

Securitization of Government School Building By PPP Model

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Abstract:- We are in 21st century and till now India is infrastructure shortfall country. The Government equally at state rank and central rank is facing complications to grow up fund for increasing requiring of infrastructure. In such condition contribution of private finance through PPP model is very supportive for government monetarily. Education is fundamental for country's escalation. Economically or communally education plays a significant role for the progress of both the sectors. Education plays chief role in mounting country in every field. Education provides passageway out of deficiency. In this study, the involvement of Private funds for the growth of the educational sector is explained.

Keywords:- (Public-Private Partnership), BOOT (Build Own Operate Transfer), Net Cash Flow, Discounted Cash Flow, Payback Period, Discounted Payback Period.

I. INTRODUCTION

Every year government spends approximately 6486.1 corer rupees per state in education sector. This expenditure is done in special forms, which includes:

- Tribal wellbeing, (capital for scholarships)
- Uniforms
- Educational infrastructures
- Teachers pay and a lot of other

A public-private partnership is the agreement partnership among a public group and a private segment individual. This modern project convey method relocates risk to those parties that best grasp and handle risk: investors, expanders, construction service providers, operators, sellers, and service contributors. The consequential complete team functions to execute the client's purposes and ideas for the betterment of the project.

Public-private partnerships involving a government group and private-area company can be used to funding, construct and control projects, such as public shipping systems, parks and conference centers. Financing a project through a public-private partnership can let a project to be finished faster or make it a prospect in the first place.

Public-private partnerships have agreement times of 15 to 30 years or longer. Financing comes partially from the private segment but involves compensations from the public sector and/or consumers over the project's life span. The private colleague takes part in designing, finishing, executing and backing the project, while the public partner focuses on defining and supervising fulfillment with the objectives. Risks are dispersed between the public and private associates according to the capacity of each to review, manage and deal with them.

II. OBJECTIVE

- To formulate the school model based on some assumptions and few facts with reference to Kendriya Vidyalaya.
- Total cash inflow, total cash outflow and net cash flow will be calculated. Cash inflow includes funds sanctioned by government, student fees etc, and cash outflow includes investment done in infrastructure construction, operation and maintenance of school.
- Payback period as well as discounted payback period has to be calculated to know that for how many years private sector has to run the project.

III. LITERATURE REVIEW

Fennell (2010) contributed on understanding of how PPP partnerships affect the educational experience and outcomes of the poor. Also sets out the conceptual framework and methodology developed for the project on Public Private Partnerships and Educational Outcomes for the Poor (P³EOP). And investigated the way forward for examining the educational outcomes of PPPs using an interdisciplinary framework that goes beyond a conventional economic framework.

Luthra and Mahajan (2013) investigated that PPP model in India is also being used for the education sectors in the form of "Model School" scheme launched in November 2008 which clearly express that out of 6000 sanctioned schools 2500 will be build under PPP model. Similar arrangement was done in one of the Australian states in the form of "New School Project" in which private sector financed, designed and constructed nine New Public Schools between the year 2002 and 2005.

Vijayalakshmi (2013) studied about the different PPP models used for higher education which are – basic infrastructure model, this includes participation of private

party only for financing school infrastructure whereas the operation and maintenance is done by government; outsourcing model, where private sector invest for infrastructure, operation as well for maintenance and the responsibility of government is to pay private investors for specified services; equity/hybrid model, in which infrastructure finance is shared by both government and

private investors where as operation and maintenance is done by private investors; and the last is reverse outsourcing model, where government invests in infrastructure of school and private party operates and maintain the school.

IV. METHODOLOGY

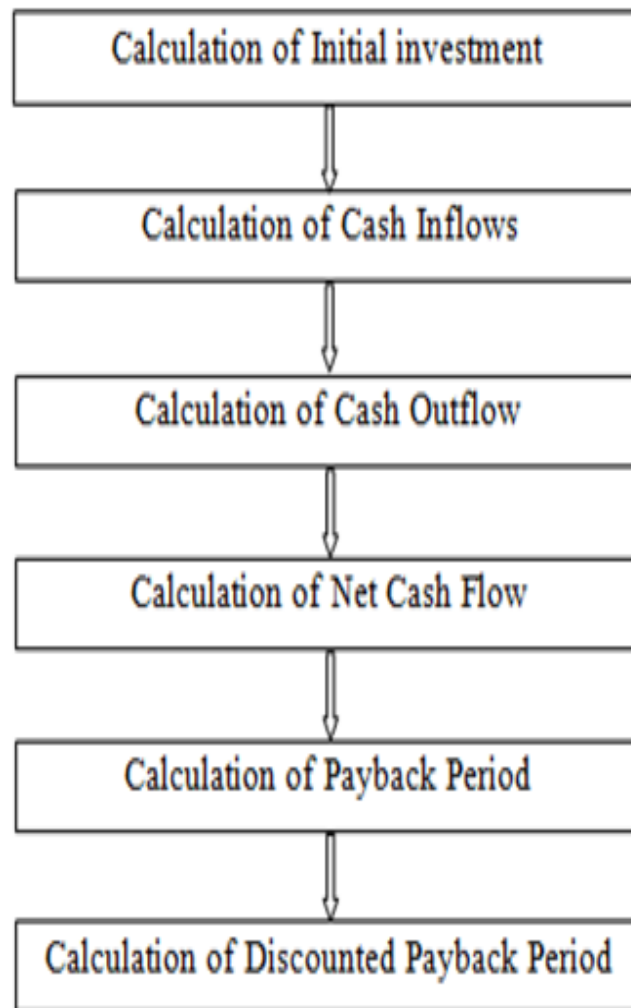


Fig 1:- Flow Chart of Methodology

V. SCHOOL MODEL FORMULATION

A. Assumptions:

- The salary of teachers and all the staff members will be paid by government.
- Fees will be same for all categories of students.
- Cost of construction with furniture inclusive of all the profit is Rs. 1500 per sq.ft
- Net cash inflow and cash outflow of every year is approximately same (equal).

B. Number of Students

Class	General	OBC	ST/SC	Muslim	Minor	PH	Total
I A	12	12	14	9	0	0	47
I B	12	12	13	6	0	0	43
II A	25	3	15	6	0	0	49
II B	22	4	14	1	0	0	41
III A	26	6	14	5	0	1	52
III B	24	6	10	6	0	0	46
IV A	24	6	9	6	1	2	48
IV B	22	6	11	10	1	0	50
V A	28	5	11	4	1	0	49
V B	23	8	14	4	0	0	49
VI A	27	5	10	6	0	0	48
VI B	30	5	10	5	0	0	50
VII A	25	11	9	5	0	0	50
VII B	18	14	10	5	0	1	48
VIII A	18	6	15	9	0	0	48
VIII B	20	7	11	12	0	0	50
IX A	19	13	5	10	1	0	48
IX B	17	16	5	11	0	1	50
X A	19	11	8	8	2	1	49
X B	19	13	11	4	2	0	49
XI (S)	27	8	11	3	0	0	49
XI (C)	29	7	8	3	2	0	49
XII (S)	21	8	11	6	2	1	49
XII (C)	27	7	9	4	2	0	49
TOTAL							1160

Table 1:- Number of Students in Each Class.

C. Fee Structure:

Fee structure contains Admission fee, taken only ones during admission; Re-Admission fee, taken every year when promoted to next class; Tuition fee, taken only from students of class 9th to 12th (both Commerce &

Science) but the amount is different for 9th & 10th, Science & Commerce; Computer Fund, from class 3rd onwards; and Vidyalaya Vikas Nidh, from class 1st to 12th.

Admission Fee	Rs. 25.00
Re Admission Fee	Rs 100.00
Tuition Fee	
Class IX & X	Rs 200.00
Class XI & XII Commerce & Humanities	Rs 300.00
Class XI & XII Science	Rs. 400.00
Computer Fund	
Class III onwards wherever Computer Education is being imparted	Rs 100.00
Computer Science Fee. (for elective subjects) + 2 stage	Rs 150.00
Vidyalaya Vikas Nidhi (Classes I - XII)	Rs. 500.00

Table 2:- Fee Structure per Month

Class	Total fee
I	Rs 500.00
II	Rs 600.00
III	Rs 700.00
IV	Rs 700.00
V	Rs 700.00
VI	Rs 700.00
VII	Rs 700.00
VIII	Rs 700.00
IX	Rs 900.00
X	Rs 900.00
XI (S)	Rs 1100.00 (+150) for elective computer science
XI (C)	Rs 1000.00 (+150) for elective computer science
XII (S)	Rs 1100.00 (+150) for elective computer science
XII (C)	Rs 1000.00 (+150) for elective computer science

Table 3:- Total Fee per Month per Student

D. Employee(s) Salary

Employee(s) salary includes Teaching Staff, Non-Teaching Staff and helping Staff. Teaching staff includes Principal, PGTs (Post Graduate teachers), TGTs (Trained

Graduate Teachers), Head master, Librarians, PRTs (Primary Teachers) and Lab. Attendants. Salaries of teachers vary according to their Ranks, Pay group, Cost of living grant and Allowances.

RANK OF STAFF	TOTAL (IN Rs)
PRINCIPAL	66205
PGT (MATHS)	65519
PGT(BIOLOGY)	52965
PGT (CHEMISTRY)	48497
PGT (PHYSICS)	49752
PGT (ENGLISH)	57454
PGT (HINDI)	67966
PGT (COMMUNICATION)	41905
PGT (COMPUTER)	51432
TGT (MATHS)	56301
TGT (SCIENCE)	44969
TGT (SOCIAL)	56271
TGT (ENGLISH)	39627
TGT (HINDI)	38489
TGT (SANSKRIT)	56271
TGT (PE)	39627
TGT (ARTS)	41993
HEAD MASTER	47920
PRT (MATHS)	31415
PRT (SCIENCE)	30517
PRT (SOCIAL)	33466
PRT (ENGLISH)	30517
PRT (HINDI)	36299
PRT(SANSKRIT)	24908
PRT (PE)	30517
PRT (MUSIC)	46635
UDC	32586
LAB ATTENDENT	27376
LAB ATTENDENT	28480
LAB ATTENDENT	29077
SUB STAFF	26369
SUB STAFF	25774
GRAND TOTAL	1357099

Table 4:- Employee(s) Salary per Month

VI. CALCULATIONS OF CASH FLOWS

➤ Calculation of Initial Investment Cost:

Initial investment cost includes cost of construction of school building, which is calculated as:

Area of Ground floor = 2692.53 sq.m

Area of First floor = 2692.53 sq.m

Total area of construction = 5385.06 sq.m = 57964.7854 sq.ft

Assuming cost of construction per sq.ft = Rs. 1500.00 (inclusive of profits)

Therefore,

initial investment cost for construction = 57964.7854*1500

= Rs. 8,69,47,178.10

➤ Calculation of Cash Inflow Per Year:

Cash inflow per year includes the total fees of students per year. Cash inflow which is received in the form of students fee per year and is calculated to be Rs. 1,08,86,400.00

➤ Calculation of Cash Outflow Per Year:

Cash out flow per year includes total employee(s) salary and recurring cost per year.

❖ Cash Outflow in Form of Employee(s) Salary per Year:

Cash out flow per month in employees' salary= Rs. 1357099

Cash outflow per year in employees' salary

= Rs. 1357099 * 12

= Rs. 1,62,85,188.00

❖ Cash Outflow per Year in the Form of Recurring Expenditure:

S.no.	RECURRING EXPENDITURE	In Rs
1	Repairs & Maintenance	
a)	School building	275925
b)	Furniture & Fixture	6000
c)	lab Equipments	0
d)	Audio Visual & Musical Instruments	3687
2	Lab Consumables	7732
3	Audio Visuals Aid consumables/supply	0
4	Sports consumables, Entry Fees & Refreshments etc	94819
5	Pupils Societies - Annual Functions & other special Occasion	235421
6	School Excursions	0
7	Examinations	144954
8	Incidental Expenses	0
9	Beatification and Horticulture	72969
10	Library Magazine & Calendar/ vidyalaya patrika]	33208
11	Computer consumable I.P. Stationery	144439
12	Medical facilities	5359
13	Security of School Exp. On outsourcing /Housekeeping	201666
14	Misc. Expenditure	
a)	Taxes and other such expense	
b)	Electricity & Water charges	
c)	Other Misc. Expense, Common Mini Programme	74527
15	Contribution to RO sports Control Board 3%	73389
16	Contribution to National sport Control Board 2 %	48926
17	Refund of fee & Fines	0
18	Expense .on Pre primary class	0
19	Exp under RTE	12502
20	Contribution to RO VVN Deposit Accounts 5 %	120834
21	Contribution to RO VVN Deposit Accounts 20 %	0
	Grand Total	1556357

Table 5:- Cash Outflow in the Form of Recurring Expenditure per Year

➤ *Calculation of Net cash flow per year:*

Net cash flow = Total cash inflow - Total cash outflow

❖ *When Employees Salary is Paid by Private Sector Itself:*

Net cash flow = Total cash inflow – Total cash outflow
 = 10886400 – (17054892.00+1556357.00)
 = Rs. – 69,55,145.00

❖ *When Employees Salary is not Paid by Private Sector:*

Net cash flow = Total cash inflow – Cash outflow in recurring expenditure
 = 10886400.00 – 1556357.00
 = Rs. 9330043.00

As the Net Cash flow per year comes out to be negative when employees salary is being paid by private sector, which indicates that the project will not be viable, therefore it is assumed that the employees salary is not paid by private sector.

Whereas, in second case where the employees salary is not paid by private sector the Net Cash flow comes out to be Rs. 9330043.00, indicates that the project is viable.

VII. RESULTS

Based on above calculations following results were calculated:

years	Net cash flow in Rs	Balance in Rs	Payback
0	-86,947,178.70	-86,947,178.70	9.31 Years
1	9,330,043.00	-77,617,135.70	
2	9,330,043.00	-68,287,092.70	
3	9,330,043.00	-58,957,049.70	
4	9,330,043.00	-49,627,006.70	
5	9,330,043.00	-40,296,963.70	
6	9,330,043.00	-30,966,920.70	
7	9,330,043.00	-21,636,877.70	
8	9,330,043.00	-12,306,834.70	
9	9,330,043.00	-2,976,791.70	
10	9,330,043.00	6,353,251.30	

Table 6:- Payback Period of Project

B. Discounted Payback Period

Discounting rate of 10% per year is taken. When Time Value of Money is considered the payback Period (Discounted) is comes to be 28.20 years.

- Total number of students = 1160 Nos.
- Cash inflow through students fee per year = Rs. 10886400.00
- Cash out flow in employees’ salary per year = Rs. 17054892.00
- Cash outflow in recurring expenditures per year =Rs.1556357.00
- Total initial expenditure in construction of infrastructure = Rs. 86947187.70
- Net cash flow per year:

➤ *When Employees’ Salary is Included*
 = Rs. (-7724849.00)

(Since the net cash flow is negative, so if the employee(s) salary will be paid by private sector the project will not be viable)

➤ *When Employees’ Salary is not Included*
 = Rs. 9330043.00

After the implementation of methodological techniques following results were also calculated:

A. Payback Period

Payback Period for the initial investment is calculate and it comes out to be 9.31 years. This indicates that without considering time value of money the recovering of initial investment can be done in 9.31 (approximately10) years.

Years	Cash flow (Rs)	Discounting Factor	Discounted cash flow (in Rs)	Balance (Rs)	Payback
0	-86947178.7	1	-86947178.7	-86947178.7	28.20 Years
1	9330043	0.909090909	8481857.273	-78465321.43	
2	9330043	0.826446281	7710779.339	-70754542.09	
3	9330043	0.751314801	7009799.399	-63744742.69	
4	9330043	0.683013455	6372544.908	-57372197.78	
5	9330043	0.620921323	5793222.644	-51578975.14	
6	9330043	0.56447393	5266566.04	-46312409.1	
7	9330043	0.513158118	4787787.309	-41524621.79	
8	9330043	0.46650738	4352533.917	-37172087.87	
9	9330043	0.424097618	3956849.016	-33215238.86	
10	9330043	0.385543289	3597135.469	-29618103.39	
11	9330043	0.350493899	3270123.153	-26347980.23	
12	9330043	0.318630818	2972839.23	-23375141	
13	9330043	0.28966438	2702581.119	-20672559.89	
14	9330043	0.263331254	2456891.926	-18215667.96	
15	9330043	0.239392049	2233538.114	-15982129.84	
16	9330043	0.217629136	2030489.195	-13951640.65	
17	9330043	0.197844669	1845899.268	-12105741.38	
18	9330043	0.17985879	1678090.244	-10427651.14	
19	9330043	0.163507991	1525536.585	-8902114.553	
20	9330043	0.148643628	1386851.441	-7515263.111	
21	9330043	0.135130571	1260774.037	-6254489.074	
22	9330043	0.122845974	1146158.216	-5108330.858	
23	9330043	0.111678158	1041962.014	-4066368.844	
24	9330043	0.101525598	947238.1949	-3119130.649	
25	9330043	0.092295998	861125.6317	-2258005.017	
26	9330043	0.083905453	782841.4834	-1475163.534	
27	9330043	0.076277684	711674.0758	-763489.458	
28	9330043	0.069343349	646976.4325	-116513.0255	
29	9330043	0.063039409	588160.3932	471647.3678	

Table 7:- Discounted Payback Period of Project

VIII. CONCLUSION

Based on the study following conclusions were made:

Approximately 6486.1 corer rupees are spent by government every year for education purpose. And this is done in several forms, which includes: Tribal wellbeing (Capital for Scholarships), Uniforms, Educational Infrastructure and Teachers pay and many more. About 35% - 45% of total educational fund is used for Infrastructure development, and this fund can be saved and may be utilized in the development of other sectors, if the securitization of education is adopted.

Study also includes following findings:

- The payback period was 9.32 years.
- Discounted payback period @ 8% discounting rate is 28.20 years.

Sometimes there can be situations where the initial investment cost is not recovered within the payback period calculated, then the concept of SPV/SPE (Special Purpose Vehicle/Entity) can be applied.

From the study it is also found that the project will not be viable if the employee's salary is paid by the private sector.

There are also some drawbacks which explains the reason why some of the Project are failed or not accepted for execution.

Since the payback as well a discounted payback period is too long there is likely more chance of the failure of the project.

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