Determinant of Academic Performance of Under Graduate Students: In the Cause of Arba Minch University Chamo Campus

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ABSTRACT

This study was designed to investigate the determinant factors affecting academic performance of regular undergraduate students of Arba Minch university (AMU) chamo campus students. The study employed the use of correlation design to establish the nature of the relationships. Data were collected from 100 respondents selected from all the 12 departments of Arba Minch university chamo campus students using the stratified sampling method. To analyze the data, the Pearson product moment correlation statistical tool and econometrics data analysis (OLS regression) method were used with the aim of establishing the relationship between factors related to student's background and family background on academic performance of regular undergraduate students at Arba Minch university chamo campus students. The findings revealed the existence of a significant relationship between gender difference, university entrance exam and studying hours and academic performance (CGPA). The findings also revealed that there was a significant relationship between students former academic back ground, studying hours, and student's behavior on taking of alcoholic drug and chat on academic performance of students. On the basis of the findings, the researcher recommended that emphasis should be taken to improve the academic performance of female students and improving students' performance earlier before the joined in to university.

Keywords: Academic performance, Determinant, OLS regression

Chapter one
1. Introduction
1.1 back ground of the study
Beyond any doubt education plays a pivotal role in the development and progress of a country. In a developing country education gains even more importance. (Sehersultaneta, 2010).

The issue of poor academic performance of students in developing countries has been much concern at all. In developing countries the problem of poor academic performance leads to the widely acclaimed fallen standard of education. Government investment on higher education and its output in terms of student's achievement (good performance of students has been observed to be unequal with government expenditure. (ajao, 2001). Most of the developing countries are improving their system in an effort to increase their tertiary student's enrollment ratio.

Ethiopia possesses a 1700 year tradition of elite education linked to the Orthodox Church. But secular higher educations were initiated in the year 1950 with the founding of university college of Addis Ababa. (William saint, 2004). Now a time the Ethiopian government has long recognized to the realization of higher education as a necessity and fundamental human development of the country and also the number of both governmental and nongovernmental higher institutions increased enough as compared with previous situations. In the year 2005 E.C. (2012/13) the total undergraduate enrolment (government and non-government; regular, evening, summer and distance programs) is 553,848 of which166, 141 are females which accounts for 30% of the total enrolment. In addition, 474,198 (85.6%) of the total undergraduate enrolment is in government institutions. undergraduate enrolment is highest in regular programs and lowest in distance programs. The distance program is the only program in which the non-government undergraduate enrolment is higher than the government enrolment. The regular program accounts for 57.4% of total undergraduate enrolment.

Ethiopian undergraduate student's enrollment trend in regular program shows an increasing trend over time. For instance in the year 2001/2008/09 the total number of students in rolled in regular undergraduate level was counted as 157424, of the total students enrolled as an undergraduate female students account 28.95 % while the remaining 71.1% were male students. And also in the year 2004/2011/2012 the number of regular students enrolled as regular undergraduate program increased by 92805 or to 250229 [16] .

As far as Arbaminch University is concerned in the year 2001/2007/08the number of undergraduate students enrolled in regular program was 10766, of the total number of students enrolled as undergraduate female students account 33.6% and the remaining 66% covered by male students. The enrollment statistics of the year 2004/2011/12 student's enrollment number increased by 17.9 % or to 13111. And also in the year 2005 E.C. (2012/13) the total undergraduate student's enrolment is increased to 14,438 Which 11,063 are males and 3,375are female. So the trend indicates that enrollment of undergraduate student's increases time to time [16].

1.2. Statement of the problem
Students' academic gain and learning performance is affected by numerous factors including gender, teaching

faculty, students previous education background , students behavior of taking drug including chat , families social ,educational and economic status and soon. In Ethiopia there is a quite public investment in the school system more over the increase in the number of students in higher education is a national goal that have been pursued by education policy. For instance Public spending on education, which during the 1980s remained under 10% of total spending, had increased to 23.6% of total expenditure by 2008/09. This constitutes 5.5% of gross domestic product (GDP), one of the highest rates on the continent [5].

However in spite of all the excessive government investment, failure to achieve a good performance is a major problem that affects all level of education. At university level failure to achieve a good performance affects many undergraduate students. This problem is a major concern for those involved in higher education.

In Arbaminch University also the number of students enrolled in undergraduate regular program increase time to time. For instance in the year 2001/2001/07 number of undergraduate enrolled as regular undergraduate was 10766 and after three years number of students enrolled as regular under graduate program increased to 13111. This trend shows that enrollment of students' increases time to time. But in spite of the increasing trend of the enrollment of students the graduating trend of students not that much increase proportionally to the enrollment trend and some students unable to achieve good performance and students removed from campus and commit readmission. This explores that there are so many factors affecting student's achievement in education.

Since Poor performance of students at university level is a major issue it needs much concern. More of the previous studies focus on primary education level but the problem is not addressed well at university level and much previous research's conducted abroad. And also in Arbaminch University there is no well-organized study conducted on this problem. So this study primarily designed to fill this gap and conducted to examine factors affecting student's academic performance at undergraduate level and also try to give insight about the effect of those factors on academic achievement of students or students **CGPA.**

1.3. Objective and Scope of the study

The scope of the study is bounded on the determining factors affect the academic performance of undergraduate students in Arba Minch university Chamo campus in 2014. Specifically the paper try's to address the following objectives:-

➢ To examine the difference in academic performance of students across gender.
➢ To examine the effect of student's former academic performance background on academic achievement at university level.
➢ To explore the effect of family education and income back ground on students' academic performance /GPA.
➢ To assess the effect of students behavior in taking of alcohol and chat and sexual partnership status on their academic performance.

1.4. Working hypothesis

The researcher hypothesis important variables as:

➢ Students former school back ground performance positively affects CGPA at university level
➢ students behavior on taking alcoholic drug and chat negatively affects students' academic performance
➢ family education and income background positively affects students' performance

1.5. Organization of the paper

The study was organized under five chapters. The first chapter deals with the introduction part which contains introduction, statement of the problem, objective, working hypothesis, scope, significance and limitation of the study. The second chapter includes both theoretical and empirical reviews. The third chapter will cover methodologies and model specification of the study. The fourth chapter will about analysis of data both in descriptive and econometrics /inferential way. The final chapter was designed to provide conclusion and policy recommendation based on the study obtained from analysis.

CHAPTER TWO
2. LITREATURE REVIEW

This section presents both theoretical and empirical literature reviews of related studies**.**

2.1 THEORETHICAL LITREATURE REVIEW

Undergraduate programs are offered for three, four or more years after completing secondary education. Completion of this program is certified by awarding a bachelor's degree. Undergraduate graduates are those who completed their study at the higher education institutions, and were awarded a bachelor's or first degree.

Higher education and economic development in sub-Saharan Africa
Education is widely accepted as a leading instrument for promoting economic growth. For Africa, where growth is essential if the continent is to climb out of poverty, education is particularly important. Higher education is a determinant as well as a result of income, and can produce public and private benefits.4 Higher education may create greater tax revenue, increase savings and investment, and lead to a more entrepreneurial and civic society. It can also improve a nation's health, contribute to reduced population growth, and improve technology, and strengthen governance.

Higher education and economic development in Ethiopia
Ethiopia is currently engaged in highly ambitious effort to re-align its higher education system in more direct support of its national strategy for economic growth and poverty reduction (yizengaw, 2003). Its achievement over the past five years has been impressive, and an aggressive expansion policy designed to raise the countries insignificant tertiary enrollment ratio to more respectable levels.

Poverty alleviation in Ethiopia requires sustained economic growth, good governance and political stability in order to be effective. Growth drives from skilled human resource and national productivity increases leading to greater country competitiveness in regional as well as global economy. Productivity gains are generated by national innovation system in which tertiary education institutions play fundamental role. This institution determines levels of capability with in the country's pool of higher level of managerial, scientific and technological experts. The effectiveness with which global knowledge is accessed and applied in the solution of local development problems and the standard of quality with in lower level of education. The quality of secondary school teachers has a direct relation of the quality of training they receive in universities. Therefore if poverty is to be reduced Ethiopia's tertiary institutions will have to improve their performance and expand their service delivery. Specifically they must operate more effectively under service resource constraints and orient themselves to demands of the knowledge economy and to the growing emphasis on national capacity building. Higher education development combined with strategic development of the economy and labor force. It can contribute to job creation and productivity there by expands resource and opportunities for the poor people. (World Bank, 2003)

Government investment on education in Ethiopia
Total education spending, public and private, as share of GDP, is relatively high in Ethiopia, given its level of per-capita income and public spending accounts for over 90% of the total. However, the composition of public education spending is relatively top heavy, with higher education. Absorbing 40% of the total during 2005-08 which share is estimated to have risen above 50% during 2008-10 (**DFID**, october 2010).

Worldwide Trend of school drop out
Drop out is a serious existing problem; it describes an excused absence from lessons. The problem cannot be related upon and reviewed by restricted perspective focusing only on school and lessons. Drop out also defined as breaking off from schooling for the rest of the term without a final certification, death and changing school excluded. Drop out also can be expressed as people who fail outside the usual parameters given by society. (birhanu and shiferaw, 2009)

Official data gathered by UNESCO proves that from a selection of sub-Saharan countries with a higher drop out and repetition rate are Chad, Mozambique maurtia, and Benin shows a higher dropout rate in both sex than Ethiopia.

Higher education's students drop out in the world considered as those how had left higher education program and withdraw during their higher education study. Drop out / attrition/ can be measured by dismissed or academic failure and withdraw. Drop out is a worldwide problem, but the magnitude or the trend varies between developing and developed countries. A report developed by UNISCO on 88 developing countries shows those 30% students dropout from higher education registered in developing countries. And the national dropout rate in higher education for developing countries accounts on average 12% annually.

2.2 EMPERICAL LITREATURE REVIEW
This section presents determinants of academic performance of college students explained by previous researchers**.**
Staffolani and bratti (2002) cited by Martha (2005) found that high school grade point average is consistently the best predictor of college grade of students. And also the same study held by Anderson, benjamin and fuss (1994) carried out a study on the determinants of success in university and found out that students performed better in high school also performs better in college and the researcher suggested that high school grades were predictors of academic performance at college without doubt.
Grealz (1995) carried out a study on socio economic status in education research and policy found that socio economic background of students remains one of the major sources of educational inequality and the researcher adds that one's educational success depends on the socio economic status of one's parent.
Considire and zapala (2002) agree with the result of graelz (1995), in their study on the influence of social and

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economic disadvantage in the academic performance of school students in Australia found that families where parents are advantaged socially, economically and educationally foster a higher a higher level of achievement in their children. They also found that parents provide higher level of psychological support for their children through environments that encourage the development of skill necessary for success at school. And they pointed out that low social economic status of families negatively affect academic achievement of children's because of low socio economic status prevents access to vital resources and creates additional stress at home.

Koyoshaba(2005) conducted a study on determinant of academic performance and he test significant relationship between former school back ground and academic performance of undergraduate students. The regression result of the study shows that significant relationship between former school background and academic performance of undergraduate students. The Pearson product moment correlation coefficient index (r) a significant correlation or p-value prevails 0.000 which is less than alpha (0.01) hence this indicates that there is a significant relationship between former school background of students and academic performance at undergraduate level.

Hoskinsetal(1997) carried out a study on performance of students at university of Plymouth , he identified the key variables that affect academic performance of students to be age , gender , prior qualification and discipline studied.

Figueroa, cited by cheesman,simpon and wint(2006) conducted a study using primary research and analyzing data for secondary and tertiary level institutions asserted that male students generally under achievement than female students. With the gap widening out at the higher levels. He further explains that

Research conducted in Zimbabwe analysis that variables such as gender, age, environment and access to internet explained or determine the academic performance of undergraduate students. Based on to the results obtained from this study gender gaps in favor of male students better performance than females students in academic achievement(ever taderara, elinahmandimaka, 2011).

A study conducted by **nayebzadeh, addinandheirany**(2011) indicates that the significant relationship between priori educational success of students and their academic performance at undergraduate level and also the analysis proofs the direct relationship between parents socio economic background and impacts of friend on academic achievement.

Sakho,2003 carried out a study on the determinant of academic performance hec- lausane graduates using tobit model and he analysis econometrically the relationship between different variables related with personal and family backgrounds and average mark of students and he conclude that socio economic background of family and good personal background of students contribute to better academic achievement.

Cheesman,simpson,wint(2006) carried out a study on determinates of student performance at university reflections from the Caribbean analyze their study on 900 samples students and the econometric result shows that gender gap in favor of male students is only related with university entrance exam scores. But in undergraduate level female students score high grade or perform better than males. The researcher pointed out the reason that female students perform or score low grade in entrance exam result and they joined in less competitive departments and this situations makes female students perform better or score high CGPA in undergraduate level than male students.

Park andM.Kerr(2005) conducted a study on determinants of academic performance of students by using multi-logit method of analysis on money and banking courses and use a sample of 97 students. The regression result indicates that college entrance exam and student's attendance determines academic performance. A student who attends attentively in class performs better in academic achievement.

Farooq , chaudnry, shafiy, berhanu(2011) addressed their research on effect of socio economic status of parents and students former education back ground specially for English and mathematics courses on academic performance on undergraduate level and they conclude that socio economic status of parents are significant indicators for students achievement. Students from high socio economic status family perform better than those not. And students previous proficiency on mathematics and English subjects ply vital role on academic performance of students at college level.

Astudy conducted by **Florence (2012)** on undergraduate students of economics in osun state indicates that family structure have great influence on academic performance of undergraduate students. According to this study family income and educational levels of parents as well as entrance exam of students determine student's achievement in education. Students from illiterate parents perform less than students from literate. This infers socio economic background of parents is an impetus to academic growth and performance of students.

(TsehayeWeldegiorgis and YesufMohammednur Awel, 2010/11) they conducted their study on The Determinants of Student Attrition at College of Business and Economics, Mekelle University: Econometric Investigation indicates that student's gender, national entrance examination overall results and mother education level significantly correlate with student performance. Female students found to perform lower than male students. Student's national entrance examination overall result is positively correlated with the student performance which is in line with our expectation. Those Students who do not drink alcohol found to have better

academic performance than otherwise. Student's mother educational background significantly affects student CGPA, i.e. the higher the level of mother education in years the better the student to perform keeping other things the same. For Public and Development Management students we found student's gender, age and financial constraint to negatively affect academic performance. We also found that national entrance examination overall results and Mathematics result significantly affect student performance. Study hours per day and father education also positively affect student academic performance.

Yeshinebret , alemayehu and firew (2013), carried out their research on factors affecting female students academic achievement at bahirdar university. They take a sample of 600 students on second year and above undergraduate female students and the result that they obtained shows that academic achievement of female students affected by students personal related factors such as less ability to competent, tension, failing in love easily, being addicted to drinking , smoking , disco houses etc. university related factors such as , influence of male students , lack of proper guidance, lack of proper reading place where students use freely, influence from male teachers and youth from surrounding environment.

CHAPTER THREE
3. Research methodology
3.1 model specification
While specifying the model, the researcher takes in to consideration important variables indicated by other researchers in determining students' academic performance. Moreover, the present study includes additional variables that are not indicated by previous scholars such as; the effect of sexual partnership and studying hours of students on their academic achievement.

Accordingly, the linear model can be written as:-

$$CGPA = B_0 + B_1AGE + B_2GEN + B_3AP + B_4FPEM + B_5ME + B_6FE + B_7PI + B_8BTAC + B_9SEX + B_{10} + HS + U_i$$

Where, B1>0, B2>0, B3>0, B4>0, B5>0, B6>0, B7>0, B8<0, B9<0, B10>0

3.1.1 Assigning dummy
Dummy for gender
1, for male and
0, for female
Dummy for sexual partnership
1, for students having sexual partnership and
0, for students not having sexual partnership
Dummy for behavior of students in taking of alcoholic drug and chat
1, for students taking of alcoholic drug and chat
0, for students not taking of alcoholic drug and chat

3.1.2 Variable descriptions
Age –measures age of students at a university level and age of students expected to be both negative and positive effect on student's achievement in education. As the age of students goes the ability of student's analysis improves and students able to perform well in education as age go higher. But in the other way age may affects academic performance of students negatively.

Gender (GEN); explains the effect of difference in gender on academic performance. The study assumes being female negatively affects academic performance. It is common that females perform less well than males in academics and male students perform better in academic than females.

Admission point (AP):- measures the former performance of students based on their entrance exam result they have. The study assumes student's university entrance exam result positively affects their academic performance after they join in to university.

Former English and mathematics proficiency (FPEM); it explains students former background on English and mathematics courses. The study assumes students having former good proficiency on English and mathematics courses positively affect students' performance at undergraduate level.

Maternal education (ME) it demonstrates the effect of female guardian /mothers education, years of schooling on the academic performance of undergraduate students. The research expects a student from educated female guardian performs better than students from illiterate family or as the family education goes higher students from high educational family performs best.

Father education (FE); it demonstrates the effect of male guardian /father education on the academic performance of undergraduate students. The research expects a student from educated male guardian performs better than students from illiterate family or as the family education goes higher students from high educational family performs best.

Parental income (PI); it explains the effect of family income on the academic performance of students. The study assumes a student from high income family back ground performs better than students from law income family background. High income of family positively affects academic performance of undergraduate students.

Behavior of students in taking of alcoholic drug and chat (BTAC); it measures the effect of taking alcoholic drug and chowing chat on the academic performance of students. And the study assumes taking alcohol and chat negatively affects student academic achievement.

Sexual partnership (SEXP); it measures the effect having sexual partnership on students' academic performance. A student with sexual partner performs less in academic than those students having no sexual partner. The study assumes having sexual partner negatively affects academic performance of undergraduate students.

Studding hours (HS); it explains how many hours students study per day. The more time students spend on study the better will be successful in academic result. Studying hours positively affect achievement in education.

Residual (U); it explains the unexplained part of the model or those variables not included in the model included under the error term.

3.2 RESEARCH METHODOLOGY

3.2.1 Source of data and method of data collection

The target population of the study was Second year and above Chamo campus students and all departments have equal chance of being selected as a sample. The study uses both primary and secondary source of data. Primary data has been collected from the selected sample students from each department trough questionnaire and structured interview. Secondary data or List of the selected samples from each department has been acquired from Chamo campus registrar office or departmental office.

3.2.2 Sampling design

Because of the heterogeneity nature of the population included in the study the representative sample students selected from each department through stratified sampling techniques. The study assumes each department as strata and sample have been selected from each strata. Among 1309 total number of second year and above undergraduate students the representative samples are 100. And the representative sample is selected from each department or strata. From each strata the following samples has been selected as a sample, 4,5,5,5,6,7,8,8,10,12,14,16, from English, Amharic, history, psychology, geography, tourism, civics, sociology, law, management, economics and accounting departments, respectively.

To design the sample size the researcher uses the following formula**;**

Pi=Ni/N

ni=npi

n=n1+n2+n3+n4+n5+……………. +

Where

N=total number of second year and above students in all twelve departments

Ni= total number of second year and above students from each department or strata

n=total sample size from all strata or department

ni= sample size from each strata or department

Pi= probability of samples being selected

3.2.3 Method of data analysis

To meet the objective, Econometrics method of data analysis has been used to explain the inferential relationship between academic performance of student's /CGPA/ and determinant factors of academic performance. Ordinary least square (**OLS**) has been used to determine the value of parameters and estimating of the model.

CHAPTER FOUR

4. RESULT AND DISCUSSION

Table.1 Respondent's academic performance by their cumulative grade point average (CGPA)

Students performance	(LP) CGPA<2.49	(HP) CGPA>2.75
Male	25(41.67%)	35(58.33%)
Female	27(67.5%)	13(32.5%)
Total	52(52%)	48(48%)

Source: own survey result, 2006/2014

Where: LP= low performing students

HP=High performing students

Table .1 Explains performances of students' in accordance with their cumulative grade point average. Those students having CGPA of less than 2.5 treated as low performance in academic achievement and students scoring 2.75 and above assumed as high performance in academic achievement. As the table explores of the total 60 male respondents 25 (41.67%) of students perform poorly their CGPA is below 2.5. And the remaining 35(58.33%) of respondents performs better in academic achievement and score 2.75 and above. As far female respondents concerned 27(67.5%) of respondents out of 40 total respondents score CGPA of bellow 2.5 and

poorly perform in their academic achievement. The rest 13(32.5%) of female respondents achieve better performance and score CGPA of 2.75 and above.

Table 2. Summary of the Pearson Product Moment correlation analysis for the relationship between gender of respondent and academic performance/CGPA/

Correlations

		COMMULATIVE GRADE POINT AVAREGE	GENDER OF RESPONDENT
COMMULATIVE GRADE POINT AVAREGE	Pearson Correlation	1	.380**
	Sig. (2-tailed)		.000
	N	100	100
GENDER OF RESPONDENT	Pearson Correlation	.380**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table .2 above illustrates that the Pearson product moment correlation index obtained on the CGPA and sex of students is r = 0.380 with significance or p-value = 0.000 which is less than alpha = 0.05 implying that being maleness significantly and positively related to academic performance than females and females performed less in academic performance than male students.

Table .3 Summary of the Pearson Product Moment correlation analysis for the relationship between university admission points and academic performance/CGPA/

Correlations

		COMMULATIVE GRADE POINT AVAREGE	UNIVERSITY ADMISSION POINT
COMMULATIVE GRADE POINT AVAREGE	Pearson Correlation	1	.717**
	Sig. (2-tailed)		.000
	N	100	100
UNIVERSITY ADMISSION POINT	Pearson Correlation	.717**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Table .3 above illustrates that the Pearson product moment correlation index obtained on the CGPA and university admission points is r = 0.717 with significance or p-value = 0.000 which is less than alpha = 0.05 implying that university admission points were significantly and positively related to academic performance of students /CGPA/.

Table .4 Summary of the Pearson Product Moment correlation analysis for the relationship between studying hours and academic performance/CGPA/

Correlations

		COMMULATIVE GRADE POINT AVAREGE	STUDYING HOURS
COMMULATIVE GRADE POINT AVAREGE	Pearson Correlation	1	.758**
	Sig. (2-tailed)		.000
	N	100	100
STUDYING HOURS	Pearson Correlation	.758**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

Source: survey result/2014/2006/

Table .4 illustrates that the Pearson product moment correlation index obtained on the CGPA and studying hours , r = 0.758 with significance or p-value = 0.000 which is less than alpha = 0.05 implying that studying hours were significantly positively related to academic performance of students /CGPA/.

4.2. ECONOMETRICS RESULTS

This section of the paper presents the statistical significance of determinant factors of academic performance of undergraduate students obtained from linear regression (OLS).

Table .5 Regression result . reg CGPA AGE GEN AP FPEM ME FE PI BTAC SEXP HS

CGPA	coefficient	Std. Err.	t –value	P>|t|
AGE	.0076251	.0068714	1.11	0.270
GEN	.1645584	.049899**	3.30	0.001
AP	.0021196	.0008822**	2.40	0.018
FPEM	.00031	.0002179	1.42	0.158
ME	.0110657	.0072768	1.52	0.132
FE	.0033625	.0079622	0.42	0.674
PI	1.90e-07	2.61e-07	0.73	0.470
BTAC	-.2207531	.0776382**	-2.84	0.006
SEXP	-.1081842	.0708306	-1.53	0.130
HS	.0633419	.01691***	3.75	0.000
_cons	1.491333	.3227959***	4.62	0.000

   F(10,   89)   = 32.80
   Prob > F   = 0.0000
   R-squared   = 0.7865
   Adj R-squared = 0.7626
    Root MSE   = 0.21685

, *, indicates statistical significance at 5%, 1% respectively

4.2.1 Diagnostic tests
It is mandatory to conduct diagnostic tests before estimating the model. Which means checking whether the model satisfies the assumption of ordinary least square estimation or not? The model must satisfy the assumption of linearity, the assumptions of homosckedasticity or constant variance of the error term, no perfect multi co linearity among independent variables, there not be exists specification error / no functional miss specification, the assumption of normality , no serial auto correlation among successive values of the error term specially for time serious data and so on.

   1. **Test for functional misspecification of the model**
   Ho, no functional misspecification problem
   Ha, there exists functional misspecification problem
. ovtest

Ramsey RESET test using powers of the fitted values of cgpa
        Ho: model has no omitted variables
                F(3, 86) =   1.31
                Prob > F =   0.2761

   The above test of functional misspecification of Ramsey rest test explains that the model has no specification error. Since P< 0.05 (0.2761>0.050), we obliged to accept the null hypothesis which is no functional misspecification problem while specifying the model.

   2. **Test of multi co linearity**
   Total avoidance of multi co linearity problem is impossible but the problem is sever if there exists perfect correlation among explanatory variables. To test whether there exists multi co linearity between explanatory variables, we can use variance of inflationary factor (vif) and contingency coefficient (cc) method for continuous variables and discrete dummy variables respectively.
. vif

Variable	VIF	1/VIF
fe	3.23	0.309915
me	2.83	0.353671
btac	2.74	0.364724
hs	2.66	0.376399
ap	2.32	0.430735
sexp	2.24	0.446339
gen	1.20	0.830159
pi	1.16	0.858444
fpem	1.13	0.888608
age	1.11	0.902939
Mean VIF	2.06	

        After regression of the whole variable with the dependent variable, the overall multi co linearity test shows no multi co linearity problem. But variance of inflationary factor test of multi co linearity test is valid for continuous variables, variables assuming number. So the researcher uses separately VIF for continuous variables

and contingent coefficient method /cc/ method to test multi co linearity among dummy variables.

3.   Test of hetroskedasticity

Ho: constant variance

Ha: hetroskedastic variance

```
. estat hettest age gen ap fpem me fe pi btac sexp hs


Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: age gen ap fpem me fe pi btac sexp hs

        chi2(10)     =     18.20
        Prob > chi2  =   0.0517
```

Test value chi square =18.20

P-value=0.0517

Conclusion; 0.0517>0.05, our decision becomes acceptance of null hypothesis. There is no hetroscedasticity problem or there exists constant variance of the error term.

4.   Test of autocorrelation

We can use Durbin-Watson statistic (d- statistics) to test whether there exists serial autocorrelation or not? If the value of   Durbin-Watson statistic (d- statistics) (d<2) there exists positive autocorrelation and if (d>2) there exists negative autocorrelation. Note that (d>1.5 - 2 ≈2)

```
. gen index=_n


. tsset index
        time variable:  index, 1 to 100
                delta:  1 unit


. dwstat

Durbin-Watson d-statistic( 11,    100) =   1.85554
```

H0: there is no autocorrelation (d=2)

H1: there is autocorrelation (d≠2)

If the value of d- statics is approximate to 2 or equal to 2 we decided to accept the null hypothesis, means there is no autocorrelation. In our cause Durbin-Watson statistic = 1.855≈2. Then the decision goes to rejection of alternative hypothesis or acceptance of the null hypothesis, means there is no autocorrelation.

4.2.2 Econometrics result interpretation

Verification of hypothesis

Since the model passes test of functional Miss Specification, multi co linearity, hetrosckedasticity, assumptions we can interpret the result and we can estimate the effect of such determinant variables on student's academic performance.

CGPA=1.49+0.0076AGE+0.1645GEN+0.0022AP+0.0003FPEM+.011ME+.00336FE+0.000002PI-0.22BTAC-.108SEXP+0.063HS+UI

Gender and CGPA

The researcher assigns a value level of "1" for   male respondents and assigns a value of "0" for female respondent students. And the hypothesis set in the first chapter of this paper entails that male students perform well than female students in academic success or by scoring better CGPA. The regression result also tells us the same thing with that of hypothesized in the first chapter of the paper. The regression held in favor of male students and the result also shows gender difference has significant effect on students CGPA. Male students perform well than female students. Statistically if the t- value for a variable is greater than 2.2 or the p- value for the variable is < 0.05 the variable gender has significant effect over CGPA at 5% significant level. As the regression result infers t- value for variable gender is greater than 2.2 which is (3.30>2.2) or p-value less than 0.05 (0.001<0.05) we decided to reject null hypothesis gender difference has no effect on students success in academic or the variation in their CGPA. Gender has positive sign and male students perform well than females. The value of the coefficient *B* for a variable gender is 0.1727, it entails that holding the effect of other things remain constant male students CGPA greater than female students CGPA by 0.1645.

Student's university entrance exam result (AP) and students' academic performance at university level

The variable AP measures the effect of student's university entrance exam result on their academic performance after they joined in to university. The researcher hypothesized variable AP has positive effect on student's academic performance (CGPA) after they joined in to university. As the regression result infers t- value for

variable AP found to be greater than 2.2 which is (2.40>2.2) or p-value less than 0.05, (0.018<0.05) we decided to reject null hypothesis AP has no effect on students success in academic or the variation in their CGPA. AP has positive sign and significantly determines CGPA at 5% level of significance. The value of the coefficient *B* for a variable AP is 0.00212, it entails that holding the effect of other things remain constant if students university admission point increased by one unit this result in CGPA increased by 0.00212 after students join in to the university.

Student's former proficiency of English and mathematics courses and students' academic performance at university level

The variable FPEM measures the effect of student's former preparatory proficiency on their academic success after they joined in to university. The researcher hypothesized the variable FPEM has positive impact on students university grade (CGPA). The result obtained from the regression of this study is in line with the result obtained by **Koyoshaba(2005)**. He tests significant relationship between former school back ground and academic performance of undergraduate students. Even if the variable is not statistically significant but the regression result explains university admission point has positive effect on student's academic performance after they joined in to university.

Mothers educational level and students' academic performance at university level

The variable mother's education (ME) measures the effect of educational level of mothers on student's academic performance (CGPA) at university level. The variable ME hypothesized as it has positive influence on student's success at university level. In the study mother's education expressed in terms of years of education of mothers. Even if mother's years of schooling has not yet significant effect on students' performance (CGPA) but its magnitude is positive sign.

Fathers educational level and students' academic performance at university level

The variable Fathers education (FE) measures the effect of educational level of Fathers on student's academic performance (CGPA) at university level. The variable FE hypothesized as it has positive influence on student's success at university level. In the study expressed Fathers education in terms of years of education. Even if Fathers years of schooling have not yet significant effect on students' performance (CGPA) but its magnitude is positive sign.

Parental income and academic performance of students

The variable PI (parental income) infers the impact of family's economic background on student's achievement in academics. The magnitude of the effect of family income on student's academic performance is found to be positive. But statistically the variable PI (parental income) has no significant effect on students CGPA.

Using of alcoholic drug and chat and academic performance of students

The variable BTAC measures the effect of addictiveness on student's academic performance (CGPA). The result obtained from the regression is in line with the hypothesis made in the first part of this paper. As the regression result infers t- value for variable BTAC found to be greater than 2.2 which is (2.840>2.2) or p-value less than 0.05, (0.06<0.05) we decided to reject null hypothesis BTAC has no effect on students success in academically /CGPA. BTAC negatively significantly determine CGPA or academic performance of university students and the variable is significant at 5% level of significance. The value of the coefficient *B* for a variable BTAC is-0.002, it entails that holding the effect of other things remain constant if students addictiveness increased by one unit students being success or CGPA decreased by -0.22.

Having sexual partnership and academic performance of students

The variable SEXP (having sexual partnership) measures how creating sexual partnership in campus affects students CGPA academic performance. Even if the variable is not statistically significant but the magnitude for its effect is negative.

Studying hours and academic performance of students

The variable HS (studying hours) infers the effect of study on student's academic performance or CGPA. The regression result for the variable HS shows that studying hours is significant at 1% level of significant level. Its t- value 3.75 (which is 3.75>2.2) or p-value less than 0.05, (0.000<0.05) we decided to reject null hypothesis HS has no effect on students success in academically /CGPA. Studying hour is significant positive impact on student's academic performance (CGPA). The value of the coefficient *B* for a variable HS is-0.063, it entails that holding the effect of other things remain constant if a student increased a studying hours by one hour a student being success or CGPA increased by 0.063.

Over all significance taste

The overall significance test prevail the combined effect of all variables included in the model. Since the probability of overall significance is <0.05 (0.0000<0.05) with F (10,   89) =32.80 we decided to reject the null hypothesis that at least one variable is zero. And the variables included in the model best explain the dependent variable. R_square = 0.7865 means that 78.65% of the variation or the change in the dependent variable or the change in CGPA is variables included in the model which is due age, gender, university admission point, former background of students regarding English and mathematics courses, socio economic background of families and

students behavior in terms of having sexual partner and drug and chat habit and also studying hours. The remaining 21.35% of the change in CGPA is due to other factors not included in the model.

CHAPTER FIVE
5. CONCLUSSION AND RECOMMENDATION
This chapter discusses the findings of the study as presented in chapter four. It also presents the conclusions arising from the study and recommendations, which could improve academic performance in Arbaminch University

5.1 CONCLUSSION
After analyzing the collected information from primary respondents the researcher develops the following conclusion:

The result obtained from the Pearson product moment correlation index and the OLS regression result evidences that Gender has positive sign and male students perform well above than females. The result of this study is in contrast with the result obtained by Cheesman,simpson,wint (2006). He pointed out that gender gap in favor of male students is only related with university entrance exam scores. But in undergraduate level female students score high grade or perform better than males.

University admission point is important variable in determining student's college performance and it is significantly and positively related to academic performance of student's /CGPA/. The regression results of this study is in line with Staffolani and bratti (2002) cited by Martha (2005)& Park andM.Kerr(2005) found that high school grade point average is consistently the best predictor of college grade of students. And with also explains student's university entrance exam result has positive impact on CGPA of students.

The behavior of students in taking alcoholic drug and *khat* implying that behavior of taking alcoholic drug and *khat* were significantly negatively related to academic performance of students /CGPA/ with r = -0.723 and As the regression result infers t- value for variable BTAC found to be negatively significantly determine CGPA or academic performance of university students and the variable is significant at 5% level of significance. The result obtained from the regression is in line with the hypothesis made in the first part of this paper.

The other important variable in determining student's college academic performance is studying hours. The number of hours students use to study per day   significantly and positively   related to academic performance of students /CGPA/ with, r = 0.758. The regression result for the variable HS shows that studying hours is significant at 1% level of significant level. Studying hour is significant positive impact on student's academic performance (CGPA).

5.2 RECOMMENDATION
Based on the study findings and the conclusions, the researcher derived the following recommendations:
As the regression result infers males were found to be higher performance than female students so it is recommended that the responsible body should give more emphasis to improve the academic performance of female students through adjusting special support to female students.

Although student's former academic background is a significant determinant for student's academic success at college and university level the responsible body should work in the ground that means improving students' performance earlier before the joined in to university were more effective measurement to improve their academic achievement in college level too.

Since Parental incomes were found to be positively related with academic performance of students, students from low income family needs income support from the university. In case the university must support those students to maintain their academic achievement better.

As the regression result infers students behavior of taking alcoholic drug and chat were found to be negatively related with students' academic performance so the responsible body should take a restrict measurements for alcoholic drug and chat users.

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