

A Study on the Effect of Banking Automation System on Rural Population with Respect to Paschim Banga Gramin Bank

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Abstract: Present paper concentrates on a leading Regional Rural Banks in West Bengal i.e. Paschim Banga Gramin Bank and analyses the growth of PBGB on the basis of different banking parameters. We also observed the details of literacy rate in functioning areas of PBGB and no of Telecom subscriber in rural Bengal. Secondary data is collected from annual reports and balance sheets of PBGB and few journals and website. After comparative study of those analyses, this study tries to point out that literacy rate of rural areas and no of subscribers subscribes telecom services relates with performance of PBGB after implementation of banking automation system and have made some suggestion towards the development of all the RRBs in West Bengal.

Keywords: West Bengal, Regional Rural Banks, key Performance indicators, Paschim Banga Gramin Bank.

1. Introduction

Major parts of the population of India reside in rural area and they mainly depend on agriculture sector. We can see also similar scenario in our state West Bengal. Regional Rural Banks have been created with a view of serving primarily the rural areas of India with basic banking and financial services. RRBs were established under the provisions of ordinance promulgated on 26th September 1975 and Regional Rural Banks Act, 1976 Act No. 21. The issued capital of RRBs is shared by the Government of India, State Government and Sponsored Bank in the proportion of 50 %, 15% and 35% respectively. They are mainly focus on serving the rural areas through economic upliftment of the economically weaker section of the society. There are three RRBs i.e. Uttar Banga Kshetriya Gramin Bank, Bangiya Gramin Vikash Bank and Paschim Banga Gramin Bank currently functioning in state of West Bengal. Paschim Banga Gramin Bank, commonly known as PBGB, one of the leading Regional Rural Banks is formed as per Govt of India Notification No: 1/4/2006-RRB dated 26.02.2007 and currently operating in 05 no of districts of West Bengal with their 230 branches.

2. Objectives of Study

- The basic objective of the study is to measure the performance of PBGB from FY 2011-12 to FY 2018-19 after full implementation of core banking services (CBS) in their respective bank branches. CBS was implemented in FY 2011-12 by transforming a traditional system into an automation system.
- To enquire the necessity of launching more digital services at the banking sector in rural W.B. particularly for RRB.
- To analysis different indicators for accessing the digital connectivity to the rural people.
- To recommend different measures in improving the banking functions on the basis of conclusion.

3. Hypothesis of Study

Paschim Banga Gramin Bank is one of the most significant RRB bank in West Bengal. It gives a huge contribution in rural development and in agriculture credit sector.

Some of the important hypotheses are as follows:

- a) All the Governments Continuously supports PBGB for funding in different rural sectors and to take banking facilities to every household.
- b) Rural people are aware of about digital connectivity.
- c) After successful implementations of CBS, ATM, and m-passbook, it is the correct time to implement more banking automation system like online banking.

4. Problems of Study

- i. Information from the PBGB in West Bengal was difficult to be obtained as it is a government organization and most of authorities concern was not interested.
- ii. Continuous effort is given to collect different reports physically and as well as website of said banks.
- iii. Availability of telecom related data and 8 years old census data are challenging.
- iv. Data in World Wide Web is also globally updated by unidentified persons.

5. Significance of Study

The study is very important to appraise the achievements of Paschim Banga Gramin Bank, one of leading Regional Rural Bank of West Bengal. The outcomes of this study will be helpful for making different innovative policies related to more banking automation system like online banking.

6. Scope of Limitations of Study

- It is not possible to specify the telecom subscriber for wire and wireless connections separately.
- Identification of telecom subscriber in functioning / operating areas of PBGB is not possible.
- As PBGB only functioning in five district of West Bengal, outcomes of that study may not matched with other districts of the country.
- Condition and no of mobile towers in operating areas of PBGB is unknown.

7. Area of Study

This study is mainly based on the performance of Regional Rural Bank in India. We choose Paschim Banga Gramin Bank as example of RRBs situated in West Bengal. Though PBGB operates a few districts in West Bengal, this study covers only those five (05) districts of West Bengal to satisfy the objective of study.

8. Period of Study

All the data is used from Financial Year 2011-12 to Financial Year 2018-19. To study the literacy rate of those functioning districts in west bengal and number of telecom subscriber including wire connection and wireless connection, different indicators to measures Performance of PBGB we used the available data within this referred period only except study of bank branches of PBGB.

9. Databases and Methodology

The importance of any of the studies is generally based on its selected database and methodology. The study is based on the secondary data which have been collected from annual reports of PBGB, balance sheets of PBGB, different websites like Wikipedia, PBGB, RBI etc., report of telecom statistics india 2018, IOSR Journal of Business and Management, e-ISSN: 2278-487X and other related information from different websites and articles. Annual reports & balance sheet is the secondary internal source of data.

Now here we explained different key terms which are used several times during this study.

9.1 Automation System

It is a process or procedure which is performed with minimum human assistance with the help of required no of computers and computer software's. It is very helpful for reduction in operating cost and also improves the quality, accuracy, and precision. Operation time and work handling time also reduces significantly. But we must ware of different possible security threats and vulnerability of automation system. PBGB already implemented their Core Banking System (CBS) which is a one type of banking automation system in financial year 2011-12.

9.2 Regional Rural Bank / RRB:

It is a Scheduled Commercial Banks operating at regional level in different parts of the country. It is created for serving

primarily the rural areas of India with basic banking and financial services. For that reason all the branches of RRB generally situates at rural and semi urban areas. Government of India also impose restriction on area of operation of RRBs. The development of the rural business and economy has been dependent largely on the investment and financial aids provided by the Regional Rural Banks.

9.3 Paschim Banga Gramin Bank/PBGB:

Paschim Banga Gramin Bank is a premier Regional Rural Bank established on 26 February 2007 in exercise of powers conferred by Sub-section(1) of section 23A of the Regional Rural Bank Act, 1976 (21 of 1976) by amalgamation of three erstwhile Gramin Banks viz. Howrah Gramin Bank, Bardhaman Gramin Bank and Mayurakshi Gramin Bank. The shareholders of the Bank are Govt. of India (50%), UCO Bank (35%) and Govt. of West Bengal (15%). The Bank is currently operating in five districts of West Bengal i.e. Howrah, Hooghly, Purba Bardhaman, Paschim Bardhaman and Birbhum. Its head office is located at Tikiapara, Howrah District, West Bengal. The bank has 230 branches and 4 Regional offices includes 204 rural, 16 semi urban, 7 urban and 3 metro branches. The share capital of this bank is Rs 30,90,195 thousand as on 31.03.2019.

Key performance indicators of PBGB in West Bengal

Year	Share capital (figure in thousands)	Outstanding Borrowing (figure in thousands)	Outstanding Deposit (figure in thousands)	Outstanding Investment (figure in thousands)	Net NPA	CD Ratio
2011 – 12	30,60,200	6,93,967	2,85,195	1,54,11,371	6.83%	32.52 %
2012 - 13	30,60,200	7,11,024	3,06,16,800	1,27,83,592	6.60%	35.11 %
2013 – 14	30,60,200	16,22,536	3,28,54,000	88,22,617	6.13%	39.62 %
2014 – 15	30,60,200	19,95,779	3,44,15,800	87,18,259	5.27%	46.02 %
2015 – 16	30,60,200	19,47,600	3,86,05,400	96,88,926	5.67%	51.40 %
2016 - 17	30,90,200	25,09,458	4,52,84,805	1,38,19,251	6.03%	49.12 %
2017 - 18	30,90,200	35,06,519	4,76,27,911	1,50,55,082	14.85 %	50.79 %
2018 - 19	30,90,195	23,70,037	5,18,13,042	1,41,98,258	9.16%	52.87 %

Source: Annual Reports and Balance Sheets of PBGB

9.4 Literacy rate:

Literacy means reading development, a progression of skills which begins with the ability to understand spoken words and decode written words, and which culminates in the deep understanding of text. It is a key for socio-economic progress.

$$\text{effective literacy rate} = \frac{\text{number of literate persons aged 7 or above}}{\text{population aged 7 and above}} \times 100$$

As per Census 2011, literacy rate is 74.04% for all over the India and 76.26 % for West Bengal.

District wise literacy rate (figure in percentage)

State Name	District Name	Census 2001	Census 2011	Increased by
West Bengal	Howrah	77.01	83.85	6.84
West Bengal	Hooghly	75.11	82.55	7.44
West Bengal	Birbhum	61.48	70.90	9.42
West Bengal	Burdwan	70.18	77.15	6.97

Source: Wikipedia data

9.5 Telecom Subscriber:

In a public switched telecommunications network, the ultimate user i.e. customer of a communication service is called telecom subscriber. Subscribers always use end instruments such as telephones, modems, routers and any type of remote terminals that are connected to a telecom network like BSNL, JIO, Vodafone, Airtel etc. Telecom network can follow any communication technologies like wired connections i.e. BSNL Broadband, cable broadband and wireless connections i.e. Wi-Fi, 3G or 4G network etc. Using those communication channels & technologies end instruments helps end users to access the World Wide Web (WWW). It is very important for implementing any automation system.

Number of Telecom Subscriber in West Bengal (figure in millions)

Year (At the end of March)	Rural	Urban	Total
2012	27.51	19.44	46.95
2013	26.77	14.94	41.71
2014	27.74	15.06	42.80
2015	31.79	15.73	47.51
2016	34.38	15.49	49.87
2017	39.86	18.72	58.58
2018	40.52	18.63	59.15

Source: Telecom Statistics India 2018

10. Summary / Observation of the Study (Findings)

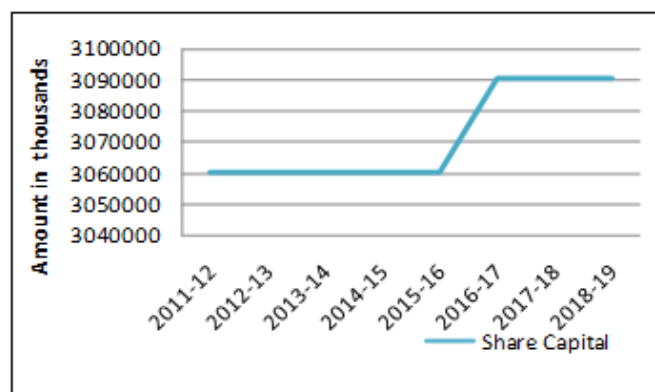
Major observations and findings are discussed one by one in this section.

Observation No.1:

The PBGB owned by the Central Government, the State Government and the Sponsor Bank i.e. UCO Bank hold shares in the ratios as follows Central Government – 50%, State Government – 15% and Sponsor Banks – 35%. They contribute capital as per proportion of their shares. If we take

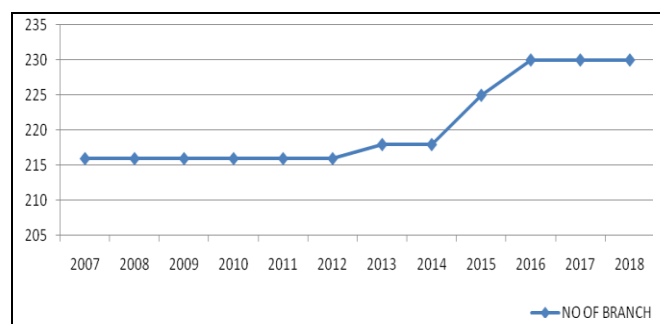
the financial year 2015-16, then contribution of different institutions are as follows, central government contributes Rs. 154,51,00,000, government of west bengal contributes Rs. 46,35,00,000 and UCO bank as sponsored bank contributes Rs. 108,16,00,000. Total share capital for FY 2015-16 is Rs. 309,02,00,000. This way all the three institutions are contributed their shares portions to successfully run the PBGB.

FINANCIAL YEAR	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Amount of Share capital (figure in thousands)	3060200	3060200	3060200	3060200	3060200	3090200	3090200	3090195
Growth	N/A	0%	0%	0%	0%	0.980%	0%	0%



In this 8 consecutive financial years, above chart clearly shows that all the institutions show their positive support for the said RRB. These shares indirectly help the rural public to avail banking facilities, grant loans and advances to small farmers and agricultural labourers so that they can start their own farming activities including purchase of land, seeds and manure. Financial supports from Government of India, Government of West Bengal and UCO Bank boost up the confidence of the people of rural India.

Observation No.2:



Above chart shows no of bank branches of Paschim Banga Gramin Bank available in west bengal (year wise). Form the year 2007 to 2012 no of PBGB branches is same. In FY 2011-12 they introduced Core Banking System (CBS) which boost up their banking services. Bank branches were increased slowly after 2012. Here we calculate the different measures of dispersion in this linear dataset.

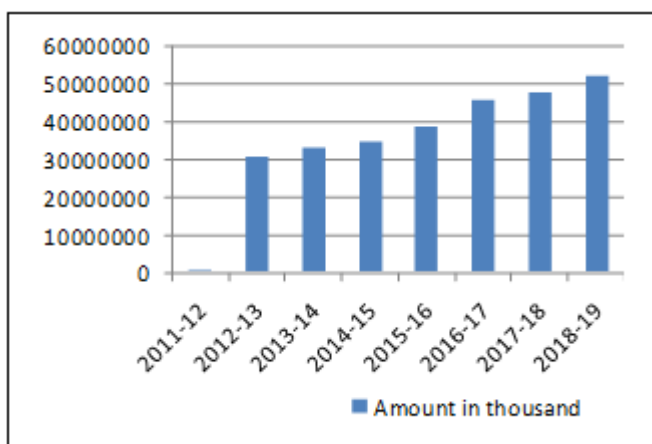
Y EAR	X = No of branch es	\bar{X}	$x - \bar{X}$	$(X - \bar{X})^2$	$\Sigma(X - \bar{X})^2$	Variance = $[\Sigma(X - \bar{X})^2 / n - 1] = s^2$	SD = Variance ^{^(1/2)}
2007	216	220.58	-	21.01	424.92	38.63	6.22
2008	216		-4.58	21.01			
2009	216		-4.58	21.01			
2010	216		-4.58	21.01			
2011	216		-4.58	21.01			
2012	216		-4.58	21.01			
2013	218		-2.58	6.67			
2014	218		-2.58	6.67			
2015	225		4.42	19.51			
2016	230		9.42	88.67			
2017	230		9.42	88.67			
2018	230		9.42	88.67			

- i) Range of dataset which contains no of branches PBGB: 14
- ii) Variance = 38.63 & Standard deviation = 6.22
- iii) Coefficient of variable = 2.82

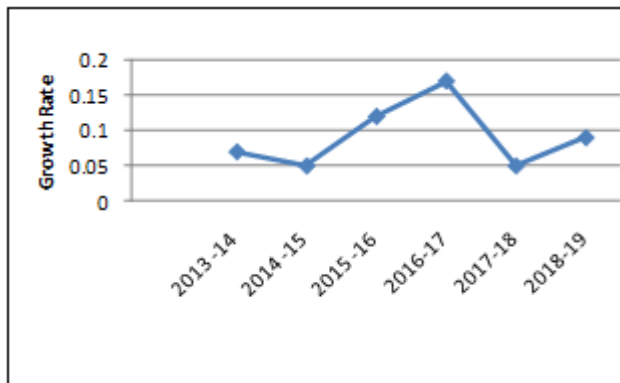
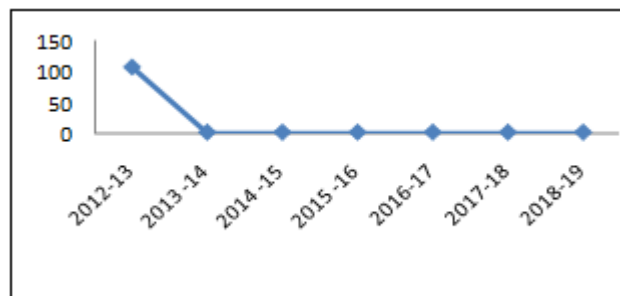
Statistical indicator dispersions have same units as the quantity being measured in this observation. All the low values of range, variance, standard deviation and coefficient of variable shows high uniformity of data. After analysing 12 years data, growth of Branches indicates that PBGB has been running steadily since 2007 and implementation of Core Banking System helped them to open new bank branches and banking automation system also helps to offer more banking related services to their rural customers.

Observation No.3:

Now we analyse the outstanding deposit of PBGB for 8 consecutive financial years. The amount of cash received by a company that is recorded on the company's general ledger is called outstanding deposit. Deposit of cash indicates the confidence of people on that regional rural bank.



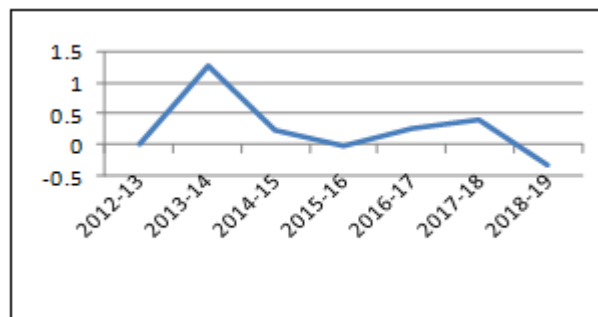
In above chart increasing graph bars clearly shows that Paschim Banga Gramin Bank earns the faith of rural people and they feel safe to keep their hard earning money in PBGB. Overall growth from FY 2011-12 to FY 2018-19 is 180.68%. But if we plot the growth of all financial years separately then we observed that growth is only high in FY 2012-13 which was just next financial year of CBS implementation year.



After financial year 2012-13 they may retain their valuable customers but growth is not so much impressive. Bank must focus on launching different offers or schemes for the customers and attract other prospective customers with new banking features and facilities.

Observation No.4:

Borrowing means receiving something of value in exchange for an obligation to pay back at a particular time in the future. It is definitely a liability for any financial institutions. Outstanding borrowing defines the aggregate principal amount of advances outstanding on a particular day. Here we analyse the growth of outstanding borrowing of PBGB for 8 consecutive financial years. PBGB always borrow funds from NABARD, sponsor bank and different schemes of NABARD like ARF, NRLM etc.

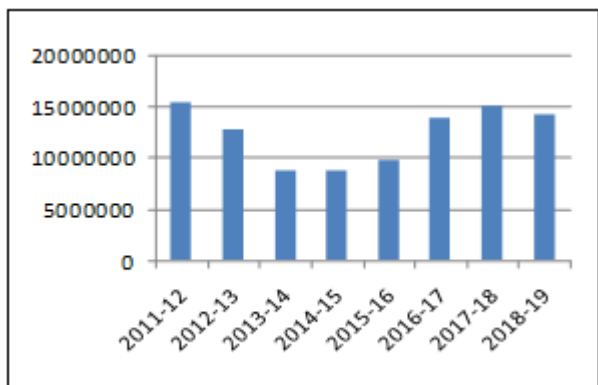


It is observed that PBGB has not created extra liability by borrowing excess fund from external sources which increases the risk of loss.

Observation No.5:

The financial goal of an investment is simply to generate a healthy return. Any investment is even better if the returns are also positive for society. PBGB invests in various Govt. Securities, approved Securities, Shares, Debentures, Bonds

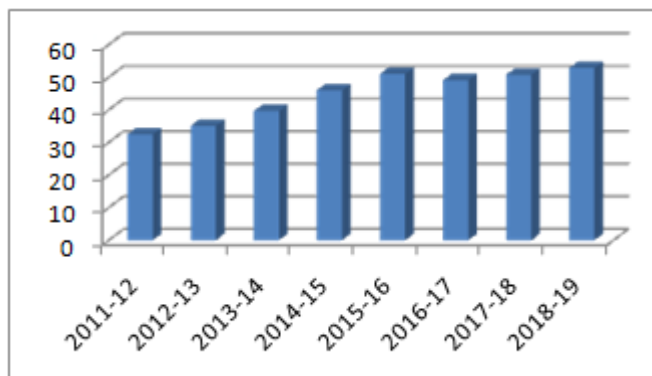
etc. Here we analyse the outstanding investment of PBGB for 8 consecutive financial years.



Above graph clearly shows PBGB authority has not invested their fund steadily. Highest investment was made in financial year 2011-12 and lowest investment was made in financial year 2014-15. Difference between these two figure is Rs. 669,31,12,000 which is a huge amount. PBGB must focus on their investment because a steady investment will return a healthy return in future time periods.

Observation No.6:

CD Ratio is the important indication of the health of a bank. The credit-to-deposit (CD) ratio is the fraction of loan assets generated by banks from the deposits received. All the scheduled banks in India have to maintain a certain portion of deposits as reserves with RBI through the Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) window. Only after that banks have available funds to mobilise for loans to various sectors. Now we analyse the CD ratio of PBGB for 8 consecutive financial years.



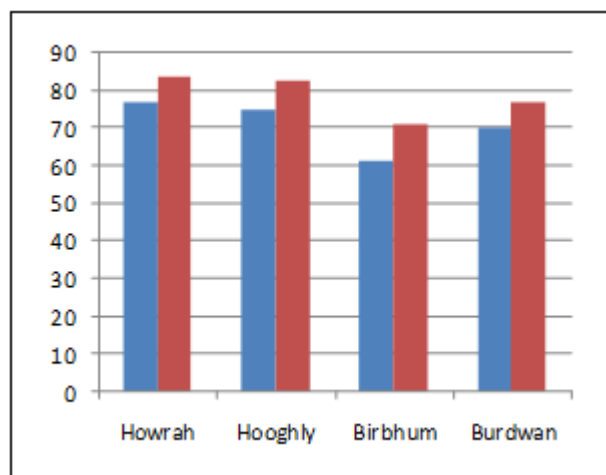
In case of Paschim Banga Gramin Bank the CD ratio increasing each financial year except 2016-17. Last financial year 2018-19, we observed highest CD ratio within our observation periods. It is definitely alarming situations for said RRB and explains that higher loan assets are created from the deposits.

Observation No.7:

Creating high security digital platform is not only the solutions to attract rural population but also find out their capability for understanding these technologies. Form the Financial year 2012-13 PBGB dedicatedly organized different camps i.c.w. financial literacy. Their primary objective was that first of all aware the rural people about different banking

activities. In Financial year 2012-13 they chose Durga Puja Festival for their innovative campaigning and displayed banners in Puja pandels usually crowd by local people of rural bengal. Financial literacy awareness camp helps the villagers to take up financial planning, inculcate saving habit and improve understanding the financial products which are best suited to them. In FY 2014-15 PBGB had undertake an innovative way of spreading financial literacy by organizing Muppet show in different rural haats within the operational districts of west bengal. It drew tremendous enthusiasm among villagers. Success of those initiatives directly depends on the literacy rate of the people of rural bengal. Now we analyze the literacy rate which was collected from the Census data for operating districts only.

State Name	District Name	Census 2001	Census 2011
West Bengal	Howrah	77.01	83.85
West Bengal	Hooghly	75.11	82.55
West Bengal	Birbhum	61.48	70.90
West Bengal	Burdwan	70.18	77.15

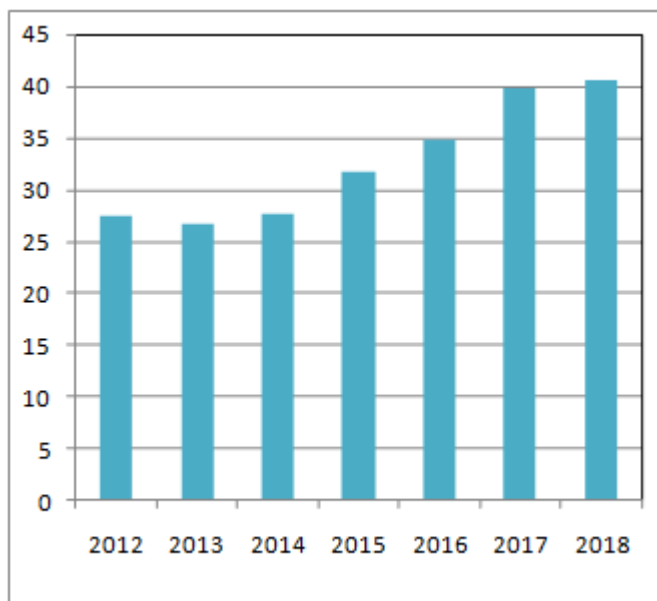


As we already discussed that literacy rate is one of the important socio economic indicator. Above graph in which blue columns indicates literacy rate estimated in Census 2001 and red columns indicates literacy rate estimated in Census 2011, clearly shows that overall literacy rate was increased in all the four districts between this ten years gap. This positive increment of literacy rates also expresses the capability of people to understand new and developing features of banking sectors. Without having proper knowledge about using different banking features in respect of technological ground, it is not possible to attract the prospective customers.

Observation No.8:

Maximum population by age group of 15-19 years & 20-24 years as per census 2011 has the willpower to understand new technologies. It is necessary that people must have proper communication medium to connect with outside world as per their needs as well as to understand new technologies. Statistical Bulletin i.e. Telecom Statistics India 2018 published by department of telecommunications under the

ministry of communications used here as secondary data and it is helped to analyze the no of telecom subscribers in west Bengal circle. Any person must have either a wire connection or a wireless connection to communicate with internet. BSNL broadband and cable net is the best example of wire connection. Mobile internet and DTH connection with internet facilities is the example of wireless connection. Anyone who has either a wire connection or a wireless connection can be termed as telecom subscriber. Here we statistically analyze the number of telecom subscribers within the time periods of seven years for rural areas of West Bengal.



Above graph clearly indicates that telecom subscribers in rural Bengal were increased gradually from 2012 to 2018. Now we calculate the statistical dispersion of this linear data for rural area only.

YEAR	X = No of Subscriber in rural	\bar{X}	$X - \bar{X}$	$(X - \bar{X})^2$	$\sum (X - \bar{X})^2$	Variance	SD = $\sqrt{\text{Variance}}$
2012	27.51	32.65	-5.14	26.45	202.76	33.79	5.81
2013	26.77		-5.88	34.61			
2014	27.74		-4.91	24.14			
2015	31.79		-0.86	0.74			
2016	34.38		1.73	2.98			
2017	39.86		7.21	51.94			
2018	40.52		7.87	61.89			

- i) Range of no of telecom subscriber: 13.75
- ii) Variance = 33.79 & Standard deviation = 5.81
- iii) Coefficient of variable = 17.80

In this observations Statistical indicator i.e. dispersions have same units as the quantity being measured in millions. All the low value's of range, variance, standard deviation and

coefficient of variable shows high uniformity of data. This dataset also indicates that rural people are subscribing different communication channels to take the advantages of World Wide Web. Without sufficient and proper availability of telecommunication network, implementation of banking automation system has not been possible.

11. Problems for Improvement of Paschim Banga Gramin Bank:

- 1) For the periods of first 6 years i.e. 2007-2012 no new bank branches were opened by PBGB authority. In next 4 years time span i.e. 2012 to 2016, 14 bank branches were opened. As per our observation, within total 12 years journey only 14 bank branches had been opened only.
- 2) From FY 2013-14 to FY 2018-19 outstanding deposits indicates that Paschim Banga Gramin Bank may retain their customers but growth of deposits is not so much impressive.
- 3) Paschim Banga Gramin Bank not focused on their investment as per their borrowing investments. Everyone knows that a steady investment will return a healthy return in future time periods. It is very important criteria for any financial institutions.
- 4) Higher CD ration in last financial year is alarming for the health of said RRB.
- 5) PBGB highly suffers from the problem of non performing assets (NPA) in FY 2017-18. Poor recovery of loans and high overdue is the main reason of this said problem.

12. Suggestions for Improvement of Paschim Banga Gramin Bank:

- 1) Already Core Banking System, ATM, and m-passbook implemented successfully. We analysed that the people of operating districts of PBGB is capable of handling different digital services because literacy rate of said districts is in good condition and telecom subscribers in rural Bengal is steadily increasing. New banking features of said RRB will be attracting prospective customers of 813 no of gram panchayats under said jurisdictions.
- 2) The PBGB should try to increase their deposits by opening branches within their service areas and improve the services to existing & prospective customers.
- 3) Highest o/s deposit i.e. 106.35% was observed in FY 2012-13. It was only possible because of implementation of CBS system. Young rural blood will be attracted towards PBGB bank only when they will introduced some new banking features/services like online banking, mobile banking etc. compare to other public sector banks in that operating areas.
- 4) The PBGB must strengthen effective credit administration by way of credit appraisal, monitoring the progress of loans and their efficient recovery to lower the NPA percentages.

- 5)The PBGB must focus on proper investment channels for high & reliable return.
- 6)Appropriate action plan should be implemented to decrease CD ratio as it crossed 40 marks.

13. Conclusion:

Speedy, qualitative and upliftment in weaker section of rural mass is only possible by dispersing credit to small and marginal farmers and socio economically incapacitated segment of population. Paschim Banga Gramin Bank plays an important role in rural Bengal to take banking to door steps of rural households and helps them to get out from the trap of village money lenders. No doubt it has already been established itself as friend in need to the distressed masses in the villages, still it has to go more by means of speedy functioning and secure services with new technologies to the present customers as well prospective customers. Both Governments should take some more effective remedial measures to make said RRBs viable. Bank must keep the practice of organizing the Financial Literacy Awareness Camps to aware the rural mass regarding different banking schemes & their facilities. At that time it is significantly true that rural mass of bengal has the capability to adopt and enjoy banking automation system fully.

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