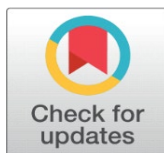


FINANCIAL INCLUSION AND GROWTH OF ASSAM ECONOMY: AN EMPIRICAL ANALYSIS

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DOI
[10.29121/shodhkosh.v5.i6.2024.5012](https://doi.org/10.29121/shodhkosh.v5.i6.2024.5012)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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ABSTRACT

The concept of financial inclusion is gaining consistent importance in the developing countries like India in the present decade. In short run it helps in uplifting the people living outside the horizon of financial inclusion by providing affordable financial products and services. In long run it assists financial deepening, inclusive growth and finally economic growth and development of a nation. Formal financial institutions act as the pillars of economic progress as it helps in plunging gap between rich and poor and eliminate poverty by providing door step banking services. Assam one of the largest populated states of NER is still lagging behind in terms of full inclusion in the financial sector. Present study attempts to observe the relationship between financial inclusion and GDP growth of Assam by adopting gross state domestic product as dependent variable and banks branches, available ATMs and C-D ratio as independent variable.

Keywords: Financial Inclusion, GDP, Inclusive Growth

1. INTRODUCTION

Developing economies in the present day are making incessant efforts in bridging the gap between rich and poor through equal distribution of country's income and available resources. India an economy of 1.2 billion populations is adopting innovative financial policies and reforms since after the nationalizations of commercial banks in 1969. Despite of various initiatives largest share of global unbanked population lives in India followed by China. Access to formal financial services by rural households is limited in India even after introduction of friendly financial products and services. About 40 per cent of rural households in India have bank accounts and nearly 38 per cent of scheduled commercial bank branches are operating in rural areas till recent (Iqbal & Sami, 2017). To improve the financial health of rural poor Government of India along with RBI is adopting different policy initiatives time to time. Among them the concept of financial inclusion was first introduced in India in order to make universal access to financial products and services. Financial inclusion aims at delivering financial products and services to all section of the population especially among the underprivileged ones at an affordable cost (Chhabra, 2015). It basically focuses on easy financial access for

effectively management and long run financial growth. The objective behind the concept of financial inclusion is advantaging the disadvantage and weaker section who are either unbanked or do not have appropriate use of available financial services. In short run financial inclusion provides short term financial benefits with the help of door step financial services. On the other in long run it offers incremental solution to tackle prevailing poverty and promote inclusive growth and development of the economy as a whole (Sarma, 2010). By generating positive externality financial inclusion increases the level of saving and investment of an economy and further accelerates long run GDP of an economy. Assam one of the highest populated states of Northeastern Region has adopted ample of policies for universalization of financial products and services but in spite of continuous efforts the region is highly dominated by informal financial services. Lack of financial literacy, limited rural bank branches, poverty, unemployment are some of the factors responsible for exclusion from formal financial institutions. As per CRISIL 2016 Report Assam ranks under the category of medium financial inclusion with a rank of 27th (47.9 inclusive value). Present research aims to overview financial inclusion status of Assam and find out the relationship between the levels of financial inclusion and GDP growth of Assam.

2. REVIEW OF LITERATURE

Burgees R. & Pande R. (2005), attempt to study the effect of rural bank branch branches in India since 1977-1990. Results of the study reveal that with the expansion of bank branches in rural areas there was significant fall in rural poverty and increase in non-agricultural output of India.

Julie O. (2013), conducted a study on Kenya from 2003 to 2012 to examine the relationship between Financial Inclusion and GDP growth. The study concluded that financial inclusion and economic growth of Kenya has a strong positive relationship. Further branch network is positively related with economic growth while ATMs and interest rate has negatively association with economic growth of Kenya.

Paramasivan C. & Ganeshkumar V. (2013), in their research discussed the overview of financial inclusion in India. The study concludes that literacy alone cannot guarantee high level of financial inclusion in a nation. Branch density plays a significant role on universal financial inclusion. Along with financial awareness appropriate financial investment is out most important in creating complete inclusion.

Iqbal B. A & Sami S. (2017), applying multiple regression analysis in their research observes positive relationship between GDP of India and financial inclusion. Study highlights financial indicators such as number of bank branches, credit-deposit ratio have strong positive impact on the GDP of India but growth of ATMs shows negative impact on the GDP of the country.

Kumar A. (2019), made an attempted to study the role of commercial banks on financial inclusion in India. Study observes that commercial banks has been playing a significant role towards inclusive growth in India by opening new bank branches in rural areas, introducing attractive investment schemes and increasing the number of ATMs. To increase the level of financial inclusion they have been providing continuous updated financial services and camping across the country.

Ray P. (2021), uses correlation and regression analysis to study the importance of banks in providing financial inclusion in India. Study concludes that nationwide banks have been playing an important role in providing financial inclusion in India. The number of ATMs has a significant and negative impact, loans and advances have positive and significant impact and number of bank branches has negative impact on Gross Domestic Savings of the country.

Findings of the study conducted by Kumar S. & Jeyaprabha B. (2022), reveals that the intensity of financial inclusion has improved over the years in the districts of Tamil Nadu but majority of districts still falls under the category of medium inclusion. The study overviews that financial inclusion programmes are potential and capable to transform the face of the district and uplift each and every individual.

Maity S. (2023), in his research attempted to explore the contribution of SHG bank linkage programme in financial and social inclusion of marginalized rural people of central Assam. The study reveals that SHG-BLP reduces social exclusion of the people considerably and improves financial inclusions.

3. RESEARCH HYPOTHESIS

H0: There is no significant relationship between financial inclusion and GDP of Assam

H1: There is significant relationship between financial inclusion and GDP of Assam

4. RESEARCH METHODOLOGY

Present research is based on the secondary data sources. Journals, newspapers, RBI reports on trend and progress of Indian banking system and Reports of State Level Bankers Committee have been used in the present study. The period from 2012-13 to 2021-22 has been taken under consideration to study relationship between financial inclusion and GDP growth of Assam. To analyze the collected data and establish empirical relationship multiple regression model has been adopted taking GDP of Assam as a dependent variable and indicators of financial inclusion namely number of bank branches, number of ATMs and Credit-Deposit ratio as an independent variables.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where, Y= Gross State Domestic Product

X1 = Number of Bank branches

X2 = Number of ATMs

X3 = Credit deposit ratio

5. RESULTS AND DISCUSSION

Gross State Domestic Product (GSDP) Growth

Gross Domestic Product is considered as an important indicator while calculation economic growth a nation. In the present study Gross State Domestic Product and Net State Domestic Product of Assam is considered from 2011-12 to 2021-22. From the table 1 below it is clear that both GSDP and NSDP of Assam has been continuously increasing from 2011-12 to 2021-22. The state attained highest growth rate in the year 2015-16 with 15.67% GSDP and 14.4% NSDP. But both GSDP and NSDP has started continuously decreasing from 2017-18 to 2020-21. In the year 2020-21 GSDP and NSDP recorded lowest of 0.93% and 0.73% over the decade because of world-wide lock down and fall in major growth sectors of the state economy.

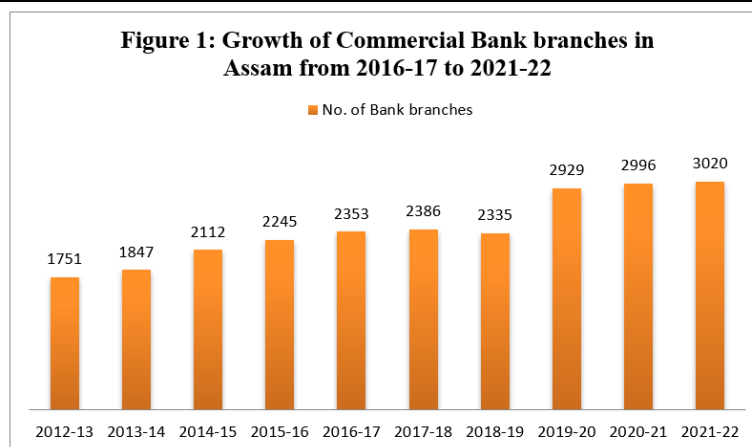
Table 1: Gross State Domestic Product and Net State Domestic Product

Year	GSDP (constant price)	AAGR (%)	NSDP	AAGR (%)
2011-12	143174.91	-	129354.12	-
2012-13	147342.38	2.91	132517.60	2.44
2013-14	154525.40	4.87	138726.76	4.68
2014-15	165212.30	6.91	146425.39	5.54
2015-16	191109.00	15.67	167628.67	14.4
2016-17	202081.00	5.74	179631.90	7.16
2017-18	219919.00	8.82	199526.28	11.07
2018-19	231040.00	5.05	204627.05	2.55
2019-20	240707.00	4.18	212315.35	3.75
2020-21	242946.00	0.93	213871.31	0.73
2021-22	262523.00	8.05	231816.49	8.39

Source: RBI

- **Status of Commercial Bank Branches in Assam:**

In order to study the relationship between GDP and financial inclusion in Assam number of commercial bank branches available in the state is taken as independent variable. Increasing number of bank branches indicates higher financial inclusion as it signifies higher availability and usages of financial products and services (Julie, 2013). Figure 1 below shows growth of commercial bank branches in Assam.



Source State Level Bankers Committee

From the figure 1 it is clear that number of commercial bank branches in Assam has been increasing at an increasing rate from 2012-13 to 2021-22 (i.e. from 1751 to 3020). But the year 2018-19 shows a significant fall in bank branches (2335) in Assam as compared to other years. Growth of bank branches in the state is mainly because of government initiative to increase the coverage of financial inclusion all over the country.

- **Number of Automated Teller Machine (ATM) in Assam:**

Increasing number of Automated Teller Machines (ATMs) indicates higher formal financial transactions (Julie, 2013, Iqbal & Sami, 2017). In order to find out the impact of financial inclusion on the GDP of Assam number of ATMs presents in the state is considered as an independent variable.

Table 2: Growth of ATMs in Assam from 2016-17 to 2021-22

Year	No. of ATMs	AAGR (%)
2012-13	1734	-
2013-14	2621	33.84
2014-15	2869	8.64
2015-16	3429	16.33
2016-17	3830	10.46
2017-18	3821	-0.23
2018-19	3727	-2.52
2019-20	3750	0.61
2020-21	3875	3.33
2021-22	4010	3.48

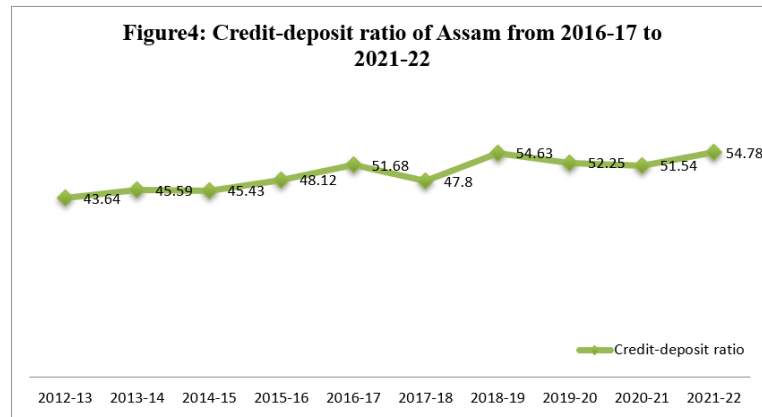
Source State Level Bankers Committee

From the table 2 it is clear that in the beginning years from 2013-14 to 2016-17 average annual growth rates of ATMs in Assam has shown a positive growth from 33.84% to 10.46%. But the year 2017-18 and 2018-19 consecutively has negative growth rate i.e. -0.23% and -2.52%. AAGR of ATM has slightly started increasing again from 0.61% in 2019-20 to 3.48% in 2021-22. Advancements in ATMs in recent years are mainly because of government initiatives of full inclusion and setting up of ATMs in rural and semi-rural areas.

6. CREDIT-DEPOSIT RATIO:

Usages of formal financial products and services are considered as one of the important indicators of financial inclusion (Iqbal & Sami, 2017). To study the usages of financial products and services by the people of Assam total deposits and total credits are taken into account. In the present study credit-deposit ratio is taken as one of the indicator to study the relationship between financial inclusion and GDP growth of Assam. Figure 3 below shows the credit-deposit ratio of Assam from 2012-13 to 2021-22. From the figure in is clear that C-D ratio of Assam is not having a positive trend over the years. C-D ratio has started increasing continuously from 43.64% in 2012-13 to 51.68% in 2016-17 but the year

2017-18 indicates a slight fall in C-D ratio to 47.8%. C-D ratio in Assam has faced ups and down from 2018-19 to 2020-21 and finally it recorded a highest growth of 54.78% in 2021-22.



Source State Level Bankers Committee

- Regression Analysis

In the following study a multiple regression model has been framed by taking GSDP as dependent variable and number of bank branches, number of ATMs and credit deposit ratio as independent variable to study the relationship between financial inclusion and GDP of Assam. Table 3 below shows the banking profile of Assam along with Gross State Domestic Product from 2012-13 to 2021-22.

Table 3: GSDP and Banking profile of Assam from 2016-17 to 2021-22

YEAR	GSDP	No. of Bank Branches	No. of ATMs	Total deposits	Total credit	Credit-Deposit ratio
2012-13	147342.38	1751	1734	7117209	3105794	43.64
2013-14	154525.40	1847	2621	7903185	3503213	45.59
2014-15	165212.30	2112	2869	8925344.	4055190	45.43
2015-16	191109.00	2245	3429	10264070	4939285	48.12
2016-17	202081.00	2353	3830	10529894	5007773	51.68
2017-18	219919.00	2386	3821	12386266	5921571	47.80
2018-19	231040.00	2335	3727	13369394	7304026	54.63
2019-20	240707.00	2929	3750	15255932	7584127	52.25
2020-21	242946.00	2996	3875	16935510	8728763	51.54
2021-22	262523.00	3020	4010	17736819	9716986	54.78

Source: State Level Bankers Committee

Table 4 Least Square Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-110829.2	60057.84	-1.845375	0.1145
NATM	8.775245	10.09585	0.869193	0.4181
NBB	47.02620	14.54213	3.233790	0.0178
CDR	3517.669	1760.757	1.997816	0.0927
R-squared	0.952893	Mean dependent variable		205740.5
Adjusted R-squared	0.929340	S.D. dependent variable		40243.13
S.E. of regression	10697.43	Akaike info criterion		21.68257
Sum squared residual	6.87E+08	Schwarz criterion		21.80360
Log likelihood	-104.4128	Hannan-Quinn criter.		21.54980
F-statistic	40.45663	Durbin-Watson stat		2.063374
Prob(F-statistic)	0.000225			

Table 5 Test of Multicollinearity

	Coefficient	Uncentered	Centered
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Variable	Variance	VIF	VIF
C	3.61E+09	315.1956	NA
NATM	101.9262	105.2647	4.313912
NBB	211.4737	109.6503	3.437237
CDR	3100267.	668.8913	3.837235

Table 6: Test of Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.884589	Prob. F(3,6)		0.2332
Obs*R-squared	4.851450	Prob. Chi-Square(3)		0.1830
Scaled explained SS	1.379044	Prob. Chi-Square(3)		0.7105
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.62E+08	4.49E+08	1.474820	0.1907
CDR	-16494753	13155712	-1.253809	0.2565
NATM	173582.4	75432.36	2.301166	0.0610
NBB	-150274.2	108653.3	-1.383062	0.2159
R-squared	0.485145	Mean dependent var		68661068
Adjusted R-squared	0.227717	S.D. dependent var		90950767
S.E. of regression	79927176	Akaike info criterion		39.52030
Sum squared resid	3.83E+16	Schwarz criterion		39.64134
Log likelihood	-193.6015	Hannan-Quinn criter.		39.38753
F-statistic	1.884589	Durbin-Watson stat		1.936273
Prob(F-statistic)	0.233170			

Table 4 above shows the summary of the multiple regression analysis carried out using EViews. The Least square results of the model shows that the value of R is 0.952893 and Adjusted R² is 0.929340 which indicates high correlation between dependent variable GSDP and independent variables (number of bank branches, number of ATMs, and credit-deposit ratio). If the test value of Durbin-Watson test, is less than 1 or greater than 2 it indicates a problem of autocorrelation. In the present model the value of Durbin-Watson test is 2.06 which indicate there is autocorrelation but it is small.

The relationship between the dependent variable GDP and the indicators of financial inclusion i.e. number of bank branches, number of ATMs and credit deposit ratio is shown in the above table. Results of multiple regression shows that the beta value of number of bank branches is 48.02620 and value of p is 0.0178 which is less than 0.05 at 5% level of significances which shows there is positive significant impact on GDP. Further beta value of number of ATMs is 8.775245 and value of p is 0.4181 which shows insignificant relationship between GDP and number of ATMs. Moreover, credit-deposit ratio shows beta value 3517.669 which shows positive impact on GDP but since p value is 0.0927 which greater than 0.05 it shows insignificant relationship between GDP and credit deposit ratio. Also as per rule of thumb if the value of VIF is greater than 10 regression model is not acceptable as it shows the sign of multicollinearity. Since in the above regression model VIF value is less than 10 therefore the model is free from multicollinearity as shown in the table 5. Also the model is free from heteroschedasticity, because both the chi-square are + 0.05.

Thus from the study following regression equation was obtained:

$$Y = -108507.7 + 48.74245X_1 + 6.64358X_2 + 3553.483X_3 + e$$

From the above analysis therefore it can be concluded that there is vigorous relationship between financial inclusion and the Gross State Domestic Product of Assam. The above findings are similar with the findings of Julie (2013) and Iqbal & Sami (2017) where they revealed that financial sector of a nation plays an important role in its economic development in long run.

7. CONCLUSION

Financial sector plays a crucial role in a developing economy like India. It helps in mobilizing savings and allocates credit for different investment purposes. Access to basic financial services boosts financial condition and standard of

living of middle and low income groups of developing countries. Present study observes positive significant relationship between GDP of Assam, available bank branches and credit-deposit ratio of the state, whereas ATM growth shows insignificant relation with the state GDP. Thus financial inclusion is strongly associated with growth and development of an economy.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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