

A CORRELATIONAL STUDY IN DEMOGRAPHIC FACTORS AND TEACHERS COLLECTIVE EFFICACY OF SECONDARY SCHOOL TEACHERS

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ABSTRACT

This paper attempts to find a potential relationship between demographic factors and teacher collective efficacy, with a belief to establish a better way of achieving school targets by hiring right teaching staff and help increase student achievement. A survey was conducted in 6 secondary schools of NCR area, capturing responses from 75 teachers. Statistical analysis was done on the responses and significant difference in teacher collective efficacy was observed between the more aged and experienced teaching staff than that of with younger and less experienced teaching staff. Paper concludes that age and teaching experience as demographic factors had a direct impact on teachers' collective outcome and hence suggests that hiring right teaching staff in the first place itself is necessary for increasing teacher collective efficacy.

Keywords: Teacher Collective Efficacy, Gender, Age, Teaching Experience, Staffing

I. INTRODUCTION

Teachers have played an unparalleled role in human civilization. Since the very inception, teachers have shaped the future of world by inculcating values and imparting education amongst their pupils. Had it not been Aristotle's teaching abilities, world would have not seen Alexander the great, to quote as one significant example from history. The trend has continued and teachers' role in human society has further augmented with contemporary changes. Today informal paathshalas and gurukuls have changed into commercial organizations where annual targets for teachers are set and student achievement is at the center of idea.

Taking this idea forward, schools are run as organizations and teachers work there as employees. Teachers strive to achieve targets and help increase student achievement by employing latest teaching methods and resources. Organizations also invest heavily in hiring right staff which match their needs. It leads us to the point that if correct teaching staff is not put in place, it would be a challenge for schools to meet their objectives. Other side of it is that with proper hiring of teaching staff a school could achieve a competitive edge over others. Hiring of teachers could be made more effective by narrowing down on demographic factors and a school could decide whether they have a perfect resource mix in place or not to achieve better outcome.

Researches have been done on determining Teacher Collective Efficacy in different setups in different parts of the world. Taking note of this, researcher set out to validate the relationship between Teacher Collective Efficacy and demographic factors for secondary schools of NCR.

Teacher Collective Efficacy was defined by **Goddard, Hoy, and Hoy (2000)** as “the perceptions of teachers in a school that the efforts of the faculty as a whole will have a positive effect on students,” with the faculty in general agreeing that “teachers in this school can get through to the most difficult students.” In the view of these researchers, “teachers’ shared beliefs shape the normative environment of schools [and] are an important aspect of the culture of the school.” Veteran educators have likely experienced some of the effects of a strong positive or negative sense of collective efficacy.

Review of related literature in this context led researcher to believe that majority of the work has been done by researchers outside of India and in context of Indian conditions, it would be interesting to see that how demographic factors and collective teacher efficacy relate together in private schools of Delhi-NCR area specifically.

II. OBJECTIVES

The researchers framed following objectives to conduct the study:

1. To explore the present status of teacher collective efficacy in secondary school teachers.
2. To explore the present status of demographic factors in secondary school teachers.
3. To find out the relationship between Demographic factors and Teacher Collective Efficacy

III. HYPOTHESES

1. There is no significant relationship between teacher collective efficacy of male and female teachers of secondary school teachers at 0.5 level.
2. There is no significant relationship between teacher collective efficacy of Graduate and Post-graduate teachers of secondary school teachers at 0.5 level.
3. There is no significant relationship between teacher collective efficacy of less than 5 years experienced and more than 5 years experienced teachers of secondary school teachers at 0.5 level.
4. There is no significant relationship between teacher collective efficacy of 35 years old teachers and more than 35 years old teachers of secondary school teachers at 0.5 level.

IV. RESEARCH DESIGN

The purpose of the study was to answer the research questions that relate to demographic factors of secondary teachers such that the collected responses could be processed and analyzed further to correlate Teacher collective efficacy. Following research design was put in place to conduct the study:

1.1. Research Method

This study tool mainly uses Descriptive Survey cum t-Test method. The survey method enabled the researcher to reach a bigger and more extensively distributed sample of teachers in Ghaziabad and

NCR areas. To address diversity in an investigation, a quantitative method using survey questionnaires is intelligent enough to provide a degree of freedom to respondents to freely act in response to the questions.

1.2. Variables of the Study

This study uses following 2 variables –

1) Demographic factors – This is an independent variable with following four dimensions to measure teacher collective efficacy:

- a. Gender – Male or Female
- b. Education – Graduate or Post-graduate
- c. Experience – Less than 5 or more than 5 year
- d. Age – Less than 35 or more than 35 year

2) Teacher Collective Efficacy – This is dependent variable.

1.3. Sample

Researcher chose random-convenience sampling to collect the samples. Selection of sample from list of schools is done randomly and then willing teachers were taken for the research sample. Sampling process is as follows:

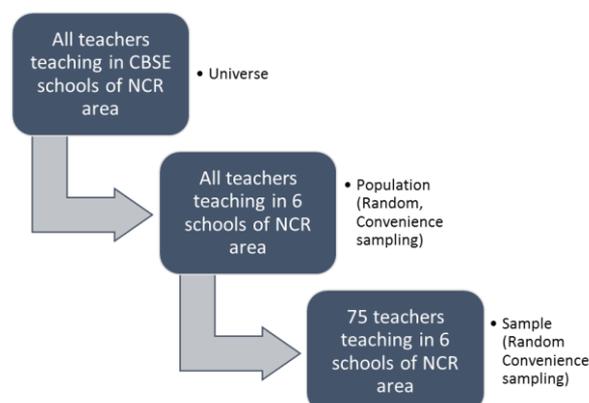


Fig 1 – Sampling Process

1.4. Tools employed in the study

The researcher used following two tools for the present research:

1. Teacher Collective Efficacy Scale constructed by **Goddard and Hoy** was adapted in Indian conditions by researcher.

Reliability - The reliability of the scale was determined using Split Half method which was found to be **0.84**, suggesting that scale is highly internally consistent (reliable).

Validity– Expert Judgment was used for tool validity (valid)

2. Demographic factors: A data collection tool. Following four dimension were taken on the basis of reviewed literature and experts’ opinion. There were 4 items finalized in tool – Age, Gender, Experience and Education.

V. FINDINGS AND DISCUSSION

In order to interpret results and draw conclusions following statistical treatments were used:

- Descriptive Statistics
- t-Test

1.1. Descriptive Statistics

Researcher collected responses from tools, processed them through coding and performed a descriptive statistics analysis to understand and describe the nature of responses collected. First level of analysis was done on demographic factors of respondents and following were the observations

Gender		Age	
Female	57	Less than 35	38
Male	18	More than 35	37

Education		Experience	
Graduate	11	Less than 5	27
Postgraduate	64	More than 5	48

Fig 2 – Tabular representation of Demographic Factors

Gender wise categorization indicated that respondents included 57 females and 18 males. While on the Age factor, there were 38 respondents who were less than 35-year-old and there were 37 respondents who were more than 35-year-old. Education wise it is observed that mostly teachers were post-graduates counting to a whopping number 64 out of a total 75 and 11 were only graduates. On the teaching experience side, 27 teachers were less than 5 year experienced and 48 were holding more than 5 year of teaching experience.

Responses for Teacher collective efficacy were presented for descriptive statistics analysis and following result was obtained.

Mean	Standard Error	Median	Mode	Standard Deviation	Sample Variance	Kurtosis	Skewness	Range	Minimum	Maximum
104.47	0.85	105.00	95.00	7.37	54.39	-0.53	-0.44	30.00	87.00	117.00

Table 1 – Descriptive Statistics of TCE

Teacher Collective Efficacy responses showed a skewness of -0.44 suggesting a perfect symmetric data with a kurtosis of -0.53 leading to believe that there is a thinner tail on the left with less extreme values. Teacher collective efficacy observed almost same values of mean, median and modes, showing a normal distribution. TCE has similar values of mean and median with mode being a little distinct pointing to the fact that most common score was different from mean and median. Standard deviation for TCE is 7 with a range of 30, this points to a wider data dispersion.

1.2. t-Test

Researcher submitted these scores to Two Tailed t-Test for finding any significant difference between Demographic factors and teacher collective efficacy. Following results were obtained -

Gender	Male	Female
Mean	101.7777778	105.3157895
Variance	74.30065359	46.2556391
Observations	18	57
Hypothesized Mean Difference	0	
df	24	
t Stat	-1.591936847	
P(T<=t) one-tail	0.06224295	
t Critical one-tail	1.71088208	
P(T<=t) two-tail	0.1244859	
t Critical two-tail	2.063898562	

Fig 3

t-Test for Gender and TCE assuming unequal variances

Education	Graduate	Postgraduate
Mean	101.2727273	105.015625
Variance	38.61818182	55.66641865
Observations	11	64
Hypothesized Mean Difference	0	
df	15	
t Stat	-1.788317193	
P(T<=t) one-tail	0.046968806	
t Critical one-tail	1.753050356	
P(T<=t) two-tail	0.093937612	
t Critical two-tail	2.131449546	

Fig 4

t-Test for Education and TCE assuming unequal variances

From Fig 3, t-Test results between Gender and TCE show that Mean of TCE for Male and Female has a difference and so does the variance. At a hypothesized mean difference of 0, while t Stat shows a value of negative 1.5, the value of p is 0.12 at 95% C.I. which is greater than Alpha value of 0.05 and hence null hypothesis cannot be rejected. Hence it can be concluded that there is no significant difference between TCE of male and female teachers of secondary schools at .05 significance level.

From Fig 4, t-Test results between Education level and TCE show that Mean of TCE for Graduates and Post-graduates has a difference and so does the variance. At a hypothesized mean difference of 0, while t Stat shows a value of negative 1.78, the value of p is 0.09 at 95% C.I. which is greater than Alpha value of 0.05 and hence null hypothesis cannot be rejected. Hence it can be concluded that there is no significant difference between TCE of Graduate and Post-graduate teachers of secondary schools at .05 significance level.

Age	<= 35	> 35
Mean	102.3684211	106.6216216
Variance	49.42816501	51.57507508
Observations	38	37
Hypothesized Mean Difference	0	
df	73	
t Stat	-2.59097787	
P(T<=t) one-tail	0.005774947	
t Critical one-tail	1.665996224	
P(T<=t) two-tail	0.011549895	(Reject H0)
t Critical two-tail	1.992997126	

Fig 5

t-Test for Age and TCE assuming unequal variances

Experience	<= 5	> 5
Mean	99.66666667	105.2916667
Variance	38.69230769	36.59397163
Observations	27	48
Hypothesized Mean Difference	0	
df	53	
t Stat	-3.79632546	
P(T<=t) one-tail	0.000189708	
t Critical one-tail	1.674116237	
P(T<=t) two-tail	0.000379416	(Reject H0)
t Critical two-tail	2.005745995	

Fig 6

t-Test for Experience and TCE assuming unequal variances

From Fig 5, t-Test results between Age level and TCE show that Mean of TCE for less than or equal to 35-years-old teacher and greater than 35-years-old teachers has a difference with a minimal variance. At a hypothesized mean difference of 0, while t Stat shows a value of negative 2.59, the value of p is 0.01 at 95%

C.I. which is less than Alpha value of 0.05 and hence null hypothesis can be rejected. Hence it can be concluded that there is a significant difference between TCE of less than or equal to 35-year-old teachers and greater than 35-years-old teachers of secondary schools at .05 significance level.

From Fig 6, t-Test results between Teaching Experience level and TCE show that Mean of TCE for less than or equal to 5-years experienced teacher and greater than 5-years experienced teachers have a difference with a minimal variance. At a hypothesized mean difference of 0, while t Stat shows a value of negative 3.79, the value of p is 0.0003 at 95% C.I. which is less than Alpha value of 0.05 and hence null hypothesis can be rejected. Hence it can be concluded that there is a significant difference between TCE of less than or equal to 5-year experienced teachers and greater than 5-years experienced teachers of secondary schools at .05 significance level.

VI. CONCLUSION

Results of the research indicate that Age and Teaching Experience as demographic efforts significantly affect TCE. Teachers who were less than or equal to 35 years in age, had lower teacher collective efficacy in comparison to teachers older to them. This also indicates to the point that as the age of a teacher grows so does the teaching experience and a similar response to teacher collective efficacy should be exhibited. This point was proven with the findings of t-Test between Teaching Experience and teacher collective efficacy where teachers with more than 5 years of teaching experience showed a greater teacher collective efficacy than those who had lesser teaching experience. This fact vindicates the believe that as teachers spend more time in system and make relationship with teaching staff their understanding amongst each other and with the management increased leading to better achievement of school objectives. Their experience plays a key role in handling internal and external challenges in schools while putting a larger focus on student achievement. On the other hand, Gender and Education level did not create any significant impact on TCE, which in principal sounds right as teacher collective efficacy is more about understanding the importance of achieving school objective working together than alone.

Researcher conclude this research with an understanding that school management who are working on improving teacher collective efficacy should put more emphasis on hiring experienced teaching staff or maintain a balance, while gender and post-graduate level remain insignificant factors.

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