**AMOGNE ASFAW ESHETU**

# Does School Type Matter in Academic Achievement in Regional Examination? Comparative Study of Private and Government Schools in Dessie Administrative Town, North Central Ethiopia

**ABSTRACT**: *Academic achievement is a cumulative outcome of different factors. School type has a paramount effect on students' performance in regional examination. This study was conducted to critically examine the effect of school type on students result in regional examination. An ex-post facto research design was employed to look into the impacts of school type on academic achievement in regional examination. Data analyses were undertaken using chi-square test, t-test, and ANOVA (Analysis of Variance). Independent sample t-test was used to test mean differences between private and government schools. ANOVA test was used to analyze mean differences based on level of satisfaction in school services. Chi-square test was used to see associations between school types with facilities and activities. Key informant interview and observation were also undertaken to substantiate the quantitative results. The t-test results revealed that private schools have scored statistically better than government ones. Students from private schools were highly satisfied with their school services. Private schools were found better equipped in library and laboratory facilities than government schools. Student centered method of teaching and tutorial classes have been more applied in private schools. Parents' involvement in school related affairs were better in private schools. Based on the findings, the recommendations that experience sharing between private and government schools as well as among schools should be organized by Dessie town administration educational office. More effort has to been done by concerned bodies so as to narrow the performance gab between private and government schools. In addition, government schools should be equipped with facilities as of the private schools.*

**KEY WORDS**: *Academic achievement, regional examination, private/government schools, school services, library and laboratory facilities, and method of teaching and tutorial classes.*

## INTRODUCTION

The development of any nation largely relies on the quality of education. It plays a vital role in the development of human capital and is linked with an individual's well-being and opportunities for better living (Memon, Joubish & Khurram, 2010; Farooq *et al.*, 2011; Ababa *et al.*, 2012; Gouda *et al.* 2013; and Oginni *et al.,* 2013). That means, education is considered as a first step for every human activity. As a result, educators, trainers, and researchers have long been interested in investigating variables contributing effectively for quality of performance of learners (Farooq *et al.*, 2011).

Hosts of inside and outside factors affect students' academic performance. These include individual and household characteristics, such as age, gender, geographical belongingness, ethnicity, marital status, socio-economic status, parents' education level, parental profession, language, income, religious affiliations, student ability, motivation, and the quality of school. One major factor, which affects students'

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academic performances, is school type (Getahun, 2002; and Farooq *et al.*, 2011).

As a result, the effectiveness of government and private schools has been the topic of a large number of studies in the educational sciences, sociology, and economics (Dronkers & Robert, 2003). The assumption of policymakers, parents, and other interested citizens in most cases is that private schools, on the whole, are better academically than government schools (CEP, 2007). But, is this assumption actually supported by empirical evidences?

A study by W. Getahun (2002), regarding the effects of school environment related factors between high and low achievers schools in Addis Ababa (in ESLCE and ESCECE examinations), revealed that most students in high scoring schools were from private, public, and mission junior secondary schools; while for the low achieving schools were from government schools. According to this study, students who had attended their junior secondary schools in private and public schools had scored better results in national examinations than government schools (Getahun, 2002).

Similarly, a study in Nigeria by A.E. Maliki, A.N. Ngban & J.E. Ibu (2009), on the performance of junior secondary students in Mathematics, showed that students from private schools performed better than those from government schools. Studies by H. Braun, F. Jenkins & W. Grigg (2006); J. Gouda *et al.* (2013); and L. Day Ashley *et al.* (2014) also found a similar result. J.B. Horowitz & L. Spector (2005), on their part, obtained no statistical difference in GPA (Grade Point Average) between students who had attended private and government secondary schools.

A study by CEP (Center on Education Policy) in USA (United States of America), on 2007, revealed that students who had attended any type of private high school ended up no more likely to attend college than their counterparts at government high schools (CEP, 2007). On the contrary, a study by J. Smith & R. Naylor (2005) found out that a male (female) student who formerly attended private school was about 6.5 (5.4) percentage points less likely to obtain a good grade than

was an otherwise equivalent student who had attended an government schools. A study by E. Yalew, M. Dawit & B. Alemayehu (2010) in Amhara National Regional State also revealed that the mean scores of students in regional examination from private schools were higher than their counterpart.

These finding were the major impetus to carry out this research and provoked us to question "Is there a statistical significant difference in academic performance between private and government schools?". Therefore, this study focused on the impact of school type in academic achievement in regional examination. To that end, the study hypothesized that there is no statistically significant difference in academic achievement between private and government schools.

## MATERIALS AND METHODS

*Description of Study Area.* The study was conducted in South Wollo, Ethiopia. South Wollo administrative zone, one of the twelve administrative zones in Amhara National Regional State (ANRS), is located in the Southeastern part of the region between $10^010'-11^041'N$ latitudes and $38^028'-40^005'E$ longitudes. It is bordered on the South by North Shewa zone, and Oromia region, on the west by East Gojjam Zone, on the Northwest by South Gonder zone, on the north by North Wollo zone and on the East by Afar region (ANRS-BoFED, 2009).

In 2013 academic year, 247,483 students (118,190 or 47.8% male and 129,293 or 52.2% female) sat for the regional examination at regional level. Of these students, 203,237 of them have scored a pass mark (96,319 or 81.5% of male and 106,918 or 82.1% of female). The proportion of females was a bit higher than their male counterparts. Similarly, during 2014 academic year, 39,485 (20,849 or 52.8% male and 18,636 or 47.2% female) students took regional examination in south Wollo in regular program only. Out of these students 30,191 of them (15,501 male and 14,690 female) have scored above the cut point. That means, 74.3% of males and 78.8% of females have scored pass mark. The percentage of females was higher than males (MoE, 2013).

*Target Population, Sampling Procedures,*

*and Samples.* Descriptive survey method was employed to explore the impact of school types in academic achievement of grade 8 students at regional examination. Target populations for this study were grade 8 students of junior secondary schools from Dessie city administration. Students from private and government schools (private schools encompass those owned by individual or religious institution, while government schools are those owned by Dessie city administration education office) were selected proportionally using semi-stratified sampling method.

After having the list of private and government junior secondary schools from Dessie city administration educational office, 13 schools (7 from government and 6 from private) out of 29 were selected using simple random lottery method. Since private schools are only 8, a purely stratified sampling method was not applied so as to take representative sample size. Again from these selected schools, one section from each sampled schools was selected randomly.

Finally, all students of the selected section have been included in the study. Sample size determination has been carried out based on V.R. Krejcie & W.D. Morgan (1970). When the total population is known, sample size can be obtained using the following formula.

$$n = \frac{\left[X^2 NP(1-P)\right]}{d^2(N-1) + X^2 P(1-P)}$$

Where: n = the required sample size; N = total population size; $\chi^2$ = table value of Chi-square at df of 1 and 0.05 level of significance (3.84); $P$ = population proportion (assumed to be 0.5); and d = degree of accuaracy (0.05) or 95% accuracy.

The total number of grade 8 students of Dessie city administration, who have registered to take the regional examination in the regular program during 2014 academic year, was 3,179. Based on this, the required sample size for this study would be 400. Therefore, the minimum expected sample size for large population, based on this formula is 400. But, since this study takes into consideration of different variables (like school type, shifting system, sex), much more sample size than the minimum number is required for comparison.

D.G. Israel (2013) stressed that heterogeneous population required larger sample size than the homogeneous one; and J. Pallant (2011:4), on this part, underlined that more participants than the required size is needed, because humans are notorious and all questionnaires might not be filled and returned back due to different reasons. As a result, I prefer a sample size of 538 to make the analysis more reliable.

*Data Collection: Sources, Tools, and Procedure.* The ex-post facto research design was employed in carrying out this study. This involved the use of already existing data. Major data sources for this study were students' academic achievement and data collected from grade 8 students as well as concerned bodies. Self-developed structured questionnaire was distributed to the sampled grade 8 students with the help of school principals, home room teachers of each section, and cluster supervisors in order to collect biostatistics of students.

About 2014 grade 8 regional examination result (standardized examination result) was obtained from Dessie city administration educational office. Grade 8 regional examination is considered as exit examination for entrance of secondary level. The questionnaires were collected and kept carefully till the regional examination was announced officially.

For correlation purpose, the average school based academic result of students was obtained from final roster after getting permission from school principals. Key informant interview with concerned bodies (like school principals and education office officials) using semi-structured questionnaire and direct school observation were also conducted to substantiate the analysis.

*Data Analysis and Interpretation.* After the necessary data were collected, tabulation and analyses were carried out using SPSS (Statistical Package for the Social Sciences) version 20. Different statistical methods were employed for analysis purpose. Cross tabulation, chi-square test, different types of t-tests, and ANOVA (Analysis of Variance)

have been applied to examine the effect of school type in academic achievement in grade 8 regional examination.

Independent sample t-test was used to analyze mean differences based on school type (private/government). The effect size of independent sample t-test results were further calculated using J.W. Cohen (1988)'s *d*. One way ANOVA test was used to analysis mean differences among schools based on level of satisfaction in different services. The effect size of ANOVA result was calculated using the eta squared formula as the proportion of sum of squares between groups with total sums of square (eta squared = sum of squares between groups/total sum of squares).

According to J.W. Cohen (1988), eta value of 0.01 – 0.06 is considered as small effect, 0.06 – 0.14 as moderate effect, and above 0.14 as large effect. Tukey's Post hoc test was also employed to further differentiate the disparities. Chi-square test was used to see associations between school type with laboratory facilities, library utilization, application of student centered method of teaching, and frequency of tutorial classes. In order to substantiate the quantitative analysis, qualitative data obtained from key informant interview and observations were used. Finally, interpretations of the results and plausible recommendations have been drawn based on the results of the analysis.

**RESULTS AND DISCUSSION**

This part of the paper focused on the major findings of the study. Specifically, it tried to examine the impact of school type (being a government or private school students) on the performance of students in regional examination. In addition, mean comparisons have been undertaken based on different school related attributes.

As depicted in table 1, the result 538 students (295 or 54.9% from government and 243 or 45.1% from private schools) were analyzed in this study. About 48.9% of the participants were male and 51.1% of them were females. About 59% of the students were below the age of 14 years, while 41 of them were above 15 years old. The average age was found to be 14.6 years old.

An independent-samples t-test (table 2) comparing the mean scores of government and private school on regional examination found statistically significant different means ($t$ (473.5) = -18, $p < 0.001$). The mean of government schools was significantly lower ($m$ = 43.77, $sd$ 9.2) than the mean of private schools ($m$ = 59.72, $sd$ = 10.9).

The mean difference, according to J.W. Cohen's *d* value is strong. Similarly, statistically significant mean difference was obtained in school based examination result between government and private schools ($t$ (453.9) = -11.7, $p < 0.001$) with 1.03 value of J.W. Cohen's *d*. The average score of private schools ($m$ = 70.93, $sd$ = 10.1) was significantly higher than the mean score of government schools ($m$ = 61.62, $sd$ = 7.9).

The findings were not consistent with L. Cappellari (2004); D. Newhouse & K. Beegle (2005); and J. Smith & R. Naylor (2005), which asserted that students from private schools achieved significantly lower test scores than government schools. Rather, the results were in line with the findings of D.N. Figlio & J.A. Stone (1997); W. Getahun (2002); and A.E. Maliki, A.N. Ngban & J.E. Ibu (2009), which underlined that private school students scored better than students of government schools. One reason for such variation, according to D.N. Figlio & J.A. Stone (1997), is that students in private schools are more likely to have college ambitions and come from high socio-economic status families.

One way ANOVA (Analysis of Variance) was computed comparing the mean differences in regional mean score among schools (table 3). A significant mean difference was found among schools (F (12, 525) = 93.07, p < 0.001, eta$^2$ = 0.68). Tukey's HSD was used to determine the nature of the mean differences among schools and the details are presented in table 4. The mean score of Alfa ($m$ = 70.98) was significantly higher than all other schools except Wisdom.

On the contrary, the mean score of Tunjit-Amba ($m$ = 33.38) was significantly lower than all other schools. Subject wise mean comparison, based on regional score, was also done. As indicated in table 5, Alfa junior secondary school has scored the highest point

**Table 1:**
Sampled Schools and Students (Number, Sex, and Age)

| Participants Based on School | | | | | | Sex | | |
|---|---|---|---|---|---|---|---|---|
| School Name (G)* | No | % | School Name (P) | No | % | Sex | No | % |
| Etege Menen | 50 | 9.3 | Alif | 30 | 5.6 | Male | 263 | 48.9 |
| Dawudo | 30 | 5.6 | Merkezl-biruhan | 43 | 8.0 | Female | 275 | 51.1 |
| Robit | 40 | 7.4 | Tesfa-dirjit (Hope) | 48 | 8.9 | Total | 538 | 100 |
| Nigus-Michael | 45 | 8.4 | Catholic | 50 | 9.3 | Age (mean age 14.6) | | |
| Bilen | 37 | 6.9 | Wisdom | 29 | 5.4 | Category | No | % |
| Tunjit-Amba | 45 | 8.4 | Alfa | 43 | 8.0 | 12-14 | 318 | 59 |
| Gerado | 48 | 8.9 | Sub-total | 243 | 45.1 | ≥15 | 220 | 41 |
| Sub total | 295 | 54.9 | **Grand Total** | **538** | **100** | Total | 538 | 100 |

* "G" stands to government schools, while "P" represents private schools.

**Table 2:**
Independent Samples t-Test Value (the Impact of School Type on Regional and School Average)

| Category | School Type | N | M | SD | MD | df | t | p | Cohen's $d^1$ |
|---|---|---|---|---|---|---|---|---|---|
| Regional Average | Gov't | 295 | 43.77 | 9.2 | | | | | |
| | Private | 243 | 59.72 | 10.9 | -15.94 | 473.5* | -18.0* | 0.00 | 1.59 |
| | Total | 538 | 50.97 | 12.79 | | | | | |
| School level Average | Gov't | 295 | 61.62 | 7.9 | | | | | |
| | Private | 243 | 70.93 | 10.1 | -9.31 | 453.9* | -11.7* | 0.00 | 1.03 |
| | Total | 538 | 65.83 | 10.09 | | | | | |

*the *t* and *df* values were adjusted because variances were not equal.

**Table 3:**
ANOVA Test (Regional Average Mean Difference among Schools)

| | SS | df | MS | F | p | Eta² |
|---|---|---|---|---|---|---|
| Between Groups | 59757.687 | 12 | 4979.807 | 93.07 | .000 | 0.68 |
| Within Groups | 28090.895 | 525 | 53.506 | | | |
| Total | 87848.582 | 537 | | | | |

**Table 4:**
Mean Differences (ANOVA-Tukey's HSD) on Average Regional Examination among Schools

| No | School | Mean | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Alfa (P) | 70.98 | | 4.5 | **8.5** | **13.6** | **16.2** | **17.3** | **20.1** | **22.4** | **24.5** | **28.9** | **29.7** | **30.2** | **37.6** |
| 2 | Wisdom (P) | 66.52 | -4.5 | | 4.0 | **9.2** | **11.8** | **12.9** | **17.6** | **17.9** | **20.1** | **24.5** | **25.3** | **25.8** | **33.1** |
| 3 | Merkezl (P) | 62.49 | **-8.5** | -4.0 | | **5.1** | **7.7** | **8.8** | **13.6** | **13.9** | **16.0** | **20.4** | **21.2** | **21.8** | **29.1** |
| 4 | Catholic (P) | 57.34 | **-13.6** | **-9.2** | **-5.1** | | 2.6 | 3.7 | **8.4** | **8.7** | **10.9** | **15.3** | **16.1** | **16.6** | **24.0** |
| 5 | Alif (P) | 54.77 | **-16.2** | **-11.8** | **-7.7** | -2.6 | | 1.1 | 5.8 | **6.2** | **8.3** | **12.7** | **13.5** | **14.0** | **21.4** |
| 6 | E/Menen (G) | 53.64 | **-17.3** | **-12.9** | **-8.8** | -3.7 | -1.1 | | 4.7 | **5.0** | **7.2** | **11.6** | **12.4** | **12.9** | **20.3** |
| 7 | Robit (G) | 48.93 | **-22.1** | **-17.6** | **-13.6** | **-8.4** | -5.8 | -4.7 | | 0.3 | 2.5 | **6.9** | **7.7** | **8.2** | **15.5** |
| 8 | T/Dirjit (P) | 48.60 | **-22.4** | **-17.9** | **-13.9** | **-8.7** | **-6.2** | **-5.0** | -0.3 | | 2.1 | **6.6** | **7.4** | **7.9** | **15.2** |
| 9 | Dawudo (G) | 46.47 | **-24.5** | **-20.1** | **-16.0** | **-10.9** | **-8.3** | **-7.2** | -2.5 | -2.1 | | 4.4 | 5.2 | 5.7 | **13.1** |
| 10 | Gerado (G) | 42.04 | **-28.9** | **-24.5** | **-20.4** | **-15.3** | **-12.7** | **-11.6** | **-6.9** | **-6.6** | -4.4 | | 0.8 | 1.3 | **8.7** |
| 11 | Bilen (G) | 41.24 | **-29.7** | **-25.3** | **-21.2** | **-16.1** | **-13.5** | **-12.4** | **-7.7** | **-7.4** | -5.2 | -0.8 | | 0.5 | **7.9** |
| 12 | N/Michael (G) | 40.73 | **-30.2** | **-25.8** | **-21.8** | **-16.6** | **-14.0** | **-12.9** | **-8.2** | **-7.9** | -5.7 | -1.3 | -0.5 | | **7.4** |
| 13 | T/Amba (G) | 33.38 | **-37.6** | **-33.1** | **-29.1** | **-24.0** | **-21.4** | **-20.3** | **-15.5** | **-15.2** | **-13.1** | **-8.7** | **-7.8** | **-7.4** | |

*The **BOLDED** mean differences are significant at the 0.001 level of alpha; and P = Private, and G = Government.

**Table 5:**
Regional Mean Result (Based on School and Subject)

| School Name | Amharic | English | Maths | Physics | Biology | Chemistry | Science | Civics | Average |
|---|---|---|---|---|---|---|---|---|---|
| Etege Menen | 38.62 | 25.46 | 17.70 | 17.30 | 30.30 | 27.54 | 32.54 | 46.32 | 53.64 |
| Dawudo | 32.07 | 22.97 | 13.50 | 12.23 | 25.10 | 23.97 | 28.73 | 45.10 | 46.47 |
| Robit | 32.38 | 22.90 | 15.48 | 13.05 | 26.93 | 26.18 | 31.18 | 47.10 | 48.93 |
| Nigus-Michael | 29.18 | 18.76 | 11.93 | 11.98 | 22.22 | 19.42 | 23.24 | 42.40 | 40.73 |
| Bilen | 27.19 | 17.05 | 11.24 | 12.32 | 23.38 | 21.59 | 27.19 | 41.68 | 41.24 |
| Tunjit-Amba | **22.78** | **15.11** | **9.67** | **9.93** | **17.38** | **16.07** | **19.42** | **36.24** | **33.38** |
| Gerado | 26.56 | 18.90 | 12.29 | 11.33 | 23.85 | 21.56 | 25.98 | 43.83 | 42.04 |
| Alif | 35.40 | 26.77 | 20.63 | 19.80 | 29.33 | 25.43 | 33.17 | 50.50 | 54.77 |
| Merkezl-biruhan | 40.86 | 31.23 | 24.70 | **21.44** | 35.81 | 35.58 | 36.30 | 48.77 | 62.49 |
| Tesfa-dirjit | 34.85 | 22.31 | 17.21 | 11.42 | 26.77 | 24.56 | 30.69 | 46.25 | 48.60 |
| Catholic | 39.70 | 30.52 | 17.38 | 16.60 | 32.44 | 32.72 | 34.72 | 48.26 | 57.34 |
| Wisdom | **44.03** | 40.10 | 21.66 | 18.72 | 38.07 | 37.69 | **39.48** | 51.28 | 66.52 |
| Alfa | 43.37 | **43.12** | **26.60** | 20.60 | **45.07** | **42.53** | 38.86 | **52.28** | **70.98** |
| Total | 34.25 | 25.46 | 16.79 | 14.99 | 28.82 | 27.14 | 30.65 | 45.94 | 50.97 |

**Table 6:**
Chi-Square Test (Level of Satisfaction in School Services Based on School Type)

| Level of Satisfaction | School Type | | Total | $\chi^2$ | df | p | Cramer's V $^2$ | p |
|---|---|---|---|---|---|---|---|---|
| | Gov't | Private | | | | | | |
| Not satisfied | 25 | 12 | 37 | 20.61 | 2 | 0.000 | 0.196 | 0.000 |
| Somewhat satisfied | 177 | 108 | 285 | | | | | |
| Highly satisfied | 93 | 123 | 216 | | | | | |

**Table 7:**
Mean Differences (ANOVA) Analysis Based on Level of Satisfaction in School Services

| Category | Level of Satisfaction | Mean | N | SD | ANOVA Table | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Regional Examination Mean result | | | | | | SS | df | F | p |
| | Not satisfied | 48.89 | 37 | 14.81 | | | | | |
| | Somewhat satisfied | 50.16 | 285 | 13.05 | Between Groups | 786.68 | 2 | | |
| | Highly satisfied | 52.40 | 216 | 11.97 | Within Groups | 87061.90 | 535 | 2.42 | .09 |
| | Total | 50.97 | 538 | 12.79 | Total | 87848.58 | 537 | | |

**Table 8a:**
Chi-Square Test (Laboratory Facility Based on School Type)

| Utilization of Laboratory Services | School Type | | Total | $\chi^2$ | df | p | Cramer's V | p |
|---|---|---|---|---|---|---|---|---|
| | Gov't | Private | | | | | | |
| Not at all | 77 | 10 | 87 | 51.58 | 2 | 0.000 | 0.31 | 0.000 |
| Some times | 156 | 146 | 302 | | | | | |
| Frequently | 62 | 87 | 149 | | | | | |

in six subjects, Wisdom and Merkezl-biruhan in one subject each (both are private schools); while the lowest point in all subjects was scored by Tunjit-Amba (government) school. In general, private schools have scored better than government schools.

To investigate whether school type has effect on the level of satisfaction of students in school service or not, a chi-square statistics was employed. Table 6 shows the Pearson chi-square result and the result indicates that students from private schools were more likely

**Table 8b:**
Mean Difference (ANOVA) on Regional Average Based on Laboratory Facility

| No | Regional Average | | | | Tukey HSD | | | | ANOVA Result | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Frequency | M | N | SD | 1 | 2 | 3 | | SS | df | MS | F | p |
| 1 | Not at all | 43.69 | 87 | 11.85 | | -9.24* | -7.57* | Between Groups | 5784.11 | 2 | 2892.06 | 18.85 | .00 |
| 2 | Some times | 52.93 | 302 | 12.97 | 9.24* | | 1.68 | Within Groups | 82064.47 | 535 | 153.39 | | |
| 3 | Frequently | 51.26 | 149 | 11.44 | 7.57* | -1.68 | | Total | 87848.58 | 537 | | | |
| | Total | 50.97 | 538 | 12.79 | | | | | | | | | |

**Table 9a:**
Chi-Square Test (Library Utilization Based on School Type)

| Frequency of Library Utilization | School Type | | Total | $\chi^2$ | df | p | Cramer's V | p |
|---|---|---|---|---|---|---|---|---|
| | Gov't | Private | | | | | | |
| Not at all | 66 | 22 | 88 | 18.12 | 2 | 0.000 | 0.184 | 0.000 |
| Some times | 209 | 196 | 405 | | | | | |
| Frequently | 20 | 25 | 45 | | | | | |

**Table 9b:**
Mean Difference (ANOVA) on Regional Average Based on Frequency of Library Utilization

| No | Regional Average | | | | Tukey HSD | | | | ANOVA Result | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Frequency | M | N | SD | 1 | 2 | 3 | | SS | df | MS | F | p |
| 1 | Not at all | 44.33 | 88 | 14.29 | | -7.73* | -9.85* | Between Groups | 4823.983 | 2 | 2411.99 | 15.54 | .000 |
| 2 | Some times | 52.06 | 405 | 11.92 | 7.73* | | -2.12 | Within Groups | 83024.599 | 535 | 155.19 | | |
| 3 | Frequently | 54.18 | 45 | 13.35 | 9.84* | 2.12 | | Total | 87848.582 | 537 | | | |
| | Total | 50.97 | 538 | 12.79 | | | | | | | | | |

highly satisfied than expected in their school services than students of government schools.

The result was statistically significant ($\chi^2$ = 20.61, *df* = 2, N = 538, *p* < .001). On the other hand, even though the mean result for highly satisfied students is higher than the other two groups in the level of satisfaction of their school services (as shown in table 7), no statistically significant mean difference was obtained in regional examination result (*F* (2,535) = 2.42, *p* = > 0.05).

As depicted in table 8a, a chi-square test was used to examine the association between availability of laboratory facilities based on school types. A statistically significant result was found and there is a very strong evidence which supports that private schools are better in laboratory facilities than government ones ($\chi^2$ = 51.58, *df* = 2, N = 538, *p* < .001). This might be one reason why private schools have scored better in regional examination than government schools.

A study by W. Getahun (2002) in Addis Ababa revealed that the laboratories and pedagogical centers of the low scorer schools have been found to be non-functional and, hence, are not used by teachers and students for the teaching learning process. As shown in table 8b, differences in laboratory facilities have impact on students' academic performance. Students, who have used laboratory facilities frequently, have scored statistically higher result. The ANOVA result (*F* (2,535) = 18.85, *p* = < 0.05) was statistically significant. A study in India by J. Gouda *et al.* (2013) indicated that better physical facilities in private schools have caused a difference in academic performance.

Chi-square statistics was used to check whether the frequency of library utilization by students differs based on school type or not (table 9a). A statistically significant result was found ($\chi^2$ = 18.12, *df* = 2, N = 538, *p* < .001) and students of private schools used library services more likely than expected as compared

**Table 10a:**
Chi-Square Test (Application of Student Centred Approach Based on School Type)

| Extent of Application of Student Centered Approach | School Type | | Total | $\chi^2$ | df | p | Cramer's V | P |
|---|---|---|---|---|---|---|---|---|
| | Gov't | Private | | | | | | |
| Not at all | 22 | 2 | 24 | 37.01 | 2 | 0.000 | 0.26 | 0.000 |
| Some times | 181 | 109 | 290 | | | | | |
| Frequently | 92 | 132 | 224 | | | | | |

**Table 10b:**
Mean Difference (ANOVA) on Application of Student Centred Approach

| No | Regional Average | | | | Tukey HSD | | | ANOVA Result | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Frequency | M | N | SD | 1 | 2 | 3 | | SS | df | MS | F | p |
| 1 | Not at all | 39.83 | 24 | 9.85 | | -9.54* | -14.4* | Between Groups | 6097.289 | 2 | 3048.64 | 19.95 | .000 |
| 2 | Some times | 49.38 | 290 | 12.82 | 9.54* | | -4.86* | Within Groups | 81751.293 | 535 | 152.81 | | |
| 3 | Frequently | 54.23 | 224 | 11.98 | 14.4* | 4.86* | | Total | 87848.582 | 537 | | | |
| | Total | 50.97 | 538 | 12.79 | | | | | | | | | |

**Table 11a:**
Chi-Square Test (Frequency of Tutorial Classes Given Based on School Type)

| Frequency of Tutorial Classes | School Type | | Total | $\chi^2$ | df | p | Cramer's V | p |
|---|---|---|---|---|---|---|---|---|
| | Gov't | Private | | | | | | |
| Not at all | 24 | 13 | 37 | 68.22 | 2 | 0.000 | 0.36 | 0.000 |
| Some times | 138 | 37 | 175 | | | | | |
| Frequently | 133 | 193 | 326 | | | | | |

**Table 11b:**
Mean Difference (ANOVA) Based on Frequency of Tutorial Classes Given

| No | Regional Average | | | | Tukey HSD | | | ANOVA Result | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Frequency | M | N | SD | 1 | 2 | 3 | | SS | df | MS | F | p |
| 1 | Not at all | 47.97 | 37 | 13.74 | | 2.32 | -6.2* | Between Groups | 8618.15 | 2 | 4309.08 | 29.10 | .000 |
| 2 | Some times | 45.65 | 175 | 11.88 | -2.32 | | -8.52* | Within Groups | 79230.43 | 535 | 148.09 | | |
| 3 | Frequently | 54.17 | 326 | 12.14 | 6.2* | 8.52* | | Total | 87848.58 | 537 | | | |
| | Total | 50.97 | 538 | 12.79 | | | | | | | | | |

with government ones.

ANOVA (Analysis of Variance) result as shown in table 9b, ($F(2,535) = 15.54$, $p = < 0.05$) was found statistically significant and the mean result of students using library frequently (m = 54.18, sd = 13.35) and some times (m = 52.06, sd = 11.92) were significantly higher than those who have not used library at all (m = 44.33 , sd = 14.29). This implied that one reason for difference in academic achievement between private and government schools is a difference in library and laboratory facilities.

As shown in table 10a and 11a, chi-square test was applied to investigate whether school type have association with extent of application of student centered method of teaching and frequency of tutorial classes

given. A statistically, significant result was found in both cases ($\chi^2 = 37.01$, $df = 2$, N = 538, $p < .001$) for application of student centered approach; and ($\chi^2 = 68.22$, $df = 2$, N = 538, $p < .001$) for tutorial classes. Student centered method of teaching and tutorial classes were more likely applied in private schools than expected as compared with government schools.

Such variation in application of student centered method of teaching and tutorial classes between private and government schools (see table 10b and 11b) have caused a difference in academic achievement. One way ANOVA (Analysis of Variance) result has found a statistically significant mean differences both in frequency of application of

student centered method ($F_{(2,535)} = 19.95$, p = $< 0.05$) and tutorial classes ($F_{(2,535)} = 29.1$, p = $< 0.05$). Student learning through students centered method of approach frequently have scored statistically higher than other groups. Similarly, frequency of tutorial classes has influenced students' academic performance.

A study by W. Getahun (2002), the impact of school related factors on academic performance of students in Addis Ababa, pointed out that teachers provide class works, home works, and other class activities in high achieving school as compared with the low scoring school teachers do. At the same time, high scorer school teachers give feed back to students' class works more than the low scorer teachers. Furthermore, teachers of the high scorer schools motivate and praise their students more than the low scorer school teachers.

Low scorer schools used teacher centered method of teaching. For these reasons, significant differences in academic performance were observed. According to A.M. Oginni *et al.* (2013), school location, school type, laboratory adequacy, and frequency of practical classes have significant effects on the academic achievement of students in Chemistry especially at secondary school level. About 36.6% of the total variance in student achievement in Chemistry was due to the four school related factors.

**CONCLUSION** [1]

Academic achievement is a cumulative outcome of different factors. School type has a paramount effect on students' performance in regional examination. This study was conducted to critically examine the effect of school type on students result in regional examination. Private schools have scored better in regional examination than government schools and the difference was statistically significant. Students from private schools were highly satisfied with their school

services. Private schools were found better equipped in library and laboratory facilities than government schools. Student centered method of teaching and tutorial classes have been more applied in private schools. Parents' involvement in school related affairs were more common in private schools.

The disparity in academic achievement was not only between private and government schools. It was also manifested among government schools. Therefore, such disparities in academic achievement among government schools should be assessed so as to narrow the gap. Based on the findings, I recommend that experience sharing between private and government schools as well as among schools should be organized by Dessie town administration educational office. More effort has to been done by concerned bodies so as to narrow the performance gap between private and government schools.

In addition, government schools should be equipped with laboratory and library facilities as of the private schools. More effort in tutorial classes and student centered method of teaching should be practiced by government schools. [2]

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[2]*Statement:* Herewith I declare that this article is my own original academic work, not product of plagiarism, and not yet also be reviewed and published by other scholarly journals.

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