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A Study on The Performance of Banks in The Financial Inclusion of Andhra Pradesh

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Abstract

The abolition of the vulnerability of the below poverty people by facilitating them with the formal financial services is called "Financial inclusion". To bring a sound full financial inclusion in the country, the formal financial system is playing a key role by its banking system and with the introduction of a number of financial products and financial inclusion schemes. The present study is about the performance of banks in the financial inclusion of the newly reformed state Andhra Pradesh. The study is about the penetration of banking, number of deposits and advances and the enrollment of the people into the newly introduced central financial inclusion schemes like "Pradhan Manty Jandhan Yojana", "Pradhan Mantri Suraksha Bhima Yojana", "Atal Pension Yojana", "Pradhan Mantri Mudra Yojana", "Pradhan Mantri Fasal Bhima Yojana" etc. The study used the research tools like, "One way ANOVA", "Two Way ANOVA", "Simple linear Regression" for the analysis of the data.

Key terms: *"Pradhan Manty Jandhan Yojana", "Pradhan Mantri Suraksha Bhima Yojana", "Pradhan Mantri Jeevan Jyothi Bhima Yojana", "Atal Pension Yojana", "Pradhan Mantri Mudra Yojana", "Pradhan Mantri Fasal Bhima Yojana; One way ANOVA", "Two way ANOVA", " Simple Linear Regression"*

Introduction:

The eradication of vulnerability of the excluded people by mingling them in the formal financial system is "financial inclusion". This Financial inclusion of vulnerable people is only successful if and only the formal financial system that smoothens the financial needs of the country is strong enough. The formal financial system of our country is spread in 'Banking' and 'nonbanking' systems which are regulated by RBI. The Banking system formally scattered to the acceptance of deposits for the distribution of credit (Banking Regulation Act 1949) to the needy people and nonbanking system that is financial institutions are for other than banking activities. The present study is concerned with the discussion of the contribution of the formal banking system for the financial inclusion of the newly reformed state Andhra Pradesh.

Need for the study:

It is felt that the study is needed to know the performance of formal banks in the financial inclusion of the state in the scenario of introduction of new central financial inclusion schemes at the bifurcation of the state with no proper capital, no proper infrastructural facilities and with revenue and fiscal deficits.

Review of Literature:

Banks are the backbones of any economy in the world (Subramaniam, 2007). Each and every individual should be provided with affordable institutional financial products and services,

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Vol-22-Issue-10-November-2019

which lead to a social safety net and protect the people from economic shocks called as financial inclusion (Devasenathipathi and Shanmuga Sundaram 2015). Financial inclusion is emerging as a new paradigm of economic growth and in the current scenario, financial institutions are the robust pillars of economic growth(Iqbal and Sami 2017). The role of the financial system is crucial in the development of any sector and agriculture is no exception to it as they play a dominant role in mobilizing savings and channelizing them for the investments in the sector (Sidhu and Gill 2006). Providing financial services to vulnerable people like farmers is both a challenge and an opportunity for banks and financial institutions (Rupa.K.N, 2015). Financial inclusion is a win-win opportunity for all stakeholders, the poor, banks, the regulator and the government (Rupa.K.N, 2015).The financial inclusion can be measured with data collection of the number of branches concerning the total population of the country (Raghuram Committee on financial sector reforms, 2008). Microfinance companies and post office branches can contribute towards the gap-filling of financial inclusion in India (Ghosh 2007).

Objectives of the Study:

1. To study the penetration wise performance of various categories of banks in the state of Andhra Pradesh
2. To study the performance of different categories of banks on the size of deposits and advances and the impact of the size of banks on them.
3. To compare the performance of various categories of banks in central financial inclusion schemes

Hypotheses of the study:

1. There is no significant difference in the penetration wise performance of various categories of banks in all geographical areas during different years of the study period
2. There is no significant impact of the size of banks on the deposits and advances providing by the banks
3. There is no significant difference between various categories of banks in the observed different years in the performance on various central financial inclusion schemes

Scope of the Study:

The study covers the banking penetration by the various categories of banks like Public sector banks, private sector banks, Regional rural banks and cooperative banks in the metro, urban, semi-urban, rural regions of the state. The study mainly considered the central ‘financial inclusion schemes like Pradhanmantry Jandhan Yojana (PMJDY), Pradhan Mantri Suraksha Bhima Yojana (PMSBY), Pradhan Mantri Jeevan Jyothi Bhima Yojana (PMJJBY), Pradhan Mantri Mudra Yojana (PMMY), Atal Pension Yojana (APY), Pradhan Mantri Fasal Bhima Yojana (PMFBY) etc., for knowing the performance of the banks in the financial inclusion of the state.

ISSN: 0971-1260

Vol-22-Issue-10-November-2019

Research Methodology:

The study is exploratory in research design and the convenient sampling method is used for the collection of data. The study is fully based on secondary data collected mainly from the agendas of State Level Bankers Committee (SLBC) of Andhra Pradesh. The data include four years of data of all four categories of banks and those are public sector banks, private sector banks, regional rural banks, and cooperative banks. For the analysis of the collected data, one way ANOVA, Two way ANOVA, Simple linear Regression analysis like research analytical tools were used.

Limitations of the study:

1. The study is limited only to 4 years of data because the after period is only 4 years from the reformation of the state.
2. The study is limited only to central financial inclusion schemes.

Data Analysis:

1. **Penetration of various categories of banks in Andhra Pradesh:**

Category wise Banks	Year	Rural Br.	Semi-Urban Br.	Urban Br.	Metro Br.	Total Branches
Public Sector Banks	31.12.15	1537	1427	1269	256	4489
	31.12.16	1588	1461	1312	268	4629
	31.12.17	1561	1462	1249	335	4607
	31.12.18	1565	1451	1241	330	4587
Pvt. Sector Banks	31.12.15	136	277	331	59	803
	31.12.16	148	304	352	69	873
	31.12.17	157	334	365	76	932
	31.12.18	164	351	376	81	972
RRBs	31.12.15	779	178	136	0	1093
	31.12.16	809	190	142	5	1146
	31.12.17	806	271	123	35	1235
	31.12.18	831	275	124	35	1265
Co-op. Banks	31.12.15	186	108	93	0	387
	31.12.16	188	109	101	0	398
	31.12.17	191	109	104	2	406
	31.12.18	193	110	105	2	410
Others (APSFC)	31.12.15	0	0	13	0	13
	31.12.16	0	0	14	0	14
	31.12.17	0	0	14	0	14
	31.12.18	0	0	14	0	14

Source: SLBC A.P agendas in various years

ISSN: 0971-1260

Vol-22-Issue-10-November-2019

$H0_1$: There is no significant difference between geographical areas in relation to the number of branches in category wise during different years of the study period.

Two way ANOVA with Replication						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Categories of Banks	4.3E+07	4	1.1E+07	10959.2	6.3491E-103	2.4937
Region wise banks	2E+07	4	5083662	5227.85	6.70012E-91	2.4937
Interaction	2.7E+07	16	1713687	1762.29	1.00376E-89	1.78023
Within	72931.5	75	972.42			

Interpretation: From the above analysis it was proved that there is a significant difference between the number of branches category wise, area wise and year wise. This conclusion arrived by the researcher with the rejected null hypothesis as the calculated F values (10959.2, 5227.85, and 1762.29) is very much higher than the F critical values (2.4937, 2.4937 and 1.78023) in the analysis.

2. The impact of the number of branches on Deposits and Advances :

Year	**Bank Branches**	**Deposits**	**Advances**
2015	6785	211025	231559
2016	7060	266639	255228
2017	7194	278502	314570
2018	7248	312002	373586

$H0_2$: There is no significant linear relationship between the number of bank branches and the deposits of the banks during different years of the study period

Regression Statistics	
Multiple R	0.97434647
R Square	0.949351043
Adjusted R Square	0.924026564
Standard Error	11575.2645
Observations	4

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	5022826401	5022826401	37.48748637	0.02565353
Residual	2	267973496.7	133986748.3		
Total	3	5290799898			

$H0_3$: There is no significant relationship between the number of bank branches and the advances disbursed by the banks during different years of the study period

Regression Statistics	
Multiple R	0.883424319
R Square	0.780438527
Adjusted R Square	0.670657791
Standard Error	36535.1279
Observations	4

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	9489292307	9489292307	7.109066236	0.116575681
Residual	2	2669631142	1334815571		
Total	3	12158923449			

Interpretation: From the above analysis on the relation between bank branches and deposits, advances, it was observed from the strong correlation 0.974, 0.88 that the number of deposits and advances are incremental with the expansion of the number of bank branches. The variability of the deposits and advances are much dependent on the number of branches is indicated with the highest coefficient of determination (R^2 .9493, 0.78). From the above ANOVA tables, the null hypotheses are rejected because of higher calculated F values (37.47, 7.109) compared with the f critical values (0.02565, 0.1165) and concluded that there is a linear relationship between the number of branches - deposits and number of branches-advances.

3. Comparison of performance of various categories of banks in financial inclusion schemes:

3.1 Pradhan Mantri Jandhan Yojana :

	Year	PSBs	RRBs	Private sector
Total No. of Accounts	2015	5424771	1687368	173972
	2016	6644331	189271	1655014
	2017	6840554	267848	1839652
	2018	7250769	332243	1962653
No of Rupay Debit Cards Issued	2015	4849172	1171256	128579
	2016	5723161	168740	1223704
	2017	5978456	254541	1324138
	2018	6094437	316830	1321205

Source: SLBC A.P agendas in various years

ISSN: 0971-1260

Vol-22-Issue-10-November-2019

$H0_4$: There is no significant difference between the number of accounts opened and the number of Rupay cards issued by various categories of banks during different years of the study under pradhan Mantri Jan-Dhan yojana scheme.

Two way ANOVA with replication						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
No. of Accounts and Rupay cards	1.36052E+12	1	1.36052E+12	3.0304972	0.09878	4.41387
Categories of Banks	1.473E+14	2	7.365E+13	164.0526	2.8E-12	3.55456
Interaction	5.57624E+11	2	2.78812E+11	0.6210427	0.54851	3.55456
Within	8.08095E+12	18	4.48942E+11			
Total	1.57299E+14	23				

Interpretation: The above analysis revealed that there is no significant difference between the number of accounts and Rupay cards as the null hypothesis is accepted with lowest calculated F value (3.0304972) than the critical F value (4.41387). But, the study opened a fact that there is a bank category wise significant difference in opening of banking accounts and issuing of Rupay cards with the rejected null hypothesis as the calculated f value (164.0526) is much higher than f critical value (3.55456).

3.2 Social Security Schemes: Pradhan Mantri Suraksha Bhima Yojana (PMSBY), Pradhan Mantri Jeevan Jyothi Bhima Yojana (PMMJBY)

	PMSBY				**PMJJBY**			
Category of Banks	**2015**	**2016**	**2017**	**2018**	**2015**	**2016**	**2017**	**2018**
PSBs including RRBs	6556608	6163119	6266632	6813984	1369786	1363898	1447269	1716100
Pvt. Sector Banks	238361	239771	533664	560540	62180	62196	60731	66871
Co-operative Banks	989	29013	63844	63844	611	8418	19206	19206
Grand Total	**6795958**	**6431903**	**6864140**	**7438368**	**1432577**	**1434512**	**1527206**	**1802177**

Source: SLBC A.P agendas in various years

$H0_5$: There is no significant difference between various categories of banks in enrolling of Pradhan Mantri Suraksha Bhima yojana accounts during different years

Two way ANOVA without Replication						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Categories of Banks	1.0388E+14	2	5.2E+13	1688.93	5.6E-09	5.14325
Years	1.7328E+11	3	5.8E+10	1.87826	0.23419	4.75706
Error	1.8452E+11	6	3.1E+10			
Total	1.0424E+14	11				

$H0_4$: There is no significant difference between various categories of banks in enrolling of Pradhan Mantri Jeevan Jyothi Bhima Yojana accounts during different years

Two way ANOVA without Replication						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Categories of Banks	5.511E+12	2	2.755E+12	316.907	8.247E-07	5.14325
Years	3.041E+10	3	1.014E+10	1.16597	0.3974919	4.75706
Error	5.217E+10	6	8.694E+09			

Interpretation: The study on social security schemes PMSBY and PMJJBY elucidated that there is a significant difference between the categories of banks in enrolling the number of accounts in these social security schemes with a rejected null hypothesis as the calculated f values (1688.93, 316.907) are much higher than the f critical values (5.14325, 5.14325). But, year-wise there is no significant difference in the enrollment in the social security accounts by the different categories of banks with the accepted null hypothesis as the calculated f value (1.87826, 1.16597) is much lesser than the f critical value (4.75706, 4.75706).

3.3 Atal Pension Yojana: Number of accounts

Category of Banks	**Year**			
	2015	**2016**	**2017**	**2018**
PSBs	96628	122074	499392	294926
Pvt. Sector Banks	2289	8358	18522	4592
RRBs	17742	40439	79114	71682
Others	0	0	4315	476
Grand Total	116659	170871	601343	371676

Source: SLBC A.P agendas in various years

$H0_6$: There is no significant difference between categories of banks in enrolling Atal Pension Yojana accounts during the number of years under the study

Two way ANOVA without Replication						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Categories of	1.68449E+11	3	56149810032	7.18557	0.0092	3.86255

Banks						
Years	36329182049	3	12109727350	1.5497	0.26802	3.86255
Error	70328166357	9	7814240706			
Total	2.75107E+11	15				

Interpretation: The study elucidated that there is a significant difference between the categories of banks in enrolling the number of Atal Pension Yojana accounts with a rejected null hypothesis as the calculated f value (7.18557) is higher than the f critical value (3.86255). But, year-wise there is no significant difference in the enrollment of Atal Pension Yojana accounts by the different categories of banks with the accepted null hypothesis as the calculated f value (1.5497) is lesser than the f critical value (3.86255).

3.4 Pradhan Mantri Mudra Yojana: Number of Accounts

Type of Bank	2015	2016	2017	2018
Public Sector Banks including RRBs	2779.54	1857.62	2896.8	7654.86
Pvt. Sector Banks	229.51	404.07	509.62	606.33
Sub Total	**3009.05**	**2261.69**	**3406.4**	**8261.19**

Source: SLBC A.P agendas in various years

$H0_7$: There is no significant difference between categories of banks in enrolling Pradhan Mantri Mudra Yojana accounts during the number of years under the study

Two way ANOVA without replication						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Category of Banks	22576814.46	1	2.3E+07	7.18922	0.07497	10.128
Years	11146827.91	3	3715609	1.18317	0.44665	9.27663
Error	9421117.595	3	3140373			
Total	43144759.96	7				

Interpretation: The null hypothesis is accepted and it is concluded that there is no significant difference between different categories of banks in enrolling of Mudra accounts and even in year wise from the above analysis as the calculated f values (7.18922, 1.18317) are lesser than the f critical values (10.128, 9.27663).

3.5 Pradhan Mantry Fasal Bhima Yojana:

	2015	2016	2017	CAGR
Number of farmers Insured (in lakhs)	15.06	15.93	15.97	0.01975
Area Insured (in lakh	19.86	20.92	18.51	-0.0232

ISSN: 0971-1260

Vol-22-Issue-10-November-2019

hectares)				
Sum Insured (in Rs crores)	6860.16	9744.05	966283.86	4.20304

Source: www.pmfby.gov.in

$H0_8$: There is no significant difference in the enrollment of farmers into the fasal Bhima yojana in number wise, area wise and in sum-assurance wise in various years

One way ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2E+11	2	1E+11	0.98278	0.42737	5.14325
Within Groups	6.2E+11	6	1E+11			
Total	8.3E+11	8				

Interpretation: From the above analysis it is revealed that the performance of Fasal Bhima Yojana is the same in all the years in the enrolling of farmers' numbers-wise, area wise and in sum-assurance wise. This is revealed from the observation of the acceptance of null hypothesis is as P value is above the 0.05 and 'f' calculated value (0.98278) is more than the 'f' critical value (5.14325).

Findings, Practical implications, and Suggestions of the Study:

The study revealed that there is a linear relationship between the size of banks and the size of core banking services like deposits and advances that shows the deepening of financial inclusion in the state. So, the banks should concern more about the expansion of banking network. The provision of zero balance bank accounts by the 'Pradhan Mantri Jandhan Yojana' is having a massive impact on the enhancement of financial inclusion in the state. The PMJDY accounts are convenient for facilitating direct benefit transfer schemes (DBT) as the monetary benefits can be directly deposited into the bank accounts of the vulnerable people. So, banks should promote more PMJDY accounts. The study revealed that the size of Rupay cards are not differing with the size of number of bank accounts also indicated a good sign for financial inclusion. The banks should give more importance in the issuing of Rupay cards as they are the national domestic cards and can enhance the financial inclusion very faster at the minimum cost. Even the size of banks is enhancing year on year, there is a significant difference between the categories of banks, specifically in the size of RRBs which are the good scope for financial inclusion. Even there is no year-wise significant difference in the enrollment of central financial inclusion schemes there is a significant difference between the categories of banks except in the enrolment of Mudra accounts. The study revealed that the performance of Pradhan Mantri Fasal Bhima Yojana is same in all the years in enrolling of farmers' numbers-wise, area wise and in sum-assurance wise. The social security schemes like PMSBY, PMJJBY,APY provide economic security to the life of people during life, accidents and afterlife, hence banks should give more awareness and make the people enroll in these schemes. The new scheme 'Pradhan Mantri Fasal Bhima Yojana' guards the farmers against the crop losses and hence the banks should make the scheme reached to all the farmers in the state.

Conclusion and scope for further research:

The study concluded that the performance of banks through the expansion of banking networks and the introduction of central financial inclusion schemes like "Pradhan Mantri Jandhan Yojana" foster financial inclusion in the state. Even there is a good position of financial inclusion (CRISIL Inclusix 95.3%) in the state; the banks have to travel further to complete the journey. The research aspirants can take the study as a base and conduct the same study in other states of the country too. There is a scope to research whether the ground reality is matching with the numbers collected from the secondary sources.

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