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# IDENTIFICATION AND ANALYSIS OF FACTORS IMPACTING PREFERENCE OF PARENTS FOR PRIVATE SCHOOLS OVER GOVERNMENT SCHOOLS- A CASE OF BHOPAL MUNICIPALITY

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#### **Abstract**

Education is a fundamental tool to achieve economic growth of a country. In that fundamental tool, elementary schools are the primary and crucial step in the education system. In Indian education system; there are both government and private schools aspiring to provide quality education. However, in the last 5 years, 20 out of 29 Indian states have seen a fall in the rate of student enrolment in government schools [3]. The aim of the study is to understand the factors responsible for the preference of parents for private schools over the government schools and analysing their spatial variations. For the purpose of this paper, Bhopal Municipal Corporation (BMC) area has been chosen as the study area. However, the criteria of selection of the study area is purely based on the ease of access in data collection and time constraint. The study begins with the understanding of the factors responsible for the level of performance of government primary schools with respect to their locations as per consolations with parents, teachers and headmasters. One of the important findings articulates that low-income groups or slum inhabitants are the main catchment for government primary schools. Thereafter through Normalization Score Method (NSM), eight schools were selected to conduct a detailed questionnaire survey and focus group discussions (FGD) with the parents, school teachers and children. There had been discussions on the challenges faced by the parents to send their children to government primary schools. Henceforth, all the Infrastructure, Administrative and Locational factors were analysed at both local and city level to derive a spatial correlation. This study and the recommended proposals are confined within the domain of Urban Planning with the focus primarily on the spatial aspects. The study helps in understanding the various factors which government authorities

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ignore while addressing the problems faced by children going to the government schools and also by their parents. As a part of suggestion, social and locational issues faced by children going to Government Schools needs to be addressed as a holistic solution against the decreasing rate of students' enrolment because merely allocating budget for government schools is not the solution.

**Keywords**: Elementary, Education, Normalization Score Method, Spatial Variation, Urban Planning

#### 1. Introduction

India as a country has a long and dynamic history, starting with 300 years of British rule. During the British colonial rule, they had brought various reforms and development into the nation but unfortunately, improvement of education system and imparting elementary education was not in their prime interest. In 1842 the Council of Education was formed in India which was headed by the British members including a few Indians with the agenda to improve higher education [1]. Whereas, in order to facilitate higher education, the Britishers had established premier institutions like Roorkee University, Madras Institute of Technology (MIT), Aligarh Muslim University (AMU), Banaras Hindu University (BHU), etc.

Indian students spent \$6.54 billion (Approx. 43,859 INR crore) in 2016-17 in the United States, whereas budget disbursement for higher education in 2016-17 by Indian Government was 52% less than the amount spent by the Indian student in US alone [2]. Despite focusing a great deal on premier higher education institutions, Indian students are still preferring to go out for higher studies which shows an alarming condition for the education infrastructure of India. Moreover, budget 2017-2018 has been very disappointing for the education sector [8] because there has been a contribution of only 1,305 INR crores for National Education Mission (NEM) which comprises of Sarva Siksha Abhiyan (SSA), Rashtriya Madhayamik Shiksha Abhiyan (RMSA) with addition of teacher training programmes and adult education for students. Mid-day meal is one of the crucial aspects because it helps economically weaker households where both parents goes out for work daily. A nominal increase of 300 INR crores in mid-day meals is also absolutely insufficient to combat malnutrition among the millions of school-going children [4].

Within the domain of school education, primary education is a distinct category as it lays the foundation of the skill and knowledge-based development of individuals. Government at local and state level is constitutionally obliged to provide education infrastructure. Primary school education assumes special importance in the urban context because of the wide socioeconomic disparity within the geographical limits of cities and also because of the special nature of the urban poor. In order to narrow down the socio-economic disparity an efficient

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Government Primary Education System is required to empower the unprivileged sections of the society.

#### 2. Problem Statement

As per the census 2011, there are about 8.4 crore children who don't have access to schools and 78 lakhs children are forced to earn a livelihood for the families by neglecting their education. Talking about the primary schools in the country, the rate of average annual dropout was 4.34 percent in 2013-14 [6]. The problem here is not the poor education system, but the lack of proper understanding of the reasons behind reduced rate of student enrolment in schools. The higher authorities handling the education system is unable to go to the root cause of the poor performance of the government schools. Here in India, we are still struggling with the financial allocation to the schools and developing the required number schools in an area as per the norms. There are many factors other than financial or infrastructure which are responsible for the decrease rate of student enrolment of any school. For example, the accessibility of the secondary schools in area can affect the rate of student enrolment into primary schools of the same area [7]. This is one of the important issues in the outskirt areas of any city, where children have to come to the city for receiving the secondary or higher secondary education. In many cases children drop out of schools after completion of the primary or secondary education because of non-availability of higher schools in the vicinity of their area. In this paper, factors affecting the decisions of parent or guardians towards sending their children to government primary schools has been identified.

As an outcome of the study, a list of factors to assess the actual problems faced by children, parents and the schools has been identified which can be replicated to other regions. For the purpose of this study, Bhopal Municipal Corporation area has been selected depending on the data availability and time restrictions.

#### 3. Methodology

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The study begins with a detailed literature study by referring various national and international research studies and journals. There are two main outcomes from the literature studies, a) it helped in identifying a list of factors and their physical, financial and social magnitudes. Thereafter, these factors were carried on to conduct consultations and FGDs with various stakeholders such as parents, teachers, headmasters, and children. b) Criteria for selection of schools in the area to perform detailed questionnaire survey was also based on literature studies. For the purpose of the study, it was crucial to identify zones in the region which were then utilized to select schools using NSM. Subsequently, a detailed questionnaire form was intended on the basis of the factors identified to apply it on the selected schools and their catchment area to understand their significance. Later on, the relative importance of all the factors was performed between all the identified factors and the selected schools. All the

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schools were analyzed at city and local level on the basis of three vital influences i.e.; administrative, infrastructure and location. As a result, recommendations & suggestions are given at both; city level and local level.

#### 4. Literature Review

There are many studies dedicated on assessing the quality of education provided in schools all around the world on the basis of factors such as social, physical, location, and condition of existing infrastructure. As per a study on factors affecting the rate of enrolment in public schools of Gaturi village in Kenya showed that the rate of enrolments of aspirants was declining. The most prominent cause for this decline was understood to be socio- economic, cultural and school based factors such as poverty, negative attitude towards education in general, transfer of kids to private institutions, poor performance of wards, and influence of bad parenthood leading to abuse against students. The same study also mentions some of the reasons for the decrease in the enrolment which is shown in Fig. 1.

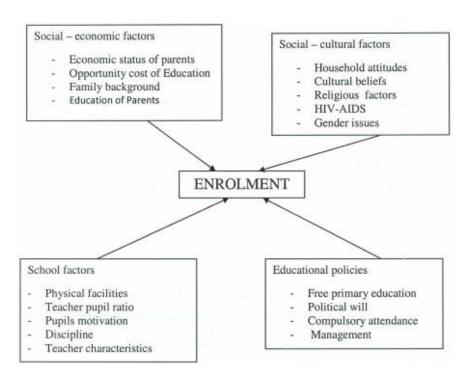


Fig. 1. Factors impacting the enrolment of government primary schools.

The apex body in India for deciding the education policy is the Ministry of Human & Resource Development (MHRD). MHRD has listed down the concepts related to education access and school mapping process. However, in a developing country there can be many factors responsible for the parent's preference over sending their kids to government schools. According to a note by MHRD; education access has three variables like physical, economic and social. Physical access means there should be a minimum distance between schools and

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the household of the registered aspirants. Economic access is the financial capability of households for sending their children to school when facilities are effortlessly accessible. Likewise, social access is considered in the forms of social fabric elements like caste, religion, social rank, with their respective importance in the social system. In order to help increase the demand for government schools and to enhance their poor performance, it is obligatory to provide them with a better physical, economic and social access. The presence of a secondary school nearby primary school can affect the rate of enrolment of the primary school [7]. Also, factors like provision of community-based amenities, physical infrastructure, better teaching quality, can reduce the access barrier to the government primary schools.

As the distance to post- primary schools negatively affects rate of enrolment in primary schools [5], therefore, as a part of solution, the education fees for post- primary schooling should be reduced to induce more participation at the primary level government schools. Furthermore, the right of children is guaranteed and safeguarded under Free and Compulsory Education Act 2009, which was the major change maker in the policy of government towards the improvement of primary education system in India. Under this act, every child of the age of six to fourteen years will have a right to free and compulsory education in a neighborhood school till completion of elementary education. No child shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing the elementary education. Also, the state Government/local authority shall undertake school mapping, and identify all children, including children in remote areas, children with disabilities, children belonging to disadvantaged group, children belonging to weaker section within a period of one year from the date of publication of the rules and every year thereafter [9].

#### 5. Study Area

Bhopal city also popularly known as the city of lakes, is located in district Huzur in the state of Madhya Pradesh. As per census 2011 the total population of the city is 2,368,145 persons spread over 2,772 sq. km. As per Rajiv Awas Yojna (RAY) there are about 375 slums located in BMC with a total population of 4. 90 Lakh which is about 20 percent of the total city population in 2011 (refer Table 1). For the purpose of the study Bhopal Municipal Corporation (BMC) has been selected as a study area. There are more than around 200 municipal primary schools within corporation, so in order to perform the study in available time; selection of schools is one of the important steps. The selection of schools was based on parameters like land use and socio-economic aspects of the area to facilitate delineation of zones comprising of different wards. After selection of zones, on the basis of grading of schools by using data inputs from U-DISE (Unified District Information System for Education) which is a database of information about schools in India, schools are selected from the delineated zones.

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Table 1: Total population and decadal growth rate, BMC

Year	Population (Lakhs)	Decadal growth rate (%)
1941	0.75	
1951	1.02	26.02
1961	2.22	117.87
1971	3.84	72.62
1981	6.71	74.35
1991	10.62	58.38
2001	14.33	34.92
2011	17.96	25.33

## 6. Education system in the study area

As per Madhya Pradesh Education Portal, there are approximately 250 primary schools in BMC which are either Government or Private. However, more than 150 among these 250 primary schools are Government Primary Municipal schools within the BMC area as shown in Fig. 2. Hierarchy of the schools are categorized into four distinct sections like lower primary, upper primary, secondary and higher secondary.

Elementary education is considered to be the foundation stone to ensure a bright and prospering future to the children. Elementary schools are regarded from class 1st to 6th standard. The present situation in BMC area is such that, there are only a few numbers of existing elementary schools. So, government is trying to upgrade all the primary schools from 1st to 5th standard into elementary schools as per RTE Act. However, most of the schools have already been upgraded to elementary schools while the rests remain in the process of achieving upgradation.

Bhopal is one of the few cities where all the schools are marked in GIS platform for their better monitoring and administration. As per District Information System for Education (DISE) there are about 194 Municipal Primary Schools spread all across BMC area. In Older parts of Bhopal, there are 84 municipal primary schools whereas newer areas of the city have about 110 municipal primary schools.

The authorities that operate these schools are mainly; Department of Education and Local Bodies. In addition, one of the prime duties of Local bodies is to execute a daily midday meal provision to each school has been handed over to a foundation named "Nandi". Nandi Foundation provides everyday mid-day meal facility to all the municipal primary schools at a time timetable. In this whole education system, the role of Municipal Corporation is limited because the main authority over these schools is of Center Govt. whereas, State Govt. lies at lower level of authority. Although, Municipal authorities do have responsibilities like maintenance and operation of the schools for their successful running. Moreover, as per

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BMC a fixed amount of 5000 - 8000 INR per year is provided to the schools for the necessary maintenance work such as white washing the school buildings, repairing etc.

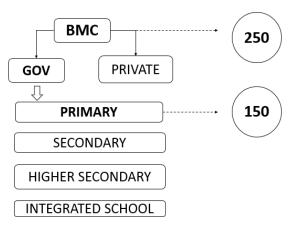


Fig. 2 Education System in BMC

## 7. Analysis and Discussions- Spatial Variations

The stage of analysis is divided into three steps. First step is to identify the factors influencing preferences of parents/guardians towards government primary schools; second step is the selection of schools to conduct a detailed stakeholder consultation using a framed detailed questionnaire, and the final step is to analyze the relative importance of the factors on the basis of the first two stages.

## 7.1 Identification of the factors influencing parent's preference

The first step is to identify the factors influencing the preference of parents towards government primary schools which is also the first objective of the study. For this purpose, a detailed survey questionnaire was framed based on the identified factors to conduct stakeholder consultation in the selected schools. The objective was met by conducting two pilot surveys aiming the randomly selected government primary schools to understand and reflect the diverse characteristics of the region and their respective catchment.

The pilot survey in the selected government primary schools included interviews with the headmasters and school teachers over the enrolment of students and the probable reason behind the fluctuating rate of enrolment. Whereas, the other pilot survey with an open-ended questionnaire targeting parents and children in order to understand the issues related to Govt. primary schools and their surrounding area followed with FGDs conducted in the catchment of the selected schools (refer Table 2) for list of factors obtained through pilot survey). The pilot surveys result was clubbed into three broad categories such as Administration, Locational and Infrastructural in order to simplify the detailed questionnaire survey process (Table 2).

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Table 2: List of factors obtained after pilot surveys

Factors	Govt/policy/ administration	Location	Infrastructure (On Site)	Infrastructure (Off Site)
	Right to education policy	Presence of higher schooling	Playground/ open filed	Municipal water supply timing
	Academic environment	Distance from home to school	Toilets / drinking water (sanitation)	Water logging / sanitation
	Mid-day meal facility	Surrounding environment	Library / computer facility	Approach road
	Financial assistance	Safety related aspect	Adequate class room capacity	Availability of electricity

The key observations of both the pilot surveys are that about 80 percentage of the children in selected government primary schools are coming from either slums or economically weaker sections (EWS). Out of these 80 percentage only 40 percentage are going to government primary schools rest are going to private schools. In order to understand why the rest 60 percentage of the children are not going to government primary schools, some of the private schools going children were considered surveying. The two major findings of the survey are; a) Right to Education Act (RTE) 2009, it was made mandatory for private schools to reserve 25 percentage of the total seats for applications from economically weaker sections. But, it was found that children from the mandate reservation return to join government primary schools because of various reasons like difficulty in coping in high-end private schools [10]. Children who are studying in private schools under either RTE or non-RTE quota are majorly the ones who first studied in government schools then shifted to private schools. This indicates lack of good quality education in government primary schools therefore, the parents prefer to shift their children to private schools for better education.

## 7.2 Selection of schools for detailed questionnaire survey

Since, there are about 200 government primary schools in BMC, thus the selection of the schools is a crucial step with an idea for unbiased representation of the corporation area. For the purpose of selection, corporation area has been divided into different zones of wards clusters on the basis of land use, demography and socio-economic parameters based on the findings from the pilot survey using the grading system outlined by DISE. Thereafter, each ward within the municipal area was given a score based by using a Normalized Score Method as explained in (refer

Table 3).

$$S_{ij} = \frac{X_{ij} - Min_j}{Max_i - Min_i}$$
 Equation 1

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**Table 3: Normalization scoring formula** 

i = ward number,
j = parameter,
X= actual value j of ward I,
$Min_j$ = value of parameter j,
$Max_j = maximum value of j$

A cumulative score is achieved by adding scores of all the parameters for each ward which was then ranked and arranged as per the highest to lowest as shown in Table 4. All the wards along with their cumulative ranks are clubbed into four different category such as low, medium, high and very high which are shown spatially in Fig. 3. The map shows eight cluster of wards out of which four clusters are formed by medium and lowest categories covering the whole peripheral region of the city area whereas the inner-city areas are covered by two highest categories.

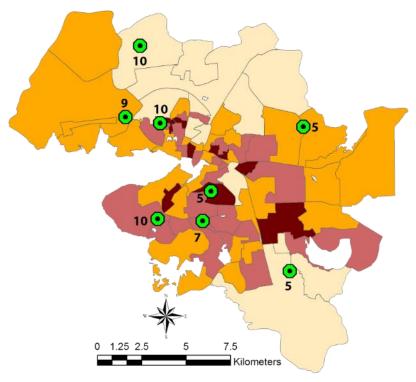


Fig. 3. Zoning of the study area for school selection based on Normalized Score Method.

For the purpose of selection of schools reflecting the entire region, two schools were selected from each of the categories, remember that each category has two spatially separated clusters (refer Fig. 3) so one school selected from one cluster with lowest grading and second

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school is selected from the other cluster with highest grade among all the school falls under that cluster. Thus, eight schools were selected in the process from all the eight clusters of wards shown in Fig. 3. Thereafter, a detail questionnaire survey was conducted within the school premises and their catchment area to record the responses and rank them from very high to very low (refer Table 4). The importance level explains the shortage or unviability of the factor in that particular area i.e.; more the importance level more will be the need to assess that particular factor in the respective area.

**Table 4: Detailed Questionnaire survey format.** 

## 7.3 Analyzing the relative importance of the factors

The responses of all the respondents from all the selected eight schools were analyzed at two levels. The first is at city level, wherein 16 factors are considered on a same graph irrespective of the location of schools. Second at the local level in which individual schools are analyzed specific to their spatial locations.

#### 7.3.1 City level analysis

Very Low

City level analysis shows, there are eight factors showing a high share in very high and high importance level columns, out of which two are administration level and rest six are non-administration level factors like locational and infrastructural. Non-administration level factor shows high importance as compared to the factors like financial assistance, this analysis shows that poverty is not the prime issue but instead there are other social as well as physical issues acting as a barrier from government primary schools (refer Fig. 4). In a nutshell, always giving financial assistance doesn't solve the issue, our government needs to see the problems from other dimensions also.

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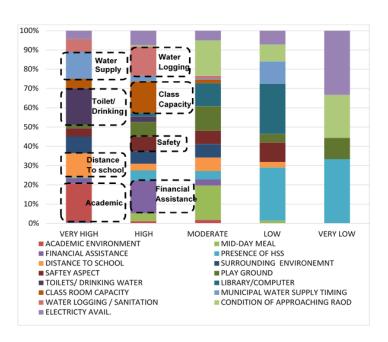


Fig. 4. Percentage share of importance level of all the factors.

#### 7.3.2 Local level analysis

In this section, analysis factors like Academic environment and Toilet/drinking water ranked high importance in all the schools, so they were removed in order to get a comprehensive graph. Fig. 5 shows the factor distance to school has high importance for the schools located in fringe area whereas in schools in city area have safety and physical surrounding environment factors ranked high importance. Moreover, the chart also explains the fluctuations in municipal water supply, electricity, impacts in overall ranking as they are both municipal corporation services. Interestingly, timing of water supply plays an important role because in areas supply timing is either inconsistent or is during noon, children return from their schools to fill water and might not resume their study. To meet the objective of the study, two factors such as distance to school and safety factors are spatially analyzed due to limitation of time and data availability. In Table 5, location of the school and it surroundings are showed using a Google map imagery along with the issues pertaining in the school as explained in Fig. 5.

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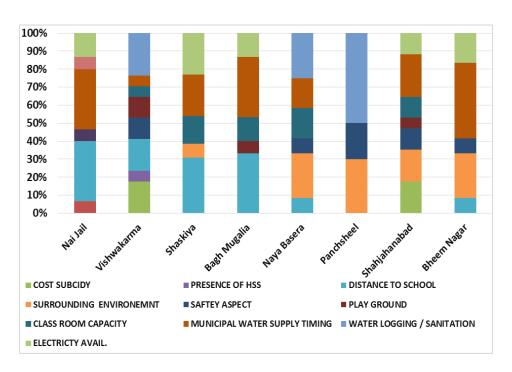
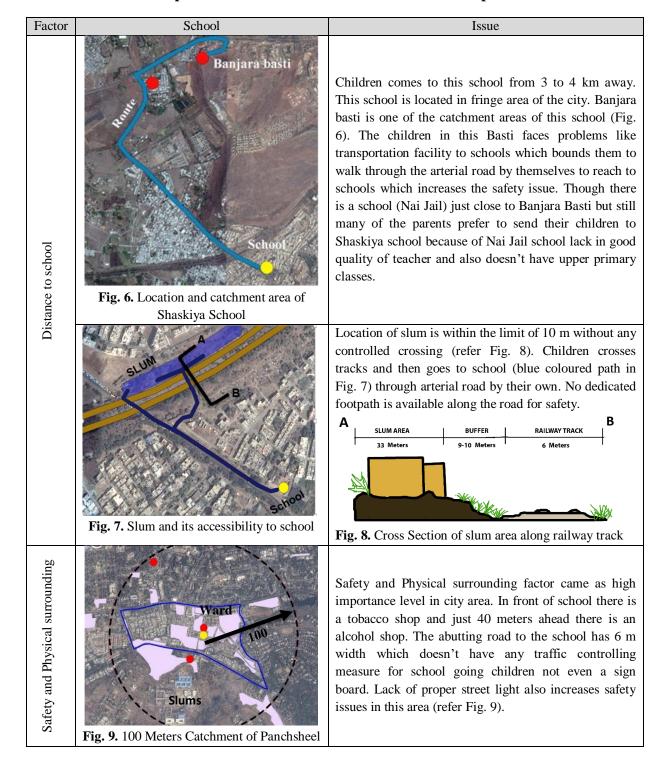


Fig. 5. Percentage share of importance level of all the factors for each school.

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Table 5: Spatial Identification of the issues for selected parameters.



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**Fig. 10.** 100 meters catchment area of Naya Basera School



**Fig. 11.** Naya Basera school situation after school hours.

Naya Baera school falls under ward number 25. Under this ward their area about 7 slums which constitutes to total 13 percentage of slum children in the ward Fig 10. The school is centrally situated between slum area, under construction area and LIG colony. After school hours youngsters from nearby LIG or slum area comes to the premises of this school and do smoking, drugs, and playing cards on school terrace and do various other unsocial activities (Fig. 10).

There are two transformers attached to the school boundary without any fencing which makes it a very dangerous area for children safety. School doesn't have any street lights along the school boundary wall or inside it which makes it a dead or dark area at night which is the reason that it is getting misused for other anti- social activities. School also doesn't even have a proper school gate with guard to protect its premises from getting misused. Children studying in this school don't play here after school hours because elder children bully them (refer Fig. 11).

## 8. Recommendation and Suggestions

Level	Factor	Recommendations/ Suggestions
Local Level	Distance to school	Nai Jail & Shahakiya primary school shows high importance of distance to school factor. Hence, far away areas can be connected with the schools through Cycle Rickshaws with a capacity of 8-10 people. However, owners of the rickshaws should be selected in such a way that they should be more responsible in doing the service daily which is possible when their own children are sitting in the rickshaw. There are many ways to implement this rickshaw scheme, one way is through policy level in which all the housing builders or any large-scale project builders can be given the responsibility of implementing the scheme in there nearby primary schools.  Another solution is pro-active solution. Pro-active solution is basically that solution that will eliminate the Distance to school problem. As per the RTE guidelines, for highly dense area there can be two primary schools within the walking distance of any neighborhood. Location of the school should not be based on thumb rule rather it should be more need-based assessment. There are many areas which are highly inaccessible to the schools. For those areas there should be provision of small schools which can cater a small habitation & can help in giving adequate education facility to those areas.
	Safety & Physical surrounding	This factor is common in inner city area where the population density is high. As per the survey and analysis there can are three major suggestion for Naya Baser and Panchsheel primary school:  1. Proper street lighting inside the premises of the school and also along the approaching roads for the school. This will create a sense of safety for the children specially girls using the premises after school hours.  2. Playgrounds of these schools can be used for other recreational activities after the

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Level	Factor	Recommendations/ Suggestions
		school hours which will rejuvenate the whole surrounding areas socially. It can be leased out to some private parties for activities like sports club center. It also can be used for conducting integrated child development programs for uplifting the awareness of the youths and children towards education, sports and social ethics.  3. Regulating the land use surrounding the schools in favour of a children friendly environment.
City level	Academic Environment	In analysis Academic environment factor came as very high importance level for all the school. Academic environment is basically the quality of education in terms of teachers' availability, qualification of teachers, co-curricular activities etc. Academic environment of government primary schools can be improved by the involvement of PPP (Public Private Partnership). Ownership will always remain under government hand but the operation of schools will be done by private party. This will increase the competitive environment among the government school for better performance. School infrastructure can be used by private party for their own benefit like school playgrounds can be used for opening sports academy. Buildings can be used for tuition classes or coaching centers after school hours.

#### 9. Conclusion

Within the domain of school education, primary education is a special category as it lays the foundation of the skill and knowledge-based development of human being. Though the children belonging to economically stronger section of the society easily gets good quality of education through private schools whereas the children from weaker section of the society don't find the similar in Govt. schools. It is very contradicting to see that on one side government is spending lots of money on the development of primary education but on the other hand policies like RTE act encourages parents to send their wards to private school aiming better education. Due to the lack of understanding for the real cause of poor performance of the schools. In this study it was found out that there are about 16 factors that are responsible for decrease in rate of enrolment in Government primary schools. The study suggests both city and local level interventions of the factors that are not only financial or policy level but exceptionally at locational & infrastructural, pointing out issues like academic environment & presence of toilets, drinking water facilities are city level issues which are common for almost all schools.

#### References

- [1] Chaturvedi, Deepak. 2014. Important India. March 19.
- [2] Dennis, Subin. 2017. What Does Indian Students' Spending in the US Reveal about India's Policies on Education? November 24. https://newsclick.in/what-does-indian-students-spending-us-reveal-about-indias-policies-education.
- [3] Kingdon, G. G. (2017). The emptying of public schools and growth of private schools in India. BUDGET PRIVATE, 12.
- [4] Rao, P. M., & Murthy, C. G. K. (2010). Right to education: Investing for a bright future. Indian Journal of Public Administration, 56(3), 538-548.

ISSN: 2455-8834

Volume: 04, Issue:03 "March 2019"

- [5] Lavy, V. (1996). School supply constraints and children's educational outcomes in rural Ghana. Journal of Development Economics, 51(2), 291-314.
- [6] Source, D. Government of India (website: http://mhrd. gov. in/statist). Educational Statistics at a Glance (2016). Published By: Government of India, Ministry of Human Resource Development, New Delhi.
- [7] Mukhopadhyay, A., & Sahoo, S. (2016). Does access to secondary education affect primary schooling? Evidence from India. Economics of Education Review, 54, 124-142.
- [8] Ambarish Rai, "Extreme Neglect of Primary Education in Budget 2017", February 2, 2017, https://thewire.in.
- [9] Act, R. T. E. (2009). The Right of Children to Free and Compulsory Education Act 2009. The Gazette of India.
- [10] Kumaraswamy, A. & Mathur, Alok. (2010, November 18). RTE Act: Private schools as catalysts? The Hindu, Retrieved from https://www.thehindu.com/features/education/RTE-Act-Private-schools-ascatalysts/article16625525.ece

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