

# Impact of Demonetization on Education Loan Segment in Punjab State

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**ABSTRACT:** The present study has been conducted to explore the statistics regarding education loan (EL) segment of scheduled commercial banks' in the state of Punjab, India. Before demonetization there was seen huge growth in the demand for EL and hence banks were also actively extending credit facility to the students especially for technical, engineering, medical, management and other professional courses. Though, Reserve Bank of India's financial reports affirms improved deposit-base of banks after the demonetization. However, few researches reveal that no significant impact has been observed in banking loans and advances segment during post-demonetization period. The present study takes into account the education loan statistics of schedule commercial banks of Punjab state from year 2013-14 to year 2019-20. Year-on-year analysis has been performed to depict the clear picture. Besides, both correlation and regression has been applied to the data set to test the seven hypotheses. The results of present study clearly states there exists a statistically significant negative linear relationship between the time (year) & education loan (EL) amount outstanding in the accounts during years 2013-2020 i.e. period of 7 years. The regression line,  $EL \text{ Amount} = -165867 + 82.932 (\text{year})$ , states that for every 1-unit increase in the predictor variable (year), the outcome variable (EL amount outstanding) decreases by the beta coefficient value (-165867).

**Keywords:** Demonetization, Education Loan (EL), Student Loan (SL), Reserve bank of India (RBI), Higher Education (HE), Correlation Analysis (CCA), Regression Analysis, India. Scheduled commercial Banks (SCBs)

## I. INTRODUCTION

The Demonization was policy announced by Prime Minister Narendra Modi on November 8, 2016. The move had both positive and negative implications for various economic sectors, industries and social segments. The education

sector was expected to benefit from the efficiencies brought by this new payment infrastructure, in terms of fee payments, benefiting both educational institutions and parents/students. Furthermore, there was perception that increased deposits with banks during post-demonetization period will substantially flow to higher education (HE) sector by way of student loans. Rather, decrease in interest rates on education loans was awaited subsequent to demonetization. However banks' loans and advances statistics show a different scenario. RBI's figures on 23.12.2016 showed that banks' overall credit growth had fallen to a meagre 5.1%, down from around 10% in the year 2015. The growth had already fallen to 5% levels in November, 2016, as credit to industry shrunk by 3% (The Hindu Businessline). The Figure 1 shows the big credit collapse occurred in the aftermath of the demonetisation in November 2016, though bank credit was already decelerating before then, because of accumulated Non Performing Assets (NPAs).

-----Insert Figure 1 here-----

'India's education loan market has shrunk 25% from March 2015-2016 to March 2018-2019. The number of students able to secure loans fell to 2.5 lakh as of March 31, 2019 from 3.34 lakh students as of March 31, 2015 (The Times of India). The total number of active loan accounts or students declined to 27.8 lakh from 34 lakh in these four years', (crifhighmark.com).

## II. IMPORTANCE OF THE STUDY

Though statistics in few newspapers are available on declining education loan figures of Indian Banking sector during post-demonetization era but rarely one comes across any detailed study in this context. Hence, the present study is an attempt to bring out a clear picture on declining trend in the number of student accounts and outstanding amount in these accounts with reference to scheduled commercial banks (SCBs) in Punjab state.

### III. OBJECTIVES OF THE STUDY

The present study covers the data during 2013-2020. The data belongs to education loan segment of schedule commercial banks (SCBs) in Punjab State. To comprehend the demonetization impact over education loan of SCBs, the study constitutes the following objectives:

- To analyse the trend in education loan portfolio of SCBs in Punjab
- To explore the correlation between education loan variables for SCBs in Punjab
- To examine the regression between education loan variables for SCBs in Punjab
- To summarize the pre demonetization and post demonetization scenario of SCBs' education loans

### IV. HYPOTHESIS OF THE STUDY

Six hypotheses have been formulated to realise the objectives of the present study. These hypotheses are:

**Hypothesis 1:** The number of Education Loan (EL) accounts & amount outstanding in them are positively correlated.

**Hypothesis 2:** There is positive association between time (year) & the number of Education Loan (EL) accounts.

**Hypothesis 3:** There is positive association between time (year) & the Education Loan (EL) amount outstanding in accounts.

**Hypothesis 4:** There is a linear relationship between time (year) & the number of Education Loan (EL) accounts.

**Hypothesis 5:** There is a linear relationship between time (year) & the Education Loan (EL) amount outstanding.

**Hypothesis 6:** There is a linear relationship between the number of EL accounts & EL amount outstanding in them.

### V. RESEARCH METHODOLOGY AND DATA ANALYSIS

The present study takes into account the education loan statistics of schedule commercial banks (SCBs) of Punjab state from year 2013-14 to year 2019-20. Year-on-year analysis has been performed to depict the clear picture. Besides, both correlation and regression techniques have been applied to the data set to test the seven listed hypotheses. For data analysis purpose, IBM SPSS Software version 18 has been used. The results are as given below:

### Trend in education loan portfolio of SCBs in Punjab

The table 1 shows the statistics related to number of student loan accounts and the amount outstanding in them since 2013-2014 in Punjab state for scheduled commercial banks (SCBs). As depicted in the table 1, there was continuous increase in the student loan accounts and the amount outstanding in them from 2013-2014 to 2015-2016 (March ending). Then Indian government introduced demonetization move on 8.11.2016. Consequently during the period from 2016-2017 and 2017-2018 this growth trend turns literally negative. Though things started to improve during the period 2018-2019 and 2019-2020 but pre-demonetization growth rate was never reached. So far, post-demonetization scenario related to education loan segment of SBCs in Punjab state has not been truly promising one.

-----Insert Table 1 here-----

### Correlation between education loan variables for SCBs in Punjab

For examining correlation statistics among EL variables following three hypotheses have been tested. The results are delineated below:

**Hypothesis 1:** The number of Education Loan (EL) accounts & amount outstanding in them are positively correlated.

As per Table 2, there exists no statistically significant positive correlation between the Number of Education Loan Accounts & Amount of Loan outstanding yearly during 2013-2020 i.e. period of seven years. Number of education loan accounts and yearly amount outstanding in them are not significantly positively correlated ( $r = -.096$ ,  $p = .838$ ).

-----Insert Table 2 here-----

**Hypothesis 2:** There is positive association between time (year) & the number of Education Loan (EL) accounts.

As per Table 3, there exists no statistically significant positive association between the time (year) & number of Education Loan Accounts during 2013-2020 i.e. period of seven years. The figures of time (year) and number of education loan accounts are not significantly and positively correlated ( $r = -.560$ ,  $p = .191$ ).

-----Insert Table 3 here-----

**Hypothesis 3:** There is positive association between time (year) & the Education Loan (EL) amount outstanding in accounts.

As per Table 4, there exists a statistically significant positive association between the number of years & Education Loan (EL) amount outstanding during 2013-2020 i.e. period of seven

years. The figures of number of years and Education Loan (EL) amount outstanding yearly are significantly and positively correlated ( $r=0.859$ ,  $p=.013$ ) at significance level 0.05. This analysis indicates that year-on-year (y-o-y) basis there has been reported statistically significant increase in the amount outstanding in student loan accounts during the period of last seven years in Punjab state for SCBs.

-----Insert Table 4 here-----

### Regression between education loan variables for SCBs in Punjab

For examining regression statistics among EL variables following three hypotheses have been tested. The results are delineated below:

**Hypothesis 4:** There is a linear relationship between time (year) & the number of Education Loan (EL) accounts.

The output's first table 5 shows the model summary and overall fit statistics. It is found that the adjusted  $R^2$  of present model is 0.176 with the  $R^2 = .313$  that means that the linear regression explains 31.3% of the variance in the number of Education Loan (EL) accounts. The Durbin-Watson  $d = 2.025$ , which is between the two critical values of  $1.5 < d < 2.5$  and therefore it is assumed that there is no first order linear auto-correlation in the data.

The F-test, the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables (in other words  $R^2=0$ ). With  $F = 2.279$  and six degrees of freedom the test is not significant, thus clearly there exists no statistically significant linear relationship between the number of years & number of Education Loan Accounts during 2013-2020 i.e. period of seven years.

-----Insert Table 5 here-----

**Hypothesis 5:** There is a linear relationship between time (year) & the Education Loan (EL) amount outstanding.

The output's first table 6 shows the model summary and overall fit statistics. It is found that the adjusted  $R^2$  of present model is 0.685 with the  $R^2 = .738$  that means that the linear regression explains 73.8% of the variance in the yearly Education Loan (EL) amount. The Durbin-Watson  $d = 1.726$ , which is between the two critical values of  $1.5 < d < 2.5$  and therefore it is assumed that there is no first order linear auto-correlation in the data.

The F-test, the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables (in other words  $R^2=0$ ). With  $F = 14.077$  and six degrees of

freedom the test is significant at significance level 0.05, thus clearly there exists a statistically significant negative linear relationship between the number of years & Education Loan (EL) amount outstanding during 2013-2020 i.e. period of seven years. The regression line can written as  $EL \text{ Amount} = -165867 + 82.932 (\text{year})$ , stating that for every 1-unit increase in the predictor variable (no. of years), the outcome variable (yearly EL amount) decreases by the beta coefficient value.

-----Insert Table 6 here-----

**Hypothesis 6:** There is a linear relationship between the number of EL accounts & EL amount outstanding in them.

The output's first table 7 shows the model summary and overall fit statistics. The adjusted  $R^2$  of present model is -.189 with the  $R^2 = .009$  implying that the linear regression explains 0.9% of the variance in the yearly Education Loan (EL) amount outstanding. The Durbin-Watson  $d = .855$ , which does not lie between the two critical values of  $1.5 < d < 2.5$  and therefore it is assumed that there is expected, a first order linear auto-correlation in the data.

The F-test, the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables (in other words  $R^2=0$ ). With  $F = .047$  and six degrees of freedom the test is not significant, thus clearly there exists no statistically significant linear relationship between the number of EL accounts & yearly EL amount outstanding in these accounts during 2013-2020 i.e. period of seven years.

-----Insert Table 7 here-----

### Summary of pre & post demonetization scenario of SCBs' education loans in Punjab state

The result for hypothesis number 5 shows that the adjusted  $R^2$  of present model is 0.685 with the  $R^2 = .738$ . This indicates that the linear regression explains 73.8% of the variance in the yearly Education Loan (EL) amount outstanding in EL accounts w.r.t. change in time (year). The F-test, the linear regression's F-test has the null hypothesis that there is no linear relationship between the two variables (in other words  $R^2=0$ ). With  $F = 14.077$  and six degrees of freedom the test is significant at significance level 0.05, thus clearly there exists a statistically significant negative linear relationship between the number of years & Education Loan (EL) amount outstanding during 2013-2020 i.e. period of seven years. The regression line can written as  $EL \text{ Amount} = -165867 + 82.932 (\text{year})$ , stating that for every 1-unit increase in the predictor variable time/year, the outcome variable (yearly EL amount outstanding) decreases by the beta coefficient value. Thus it is

precisely established that over the last four (2016-17 to 2019-20) years there has been decline in the amount of loan outstanding in the student loan accounts in Punjab state for schedule commercial banks.

**Implications and Future Agenda**

RBI’s Mint Street Memo No. 01 assesses that ‘excess’ bank deposit growth (y-o-y) post-demonetisation has been in the range of 3.0-4.7% points. In nominal terms, these estimates indicate the excess deposits with banks to be in the range of ₹ 2.84.3 trillion. Various research studies and newspaper articles validate the same. However, when it comes to loans and advances portfolio of banks in India, there has been noticeable decline in lending activity post-demonetization. Probably banks could have created more credit to earn greater profitability. However, due to significant increase in non-performing assets (NPAs) during last few years, the banks resorted to strict credit regime and adopted more precautionary measures while extending credit.

Further, in future it would be attention-grabbing to see if the banks still continue with their strict credit regime and precautionary lending policies. Research can also be carried out to examine if the banks adopt the same approach for low-value and high-value education loans. Education loans fall under the priority sector lending initiatives of banks in India, thus banks

remain under pressure to extend this facility to students. In this case too it will be interesting to know how banks are going to effectively recover the outstanding amount while keeping a check on overall NPAs level in student loan segment. An analysis can also be carried out for growing level of NPAs in banks’ education loan segment post-demonetization.

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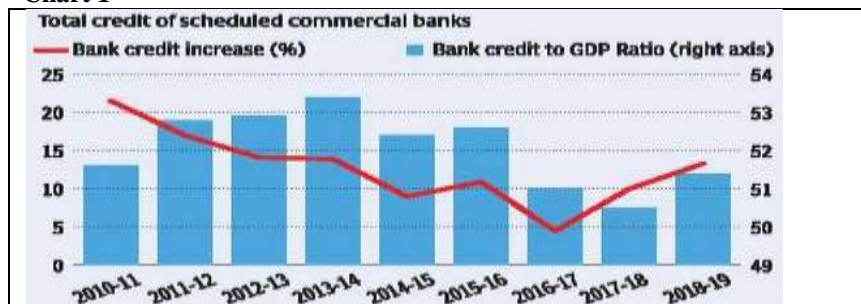
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**Chart 1**



Source: The Hindu Businessline

**(Table 1) Number of Education Loan Accounts & Amount of Loan Disbursed in Punjab**

<b>(2013-2014 to 2019-2020)</b>						
<b>(Rs. in Crore)</b>						
Year (Ending March)	No. of Accounts	Increase		Amount Outstanding	Increase	
		Absolute	%age		Absolute	%age
2013-2014	35177			1090.64		
2014-2015	36607	1430	4.07%	1258.55	167.91	15.39%

2015-2016	43985	7378	20.15%	1508.60	250.05	19.86%
2016-2017	33746	-10,239	-23.28%	1379.97	-128.63	-8.52%
2017-2018	31037	-2709	-8.03%	1358.73	-21.24	-1.54%
2018-2019	31550	513	1.65%	1513	154.27	11.35%
2019-2020	31985	435	1.38%	1745	232	15.33%

Data Source: Agenda Papers, SLBC, Punjab

Education Loan		No of Accounts	Amount
No of Accounts	Pearson Correlation	1	-.096
	Sig. (2-tailed)		.838
	N	7	7
Amount	Pearson Correlation	-.096	1
	Sig. (2-tailed)	.838	
	N	7	7

Data Source: Agenda Papers, SLBC, Punjab

		year	EL Accounts
year	Pearson Correlation	1	-.560
	Sig. (2-tailed)		.191
	N	7	7
EL Accounts	Pearson Correlation	-.560	1
	Sig. (2-tailed)	.191	
	N	7	7

Data Source: Agenda Papers, SLBC, Punjab

		year	EL Amount
year	Pearson Correlation	1	.859*
	Sig. (2-tailed)		.013
	N	7	7
EL Amount	Pearson Correlation	.859*	1
	Sig. (2-tailed)	.013	
	N	7	7

\*. Correlation is significant at the 0.05 level (2-tailed).

Data Source: Agenda Papers, SLBC, Punjab

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.560 <sup>a</sup>	.313	.176	4085.371	.313	2.279	1	5	.191	2.035

a. Predictors: (Constant), year

b. Dependent Variable: account

Data Source: Agenda Papers, SLBC, Punjab



Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.859 <sup>a</sup>	.738	.685	116.96284	.738	14.077	1	5	.013	1.726

a. Predictors: (Constant), year

b. Dependent Variable: amount

Data Source: Agenda Papers, SLBC, Punjab

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.096 <sup>a</sup>	.009	-.189	227.40932	.009	.047	1	5	.838	.855

a. Predictors: (Constant), account

b. Dependent Variable: amount

Data Source: Agenda Papers, SLBC, Punjab



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