

ANALYSING INFLUENCE OF PRIORITY SECTOR LENDING ON THE ACHIEVEMENT OF STATE LEVEL SDGs IN INDIA WITH SPECIAL FOCUS ON INEQUALITIES AND QUALITY EDUCATION

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ABSTRACT

The 2030 agenda stipulates some SDGs to achieve sustainability at local and global level. The SDGs address an interrelated and complex series of challenges that cannot be overcome without the joint contributions of the public sector, the private sector, academics and the community at large (Gambetta et al., 2021). For SDGs, there is a very high level resource implications across the world, representing global investment needs of approximately \$5–7 trillion per year. Finance plays a crucial role in most theories of persistent inequality. In fact, economic theory provides conflicting arguments with regard to the nature of relationship between finance and inequality (Demirguc-Kunt & Levine, 2009). Indian commercial banks have been contributing to the priority sectors through lending (PSL) support for several decades. In this backdrop, the present paper is an attempt on the search of relationship between banks' PSL and achievement of SDGs, particularly, quality education, gender equality and reduce inequalities in Indian states. Data relating to SDG index of Indian states have been collected from the reports of NITI Ayog for the period 2018-19 to 2020-21 whereas the data relating to bank lending have been taken from the reports of RBI for the study period. Correlation and multiple linear regression models have been used to understand this issue. The study shows that there is a significant relationship among the selected variables. In some cases, highly significant positive impact has been found in the study. The paper can be useful for governmental policy making and also helpful for further study to find better planning of banking initiatives with respect to the achievement of SDGs.

Keywords: SDGs, Sustainable Development, Priority Sector Lending, Gender Equality, Inequalities.

Introduction

In 2015, the United Nations General Assembly approved a new agenda for sustainable development, termed the 2030 Agenda, along with a new set of 17 development goals that are collectively called the Sustainable Development Goals (SDGs). The Agenda is the end result of many years of negotiation which was endorsed by all 193 member-nations of the General Assembly. This agenda applies to all countries, both developed and developing ones. The General Assembly summarised 169 targets and created the necessary framework within which countries can work to eliminate poverty, reduce inequalities and fight against climate change (United Nations, 2015). UN Secretary General Ban Ki-Moon noted that “the new agenda is a promise by leaders to all people everywhere. It is an agenda for people, to end poverty in all of its forms-an agenda for the planet, our common home.”

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The SDGs address an interrelated and complex series of challenges that cannot be overcome without the joint contributions of the public sector, the private sector, academics and the community at large (Gambetta et al., 2021). For SDGs, there is a very high level resource implications across the world, representing global investment needs of approximately \$5–7 trillion per year. The estimate for developing countries alone range from \$3.3 trillion to \$4.5 trillion per year, mainly for basic infrastructure (water and sanitation, roads, rail and ports, power stations), food security (agriculture and rural development), health, education and climate change mitigation and adaptation (United Nations, 2014). In this line, the Synthesis Report of the UN Secretary General on the post-2015 sustainable development agenda stated: “All financing streams need to be optimized towards sustainable development and coordinated...” (UN General Assembly, 2014).

Finance plays a crucial role in most theories of persistent inequality. In fact, economic theory provides conflicting arguments with regard to the nature of relationship between finance and inequality (Demirguc-Kunt & Levine, 2009). Finance can operate on the extensive margin, providing increased funds and related services to the sections, who had not been availing these services because of cost or other impediments, i.e., the weaker sections. This might expand the economic opportunities of disadvantaged groups and reduce the intergenerational persistence of relative incomes (Becker & Tomes, 1979, 1986; Greenwood & Jovanovic, 1990). On the other way finance can also operate on the intensive margin, enhancing the financial services of those already accessing the financial system, which are frequently high-income individuals and well-established firms. Therefore, improvement in the quality of financial services might have direct effect on the rich disproportionately, widening inequality and perpetuating cross-dynasty differences in economic opportunity (Greenwood & Jovanovic, 1990). Economic theory also postulates that the financial system can influence inequality through indirect mechanisms. Financial development directed towards disadvantaged groups can influence both the aggregate production and the allocation of credit, each of which may result in increased demand for low- and high-skilled workers with concomitant ramification on the distribution of income (Townsend & Ueda, 2006).

Nearly in 1970's, the formalisation of commercial banks' priority sector lending (PSL) initiatives has been started in India. Priority sector means those sectors which the Government of India and Reserve Bank of India consider as important for the development of the basic needs of the country and are to be given priority over other sectors. The commercial banks are directed to encourage the growth of such sectors by providing adequate and timely credit facility. In order to achieve an all-round development of the economy, the RBI directs the banks to provide a specified portion of the bank lending to a few specific sectors like agriculture and allied activities, micro and small enterprises, poor people for housing, students for education and other low-income groups and weaker sections of the country. Research results show that the performance of banks in priority sector lending has improved in recent years, although substantial variations have been observed in the performance of various bank groups as also in meeting the sub-targets within the priority sector (Selvi, 2014). In India, the overall target of PSLs was fixed at 40 per cent for the domestic banks and 32 per cent for the foreign banks, but banks are not able to achieve the prescribed targets for PSLs (Ahmed, 2010). It is also observed that private sector banks are lacking behind in comparison to their public sector counterpart so far the PSLs are concerned (Kumar & Gambhir, 2012 and Kadiwala, 2017).

In this present era of sustainable development, the PSLs are expected to have either direct or indirect influence on the achievement of sustainable goals in the country. India is amongst one of the nations, striving to achieve its sustainable development targets. The government of India has been issuing the SDG index report on a yearly basis for the states and union territories since 2018. But no study has been found to explore the association between PSLs and achievement of SDGs in India. In this backdrop, the present paper strives to shed some lights on the impact of PSLs on the achievement of SDGs with a special focus on quality education (SDG4), gender equality (SDG5) and reduced inequality (SDG10). With this brief introduction, the next section specifies the objectives of the study, section three narrates the methodology adopted in the study while findings are analysed in section four and the concluding remarks are presented in section five.

Objective of the Study

The objectives of the present study are to understand the nature of impact of different PSL scheme towards the achievement of SDGs, with special focus on quality education (SDG 4), gender equality (SDG 5), and reduced inequalities (SDG 10) of the different states in India.

Research Methodology

In order to accomplish the above-mentioned objectives, following methodology has been used in the present study.

Sampling

The study is based on the twenty-seven Indian states as listed in the SDG Index report of NITI Ayog. Necessary data have been collected from the different reports published by the NITI Ayog and the Reserve Bank of India for the period 2018-19 to 2020-21. The index values for the 4th, 5th and 10th SDGs are taken from the SDG Index reports of twenty-seven Indian states. Therefore, we obtain eighty-one index scores for every SDGs. The data relating to state wise contribution of commercial banks in outstanding loan in respect of the selective priority sectors are taken from the RBI reports.

Variables

The variables used in the study are mentioned in the following ways with indicators and definitions.

- SDGI => Sustainable Development Goals Index.
- EDUCAI=> It is the index value for SDG 4 representing quality education.
- GENEQI=> It is the index value for SDG 5 representing gender equality.
- REDINEQI=> It is the index value for SDG10 representing reduced inequality.
- PSOSB=> Commercial banks' outstanding amount to priority sector lending.
- EDUCOSB=> Commercial banks' outstanding amount to educational lending.
- SOIOSB=> Commercial banks' outstanding amount to social infrastructure lending.
- SGDP=> State Gross Domestic Production.
- BLGDP=> Proportion of commercial banks' outstanding loans to SDGP.
- SLGDP=> Proportion of state loan outstanding to SDGP.
- TOPSOB=> Total amount of PSL outstanding of commercial banks.
- OSLSTATE=> Total amount of outstanding loan of a state.

The first four variables are expressed in terms of index score while the remaining variables are INR in thousand crores except SLGDP and BLGDP.

Hypothesis

Considering the objectives of the study the following alternative hypotheses can be formulated:

- **Alternative H₁:** The commercial banks' lending in EDUCOSB and SOIOSB have significant positive impact on the SDGI,
- **Alternative H₂:** The commercial banks' lending in EDUCOSB and SOIOSB have significant positive impact on the EDUCAI.
- **Alternative H₃:** The commercial banks' lending in EDUCOSB and SOIOSB have significant positive impact on the GENEQI.
- **Alternative H₄:** The commercial banks' lending in EDUCOSB and SOIOSB have significant positive impact on the REDINEQI.
- **Alternative H₅:** The proportion of bank loan has positive impact on SDGI.
- **Alternative H₆:** The PSL and state level loans helps to improve State GDP.

Statistical Tools & Models

For all the hypotheses, descriptive statistics and Pearson's bi-variate correlation analysis are made. Multiple linear regression models are formed primarily by considering SGDP as control variable, SDG Indexes as dependent variables and Banks' lending as independent variable. These models are mentioned below:

$$SDGI_{it} = \alpha_0 + \alpha_1SGDP_{it} + \alpha_2SOIOSB_{it} + \alpha_3EDUCOSB_{it} + \varepsilon \dots\dots\dots(1) \text{ for H}_1.$$

$$EDUCAI_{it} = \alpha_0 + \alpha_1SGDP_{it} + \alpha_2SOIOSB_{it} + \alpha_3EDUCOSB_{it} + \varepsilon \dots\dots\dots(2) \text{ for H}_2.$$

$$GENEQI_{it} = \alpha_0 + \alpha_1SGDP_{it} + \alpha_2SOIOSB_{it} + \alpha_3EDUCOSB_{it} + \varepsilon \dots\dots\dots(3) \text{ for H}_3.$$

$$REDINEQI_{it} = \alpha_0 + \alpha_1SGDP_{it} + \alpha_2SOIOSB_{it} + \alpha_3EDUCOSB_{it} + \varepsilon \dots\dots\dots(4) \text{ for H}_4.$$

$$SDGI_{it} = \alpha_0 + \alpha_1BLGDP_{it} + \alpha_2SLGDP_{it} + \varepsilon \dots\dots\dots(5) \text{ for H}_5.$$

$$SGDP_{it} = \alpha_0 + \alpha_1TOPSOB_{it} + \alpha_2OSLSTATE_{it} + \varepsilon \dots\dots\dots(6) \text{ for H}_6.$$

The Equation-1 (Eq-1) through Eq-4 are to understand the influence of SOIOSB and EDUCOSB on the achievement of SDG Index and its sub-indices, namely, EDUCAI, GENEQI, and REDINEQI. The Eq-6 has been used to assess total impact of bank loans on the SDGI whereas in Eq-6, the impact of total PSL and state loan on the achievement of state GDP have been identified.

Results and Discussion

The study results are divided into descriptive statistics, correlation analysis and regression analysis as follows.

- Descriptive Statistics:** Table 1 reveals the average, standard deviation, minimum and maximum values of the selected variables in the study. It is found from Table 1 that the average SDG index is around 60 and the average scores of EDUCAI, REFINEQI are around 60 or above whereas average of GENEQI is around 42. This indicates that EDUCAI and REFINEQI have more contribution in improving SDGI than the GENEQI. The standard deviation (SD) of SDGI is also considerably lower than that of EDUCAI, and REFINEQI. This finding provides evidence that there are more inconsistencies among SDG 4 and SDG 10. But so far the minimum (42) and maximum (75) values of SDGI are concerned, the index is in a better position with respect to its average value of 60.

Table 1: Descriptive Statistics

	SDGI	EDUCAI	GENEQI	REDINEQI	OSLSTATE	CBL	TOPSOB	EDUCOSB	SOIOSB	SGDP
Mean	60.8	57.2	42.1	69.2	194	320	124	2.22	0.0646	662
SD	6.95	12.8	8.9	13.9	173	526	172	3.2	0.0855	642
Minimum	42	19	24	38	6.85	2.76	0.9	0.01	0.001	19.4
Maximum	75	87	64	100	663	2792	1013	15.9	0.366	2819

Sources: Compiled and computed from NITI Ayog reports and RBI reports, various issues.

The average of commercial banks' priority sector lending is around Rs. 1,24,153 crore. The average values of EDUCOSB and SOIOSB are Rs. 2,220 crore and Rs. 64.4 crore respectively. The average EDUCOSB and SOIOSB are only 1.79% and 0.05% of average TOPSOB respectively. These findings show that a very marginal or negligible portion of priority sector lending are allotted for education and social infrastructure purposes.

- Correlation:** In Table 2 we have presented the Pearson's correlation coefficients among the selected variables under study. This table discloses that the correlation coefficient between TOPSOB and SGDP is significantly positive (0.905 at $p < 1\%$). This conforms to the argument that PSL should have some positive relation with gross domestic production. Moreover, the correlation coefficient between SDGI and TOPSOB (0.305) is positive and significant at $p < 1\%$. It signifies that the priority sector lending has significant impact on the achievement of better SDGI.

Table 2: Pearson's Correlation Coefficients

		REDINEQI	GENEQI	EDUCAI	SDGI	SGDP	SOIOSB	EDUCOSB	TOPSOB	CBL
GENEQI	Cor.	-0.045	—							
	Sig.	0.692	—							
EDUCAI	Cor.	0.192	0.207	—						
	Sig.	0.087	0.064	—						
SDGI	Cor.	0.136	0.593	0.607	—					
	Sig.	0.225	< .001	< .001	—					
SGDP	Cor.	-0.127	0.116	0.236	0.26	—				
	Sig.	0.259	0.304	0.034	0.019	—				
SOIOSB	Cor.	0.134	0.019	0.426	0.281	0.554	—			
	Sig.	0.235	0.866	< .001	0.011	< .001	—			
EDUCOSB	Cor.	0.058	0.199	0.379	0.383	0.613	0.786	—		
	Sig.	0.609	0.076	< .001	< .001	< .001	< .001	—		
TOPSOB	Cor.	-0.035	0.144	0.286	0.305	0.905	0.464	0.565	—	
	Sig.	0.759	0.2	0.01	0.006	< .001	< .001	< .001	—	
CBL	Cor.	0.012	0.114	0.279	0.288	0.872	0.427	0.515	0.978	—
	Sig.	0.912	0.312	0.012	0.009	< .001	< .001	< .001	< .001	—
OSLSTATE	Cor.	-0.229	0.107	0.177	0.18	0.911	0.541	0.585	0.725	0.657
	Sig.	0.04	0.342	0.113	0.107	< .001	< .001	< .001	< .001	< .001

*. at the 0.01 & #. at the 0.05 level (2-tailed) Pearson Correlation is significant (N=81)

Sources: Author's own calculations

The correlation coefficients of SOIOSB with respect to EDUCAI (0.426), SDGI (0.281) and SGDP (0.554) are found to be statistically significantly positive. Similarly, the correlation coefficients of EDUCOSB with respect to EDUCAI, SDGI and SGDP are 0.379, 0.383 and 0.613 respectively and all are

found to statistically significant at 0.01 level of significance. These findings provide strong evidence of positive impact of social infrastructure and educational lending on quality education, sustainable development and state GDP.

The linier multiple regression analyses are made in the next sub-section to understand the nature of impact of banks priority sector lending on the EDUCAI, GENEQI and REDINEQI.

- **Regression:** The regression results of Eq-1 have been presented in Table 3. This table shows that the R^2 value is around 15% with significant F-Statistic (4.49 at 1% level). The constant term (58.83) is found to be positive and statistically significant at 1% level of significance. The coefficient value of EDUCOSB is positive (0.872) and found to be statistically significant at 5% level of significance. However, coefficient for SOIOSB is negative but it is statistically insignificant. The Shapiro-Wilk test shows the normality of the data and the Breusch-Pagan test result indicates that there is no heteroscedasticity issue. The VIF value in around 2 indicating non-existence of multicollinearity. The findings of the Table 3 provide strong evidence of notable contribution of educational lending towards improving SDG index.

Table 3: Regression Results of Equation 1

		Dependent: SDGI									
Eq	R ²	F	F-Sig	Variables	B	SE	Sig.	VIF	Test	Statistic	p
1	0.149	4.490	0.006	C	58.834	1.061	0.000				
				SGDP	0.001	0.001	0.727	1.640	Shapiro W	0.991	0.865
				SOIOSB	-4.948	13.961	0.724	2.670	Breusch P	1.310	0.726
				EDUCOSB	0.872	0.393	0.029	2.970			

Sources: Author's own calculations

The Table 4 discloses the regression results for Eq-2. This table shows that the R^2 value is around 18% but F-Statistic is found to be statistically significant at 1% level of significance. The constant term (53.19) is positive and statistically significant at 1% level. The coefficient of SOIOSB is positive (51.293) and found to be statistically significant at 5% level of significance. It implies that social infrastructure lending has a significant positive effect on improving the quality education index. The effect of EDUCOSB is found to be positive but not statistically significant even at 10% level of significance. It implies that educational lending has not been able to significantly influence the quality education index in India.

Table 4: Regression Results of Equation 2

		Dependent: EDUCAI									
Eq	R ²	F	F-Sig	Variables	B	SE	Sig.	VIF	Test	Statistic	p
2	0.187	5.920	0.001	C	53.187	1.915	0.000				
				SGDP	-0.001	0.003	0.796	1.640	Shapiro W	0.981	0.271
				SOIOSB	51.293	25.215	0.045	2.670	Breusch P	3.490	0.322
				EDUCOSB	0.529	0.709	0.458	2.970			

Sources: Author's own calculations

Table 5 discloses the regression results for Eq-3. This table shows that the R^2 value is around only 8% but F-Statistic is found to be statistically significant at 10% level of significance. This table also reveals that the constant term (41.39) is positive and statistically significant at 1% level. The coefficient value of SOIOSB (-37.87) is found to be negative and statistically significant at 5% level of significance. However, coefficient for EDUCOSB has been found to be positive and statistically significant at 5% level. It provides evidence of strong influence of education loan in improving gender equality index in India.

Table 5: Regression Results of Equation 3

		Dependent: GENEQI									
Eq	R ²	F	F-Sig	Variables	B	SE	Sig.	VIF	Test	Statistic	p
3	0.089	2.510	0.065	C	41.390	1.405	0.000				
				SGDP	0.000	0.002	0.818	1.640	Shapiro W	0.991	0.826
				SOIOSB	-37.870	18.499	0.044	2.670	Breusch P	2.690	0.443
				EDUCOSB	1.290	0.521	0.015	2.970			

Sources: Author's own calculations

Table 6 displays the regression results for Eq-4. This table shows that the R^2 value is negligible with insignificant F-Statistic. This indicates the fitted model is not a good fit. Moreover, coefficients for all the regressors are found to be statistically insignificant except for SGDP. More data and additional contributory variables can be incorporated in the specification to obtain a good fit model so that the true impact of social infrastructure and educational lending on reduced inequality index in India can be identified.

Table 6: Regression Results of Equation 4

		Dependent: REDINEQI									
Eq	R ²	F	F-Sig	Variables	B	SE	Sig.	VIF	Test	Statistic	p
4	0.076	2.110	0.105	C	70.308	2.211	0.000				
				SGDP	-0.006	0.003	0.040	1.640	Shapiro W	0.981	0.259
				SOIOSB	46.436	29.108	0.115	2.670	Breusch P	3.540	0.315
				EDUCOSB	0.057	0.819	0.945	2.970			

Sources: Author's own calculations

The Table 7 presents the regression results for Eq-5. This table shows that the R² value is around 12% with a significant F-Statistic (at 1% level). Table 7 also reveals that the constant term (54.10) is positive and statistically significant at 1% level of significance. The coefficient value of BLGDP (14.17) is positive and found to be statistically significant at 1% level of significance. This finding provides strong evidence of commercial banks' lending on increasing sustainable development index.

Table 7: Regression Results of Equation 5

		Dependent: SDGI									
Eq	R ²	F	F-Sig	Variables	B	SE	Sig.	VIF	Test	Statistic	p
5	0.122	5.400	0.006	C	58.100	3.010	0.000				
				BLGDP	14.172	4.630	0.003	1.390	Shapiro W	0.986	0.500
				SLGDP	-0.637	1.060	0.549	1.390	Breusch P	1.180	0.555

Sources: Author's own calculations

From Table 8, it is observed that total PSLs and state outstanding loan have a notable and statistically significant positive impact on the state level GDPs. This finding also provides evidence in support of positive influence of PSL on the GDPs.

Table 8: Regression Results of Equation 6

		Dependent: SGDP									
Eq	R ²	F	F-Sig	Variables	B	SE	Sig.	VIF	Test	Statistic	p
6	0.956	857.000	0.000	C	34.300	22.853	0.137				
				TOPSOB	1.930	0.128	0.000	2.110	Shapiro W	0.864	0.000
				OSLSTATE	2.000	0.127	0.000	2.110	Breusch P	9.160	0.010

Sources: Author's own calculations

Altogether, it has been observed that all these regression models are good fit excepting Eq-4 and majority of the findings conform to the alternative hypotheses. On the basis of the analysis of the results, conclusions are drawn in the next section.

Conclusions and Recommendations

Considering the present scenario of exiguity of studies in literature on the impact of PSLs on SDGs, this paper is a small attempt to explore such area. It has been observed that the outstanding loan for education has notable positive impact on the sustainable development index and its sub-index representing gender equality in India. Moreover, social infrastructure lending has considerable positive influence on the quality education index of Indian states. Further, on the basis of the findings of the study, it can be inferred that commercial banks' lending significantly contributes to improving sustainability index while priority sector lending has notable positive impact on enhanced state GDP.

Finally, it can be concluded that some sort of significant associations between banking initiative for PSLs and achievement of sustainable goals are in existence. Therefore, a constructive and planned PSL system can be put in place for better accomplishment of SDGs.

On the basis of the study results, some recommendations can be offered for the government in this respect. Government should move early towards policy making and also should pave the way for smooth mobilisation of funds for priority sectors for the better achievement of SDG targets. Researchers may undertake further study by increasing the study period on the availability of SDGI for India. They can also include other contributing variables in the specifications for attaining better results.

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