managerial fraud in the banks.

It is observed that one variables i.e. Capital Adequacy ratio (CAR) is significantly impacting/predicting managerial frauds in the banks. It is significant at 5% level of significance. From the Beta Coefficient it can be observed that there is negative relationship between Capital Adequacy ratio and Managerial Fraud.

Table 4 Logistic regression result for Model C

		B	S.E.	Wald	BootstrapSig. (2-tailed)	Exp(B)
Step 1[a]	EQA	15.370	24.584	.391	.533	4730520.250
	CAR	-.166	.066	6.349	**.017**	.847
	Constant	1.942	.930	4.357	.038	6.973

Source: SPSS Output.

*p<.05

Model D- Impact of Business ratio of bank on managerial fraud

This model analyses the impact of independent variables like Interest Income as percentage to working fund, Non- Interest Income as percentage to working fund, Operating profit as percentage to working fund, Business per employee, Return on Assets and Profit per employee on the dependent variable that is Occurrence of managerial fraud or no fraud in banks.

The equation for the above model is-

Y1 = f (Interest Income as percentage to working fund, Non- Interest Income as percentage to working fund, Operating profit as percentage to working fund, Business per employee, Return on Assets, Profit per employee) –Eq. (4)

Where, Y1 represents the dependent variables, i.e., Banks with Managerial fraud (assigned 1) & Banks without Managerial fraud (assigned 0))

Result of Model D

Table 5 Logistic regression result for Model D

		B	S.E.	Wald	Bootstrap Sig. (2-tailed)	Exp(B)
Step 1[a]	ROA	-.100	.366	.075	.781	.904
	PLPE	-.024	.262	.008	.908	.977
	IIWF	-.555	.174	10.186	**.004***	.574
	NOIIWF	-.041	.075	.291	.176	.960
	OPWF	-.019	.365	.003	.948	.981
	BPE	.008	.003	5.499	**.062****	1.008
	Constant	3.521	1.642	4.600	.042[b]	33.816

Source: SPSS Output.

*p<.05, **p<.10

The above model explains the relationship between Business Ratios and managerial fraud in the banks. It is observed that two variables i.e. Interest Income as percentage to working fund (IIWF)&Business per employee (BPE) are significantly impacting/predicting managerial frauds in the banks. Interest Income as percentage to working fund (IIWF) is significant at 5% level of significance whereas Business per employee is significant at 10% level of significance.

From the Beta Coefficient it can be observed that there is negative relation between Interest Income as percentage to working fund and fraud. Whereas, there is positive relation between Business per employee and fraud.

Model E for Hypothesis II

The model below analyses the impact of corporate governance variables - Whistle Blower Policy(WBLOW),Penalty(PENALTY),Committee(COMM),Report and disclosures(REPODIS), Board of director and audit committee(BODAC) and Award (AWARD) on the dependent variable Y.

Y= f (WBLOW, PENALTY, COMM, REPODIS, BODAC, AWARD)……….Eq(2)

Note: The assumptions of Multicollinearity, Linearity, Normality, Heteroscedasticity and outliners are taken care of in the above two models.

Result of Model E

The model explains the relationship between corporate governance variables and managerial fraud in the banks. It is observed that four variables i.e. Director & Audit Committee, Report & Disclosure, Whistle Blower Policy & Award are significantly impacting/predicting managerial frauds in the banks. Director_Audit, Whistle Blower Policy and Award are significant at 1% level of significance whereas Report & Disclosure is significant at 5% level of significance.

From the Beta Coefficient it can be observed that there is positive relationship between Compliance of Director & Audit Committee, Report & disclosure and Award on fraud. Whereas, there is a negative relationship between whistle blower policy and fraud.

Table 6 Logistic regression result for Model E

		B	S.E.	Wald	Bootstrap Sig. (2-tailed)	Exp(B)
Step 1[a,b]	BODAC	20.862	11415.51	.000	**.001***	1148284839.17
	REPODIS	.594	.304	3.824	**.021****	1.811
	COMM	-.809	30061.71	.000	.363	.445
	WBLOW	-1.324	.503	6.936	**.001***	.266
	PENALTY	-.348	.334	1.084	.310	.706
	AWARD	.964	.346	7.769	**.002***	2.621
	Constant	-169.13	101063.4	.000	.001[b]	.000

Source: SPSS Output.

*p<.01;**p<.05

FINDINGS OF THE STUDY

The following table briefly summarizes the findings of all 5 models:

Table 7: Findings

S.NO.	SIGNIFICANT VARIABLES	IMPACT ON FRAUD
1	Cash dividend to Net Income(CDNI)	Positive
2	Net Interest Margin(NIM)	Negative
3	Net NPA to Net Advance (NNNA)	Positive
4	Total Assets per employee (TAPE)	Positive
5	Capital Adequacy ratio (CAR)	Negative
6	Interest Income as percentage to working fund (IIWF)	Negative
7	Business per employee (BPE)	Positive
8	Director_Audit	Positive
9	Report and Disclosure	Positive
10	Whistle Blower Policy (WBPD)	Negative
11	Award/Rating for Corporate Governance (ARCGD)	Positive

In the above table we saw that there are in total 7 financial and 4 non-financial variable(governance variables) which impact the managerial fraud in the banks or can be used as predictor of fraud.

COMPARING THE RESULT WITH DATA OF PUNJAB NATIONAL BANK

Now, we will compare these significant variables with Punjab National bank's variable movement in order to assess whether there was a possibility to predict the scam of around Rs.13,000 crores which shook the Indian banking industry in 2018.

Financial Variables

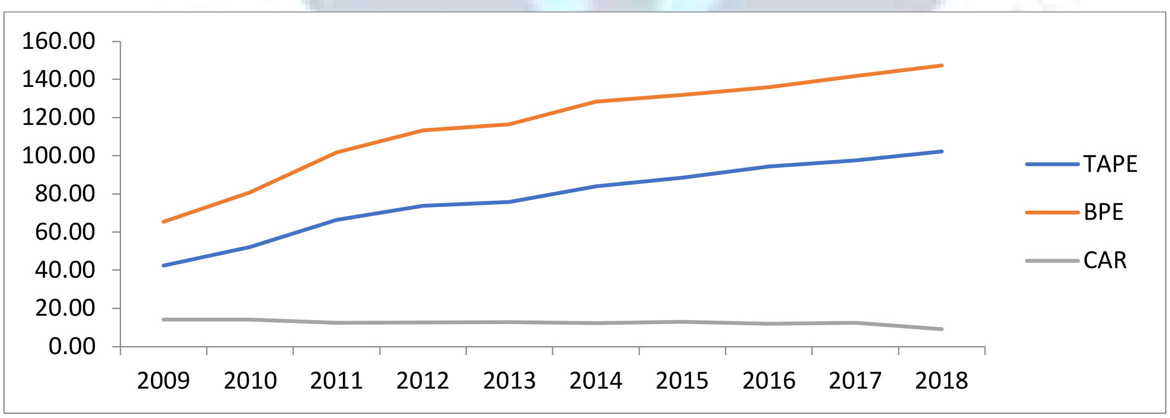

Figure 1: Figure showing the graph of significant financial variables of PNB from 2009-18.

Source: Self compiled

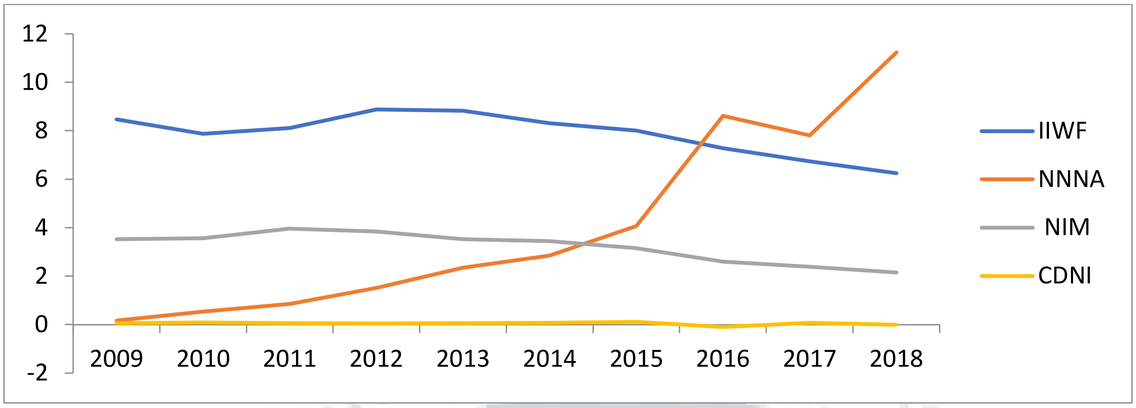

Figure 2: Figure showing the graph of significant financial variables of PNB from 2009-18.

Source: Self compiled

Above are graphs 1 and 2 which are depicting the pattern of financial variables in Punjab National bank over the period of 10 years.

We can see in these graphs-

1. Total Assets per employee (TAPE) is increasing which has positive relation with Managerial fraud **(indicating fraud).**

2. Business per employee (BPE) is increasing which has positive relation with Managerial fraud **(indicating fraud).**

3. Capital Adequacy ratio (CAR) is decreasing which has negative relation with Managerial fraud **(indicating fraud).**

4. Interest Income as percentage to working fund (IIWF) started decreasing after which has negative relation with Managerial fraud **(indicating fraud).**

5. Net NPA to Net Advance (NNNA) is increasing since 2015 which has positive relation with Managerial fraud **(indicating fraud).**

6. Net Interest Margin(NIM) is showing downward trend which has negative relation with Managerial fraud **(indicating fraud).**

7. Cash dividend to Net Income(CDNI) is almost constant which has positive relation with Managerial fraud **(not indicating fraud).**

Thus, in case of financial variables we can conclude that 6 out of 7 significant variables were predicting the managerial fraud which happened in Punjab National bank in 2018.

Corporate Governance Variables

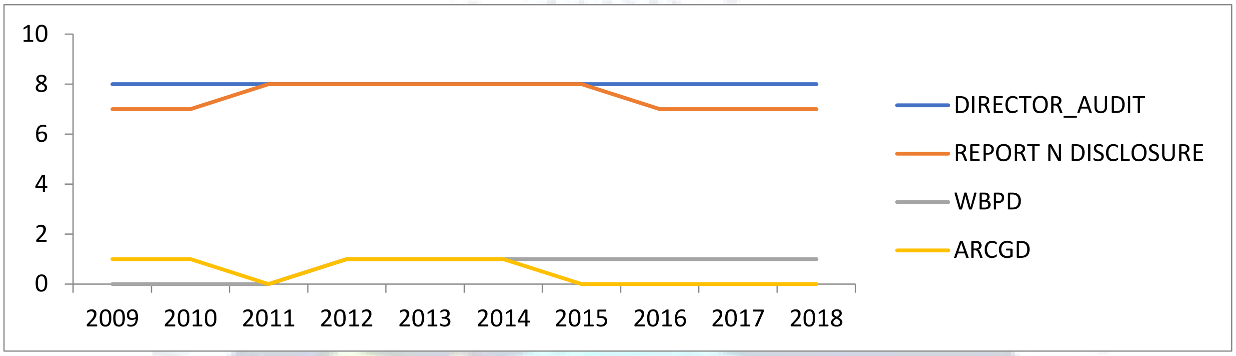

Figure 3: Figure above shows the graph of significant corporate governance variables of PNB from 2009-18.

Source: Self compilation

Above is the graph depicting Governance score of 4 significant variables in Punjab National bank over the period of 10 years.

1. Director & Audit Report has constant score which has positive relation with managerial fraud **(not indicating fraud).**

2. Report & Disclosure score start decreasing after 2016 but it too has positive relation with managerial fraud **(not indicating fraud).**

3. Whistle Blower Policy (WBPD) has constant score which has negative relation with managerial fraud **(not indicating fraud).**

4. Award/Rating for Corporate Governance (ARCGD) score is showing downward trend after 2015 but it has positive relation with managerial fraud **(not indicating fraud).**

Thus, by studying above four Corporate Governance variables of Punjab National Bank, it was very difficult to predict that managerial fraud was about to happen.

If we talk in cumulative figure then **6 out of 11 variables were hinting Scam** which is almost a fifty-fifty chance to predict the happening of Punjab National Bank Scam in 2018. But, if we consider only financial variables then the chance of predicting PNB scam was around 85%.

CONCLUSION

We have seen many scams in the recent past and the banking sector in India was the worst hit sector. In this paper, we tried to study the possibility of tapping the managerial fraud with the help of analysing the relationship between managerial fraud and financial as well as corporate governance variables. According to the data available and objective of the study, logistic regression was applied which gave the result that these variables are not strong indicators of managerial fraud. The incident of fraud is more related to the human psychology what makes it very difficult to predict. The case of PNB scam is also one such example where due to ignorance on the part of auditors, lack of proper surveillance by the management, non adherence to the directives from RBI, etc factors resulted in the fraud of approx. Rs. 13,000 crore. In this study it was also observed that it is not easy to quantify certain Corporate Governance/ Management factors like casual attitude of auditors, non adherence to rules if the information is not available in public domain, actual impact of meetings held by audit committee, remuneration committee, whistle-blower committee, etc.

In this study, one thing that was evident was that more than lack of guidelines and infrastructure there was lack of motivation in managers to do work ethically. All the rules, regulations, guidelines, infrastructures are in place with scope of some modification but the major problem lies in its execution.

During the study, certain loopholes were observed and following steps can surely strengthen the Corporate Governance in Banking Sector in India-

a) India should focus on better development of digital infrastructure. As seen in the case of PNB Scam, if PNBs core banking system was integrated with SWIFT system, then such fraud would not have been possible.

b) In most of the scams, there is a failure in auditing, so there should be more stringent rules for auditing and auditors so that there is minimal scope of mistake at their end.
c) Board of directors are mostly dormant in the cases where fraud takes place, so there should be a monitoring policy which will keep an eye on the directors functioning.
d) There should also be multi-level authentication for key functions so that the chances of unethical conduct reduce at the individual's level.
e) The RBI and SEBI should introduce new tools to avoid fraud in Indian banking sector. E.g- RBI has recently introduced Legal Entity Identifier (LEI) to bring transparency in overseas transactions in banks.
f) There should be timely disclosures from the end of banks so that regulatory authorities can keep a track of their activities.
g) There should be proper training programs for employees so that they don't get motivated to indulge in unethical activities.
h) Scam is more the result of human behaviour rather than Governance lapse, so it is important for regulatory authority to research on this area and understands the psychology of frauds to bring a mechanism which curb such tendencies.

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APPENDIX

There are 20 banks taken in my study as sample for analysis. These 20 banks are classified in two categories-

1. Banks with no managerial frauds (Assigned 0)
2. Banks with managerial frauds (Assigned 1)

Banks with no managerial frauds are-

i. Bank of India
ii. City Union bank
iii. Corporation bank
iv. Federal bank
v. HDFC bank
vi. Indian Bank
vii. IndusInd Bank
viii. Kotak Mahindra Bank
ix. RBL Bank
x. State Bank of India
xi. Union bank of India
xii. Yes Bank

Banks with managerial frauds are as under-

i. **Axis Bank-** The bank has been penalised multiple times by the RBI for non-compliance of KYC norms and violations of NPA classifications. The NPA grew 7 times in the span of only two years i.e, 2015-2017 which shows how managers were involved in unethical conduct just to increase their business and not doing proper credit rating of their customers.
ii. **Bank of Baroda**- In the year 2015, BoB was involved in Rs.6,000 Crore scam of money laundering. After the investigation by Central Bureau of Investigation (CBI) and the Enforcement Directorate (ED) few top officials of Bank of Baroda were arrested for this scam.
iii. **Canara Bank**- In 2017, CBI arrested former DGM of Canara bank for allegedly involved in Rs. 290 crore scam and defrauding Canara and Vijaya bank.
iv. **Central Bank of India-** In 2014, the employees of central bank of india was involved in Rs. 437 Crore scam. The Ahmedabad based firm Electrotherm India with the help of employees cheated the bank.
v. **ICICI Bank-** CBI registered the case against former CEO of the bank over questionable distribution of Rs.3,250 crore loan to Videocon group.
vi. **IDBI Bank-** In 2018, CBI filed chargesheet against 15 officials of the bank in Rs.600 crore loan frauds.
vii. **Oriental Bank of Commerce-** In 2015 money laundering case of Rs.6,000 crores, Oriental bank of commerce was involved with Bank of baroda.

viii. **Punjab National Bank-** One of the biggest scams which hit the Indian bank industry in 2018. The scam amounted to more than Rs.13,000 Crores. Various senior managers were involved in this scam as per the investigation of CBI & ED.

[i] https://economictimes.indiatimes.com/industry/banking/finance/banking/pnb-will-honour-commitments-to-banks-in-lou-case/articleshow/63497672.cms

[ii] https://www.thehindubusinessline.com/money-and-banking/police-arrest-3-people-in-pnb-fraud-case-source/article22782873.ece