A Study on Measuring the Operational Performance of Tripura Gramin Bank

Puranjan Chakraborty
Research scholar (Correspondent), Department of Commerce, Assam University, Assam
Ram Chandra Das
Assistant Professor, Department of Commerce, Assam University, Assam

Abstract

Regional rural bank plays an important role by providing easy and small credit facilities to the people of weaker section living in rural India. The Tripura Gramin Bank (TGB) has been performing its operation in the state Tripura with its 144 number of active branches and helping the state for financial inclusion. These 144 branches are spread across the state covering all the eight districts and rural, semi urban and urban areas of Tripura. In the present paper, an attempt has been made to measure the operational performance of Tripura Gramin Bank. The secondary data of the study has collected from the Annual Reports of Tripura Gramin Bank for the period ranging from 2003-04 to 2016-17. The performance of TGB is measured through deposit mobilization, credit deployment and, status of CD ratio and NPA. The study reveals that the operational performance of TGB in terms of saving deposit, current deposit, term deposit, priority sector lending, non-priority sector lending, status of C/D ratio and NPA is improved during the study period.
Key word: Tripura Gramin Bank, Performance, NPA, Deposit Mobilization, Credit Deployment

1. Introduction

Operational performance of a bank is an important factor in banking business which dictates the very survival of the bank. A small mistake in the bank's operation may cause total collapse of the business in the course of time. Hence proper attention on operational performance of a Bank business is very much essential .Primarily banking operations are confined into deposit mobilization, credit deployment and timely recovery of credit through raising demand and plan of recovery. The present topic is about operational performance of Tripura Gramin bank which is one of the Regional Rural Bank in India involved in rural banking service in Tripura addressing the rural credit needs of rural society especially the weaker sectioncomprising small and marginal farmers, village artisans, small business man, land less agricultural labours, rural industrialist, small scale and cottage industries etc. Thepurpose of the study is to measure the operational performance of TGB through deposit mobilization and credit deployment in Tripura State for the period 2003-04 to 2016-17. The scope of the enquiry has been confined to Tripura state jurisdiction of Tripura Gramin Bank

Tripura is one of the small hilly states in the North East region isolated from the rest part

of the country and only northern part of the state is connected to Assam and 3 sides are having international border with Bangladesh. Most of the areas are rural and hilly. Hilly areas are inhibited by 16 types of tribal people. The state has a population of 37 lacks and most of the populations are living in the rural areas and agriculture and animal husbandry is the main lively hood. In Tripura, Tripura Gramin bank (TGB) is operating with 144 branches covering entire state comprising rural semi urban and urban areas giving banking services. Since it's inception in 1976 and now with a time period of 44 years Tripura Gramin Bank has been providing banking services in Tripura with an objective of amelioration of socioeconomic condition of the people of rural Tripura. It is now essential to know the operational performance of Tripura Gramin Bank in the context of Regional Rural Bank as a whole in India. In this connection many literatures are reviewed related to numerous RRBs in different states of India. But no any study is found for the operational performance of Tripura Gramin Bank and hence there is a research gap and the present study is undertaken.TGB is the only RRB in Tripura with 144 branches with an object to bring the banking facilities to rural people of the state in the rural areas. Presently, out of the available branches of TGB, 71.52per cent of the branches are located in rural, 21.52 per cent in semi urban and 6.96per cent branches in urban areas.

The bank has undergone several changes since it's inceptionin terms of administrative structure, business strategy, and infrastructure. TGB also faced numbers of external and internal challenges like global financial recession and financial crisis, financial inclusion drive, inclusion of new technologies in banking sector. TGB is providing banking facilities more particularly in rural Tripura for last 44years since it's inception. However considering the importance of TGB in rural Tripura, it is important that TGB should have a sound financial health with good performance. Few questions need to answer for the same. Firstly, could TGB improve its banking operational performance over the years? Secondly, is banking operational performance of TGB good? The present study has made an attempt to enquire the banking operational performance achieved by TGB in Tripura.

There is only one RRB in Tripura and that is Tripura Gramin Bank (TGB). TGB has covered entire Tripura state with their banking services in urban as well as in rural areas. TGB is the only bank with the largest branch network of total 144 branches in all the 8 districts of Tripura. The basic objectives of TGBis to boost the rural economy of Tripura through best rural credit delivery mechanism, banking professionalism addressing the credit needs of economically backward class and weaker section of the rural society. TGB is operating in Tripura for last 4 decades and it's role in boosting the rural economy of Tripura is very much crucial. In the course of time since its inception in 1976, it has under gone through several changes of banking environment both inside and outside of the bank.

Tripura state is mostly comprises of rural population and hence boosting of rural economy of Tripura is very much essential in in the state. In this connection the role of

TGB in Tripura is very much crucial. TGB is supposed to fulfill it's basic obligations of rural credit delivery with sound professionalism with it' sound financial health. The financial health of the bank will be sound if the bank's operational performance is well. It is therefore essential to conduct a study on operational performance of TGB.

From the above review of the literature it is observed that the study on operational performance of RRBs has got importance in research at national level.Considering the importance of the topic, few studies have already been completed in India. However, in North East also few studies have been completed on operational performance of RRBs covering Assam, Manipur, Nagaland, Mizoram, Meghalaya, Sikkim, Tripura and Arunachal Pradesh. It is also observed that in Tripura also few studies have conducted on operational performance of other banks in the front of economic development of the area. But there is no any particular study on operational performance of Tripura Gramin Bank (TGB).However it may be mentioned that TGB has been playing a significant role in economic development of Tripura more particularly in providing banking facilities to rural semi-urban and urban areas in Tripura. Hence it has got an importance to have a study in that area. Uddin (2003) in his study on operational performance of Regional Rural Bank has identified select operational problems i.e. defective control, insufficient staffing, untrained staff, rigid policies, mis-management are influencing the operational performance of the bank.Ahmed (1998) has identified select problems of RRBs since inception which is poor recovery of loans, low volume of business, low productivity of staff, and limited area of operation.Sangawan (1989) concluded that, the trend of credit to deposit ratio and overdue of RRB is not appreciable and there is a need of effective implementation of repayment schedule and the researcher also opined to check the viability of RRBs. After the review of the literature it is found that there is no any study on operational performance of Tripura Gramin Bank (TGB). With this research gap the present study is undertaken. Now few questions arise in mind and these questions are as follows. Does the operational performance of TGB improved in terms of deposit mobilization and credit deployment during the study period? Does the deposit mobilization of TGB improved in terms of saving deposits, current deposits, term deposits and total deposits? Does the credit deployment of TGB improved during the study period in terms of priority sector lending, non-priority sector lending and total lending? Does the operational performance of TGB is improved during the study period in terms of performance of C/D ratio and total NPA and total NPA further in terms of sub-standard asset, doubtful asset and loss asset. What is the status of semi average and straight line trend equation with respect to time of deposit, credit, total NPA of TGB during the study period? The objective of the study is to study the operational performance of TGB in terms of deposit mobilization and credit deployment, performance of C/D ratio and NPA. The deposit mobilization is further looked into saving deposit, current deposit, term deposit and total deposit. The credit deployment is further looked into priority sector lending, non-priority sector lending and total lending.

After collecting the secondary data it is tabulated. To assess the growth performance annual growth rate compound annual growth rate is calculated. Semi average method is applied on tabulated data (both deposit and credit) to assess the growth performance during the study period. To know the relationship among the components of total deposit, total credit total NPA correlation analysis is done. To know the C/D ratio performance all the C/D ratio of TGB for the study period is tabulated and average is calculated. To know the impact of the independent component of total deposittotal credit, total NPA on total deposit, total credit and total NPA regression analysis is done. To know the growth performance straight line trend equation with respect to time is applied using time series analysis .With this analysis the study arrived at the findings and conclusion and it's social and economic implication.

2. Review of Literature

Ibrahim (2010) has assessed the performance of the RRBs through the parameters i.e. number of branches, coverage of districts, capital funds, mobilization of deposits, loans and investments. The study had revealed that, the operational performance of RRBs in India has improved during the post-merger period in terms of deposit mobilization, credit deployment, coverage of districts and it's capital fund. Ahmed (2013) has examined the trend and growth of deposit mobilization of RRBs in India. The study has revealed that, there is an improvement of operational performance of RRBs in terms of deposit mobilization and it's positively rising trend and growth during the study period. Rao and Rao (2014) have assessed the operational performance of APGVB for rural credit disbursement through select Government schemes and policies. The study has revealed that the APGVB is the major rural financial institution to meet the rural credit need through various government schemes and hence credit deployment by the bank. Khan and Gupta (2014) have conducted a study to identify the significance of the RRBs in economic development of Himachal Pradesh through their operational performance. The study has concluded that, the operational performance of RRBs in Himachal Pradesh could not bring economic development of the state due to unsatisfactory deposit mobilization and credit deployment by the bank, poor management of the branch, poor loan assessment and recovery of loan. Geetha (2016) has conducted a study to measure financial performance of regional rural banks in Shimoga district. The study has concluded that, financial performance of Krishna PragatiGramina Bank is not appreciable due to poor operational performance in terms of work force management, deposit mobilization, credit deployment , loan assessment, sanctioning of loan , follow up and recovery of loanby the bank during the study period. Bagchi (2006) has conducted a study on operational performance of RRBs in India. The study revealed that, operationalperformance of RRBs in West Bengal is improved in terms of deposit mobilization and credit deployment in the rural area of the state. The study has also highlighted some unsatisfactory operational performance

of loan recovery by the bank. Narasimhan committee -1991 suggested that, Regional Rural Bank should be free from restriction of operation, target customers and they should be allowed to do all sorts of banking business. The committee also suggested that RRBs should improve their rural banking structure with managerial skill at par of commercial banks. Devendra (1998) opined that, Regional Rural Bank is the cause of rural development in India providing easy access to banking services in the rural area but at the same time RRBsare facing recovery problem. Balistter (1989)pointed out that, farmers are repaying the loan out of pressure from the money lender and willful defaulters are because of the view that, loans will be written off. The study also identified that, banks are not providing timely instruction of repayment of loan.

3. Objective:

1. To examine the operational performance of Tripura Gramin Bank in terms of deposit mobilization, credit deployment.Deposit mobilization further looked into saving deposit, current deposit, term deposit and total deposit. Credit deployment further looked into priority sector lending, non-priority sector lending and total lending.
2. To examine the status of C/D ratio, NPA of TGB.
3. The study also to examine the trend of deposit, credit, NPA using semi average method and straight line trendequation with respect to time.

4. Research Question

1. Does the operational performance of Tripura Gramin Bank (TGB) improved during the study period in terms of the following?
2. Does the deposit mobilization of TGB improved during the study period in terms of saving deposit, current deposit, term deposit and total deposit?
3. Does the credit deployment of TGB is improved during the study period in terms of priority sector lending, non-priority sector lending and total lending?
4. Does the operational performance of TGB is improved during the study period in terms of C/D ratio and NPA?
5. What is the status of semiaverage and straight line trend equation with respect to time of credit, deposit and NPA of TGB during the study period?

5. Research Methodology

The present study aimed to examine the operational performance of Tripura Gramin Bank (TGB) for a period of 14 years from 2003-04 to 2016-17 in terms of deposit mobilization, credit deployment, status of NPA and C/D ratio.. The study is empirical cum explanatory in nature. Secondary data has been used to attain the objectives. Data has been collected from the published Annual Reports of TGB. The present study is an empirical and explorative study.

The broad parameters used to analyze the operational performance are deposit mobilization, credit deployment, status of non-performing asset (NPA) and C/D ratios. Deposit mobilization again has been looked into in terms of saving deposit, current deposit and term deposit. On the other hand, the credit deployment has been viewedin terms of priority sector lending and non-priority sector lending. Non-performing assets of TGB has been looked in terms of sub-standard asset, doubtful asset and loss asset.

To analyze the collected data for the above mentioned parameters, selected statistical measures i.e. mean, standard deviation, annual average growth rate (AAGR) and compound annual growth rate (CAGR) have been used.To witness the operational performance during the study period semi average methods are used. Moreover to perceive the trend, thestraight line trend equationwith respect to time has also been used for annual growth rate ofselected parameters under study.Formulae used in this study are as follows.

$$\text{➤ } AnnualGrowthRate = \frac{CurrentYearValue - PreviousYearValue}{PreviousYearValue} \, x100$$

$$\text{➤ } CAGR = \left(\frac{Amountattheendofstudyperiod}{Amountatthebeginingofstudyperiod}\right)^{\frac{1}{n}} - 1$$

Where, n= number of years

$$\text{➤ } AAGR = \frac{Sumofannualgrowthrates}{Numberofyears}$$

6. Analysis of Research Results

Deposit Mobilization: Deposits are collected by Tripura gramin bank (TGB) through 3 types of accounts namely saving accounts, current accounts and term deposit accounts. TGB is doing promotional activities i.e. financial literacy campaign, loan recovery camp, opening new branches in unbanked area, recruiting business correspondent to cover unbanked areas to improve deposit mobilization.

Table-1: Deposit Mobilized by TGB during the study period

Years	Saving Deposit(Rs.in crore)	Annual Growth rate of saving Deposit (per cent)	Current Deposit(Rs.in crore)	Annual Growth rate of Current Deposit (per cent)	Term Deposit(Rs.in crore)	Annual Growth rate of Term Deposit (per cent)	Total Deposit(Rs.in crore)	Annual Growth rate of Total Deposit (per cent)
2003-04	303.19 (41.57)		123.16 (16.89)		302.96 (41.54)		729.31	
2004-05	339.11 (44.75)	**11.85**	101.62 (13.41)	**-17.49**	317.06 (41.84)	**4.65**	757.8	**3.91**
2005-06	472.03 (50.43)	**39.2**	115.92 (12.38)	**14.07**	348.11 (37.19)	**9.79**	936.07	**23.52**
2006-07	555.71 (52.02)	**17.73**	136.14 (12.74)	**17.44**	376.47 (35.24)	**8.15**	1068.32	**14.13**
2007-08	705.38 (54.49)	**26.93**	143.71 (11.1)	**5.56**	445.51 (34.41)	**18.34**	1294.61	**21.18**
2008-09	1002.07 (59.65)	**42.06**	164.97 (9.82)	**14.79**	512.98 (30.53)	**15.14**	1680.03	**29.77**
2009-10	1297.88 (63.31)	**29.52**	181.62 (8.86)	**10.09**	570.68 (27.84)	**11.25**	2050.19	**22.03**
2010-11	1364.71 (60.54)	**5.15**	211.52 (9.38)	**16.46**	678.06 (30.08)	**18.82**	2254.3	**9.96**
2011-12	1631.24 (58.79)	**19.53**	296.07 (10.67)	**39.97**	847.41 (30.54)	**24.98**	2774.73	**23.09**
2012-13	1640.25 (54.29)	**0.55**	196.7 (6.51)	**-33.56**	1184.5 (39.2)	**39.78**	3021.46	**8.89**
2013-14	1996.33 (54.68)	**21.71**	244.96 (6.71)	**24.53**	1409.08 (38.6)	**18.96**	3650.38	**20.82**
2014-15	2156.89 (51.89)	**8.04**	307.73 (7.4)	**25.62**	1691.68 (40.7)	**20.06**	4156.31	**17.07**
2015-16	2428.31 (50.25)	**12.58**	294.07 (6.09)	**-4.44**	2109.66 (43.66)	**24.71**	4832.05	**16.26**
2016-17	2755.65 (51.2)	**13.48**	278.63 (5.18)	**-5.25**	2347.44 (43.62)	**11.27**	5381.73	**11.38**
Total	18648.75 (53.91)		2796.82 (8.08)		13141.6 (37.99)		34587.3	
AVERAGE	1332.05		199.77		938.69		2463.38	
AAGR		**19.1**		**8.29**		**17.38**		**16.83**
CAGR	0.17		0.06		0.16		0.15	
SD	805.04	**12.57**	73.11	**19.51**	695.92	**9.18**	1549.17	**7.28**

Figures in the bracket indicate the percentage to the total.

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB.

The **Table-1** shows the deposit mobilization by TGB and it also depicts the annual growth rate of various types of deposits. The saving deposit of TGB during the year 2003-04 is Rs.303.19 crore which is 41.57 per cent of the total deposits during the year. The saving deposit during the year 2016-17 is Rs.2755.65 crore which is 51.2 per cent of the total deposit collected during the year. Thus it is observed that, there is 9.08

times increase in saving deposit of TGB during the study period.

The current deposit of RRB during the year 2003-04 is Rs.123.16 crore which is 16.89 per cent of the total deposit during the year. The current deposit during the year 2016-17 is Rs.278.63 crore which is 5.18 per cent of the total deposit during the year. Thus it is observed that, there is 2.26 times increase in current deposit during the study period. Hence it is evident that growth of saving deposit is more than of current deposit during the study period.

The term deposit of TGB during the year 2003-04 is Rs.302.96 crore which is 41.54 per cent of the total deposit during the year. The term deposit during the year 2016-17 is Rs.2347.44 crore which is 43.62 per cent of the total deposit during the year. Thus it is observed that, there is 7.74 times increase in term deposit during the study period which is more than the current deposit.

The total deposit of TGB during the year 2003-04 is Rs.729.31 crore and during the year 2016-17 is Rs.5371.73 crore. Thus it is observed that, there is7.36 times increase in total deposit during the study period which is more than the current deposit.

Table -2: Correlation matrix of Deposit under Select accounts of TGB during Study Period

Parameters	Saving Deposit of TGB	Current Deposit of TGB	Term Deposit of TGB	Total Deposit of TGB
Saving Deposit of TGB	1			
Current Deposit of TGB	0.93 (8.76)*	1		
Term Deposit of TGB	0.95 (10.54)*	0.84 (5.36)*	1	
Total Deposit of TGB	0.99 (24.31)*	0.91 (7.37)*	0.98 (17.06)*	1
*Table values at 12 df , $t_{.05}$= 2.179, $t_{0.01}$=3.055 at 12 df. * t –statistics are significant.*				

Source: compiled and computed from annual reports (2003-04 to 2016-17) of TGB,

As it is is observed in the table-2 there is strong positive association (r = 0.93) between saving deposit and current deposit,term deposit and saving deposit(r=0.95), total deposit and saving deposit(r= 0.99), total deposit and current deposit(r=0.91), total deposit and term deposit(r =0.98). This implies that as the saving deposit increases the current deposit is also increases and as the saving deposit decreases the current deposit also decreases. Similarly other pairs of parameters in strong positive association also increases or decreases accordingly.It is observed that, all the calculated *t- statistics are higher than the table valuesat 5 percent level and 1 per cent level so they (* t - statistics) are significant. So the result obtained is significant.

Table-3: Semi average of deposit mobilized by TGB during the study period

Parameter	Average during (2004 2010)(Rs.in crore)	Average during (2011-2017)(Rs.in crore)	Result
Savings Deposit	667.91	1996.20	Improved
Current Deposit	138.16	261.38	Improved
Term Deposit	410.53	1466.83	Improved
Total Deposit	1216.62	3724.42	Improved

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB

Table-3 shows the semi average of various deposit parameters of TGB for the study period. It is observed that, the semi average of saving deposit, current deposit, term deposit and total deposits areimproved during the study period.

Table-4: Straight line trend equations with respect to timeof annual growth rate of deposits of TGB

Parameters	Straight line trend equations with respect to time.	R^2	Regression coefficient(β)	Calculated t values	Direction of trend
AGR-Saving deposit	y = 29.514 – 1.4873x	0.2122	Negative	-3.58	Downwards trend
AGR-Current deposit	y =8.1514 + 0.0203x	0.00002	Positive	-0.41	Upwards trend
AGR-Term deposit	y = 8.6542 + 1.246x	0.2796	Positive	-4.11	Upwards trend
AGR-Total deposit	y = 18.153 - 0.189x	0.0102	Negative	-4.79	Downwards trend

*AGR-Annual growth rate, Table values At 12 df, $t_{0.01}$ =3.055, $t_{0.05}$ = 2.179 for all the above parameters t_{cal}<t_{tab} at 1% and 5% significance level so they **are not significant***

Source: compiled and computed from select annual reports (2003-04 to 2016-17) of TGB

Table-4 shows straight line trend equations of annual growth rates of all types of deposits of TGB. It is observed that, 21.22per cent variation of annual growth rate of saving deposit is explained by the variation of the time variable(x). The growth of saving deposit has a negative trend with regression coefficient (β) is (-) 1.4873 and coefficient of determination 21.22per cent. On the other hand 0.002per cent variation of annual growth rate of current deposit and 27.96per cent variation of annual growth rate of term deposit is explained by the variation of time variable(x) with regression coefficient (+) 0.0203 and (+)1.246 respectively . On contrary the growth of total deposit has a negative trend during the study period with regression coefficient (β) is (-) 0.189 and a coefficient of determination 1.02per cent.To know how much influence individual components of total deposit is having on the total deposit we do multiple regression but we get a biased result. Hence we do separate regression with total deposit as dependent variable and each component of deposit as independent variable(x) .The result is tabulated below.

Table-5: Result of regression for total deposits of TGB

Dependent variables(y)	Independent variables(x)	Value of Adjusted R^2	p-value	F-value	F-significance value
Total deposit	Saving deposit	0.98	0.00	689.92	0.00
Total deposit	Current deposit	0.8	0.00	54.53	0.00
Total deposit	Term deposit	0.96	0.00	367.8	0.00

Source: Compiled and computed from annual reports of TGB (2003-04 to 2016-17).

We have noted the value of adjusted R^2 in each case along with p-value F-value and F-significance values.In the table-5 it is observed that, 98per cent variation of total deposit is explained by the saving deposit and 80per cent of the variation of the total deposit is explained by the variation of current deposit. It is also observed that 96per cent variation of the total deposit is explained by the variation of term deposit. It is further observed that F value is higher than F-significance values which tell us the case of insignificance. But F values are judged for significance when there are group of variables. Here in our regression there is one independent variable and one dependent variable. So we discard the F-value results and go for p values.The pvalues are much lower than the 5per centalpha significance level 0.05 for all the cases. Hence the results obtained in the table-5 are significant.

Credit deployment

Collected deposit is wisely invested through select lending and investment scheme with the aim of economic development of the rural areas of Tripura. Total credit is broadly categorized into priority sector credit and non-priority sector credit. Analysis of 14 years credit deployment is shown in the following Table-6.

Table-6: Advances mobilized by TGB

Years	Priority sector Lending(Rs.in crore)	Annual growth rate of Priority sector Loan (per cent)	Non-priority loan(Rs.in crore)	Annual growth rate of Non priority sector loan (per cent)	Total advances(Rs.in crore)	Annual growth rate of total advances (per cent)
2003-04	24.6084 (30.57)		55.8808 (69.43)		80.4892	
2004-05	39.0494 (39.91	58.68	58.7883 (60.09)	5.20	97.8377	21.55
2005-06	142.597 (74.91)	265.17	47.7507 (25.09)	-18.78	190.3477	94.55
2006-07	136.1467 (70.83)	-4.52	56.0598 (29.17)	17.40	192.2065	0.98
2007-08	134.5382 (69.19)	-1.18	59.9135 (30.81)	6.87	194.4517	1.17
2008-09	186.4164 (75.02)	38.56	62.0589 (24.98)	3.58	248.4753	27.78
2009-10	201.0717 (74.08)	7.86	70.3443 (25.92)	13.35	271.416	9.23
2010-11	262.9207 (73.56)	30.76	94.4815 (26.44)	34.31	357.4022	31.68
2011-12	366.2585	39.30	174.1898	84.36	540.4483	51.22

	(67.77)		(32.23)			
2012-13	496.4937 (79.04)	35.56	131.6708 (20.96)	-24.41	628.1645	16.23
2013-14	611.4523 (81.96)	23.15	134.6106 (18.04)	2.23	746.0629	18.77
2014-15	638.3834 (86.14)	4.40	102.688 (13.86)	-23.71	741.0714	-0.67
2015-16	768.5208 (86.21)	20.39	122.9507 (13.79)	19.73	891.4715	20.29
2016-17	792.5045 (85.07)	3.12	139.0597 (14.93)	13.10	931.5642	4.50
Sum	4800.9617		1310.4474		6111.4091	
Average	342.9258		93.6034		436.5292	
AAGR		40.10		10.25		22.87
CAGR	0.28		0.07		0.19	
SD	268.58	70.22	40.62	28.25	300.94	26.05

Figures in the brackets are the percentage to the total advance.

Source: Compiled and computed from annual report (2003-04 to 2016-17) of TGB.

The **Table-6** shows the credit deployment of TGB in priority and non-priority sector. The average credit deployment of TGB in priority sector lending is Rs.342.9258 crore and the average non-priority sector lending of TGB is Rs.93.6034 crore. The priority sector loan during the year 2003-04 is Rs.24.6084 crore which is 30.57 per cent of the total creditdeployment. The priority sector loan during the year 2016-17 is Rs.709.5045 crore which is 80.07 per cent of the total advance during the year. Thus there is 32.20 times increase of priority sector lending during the study period. The non-priority sector lending during the year 2016-17 is Rs.139.0597 crore which is 14.93 per cent of the total advance during the year. Thus there is 2.48 times increase of non-priority sector lending during the study period. So the increase of non-priority sector lending is much lower than the increment of priority sector lending during the study period. The CAGR of non-priority sector lending is 0.07per cent.The total non-priority sector lending during the study period is Rs.1310.4474crore. The AAGR of priority sector lending is 40.10per cent and that of non-priority sector lending is 10.25per cent. The AAGR of total lending is 22.87per cent. Thus AAGR of non-priority sector lending is almost ¼th of the priority sector lending and AAGR of total lending is almost half of priority sector lending. As it is observed in Table-7 the semi average of priority sector lending, non-priority sector lending, and total lending are improved during the study period.

Table-7: Performance of credit deployment by TGB based on semi average

Parameters	Average during 2004-2010	Average during 2011-2017	Result
Priority sector lending (Rs.in crore)	123.45	562.36	Improved
Non-Priority sector lending (Rs.in crore)	58.69	128.52	Improved
Total Advances (Rs.in crore)	182.13	690.88	Improved

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB

The **Table-8** shows the correlation among various types of lending of TGB. There is strong positive association (r = 0.77) between priority sector lending and non-priority sector lending, priority sector lending and total advance (r = 0.99), total lending and non-priority sector lending(r=0.82).

Table-8: Correlation matrix of advances (absolute value) of TGB during the study period

Parameters	Priority sector lending (Rs.in crore)	Non-Priority sector lending (Rs.in crore)	Total Advances (Rs.in crore)
Priority sector lending (Rs.in crore)	1		
Non-Priority sector lending (Rs.in crore)	0.77 (4.18)*	1	
Total Advances (Rs.in crore)	0.99 (24.31)*	0.82 (4.96)*	1
*Table values at 12 df $t_{.05}$= 2.179, $t_{0.01}$= 3.055 at 12 df. **t -statistic are significant**.*			

Source: compiled and computed fromannual report (2003-04 to 2016-17) ofTGB

The calculated *t statistics are higher than critical table value so they are (*t statistics) significant both at 1 per cent and 5 per cent level. This implies that, priority sector lending and non-priority lending varies directly with each other and they are separately and directly vary with total lending

Table-9: Straight line trend equations for annual growth rate of lending on select accounts of TGB

Parameters	Straight line equations	R^2	Regression coefficient(β)	Calculated t Values	Direction of the tend
AGR-PSL	y = 94.843 - 7.8205x	0.1881	Negative	-1.69	Downwards trend
AGR-NPSL	y = 7.3023 + 0.421x	0.0034	Positive	-0.41	Upward trend
AGR-TL	y = 38.578 - 2.2442x	0.1126	Negative	-2.17	Downwards trend
*The table values at 12 df are $t_{0.01}$ =3.055, $t_{0.05}$ = 2.179.Since t_{cal} is less than t_{tab} the **values are not significant**. PSL-Priority sector lending, NPSL-Non-priority sector lending, TL-total lending, AGR-Annual growth rate.*					

Source: compiled and computed from select annual reports (2003-04 to 2016-17) of TGB.

The **Table-9** shows the straight line and trend equations of annual growth rate of priority sector lending, non-priority sector lending of TGB. The observations are as follows. The growth of priority sector lending has a negative trend during the study period with the

regression coefficient (β) is (-) 7.8205 with coefficient of determination 18.81per cent. On the other hand growth of non-priority sector lending has a positive trend during the study period with a regression coefficient (β) is (+) 0.421 and coefficient of determination 0.34per cent. On contrary the growth of total lending of TGB has negative trend during the study period with regression coefficient (-) 2.2442 and a coefficient of determination 11.26per cent.

Table-10: Result of regression results of all components of total advances of TGB

Dependent variable(y)	Independent variable(x)	Value of Adjusted R^2	p-value	F-value	F-significance value
Total Advances	Priority sector lending	0.99	0.00	1599.76	0.00
Total Advances	Non-priority sector lending	0.64	0.00	24.86	0.00

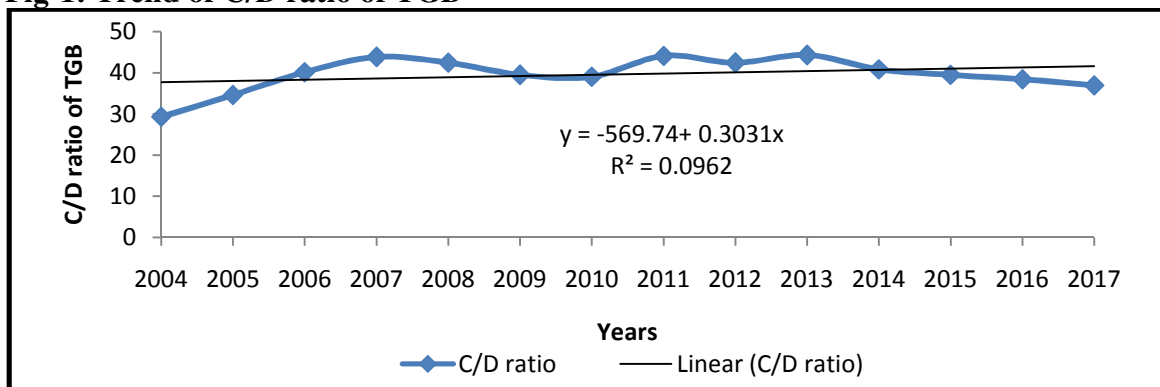*Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB*

Now we will be interested to know how much variation of total advance will be explained by the variation of each components of total advance. Table-10 shows the regression results of regression result of all components of total advances of TGB. In this connection we have done multiple regression taking total advance as dependent variable(y) and priority sector advance and non-priority sector advance as independent variables (x). But we have got a biased result for R^2 value. So we do regression separately taking total advance as dependent variable(y) and priority sector lending and non-priority sector lending as independent variables(x) and we get the value of adjusted R^2, p-value F value and F-significance value as shown in table-10.It is observed that, 99per cent of the variation of the total advanceis explained by priority sector lending.It is also observed that 64per cent of the variation of the total advance is explained by the variation of non-priority sector lending. It is also observed that, p-value is 0.000316 which is much below the alpha significance level of 0.05. So the result obtained is significant. Though F value is larger than the F-significance value which shows insignificance but F value is judged for significance when there are a group of variables. Here we have one independent variable and one dependent variable in our regression.So we discard the result of F values here. Hence we consider our result according to p-value result.

Table-11: C/D ratio of TGB

Years	C/D ratio	Years	C/D ratio
2004	29.3	2011	44.09
2005	34.58	2012	42.4
2006	40.1	2013	44.26
2007	43.8	2014	40.79
2008	42.42	2015	39.51
2009	39.44	2016	38.38
2010	39	2017	36.94
		Average	39.64

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB

Table-11 above shows the C/D ratios of TGB which shows improvement during the study period and the average C/D ratios is 39.64. It is observed in the Fig-1 that the C/D ratio is having a positively rising trend during the study period with a regression coefficient (+0 0.303 and a coefficient of determination of 9.62per cent. This is inferred that, there is proportionate increase of deposit and credit during the study period which is a good sign of stability of the business and profitability of the bank.

Fig-1: Trend of C/D ratio of TGB

Non-performing Assets of TGB: There are many revisions of policies of Tripura Gramin bank since it's inception in 1976 to maintain the quality of the bank assets. But it is still observed that, with the expansion of business there is growth of NPA of the bank. The reason of increased NPA of bank is a debatable matter. Table-11 is showing tabulated data of NPA of TGB which is used for further analysis.

Table No.-12: Non-Performing assets (NPA) of TGB

Years	Sub-standard asset(Rs.in crore)	Annual growth rate of Sub-standard asset (per cent)	Doubtful asset(Rs.in crore)	Annual growth rate of Doubtful asset (per cent)	Loss asset(Rs.in crore)	Annual growth rate of Loss asset (per cent)	Total NPA(Rs.in crore)	Annual growth rate of Total NPA (per cent)
2003-04	0.2587 (0.44)		57.2887 (97.34)		1.3059 (2.22)		58.8533	
2004-05	0.2576 (0.45)	-0.43	54.5668 (97.18)	-4.75	1.3281 (2.37)	1.7	56.1525	-4.59
2005-06	0.3566 (0.66)	38.43	52.7705 (97.78)	-3.29	0.8498 (1.57)	-36.01	53.9664	-3.89
2006-07	0.3103 (0.65)	-12.98	46.6865 (97.07)	-11.53	1.0979 (2.28)	29.2	48.0947	-10.88
2007-08	0.8825 (1.86)	184.4	45.5848 (96.28)	-2.36	0.8784 (1.86)	-19.99	47.3457	-1.56
2008-09	1.631 (3.49)	84.82	44.389 (95.06)	-2.62	0.6779 (1.45)	-22.83	46.6979	-1.37
2009-10	4.4353 (15.39)	171.94	24.008 (83.32)	-45.91	0.37 (1.28)	-45.42	28.8133	-38.3
2010-11	5.1421 (24.68)	15.94	15.4321 (74.05)	-35.72	0.2648 (1.27)	-28.43	20.839	-27.68
2011-12	12.1115 (42.65)	135.54	15.9245 (56.07)	3.19	0.3637 (1.28)	37.35	28.3997	36.28
2012-13	20.9983 (56.07)	73.37	16.4535 (43.93)	3.32	0.0002 (0.00005)	-99.94	37.452	31.87
2013-14	39.4507 (60.02)	87.88	26.2745 (39.98)	59.69	0	0	65.7252	75.49
2014-15	39.0825 (48.8)	-0.93	41.0074 (51.2)	56.07	0(0)	0	80.09	21.86
2015-16	75.9186 (50.94)	94.25	73.0831 (49.03)	78.22	0.0437 (0.03)	0	149.0454	86.1
2016-17	69.3783 (41.16)	-8.61	99.1823 (58.84)	35.71	0 (-100)	-100	168.5606	13.09
Total	270.214 (30.35)		612.6517 (68.83)		7.1804 (0.8)		890.0357	
Average	19.301 (30.35)		43.7608 (68.83)		0.5128 (0.8)		63.5739	
AAGR		66.43		10		-21.88		13.57
CAGR	0.49		0.03		-1		0.07	
SD	26.4326 (60.86)	68.14	23.7796 ((54.75)	36.95	0.5027 (1.15)	12099.11	43.4268	36.62

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB .Figures in the brackets indicates the percentage to total NPA.

Table-12 shows the various components of non-performing assets along with annual growth rates.The total sub-standard asset during the study period is Rs.270.214 crore which are 30.35per cent of the total NPA during the study period.

The sub-standard asset during the year 2003-04 is Rs.0.2587 crore which is 0.44 percent of the total NPA during the year. The sub-standard asset during the year 2016-17 is Rs.69.3783 which is 41.16per cent of the total NPA. Thus there is 268.18 times increase of sub-standard asset during the study period

The doubtful asset during the year 2003-04 is Rs.57.2887 crore which is 97.34 percent of

the total NPA during the year. The doubtful asset during the year 2016-17 is Rs.99.1823 which is 58.84per cent of the total NPA. Thus there is 1.73 times increase of doubtful asset during the study period.

The loss asset during the year 2003-04 is Rs.1.3059 crore. The loss asset during the year 2016-17 is 0. Thus there is 100per cent decrease of loss asset during the study period. The total loss asset during the study period is Rs.7.1804 crore which is 0.80 per cent of the total NPA during the study period.

The total NPA of TGB during the year 2003-04 is Rs.58.8533 crore and during the year2016-17 is Rs.890.0357. Thus there is 15.12 times increase of total NPA of TGB during the study period.

Table-13: Component wise semi average of NPA in absolute values (Rs.in crore) on select accounts of TGB

Parameters	Average during(2004-2010)	Average during(2011-2017)	Result
Sub- standard asset(Rs.in crore)	1.1617	37.4403	Increased
Doubtful asset(Rs.in crore)	46.4706	41.0511	Reduced
Loss asset(Rs.in crore)	0.9297	0.0961	Reduced
Total NPA(Rs.in crore)	48.5605	78.5874	Increased

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB.

As it is observed in the **table-13**,the semi average of the sub-standard asset and total asset is increased during the study period. The semi average of doubtful asset and loss asset of TGB is reduced during the study period.

Table-14: Correlation matrix among various componentsof NPA of TGB

Parameters	Sub- standard asset	Doubtful asset	Loss asset	Total NPA
Sub- standard asset	1			
Doubtful asset	0.51 (2.05)	1		
Loss asset	-0.72 (-3.59)	0.14 (0.49)	1	
Total NPA	0.88 (6.42)*	0.86 (5.84)*	-0.35 (-1.29)	1
$t_{.05}$= 2.179, $t_{0.01}$= 3.055 at 12 df * t- statistic are significant.				

Source: compiled and computed from annual reports (2003-04 to 2016-17) of TGB.

Table-14 above shows the correlation between components of NPA of TGB. It is observed that, total NPA has strong positive association with sub-standard asset (r = 0.88). Total NPA also has a strong positive association with doubtful asset(r = 0.86).It is also observed that, *t-statistics are above the table values at both 1per cent and 5 per cent significance level. So the obtained results are significant.

Table-15: Straight line and trend equations of annual growth rate of NPA of TGB on select accounts

Parameters	Equations	R^2	Regression coefficient (β)	Calculated t values	Direction of the trend
Annual growth rate of sub-standard asset	y = 50.509- 3.6029x	0.034	Negative	-3.19	Downwards trend
Annual growth rate of doubtful asset	y = -34.896 + 6.4151x	0.4571	Positive	-0.38	Upward trend
Annual growth rate of loss asset	y = 2.2327 - 4.5825x	0.1474	Negative	**2.38	Downwards trend
Annual growth rate of total NPA	y = -27.959 + 5.9645x	0.3813	Positive	-0.74	Upward trend

*Table value at 12 degree of freedom t_{01} = 3.055, t_{05} = 2.179, ** statistics is significant at 1% significance level.*

Source: Compiled and computed from select annual reports of TGB (2003-04 to2016-17).

Table-15 shows the straight line trend equations with respect to timefor all components of NPA of TGB. The observations are as follows. The growth of sub-standard asset and loss asset of TGB has a negative trend during the study period with regression coefficient (β) is (-) 3.6029 and (-) 4.5825 respectively with coefficient of determination 3.4per cent and 14.74 per cent respectively. On the other hand growth of doubtful asset and total NPA has a positive trend during the study period with regression coefficient (β) is (+) 6.4151 and (+) 5.9645 respectively with coefficient of determination 45.71per cent and 38.13per cent.

Table-16: Result of regression for all components of total NPA of TGB

Dependent variable(y)	Independent variable(x)	Value of Adjusted R^2	p-value	F-Value	F-significance value
Total NPA	Sub-standard asset	0.75	0.00	41.9	0.00
Total NPA	Doubtful asset	0.72	0.00	34.44	0.00
Total NPA	Loss asset	0.04	0.227	1.61	0.22

Source: Compiled and computed from annual reports (2003-04 to 2016-17) of TGB

Now we will be interested to know how much variation of total NPA will be explained by the variation of each components of total NPA. **Table-16** shows the regression result of all components of total NPA of TGB. In this connection we have done multiple regressions taking total NPA as dependent variable(y) and sub-standard asset, doubtful asset, loss asset as independent variables (x) together. But we have got a biased result for R^2 value. So we do regression separately taking total NPA as dependent variable(y) and each component of total NPA as independent variables(x)separately and we get the value of adjusted R^2, p-value F value and F-significance value as shown in table-15.It is

observed that, 75per cent of the variation of the outcome variable (total NPA) is explained by the predictor variable(substandard asset).It is also observed that 72per cent of the variation of the total advance is explained by the variation of doubtful asset. It is also observed that, p-value is 0.00 for sub-standard asset and 0.00 for doubtful asset which is much below the alpha significance level of 0.05. So the result obtained is significant. Though F value is larger than the F-significance value which shows insignificance but F value is considered for significance when there are a group of variables. Here we have one independent variable and one dependent variable in our regression .So we discard the result of F values and go for p values here. Hence we judge our result according to p-value result. It is observed that, 4per cent variation of total NPA is explained by the variation of loss asset but the p- value for loss asset is 0.227 which is much higher than the alpha significance level of 0.05. Hence the result of loss asset is not significant.

7. Discussion

It is foundthat, there is a positively growing upward trend for the deposit mobilization, credit deployment and C/D ratio of TGB during the study period. It is also found that, there is a positively growing upward trend for substandard asset and total NPA and a negative trend for the loss asset of TGB during the study period. The Specific findings are as follows.

Specific facts of discussion

1. Saving deposit of TGB is increased 9.08 times during the study period followed by term deposit (7.74 times), total deposit (7.36 times), and current deposit (2.26 times).
2. Average total deposit is Rs.3463.38 crore followed by saving deposit is Rs.1332.05 crore ,term deposit 938.69 crore and current deposit Rs.199.79 crore.
3. The semi average of the saving deposit, current deposit, term deposit and total deposit is improved during the study period.
4. The AAGR of saving deposit of TGB is 19.1per cent followed by term deposit (17.38per cent), total deposit (16.38per cent) and current deposit (8.29per cent).
5. The CAGR of saving deposit is 0.17per cent followed by term deposit (0.16per cent), total deposit (0.15per cent) and current deposit (0.06per cent).
6. The growth of current deposit and term deposit has a positive trend during the study period with positive regression coefficient (β) whereas the growth of saving deposit and total deposit has a negative trend during the study period with negative regression coefficient (β).
7. The priority sector lending of TGB has increased 32.2 times followed by total lending (11.57 times) and non-priority sector lending (2.48 times).

8. The average total lending is Rs.436.5292 crore followed by average priority sector lending (Rs.342.9258 crore) and average non-priority sector lending (Rs.93.6034 crore).

9. The AAGR of priority sector lending is 40.1per cent followed by total lending (22.87per cent) and non-priority sector lending (10.25per cent).

10. The CAGR of priority sector lending is 0.28per cent followed by total lending (0.19per cent) and non-priority sector lending (0.07per cent).

11. The semi average of priority sector lending, non-priority sector lending and total lending during the study period is improved.

12. The growth of non-priority sector lending has a positive trend during the study period with a positive regression coefficient(β) whereas the growth of priority sector lending and total lending of TGB has a negative trend during the study period with negative regression coefficient (β).

13. The C/D ratio of TGB is having a positive trend during the study period with an average C/D ratio of 39.64per cent.

14. The sub-standard asset of TGB has increased 268.18 times during the study period which is followed by total NPA (15.12 times increase), doubtful asset (1.73 times increase) and loss asset (100per cent decrease).

15. The AAGR of substandard asset is 66.43per cent followed by total NPA (13.57per cent), doubtful asset (10per cent) and loss asset (-21.88per cent)

16. The CAGR of sub-standard asset is 0.49per cent followed by total NPA (0.07per cent), doubtful asset (0.03per cent) and loss asset (-1per cent)

17. The growth of sub-standard asset, doubtful asset and total NPA has a positive trend during the study period with a positive regression coefficient(β) whereas the growth of loss asset has a negative trend during the study period with a negative regression coefficient(β).

So it is established that, our hypothesis is proved to be true and during the study period i.e. from 2004 to 2017 the operational performance of Tripura Gramin Bank is improved.

8. Conclusion

It is observed that during the study period, i.e., from 2004 to 2017 there was sustained growth of deposit mobilization. Component wise various types of deposit like saving, current, term deposit have shown a positive regression coefficient and upwards trend. The total deposit has shown a upward trend with positive regression coefficient. The total advances also have shown a sustained growth during the study period. Component wise various types of lending like priority and non-priority lending have shown a sustained increment. C/D ratio of the Bank TGB has shown a sustained growth with a positive slope of straight line trend equation. So far as NPA is concerned total NPA is increased but loss asset is gradually decreased which is a good sign of banking business. Sub-standard asset is gradually increased. Over all it can be said that the TGB bank has

done better operation which enhances it's capacity of operational performance. Since TGB's operation in Tripura is has the objective of amelioration of socio economic condition of people of rural Tripura especially the weaker section of the rural society comprising small and marginal farmers land less agricultural labours, village artisans, small business man rural industrialist. As the result of the study shows improved operational performance of TGB it is inferred that there is successful credit deployment in the areas of rural Tripura and a positive economic development in rural Tripura is expected with improved living standard with improved per capita income, and saving, improved life style in terms of health nutrition, sanitation, education, home electrification, safe drinking water housing and shelter, transportation and infrastructure is supposed to be resulted in rural Tripura. After all the study suffers from some limitation which are noted below.

1. The study would focus on numerous aspects of operational performance of TGB. The operational area of the bank is Tripura state. Each area has it's own locational, economic and other specificities. Therefore, the findings of the study need to be carefully interpreted for making any kind of generalization as it by and large reflects the situation specific to chosen bank and it's operational area.

2. During the study numerous information, data are used from the published annual reports and as such it is subject to limitations that are inherent in a compiled statement itself.

3. Customers' opinion has ignored for assessing the performance of Tripura Gramin Bank (TGB).

    There is way for future study by making schedule and questionnaire and collecting primary data from the field. Information can be collected from the bank customers, bank staff related to bank performance especially it's day to day operation, dealing with customer. So far as bank staff and their performance is concern it depends on many factor like productivity of staff which is related to mental and physical fitness of the staff. The endurance of the staff related to flexible working hour, stress situation, pressure of work load, skills, knowledge and workability etc. To cover up all these factor many elaborate future study is required.

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Declaration of conflicting interest: The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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