

# An Empirical Study of the Influence of School Infrastructure on the Motivation of Teachers

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## ABSTRACT

*It is widely accepted that school infrastructure plays an important part in the teaching-learning process and its eventual efficacy. Since teachers constitute a very important part in the teaching learning process it is very important to study the role of school infrastructure in motivating teachers. In order to design motivation oriented school infrastructure systems it is essential to know how the different aspects of school infrastructure affect teachers' motivation. The present study sought to address these factors in order to create a structured model which represents how the different aspects of school infrastructure influence the motivation of school teachers. The study was conducted among a random sample of teachers from North Bengal (N= 111). The results were analyzed using SPSS 17.0. Principal component analysis resulted in extracting three factors: which were subsequently labeled as Ego factors, Convenience factors and Operational factors. The findings were analyzed and interpreted. This study provided a structured framework which represented how the different aspects of school infrastructure fulfilled the different human needs and resulted in teacher motivation.*

**Keywords:** *Motivation, Teacher, School Infrastructure, System, Factor Score Regression*

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## INTRODUCTION

There are three approaches to the study of human motivation. The behavioural approach which lays importance on reinforced desired behaviour as propounded by the likes of B.F. Skinner (Skinner, 1938, 1948), the cognitive approach which posits that human behaviour is influenced by an individual's perception of things wherein Jean Piaget's theory of equilibration, assimilation and accommodation (Piaget, 1964) finds importance and the humanistic approach which propounds that people are motivated to satisfy deficiency needs only when those needs are unmet. Abraham Maslow (1943) and Friedrich Herzberg (1959) are the famous names who have propounded theories to that effect.

While studying the impact of school infrastructure on the motivation of teachers it is the humanistic approach that finds precedence. School infrastructure tends to fulfill some need or the other for teachers and in the absence of the fulfillment of such a need there might be a lack of motivation to perform at work. This was examined by the study. Since studies by Brumback (1986) and Maehr (1984) showed that motivated teachers led to better student performance it is important that all aspects of teacher motivation including school infrastructure are given utmost importance.

## LITERATURE REVIEW

A study of related literature shows that a number of studies have taken into consideration the impact that school infrastructure has on the motivation of school teachers. An overwhelming majority of these studies were conducted in the developing world mainly in Africa, South Asia and Latin America. This in itself is significant because these are areas of the world where school infrastructure needs significant augmentation. This lack of infrastructural facilities has led to a lowering to teachers' motivation at work. This was held true even in studies conducted in developed countries like the United States of America. Johnson (2006) had postulated that "Neglected maintenance not only conveys indifference or disdain for those who use the school but also interferes with effective instruction" Buckley et. al (2004) had posited about the 'sick building syndrome' which they said affected all stake holders including students and led to low motivation across the board. Hanushek & Rivkin (2007) concluded, "An important agenda item, both for research and for policy, is to learn which working

conditions are most important for teachers.” Among the relevant studies that were conducted in the developing world Dehaloo (2011) in his study in Kwazulu Natal, South found that teachers motivation was related to school policies regarding safety and security among other factors. Alcázar et al (2006) studied the causes for teacher absenteeism in Peru and concluded that poor infrastructure was one of the causes for such absenteeism. In a similar study conducted in India Kremer et al (2005) concluded that “teachers are less likely to be absent at schools that have been inspected recently, that have better infrastructure, and that are closer to a paved road.”

While studies have concluded that school infrastructure plays an important role in the motivation of school teachers there has not been a vertical analysis of the various factors that constitute the school infrastructural system and their relevant impact on the motivation of school teachers. This study seeks to bridge that gap by analysing the various components of the school infrastructural system and categorising them as regards to their role in influencing the motivation of school teachers.

A thorough study of related literature was followed by a set of six interview sessions with heads of schools and three interview sessions with educational experts. At the end of the thorough discussions a set of eleven factors emerged as the principal components of a school infrastructure system. These are:-

1. Academic Infrastructure
2. Safety
3. Cleanliness
4. Aesthetic Qualities
5. Location
6. Recreational Facilities
7. Access to internet and computers
8. Maintenance
9. Communication and Transport
10. Overall status of infrastructure in comparison to other schools
11. ICT in the teaching learning process

## METHODOLOGY

The study was essentially a descriptive research study and there was no intervention or attempt to change the status quo by the researcher. A random sample of school teachers from the Darjeeling and Jalpaiguri

districts of West Bengal (N=111) was administered a questionnaire. The questionnaire was self designed and administered by the researchers themselves. Various types of school teachers from primary, secondary and higher secondary schools from a wide range of schools were administered the questionnaire. There was a strict understanding on confidentiality of the responses to elicit honest and serious responses. While most teachers who were approached agreed to take part in the study some refused, while some others agreed to fill up the questionnaires at home. The Likert type scale and the questions were objectively explained to the teachers with a conscious attempt to eliminate any bias in the explanations.

The software that was subsequently used for the quantitative analysis was SPSS 17.0. The questionnaire used for this study had thirteen questions. The respondents were to rate those questions on a five point Likert- type scale. The first two questions related to the respondents' efforts to give their best at work in school and their overall experiences with school infrastructure. The scale used here was; 1= *Terrible* 2= *Not satisfactory* 3= *Satisfactory* 4= *Good* 5= *Excellent*. For the purposes of subsequent analysis these two questions represented the dependent variables. In the next eleven questions the teachers' experiences with the various aspects of the school infrastructure were rated on the same five point Likert-type scale. These eleven questions represented the independent variables. In this study, since the sample size as relatively large and the scale was a five point scale the data was treated as continuous and subjected to parametric analysis. In this context the comment of Carifio and Perla (2007) "If one is using a 5 to 7 point Likert response format, and particularly so for items that resemble a Likert-like scale and factorially hold together as a scale or subscale reasonably well, then it is perfectly acceptable and correct to analyze the results at the (measurement) scale level using parametric analyses techniques such as the F-Ratio or the Pearson correlation coefficients or its extensions (i.e., multiple regression and so on), and the results of these analyses should and will be interpretable as well. Claims, assertions, and arguments to the contrary are simply conceptually, logically, theoretically and empirically inaccurate and untrue and are current measurement and research myths and urban legends." (P. 115) is very relevant. Similarly (Norman, 2010) had posited that "Parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of 'coming to the wrong conclusion'. These findings are consistent with empirical literature dating back nearly 80 years." (P. 631). At Primarily the data was checked for reliability and validity. Following which a principal

component analysis was conducted to extract three principal components. The results of the various statistical analysis are given in the following charts and subsequently analyzed and elaborated.

**Table I: Descriptive Statistics : SPSS OUTPUT**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Motivation at work	111	1.00	5.00	2.8108	1.37188
Overall experience with school infrastructure	111	1.00	5.00	2.7297	1.25731
Academic infrastructure	111	1.00	4.00	2.2252	.89122
Safety	111	1.00	5.00	2.9009	1.32771
Cleanliness	111	1.00	5.00	3.0541	1.39374
Aesthetic	111	1.00	5.00	2.8198	1.21504
Location	111	1.00	5.00	2.9459	1.38063
Recreational Facilities	111	1.00	5.00	3.2432	.97436
Access to computers and internet	111	1.00	4.00	2.2613	.97898
Maintenance	111	1.00	5.00	2.9459	1.41959
Communication and transport	111	1.00	5.00	2.9730	1.42994
Status of infrastructure as compared to other schools	111	1.00	5.00	2.7477	1.10756
ICT in the teaching learning process	111	1.00	5.00	2.4324	1.09230
Valid N (listwise)	111				

**Table II: Reliability Statistics for The Entire Questionnaire: SPSS OUTPUT**

Case Processing Summary			
		N	%
Cases	Valid	111	100.0
	Excluded <sup>a</sup>	0	.0
	Total	111	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.928	13

**Table III: Reliability Statistics for Section A of The Questionnaire: SPSS OUTPUT**

Case Processing Summary			
		N	%
Cases	Valid	111	100.0
	Excluded <sup>a</sup>	0	.0
	Total	111	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.938	2

**Table IV: Reliability Statistics for Section B of The Questionnaire: SPSS OUTPUT**

Case Processing Summary			
		N	%
Cases	Valid	111	100.0
	Excluded <sup>a</sup>	0	.0
	Total	111	100.0

Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.901	11

The Cronbach's Alpha for the whole questionnaire was .928. The Cronbach's alpha for section A of the questionnaire was .938 and the Cronbach's alpha for Section B of the questionnaire was .901. Thus the reliability statistics were acceptable and thus the reliability of the questionnaire was established.

The hypothesis that teachers' experience with school infrastructure affects their motivation to give their best in school was next in the next step. To test this hypothesis the correlation between the responses given to the two dependent variables were tested. Thus:-

H<sub>1=</sub> There is a relation between the experiences of teachers with the school infrastructure and their motivation to give their best at work in school.

**Table V: Correlation between The Experiences of Teachers with Their School’s Infrastructure and Their Motivation to Give Their Best in School: SPSS OUPUT**

Correlations			
		VAR00001	VAR00002
<b>Motivation at Work</b>	Pearson Correlation	1	.887**
	Sig. (2-tailed)		.000
	N	111	111
<b>Overall experience with school infrastructure</b>	Pearson Correlation	.887**	1
	Sig. (2-tailed)	.000	
	N	111	111

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table VI: Total Variance Explained**

Total Variance Explained			
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6.205	56.407	56.407
2	1.517	13.792	70.199
3	1.191	10.825	81.024
4	.729	6.624	87.648
5	.487	4.424	92.072
6	.293	2.664	94.736
7	.209	1.898	96.634
8	.139	1.260	97.894
9	.115	1.048	98.943
10	.063	.574	99.517
11	.053	.483	100.000

Extraction Method: Principal Component Analysis.

Table V tests the correlation between the experiences of teachers with the school infrastructure and their efforts to give their best at work in school. The Pearson correlation was .887 and the test were significant at .01 level (2 tailed). Thus it was concluded that there is a correlation between

the experiences of teachers with the school's infrastructure and their motivation to give their best in school. Thus, hypothesis  $H_1$  was accepted.

At the next step a principal component analysis was conducted with all the eleven independent variables.

**Table VII: Total Variance Explained**

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	56.407	6.205	56.407	56.407
2	70.199	1.517	13.792	70.199
3	81.024	1.191	10.825	81.024

Extraction Method: Principal Component Analysis.

**Table VIII: Total Variance Explained**

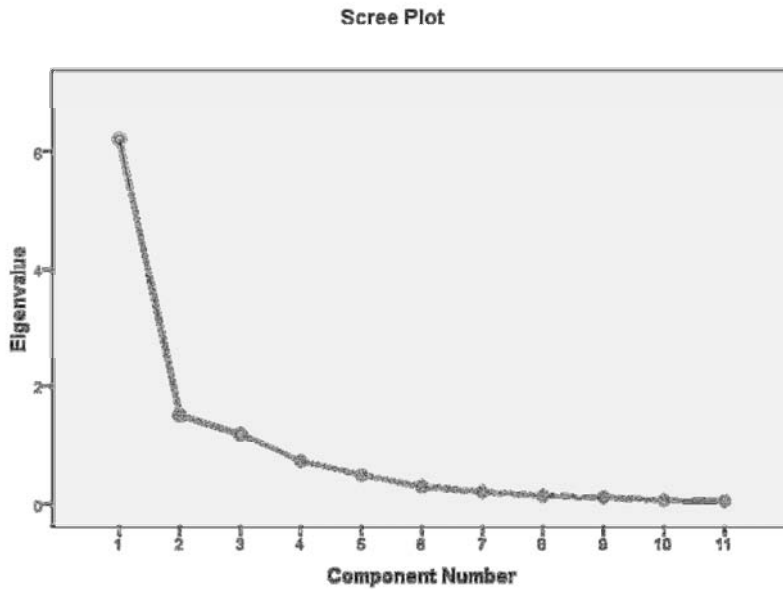
Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	4.571	41.554	41.554
2	2.769	25.171	66.725
3	1.573	14.299	81.024

The KMO measure of sampling adequacy was .875 thus the KMO and Bartlett's test showed that factor analysis was justified in this case. The principal component analysis extracted three factors with eigenvalue greater than 1. Hereafter another principal component analysis with orthogonal varimax rotation was carried out. The number of factors to be extracted was 3. It was seen from the results that the three factors that were extracted explained 81.024% of the variances. It was seen from table that variables 2, 3, 5, 8, 9 loaded onto component 1. Variables 1,7,11 loaded onto component 2 while variables 4, 6, 10 loaded onto component 3. The three components were named convenience, operational and ego factors.

**Table IX: KMO and Bartlett's Test: SPSS OUTPUT**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	1186.553
	df	55
	Sig.	.000

**Figure 1. Screen Plot**



**Table X: Rotated Component Matrix : SPSS Output**

Rotated Component Matrix <sup>a</sup>			
	Component		
	1	2	3
Academic infrastructure	.322	.834	.092
Safety	.894	.316	.087
Cleanliness	.904	.337	.065
Aesthetic	.374	.158	.701
Location	.903	.303	.053
Recreational facilities	-.181	-.198	.685
Access to internet and computers	.288	.876	.051
Maintenance	.903	.335	-.009
Communication and transport	.910	.187	.046
Status in comparison to other schools	.061	.274	.760
ICT in teaching	.363	.845	.081

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

**Table XI: Extracted Components from Principal Component Analysis**

<b>EGO FACTORS</b>	<b>OPERATIONAL FACTORS</b>	<b>CONVENIENCE FACTORS</b>
Aesthetics	Academic infrastructure	Safety
Recreational Facilities	Access to computers and internet	Cleanliness
Status in comparison to other schools	ICT in the teaching learning process	Location
		Maintenance
		Communication and transport

A principal component regression was conducted using the principal components as inputs. A multiple linear regression analysis was first run on the data, taking the variable 1 which represented the motivation of the teachers to give their best at work in school as the dependent or predicted variable and the three components extracted by the principal component analysis as the predictor variables. The results of the multiple regression analysis are as follows:

**Table XII: Model Summary<sup>b</sup>****Model Summary<sup>b</sup>**

	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.890a	.792	.787	.63383

a. Predictors: (Constant), REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

b. Dependent Variable: VAR00001

**Table XIII: Model Summary**

<b>Model</b>	<b>Change Statistics</b>					<b>Durbin-Watson</b>
	<b>R Square Change</b>	<b>F Change</b>	<b>df1</b>	<b>df2</b>	<b>Sig. F Change</b>	
1	.792	136.107	3	107	.000	1.571

b. Dependent Variable: VAR00001

**Table XIV: Coefficients**

**Coefficients<sup>a</sup>**

		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	
1	(Constant)	2.811	.060		
	REGR factor score for analysis 1	1	1.057	.060	.771
	REGR factor score for analysis 1	2	.608	.060	.443
	REGR factor score for analysis 1	3	.066	.060	.048

a. Dependent Variable: VAR00001

**Table XV: Coefficients**

**Coefficients<sup>a</sup>**

Model				Collinearity Statistics		
		t	Sig.	Tolerance	VIF	
1	(Constant)	46.722	.000			
	REGR factor score for analysis 1	1	17.494	.000	1.000	1.000
	REGR factor score for analysis 1	2	10.055	.000	1.000	1.000
	REGR factor score for analysis 1	3	1.090	.278	1.000	1.000

a. Dependent Variable: VAR00001

**Table XVI: Collinearity Diagnostics**

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	REGR factor score 1 for analysis 1
1	1	1.000	1.000	.00	.00
	2	1.000	1.000	1.00	.00
	3	1.000	1.000	.00	.00
	4	1.000	1.000	.00	1.00

Dependent Variable: VAR00001

Table XVII: Collinearity Diagnostics

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Variance Proportions	
		REGR factor score 2 for analysis 1	REGR factor score 3 for analysis 1
1	1	1.00	.00
	2	.00	.00
	3	.00	1.00
	4	.00	.00

a. Dependent Variable: VAR00001

Table XVIII: ANOVA

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.040	3	54.680	136.107	.000 <sup>a</sup>
	Residual	42.987	107	.402		
	Total	207.027	110			

a. Predictors: (Constant), REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

b. Dependent Variable: VAR00001

As per the results of the principal component regression which was conducted using the component scores as the predictor variables and the enter method a significant model emerged ( $F_{3,107} = 136.107$ ,  $P < .0005$ , Adjusted  $R^2 = .787$ ). Further, Durbin-Watson statistics = 1.571 so there was no significant autocorrelation, the conditionality Index was 1 which showed that there was no multicollinearity among variables. Figure 2 illustrates that the residuals are approximately normally distributed. The principal component regression brought forth the fact that while the convenience factors and operational factors are significant predictors of workplace motivation of school teachers the ego factors are not significant predictors of the same.

Table XIX: Analysis and Interpretations

Predictor variables	Beta	P
CONVENIENCE FACTORS	.771	$P < .0005$
OPERATIONAL FACTORS	.443	$P < .0005$
EGO FACTORS	.048	$P > .0005$

Figure 2:

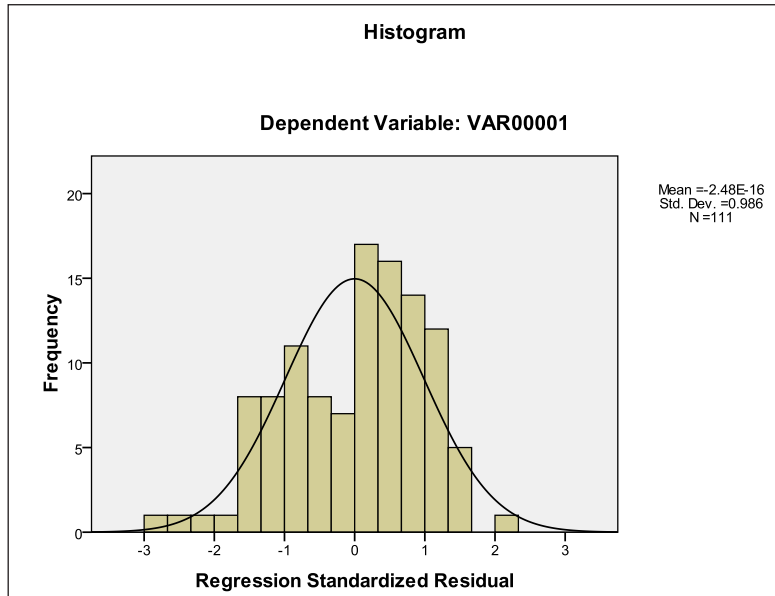
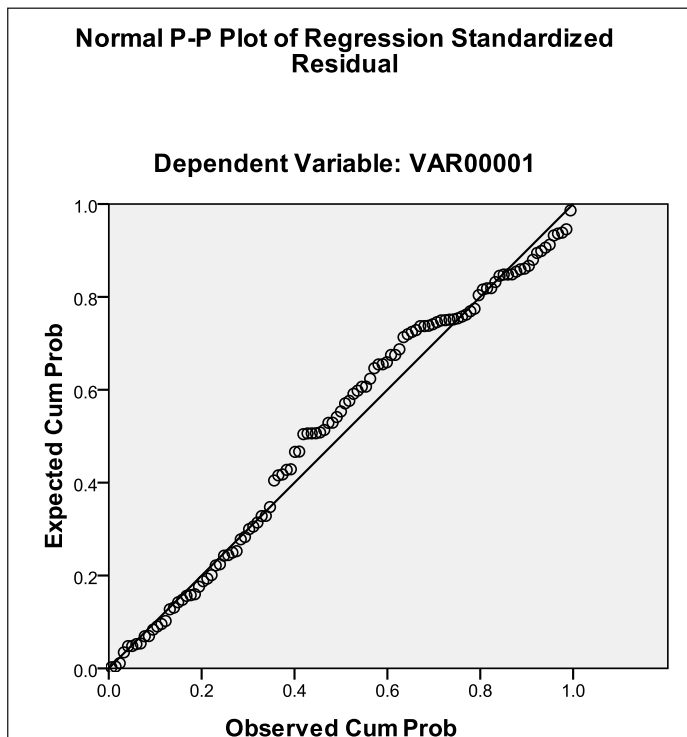


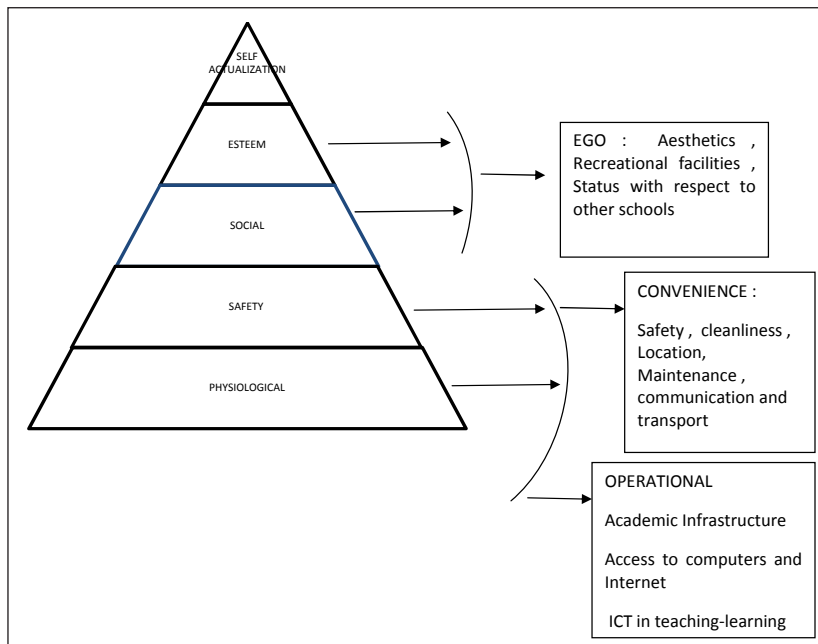
Figure 3:



Question 1 represented the dependent variable which asked the respondents to rate their efforts to give their best at work in school. This variable ascertained the workplace motivation level of the teachers. Question 2 represented the second dependent variable wherein the respondents were to rate their overall experience with infrastructural facilities of the school. Correlation analysis between the responses of these two variables showed significant correlation between the responses. Thus the motivation of the teachers are correlated to their experiences with the infrastructural facilities of their school. This is in conformity to the findings of previous studies in teacher motivation. School infrastructure not only creates physical conveniences for work but also helps to create psychological conveniences for optimal performance and motivation to work. Thus it is natural that the motivation level of school teachers are connected to their experiences with school infrastructure.

After a principal component analysis of the eleven independent variables that were taken to be representative of the school infrastructural facilities, three components were extracted:

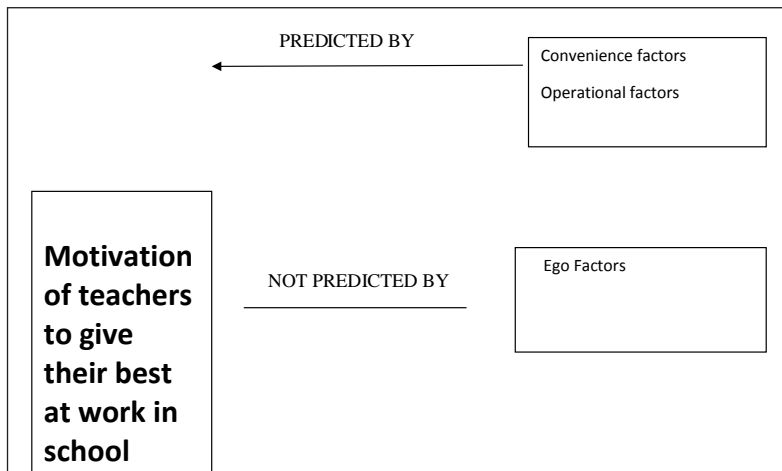
- The first component was labeled *Convenience Factors*. It comprised of 5 items, all of which were related to the convenience dimension of school infrastructural facilities. These factors work to support the teachers by creating a convenient physical workplace atmosphere. These factors were safety, cleanliness, location, maintenance, communication and transport facilities. This component is related to variables which seek to satisfy the lower order safety and physiological needs as propounded by Abraham Maslow in his theory of hierarchy of needs (Maslow, 1943).
- The second component represents *Operational Factors* which consist of infrastructural facilities that are directly related to the actual teaching learning process. These consist of general academic infrastructure, access to computers and internet, and use of ICT in the teaching-learning process. This component is also related to the lower order needs as propounded by Maslow. These factors provide incentives to work and teach better.
- The third component represents *Ego factors*. This component includes variables like aesthetics of the school, recreational facilities for teachers, status of the infrastructure in relation to other schools. These variables lead to ego boosts and relates to the higher order social and esteem needs that were propounded by Maslow in his hierarchy of needs .

**Figure 4: Relating Maslow's Hierarchy of Needs to School Infrastructure**

The results of the principal component regression showed that the dependent variable which was the motivation of the teachers to give their best at work in school could be satisfactorily predicted by the component scores from *two* of the *three* components that were extracted by the principal component analysis while adhering to all the assumptions of a multiple regression analysis on model fit, autocorrelation, multicollinearity and normality of residuals.

The resultant model that emerged inferred that the motivation of the teachers are predicted by the convenience and operational factors but not so much from the ego factors. This may be due to a number of reasons. Since the study was conducted in India where school infrastructure development is at a nascent stage and there is much more to achieve, teachers are still motivated primarily by the lower order needs. If the school presents all the basic physical conveniences of work, communication, safety, cleanliness it is enough to motivate teachers to give their best. Teachers motivation is not significantly predicted by ego factors of aesthetic school building and environments, recreational facilities or even by the inter school comparison of infrastructure. This is significant in terms of designing and planning of schools, where prioritization of facilities can lead to less wasteful expenditure and better learning outcomes.

Figure 5: Predictor Chart

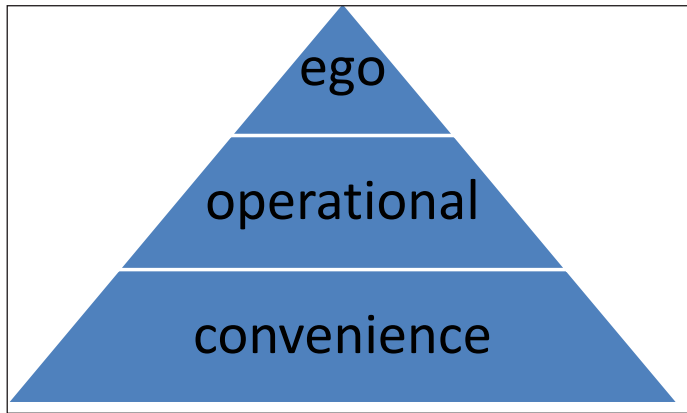


The designing of school infrastructure depends on the objectives set by the school management. In schools which seek to maximize motivation and strive to be motivation maximizers all school systems and processes have to be designed so that they maximize teacher motivation. In this regard the design of school infrastructural system is of utmost importance. School management generally have to work to limited resources and so prioritizing the parameters that will guide the design process is of utmost importance. The priority has to be given to convenience and operational infrastructure and no factors or items from those components should be over looked. It is in this regard that it is pertinent to note that some school management prioritize on aesthetics and ego factors rather than core areas which need to be developed first. Such an approach leads to a needless wastage of resources with no gain in return.

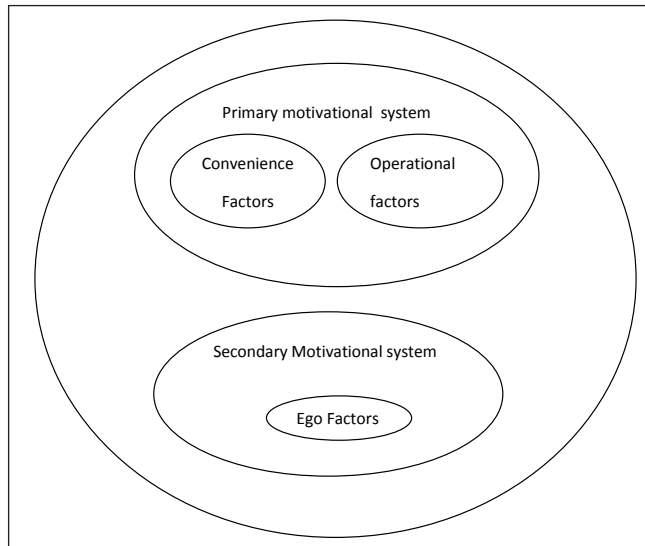
The school infrastructure can be taken as a motivational system for teacher motivation and designed as such. The primary predictor components which comprise of convenience factors and operational factors are taken as subsystems of a primary motivational system where as the ego factor which does not predict teacher motivation satisfactorily a secondary motivational system which backs up the primary motivational system only after the primary system is fully functional at an optimal level.

The findings show that a school infrastructural system which ensures a clean, safe environment, with conveniently located with proper accessibility and transport facilities to and from the school, and well maintained serves to motivate teachers . Thus these parameters are important in planning, designing and functioning of schools.

**Figure 6: Infrastructure Priority Model. Priority Decreases as One Move up the Pyramid. (conceptual framework developed by the authors).**



**Figure 7: Infrastructural Motivation System for School Teachers (Conceptual Framework Developed by the Authors)**



The results of this study also emphasize that operational factors like a proper academic infrastructure, access to computers and internet , and the use of ICT in the teaching learning process helps to motivate teachers.

School aesthetics, recreational facilities or the status of the school infrastructure as regards to other school are not significant predictors for teacher motivation. These factors though might have predictive value for

other processes with regards to schools like marketability.

These findings can be used by the management and promoters of schools to design school infrastructure as a self-system which augments teachers' motivation to work and give their best at school every day. Schools should design infrastructural systems for maximizing motivation and prioritize focus areas with that objective in mind.

## SUMMARY AND CONCLUSION

The present study sought to dwell into the impact of the school infrastructural systems on the motivation of school teachers. The study was a descriptive research survey. It was conducted among a random sample of 111 teachers from the districts of Darjeeling and Jalpaiguri in North Bengal. It was noted that the motivation of teachers to give their best at work in school had a positive correlation with their experience with the school infrastructural system. A principal component analysis extracted three components which were subsequently named Convenience factors, operational factors and ego factors. A subsequent principal component regression showed that while convenience and operational factors were significant predictors of teacher motivation ego factors did not have a significant predictive impact on teacher motivation. An infrastructural system model was drawn up using these factors and their impact on the motivation of teachers. The present study is a comprehensive vertical study which analyzed the influence of the various factors related to the infrastructural system of a school on the motivation of school teachers. The motivation of teachers is very important for student performance (Brumback, 1986). In the modern world scenario where tough competition ensures that the motivation of students is an organizational priority motivated teachers are very important for effective school outcome. Thus every aspect of the school system including the infrastructural system has to be designed with organizational motivation as the core construct. Systems built around this philosophy develop into automatic motivating systems where the systems have an intrinsic nature to motivate organizations without any further interventions.

In order that such a system is developed and the efficacy of the teaching-learning process in the schools is maximized it is important that school infrastructure is designed to motivate teachers. This paper provides a groundwork to design such infrastructural systems.

However it should not be ignored that the study had its limitations. It

had limitations of size in terms of a sample size of only 111 respondents, and all from only two districts in India. Some bias might have crept while translating the questionnaire from English to vernacular languages. A wider study with a larger sample size is thus proposed for further research in the area.

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## APPENDIX:

### SECTION A.

#### A1. Rate your efforts to give things your best at work in school?

1. Terrible  2. Not Satisfactory  3. Satisfactory   
 4. Good  5. Excellent

#### A2. Rate your experience with the overall infrastructure of your School ?

1. Terrible  2. Not Satisfactory  3. Satisfactory   
 4. Good  5. Excellent

### SECTION B

Please rate your school's infrastructure on the following:-

#### D1. Academic Infrastructure

1. Terrible  2. Not Satisfactory  3. Satisfactory   
 4. Good  5. Excellent

#### D2. Safety

1. Terrible  2. Not Satisfactory  3. Satisfactory   
 4. Good  5. Excellent

#### D3. Cleanliness

1. Terrible  2. Not Satisfactory  3. Satisfactory   
 4. Good  5. Excellent

**D4. Aesthetic Qualities**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D5. Location**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D6 . Recreational Facilities**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D7. Access to internet and computers**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D8. Maintenance**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D9. Communication and Transport**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D10. Overall status of infrastructure in comparison to other schools**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent

**D11. ICT in the teaching learning process**

1. Terrible  2. Not Satisfactory  3. Satisfactory   
4. Good  5. Excellent