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Factors Affecting the Academic Performance of Undergraduate Students': The Case of Raya University, Maichew, Ethiopia

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Abstract
The main objective of this study is to identify factors affecting the academic performance of undergraduate students of Raya University (RU), Maichew, Ethiopia. In order to achieve the stated objectives of the research a stratified sampling was used to select 146 students from 17 departments of the university. To analyze the collected data and to investigate factors affecting the academic performance of undergraduate students the ordinary list square (OLS) and Tobit regression methods were used. The findings reviled the existence of significance relationship between the student's university cumulative grade point average (UCGPA) and preparatory CGPA, gender deference, place of origin, college of the student, mismatch between teaching and learning style and student's expectation about their future job opportunity. The above independent variables are statistically significant and they are the major determinants of students' academic performance. However, variables like, age, study hour, entrance exam result, participation in cooperative learning program, mother's educational level and department choice were insignificant. Finally, the study recommends that Raya University, the Ethiopian ministry of education, students and students' families, policy makers and other concerned body should work hard towards improving students' academic performance, by considering aforementioned determinant factors.
Keywords: Academic performance, Determinant, OLS regression, Tobit regression

1. Introduction

1.1 Back ground of the study

Education and development are closely related endeavors. This is the main reason why many developed and developing countries like Ethiopia always consider education as the key instrument in their development. The world is being changed at a steady pace in all aspects. The change is quite conspicuous in the area of education particularly in information and communication albeit educational change has never been easy (MOE, 2009). However, it is important to consider the performance of the education sector and more specifically the performance the stockholders in the education sector. Without the satisfactory performance of the stockholders, it is difficult to imagine the fruits of education.

Being a developing country, Ethiopia is in need of highly qualified professionals for the betterment of its socio-economic and political development status. Due to the declaration of the transformation and the resulting economic dynamism, the country requires highly qualified professionals in different fields. As a result, it is necessary to enhance the means of qualifying the existing workers in various sectors of the economy.

Students are most essential asset for any educational system. School, colleges and universities are meaningless without student. The overall development of any country is directly linked with student academic performance. Understanding the status and determinants of academic performance of students is essential for successful and effective intervention to bring quality education (Muhdin .M, 2016).

"Education can add to the value of production in the economy and to the income of the person who has been educated. However, even with the same level of income, a person may benefit from education—in reading, communicating, arguing, in being able to choose in a more informed way, in being taken more seriously by others and so on."

Nobel laureate Amartya Sen, Development as Freedom, 1999

1.2 Statement of the Problem

Academic performance, which measured by the examination results, is one of the major mechanism to measure the academic performance of students. Hoyle (1986) argued that schools are established with the aim of imparting knowledge and skills to those who go through them and behind all this is the idea of enhancing good academic performance. As a result, understanding the status and determinants of academic performance of students is essential for successful and effective intervention to bring quality education (Muhdin .M, 2016). Students' academic gain and learning performance is affected by numerous factors including gender, teaching faculty, students previous education background, student's behavior of taking drug, family's social, educational and economic status (Moges, E. 2017).

Raya University whose vision is to be one of the top ten universities in Ethiopia and this vision based on quality assurance and maintenance of standards. However, according to 2017/2018 first year, first semester academic performances of the university students, some of the students are with a very good performance while,

others registered low performance. Currently, the university community concerned about those who do not perform well because if this poor performance goes unchecked, the university may lose its reputation, which may result in loss of confidence in Raya University graduates.

Since the university is a new university with the age of one academic year, there is no research, which deals with factors affect the academic performance of the students. The researcher would therefore like to establish the factors affecting the academic performance of undergraduate students of Raya University with specific reference to entrance exam result (admission points), gender, socioeconomic status of the student, socioeconomic status of the student's family and student's expectation about their future employment opportunity, college of the students, department choice etc.

1.2 Objective

General objective: The general objective of this study is to find out the relationship between different factors and students' academic performance using the university cumulative grade point average (UCGPA) as outcome indicator.

Specific objectives: having the above general objectives this research have also the following specific objectives

- To establish the relationship between students' admission points (Entrance exam result and preparatory CGPA) and academic performance of undergraduate students.
- To measure the impact of students expectation about future job opportunity on their academic performance
- To measure impact of socioeconomic factors on the students' academic performance

2. Methodology of the study

2.1 Discerption of the study area

Raya university established by the government of Ethiopia with the council of ministers, regulation number 357/2016 as an autonomous higher education institution in Maichew at a distance of 668 kilometer to the north of the capital city (Addis Ababa). Currently the university has five colleges namely, College of Natural and Computational Sciences (CNCS), College of Agriculture (CA), College of Business and Economics (CBE), College of Social Sciences (CSS) and College of Engineering (CE). The university launched its formal service in 2017 with 17 undergraduate programs. At present, the university is on its way to launch postgraduate program in economics, accounting and management discipline.

2.2 Study Design and Setting

2.2.1 Data source and sample size determination

For the consumption of the study, a primary data was collected from sampled respondents of the university undergraduate students. Beside, secondary data also collected from the university registrar and alumni directorate. The sample size was determined by using Yamane's formula and it is estimated to be 146.

Since the University has 17 departments with respective number of students, a stratified random sampling technique employed as a sampling technique. Stratified random sampling provides better results than the random sampling when the strata are more different among them and more homogeneous internally (**Lagares& Puerto, 2001**).

As result, this research take random sample proportionally to the size of each stratus (wards), i.e., if we take the **j-th** stratus with size **Nj**, and then a sample of this stratus will have size $\left(\frac{NJ}{N}\right)\boldsymbol{n}$; being **N** the size of the population and **n** the size of the sample. In our case **N** = 1161 and n is estimated to be 146.

Table 1: Number of sample from each department (ward)

Department	Number of student per department	Number of sample per department		
		F	M	Total
Animal science	84	4	7	11
Horticulture	87	4	7	11
Accounting and Finance	184	9	14	23
Economics	124	6	9	15
Management	105	5	8	13
Automotive Engineering	54	2	5	7
Manufacturing	54	2	5	7
Computer Science	73	3	5	8
Electrical Engineering	54	2	5	7
Mechanical Engineering	54	2	5	7
Biology	74	3	6	9
Chemistry	36	2	3	5
Mathematics	20	1	1	2
Physics	25	1	2	3
English	45	2	4	6
Geography	46	2	4	6
History	45	2	4	6
Total …….. 146				

2.2.2 Specification of the model

In order to identify factors that determine the academic performance of Raya University undergraduate students, the study used multiple regression model. The dependent variable is the student's academic performance, which measured by the student's university commutative grade point average (**UCGPA**) and its value varies between zero and four points. One of the important kind of limited dependent variable is a corner solution response. Such a variable is zero for a nontrivial fraction of the population. However, is roughly continuously distributed over positive values. The Tobit model is quite convenient for these purposes. Typically, the Tobit model expresses the observed response, **Y**, in terms of an underlying latent variable (Wooldridge, 2013). Hence, by employing the **OLS** and Tobitmodel the academic performance is linked to personal, socio-economic and demographic characteristics of the respondent's.

$$UCGPA = \alpha + \beta_1 AGE + \beta_2 EER + \beta_3 pCGPA + \beta_4 SH + \beta_5 GEN + \beta_6 PO + \beta_7 CO + \beta_8 PICLP + \beta_9 MEL + \beta_{10} DC + \beta_{11} d\ AM\ OK + \beta_{12} EFJO + \beta_{13} SHS + Ui$$

2.2.3 Description of the variable

Dependent variable: UCGPA (University Cumulative Grade Point Average). Most of the researchers around the world use Grade Point Average (GPA) as a measure of students' academic merit and it is the best variable to measure the educational achievements of undergraduate students (See *MogesEndalamaw, 2017; Orestes Kapinga& Jaqueline Amani, 2016; Maruzzella Rossi, 2017 ;Muhdin Muhammedhussen, 2016*).

Independent variable:

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. However, in the other way age may affects academic performance of students negatively. **Gender (GEN)** is 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.**University entrance exam result (UEER)** which measures the former performance of students, based on their entrance exam result they have. The study assumes student's entrance exam result positively affects their academic performance after they join university.

Preparatory CGPA (PCGPA) measures the former performances of students based on their grade 11^{th} and 12^{th} CGPA. This study assume positive relation between students' average preparatory CGPA and their current academic performance.**Mother's educational level, (MEL)** demonstrates the effect of mother's educational level, on the academic performance of undergraduate students. The research expects a student from educated mothers to perform better than students from illiterate mothers. **Studding Hour (SH)** is Studding hour or a time spent on studding and this research expect positive relation between students' academic performance and studding hour. **Studding hour square(SHS)** is the square of studding hour and it may indicate the change in CGPA because of the increment in studding hours.

Place of origin (PO) is place of origin (Rural/ Urban Dummy) and this variable indicates the original place of the respondents. **College of the respondent (CO)** is a categorical variable, which stands for college, and it will

demonstrate the impact of the college on the students' academic performance, if any. **PICLP** stands forparticipation in cooperative learning program(Active/ Passive Dummy)**.** Theoretically, cooperative or group learning program will help students to improve their academic achievements. This research also expect positive relation between student's academic achievement and their participation in the cooperative program. **EFJO:** It is a new variable, which demonstrates the effect of student's expectation (pessimistic verses optimistic) about future job opportunity on their academic performance. This research expect positive relation between student's expectation about future job opportunity and their current academic achievement.

AM OK: is a dummy variable, which represents students who are fine (ok) with the teaching methodology followed by the instructors. In other word, this dummy variable stands for students whose learning style match with the thatching style of the instructors.

3. Descriptive Statistics and Econometrics Analysis

3.1 Descriptive Statistics

In order to achieve the stated objectives of the paper this research used a primary data, which collected from 52 female and 94 male Raya university undergraduate students. Out of the total respondents 19 (13.01%) of them are from college of natural science, 22 (15.07) of them are from college of agriculture, 51 (34.93) of them are from college of business and economics, 18 (12.33) of them are college of social science and the remaining 36 (24.66) of them are from college of engineering.

Table 2: Students' and their families' background

Features	Statistics	Features	Statistics
Age (Mean in Year)20.26712		**Mothers Education**	
Sex of students		Illiterate	90
Male	**52**	Primary level	46
Female	**94**	Secondary level	5
		Tertiary level	5
Place of Origin		**Fathers Education**	
Urban	**36**	Illiterate	64
Rural	**107**	Primary level	68
Area of study		Secondary level	7
Natural Science	**77**	Tertiary level	7
Social Science	**69**		
Study place		**Place of Origin**	
Library	**77**	Urban	107
Class room/ space	**36**	Rural	36
Dormitory	**24**		
Other place	**9**		

Out of the total respondents 116 (79.45%) are fine with the teaching methodology adopted by Raya University instructors while the remaining 30 (20.55) respondents are not fine with the teaching methods adopted by the university instructors. Concerning department choice, 108 (73.97%) of the respondents are studding their first choice and 38 (26.03) are studding a filed which was not their first choice or beyond their first choice.

When we see the students expectation about future job opportunity, of the total respondents 105 (71.92%) are optimist about their future job opportunity and the remaining 41 (28.08%) of the respondents are pessimist about their future job opportunity. When we see the participation of students on a cooperative learning program (1 to 5 learning group), Out of the total respondents 133 (91.10%) are active participants and the remaining 12 (8.9%) are passive participants on the program.

3.2 Econometrics Analysis

In this section of the study, the ordinary list square **(OLS)** and **Tobit** model estimation are presented and the estimation results are interpreted, compared and discussed in detail.

3.2.1 The OLS Estimation Result

Before totally accepting and interpreting the ordinary list square (**OLS**) regression result, we need to test the fulfillment of the five basic assumption and some other conditions for **OLS** regression. According to the basic assumption any **OLS** regression result should be tested for Linearity, randomness of the sample observation (In this assumption we mean that the sample should consist of n-paired observations that are drawn randomly from the population, the number of observations should be greater than the number of parameters to be estimated. The assumption that state the independent variables (X's) are no stochastic, whose values are fixed, the assumption of zero conditional mean, the assumption of no perfect collinearity (multicollinearity test) , the

assumption of homoskedasticity (heteroskedasticity test) and omitted variable bias test.

3.2.1.1 The Assumption of Normality and Normality Test

If we assume that all assumptions including the normality assumption hold, we will have a multiple linear Gaussian model (parametric model), and a solution is to use the Maximum Likelihood Estimate **(MLE)**. In this case, the Maximum Likelihood Estimator for the parameters coincides to the ordinary least squares **(OLS)** estimator but if we assume that only the first five main assumptions of the multiple linear regression modelsexcept for the assumption of normality hold, we have a semi-parametric multiple linear regression models, the **MLE** is unfeasible. In this case, the only solution is to use the ordinary least squares estimator (**OLS**) (Hurlin, 2013).

One of the major non-graphical tests for normality is the ***Shapiro-Wilk*** test and it tests the hypothesis that the distribution is normal, in this case, the null hypothesis is that the distribution of the residuals is normal.

Table 3: Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
r	146	0.97868	2.424	2.005	0.02249

In the above Shapiro – Wilk test table the p-value is 0.0000 (which is below 0.05 threshold) as a result we reject the null hypothesis.

Yes, of course, it is widely but incorrectly believed that the **t**-test and linear regression are valid only for normally distributed outcomes. The **t**-test and linear regression compare the mean of an outcome variable for different subjects. While these are valid even in very small samples if the outcome variable is normally distributed, their major usefulness comes from the fact that in large samples they are valid for any distribution (Lumley etal, 2009).

3.2.1.2 The Assumption of Homoskedasticity and Heteroskedasticity Test

The properties of the estimators of the regression coefficients depend on the properties of the disturbance term in the regression model. One of the major Gauss–Markov conditions states that the variance of the disturbance term in each observation should be constant. To put it in another way, the probability of the error term reaching a given positive (or negative) value will be the same in all observations. This condition is known as homoscedasticity, which means "same dispersion"(Dougherty, 2017). If the homoskedasticity assumption is not satisfied, then there is heteroskedasticity, or disturbances are heteroskedastic.

Most of the times a models estimated with cross-sectional data are affected by the problems of heteroskedasticity. When there is heteroskedasticity, the **OLS** method is not the most appropriate because the estimators obtained are not the best, i.e. the estimators are not **BLUE** in addition the covariance matrix of the estimators obtained by applying the usual formula is not valid when there is heteroskedasticity (and/or autocorrelation). Consequently, the **t** and **F** statistics based on the estimated covariance matrix can lead to erroneous inferences.

It is possible to test the problem of heteroskedasticity through different methods but in our case, we used the ***Breusch-Pagan test*** to detect the problem of heteroskedasticity and the result of the test presented below

Table 4: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity		
Ho: Constant variance		
Variables: fitted values of LnVIC	chi2(18) = 28.19	There is Heteroskedasticity
Ho: Constant variance	Prob > chi2 = 0.0593	problem

The null hypothesis is that residuals are homoskedastic. Here we have Prob > chi2 with the value of 0.059, as a result, we accept the null and concluded that residuals are homoskedastic.

3.2.1.3 The Assumption of no perfect collinearity and Multicollinearity Test

An important assumption for the multiple regression models is that independent variables are not perfectly multicollinear. Multicollinearity is a case of multiple regression in which the predictor variables are themselves highly correlated. In other word multicollinearity, can be defined as a situation in which there is an exact (or nearly exact) linear relation among two or more of the input variables.

One of the major problems of multicollinearity is that the individual **P** values can be misleading (a **P** value can be high, even though the variable is important). The second problem is that the confidence intervals on the regression coefficients will be very wide. The confidence intervals may even include zero, which means one cannot even be confident whether an increase in the independent variable value is associated with an increase, or a decrease, independent variable. Because the confidence intervals are so wide, excluding a subject (or adding a new one) can change the coefficients dramatically and may even change their signs (Paul, 2017).

Table5: Variance Inflation Factor

Variable	VIF	1/VIF	Variable	VIF	1/VIF
SH	25.22	0.039655	**dMT**	1.36	0.733904
SHS	24.75	0.040396	**dMS**	1.31	0.764344
CBE	3.58	0.279102	**dfco**	1.29	0.774522
CE	3.51	0.284970	**Age**	1.29	0.778022
CA	2.99	0.333890	**pCGPA**	1.25	0.797392
CNS	2.18	0.457863	**dactive**	1.24	0.807720
EER	1.87	0.535817	**dAMOK**	1.24	0.808051
dru	1.51	0.662999	**dOPTIMIST**	1.23	0.812593
df	1.42	0.703326	**dMp**	1.17	0.855777
Mean VIF ……..4.36					

A VIF > 10 or a 1/VIF < 0.10 indicates trouble. In our case, all VIFs are below ten and the mean VIF is 4.36, as a result, there is no multicollinearity problem.

3.2.1.4 The Impact of Omitted Variable Bias and Model Specification

If we miss out an important variable it does not only mean our model is poorly specified it also means that any estimated parameters are likely to be biased as result testing for omitted variable bias is important for our model. In order to know the presence of omitted variable in our model we used Ramsey ***RESET*** test.

Table 6: Ramsey RESET test using powers of the fitted values of UCGPA

Ramsey RESET test using powers of the fitted values of LnVIC		
	Ho: model has no omitted variables	
Ho: model has no omitted variables	*F (3, 214) = 1.01*	*The model has no omitted variable bias*
	Pro b > F = 0.3930	

The null hypothesis is that the model does not have an omitted-variables bias, the p-value is 0.3930, which is higher than the usual threshold of 0.05, so we fail to reject the null and conclude that we do not need more variables.

Another method that can be used to test the problem of model specification is the linktest. The link test checks whether we need more variables in our model by running a new regression with the observed ***Y (csat)*** against ***Yhat (csat_predicted)*** and ***Yhat-squared*** *as* independent variables. In this test, we will focus on the significance of *hatsq*.

Table 7: Link test

UCGPA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
hat	.8355386	.791108	1.06	0.293	-.7282383 2.399316
hatsq	.0274306	.1313967	0.21	0.835	-.2323003 .2871614
cons	.239426	1.168638	0.20	0.838	-2.070611 2.549463

The null hypothesis is that there is no specification error. Since the **p**-value of **_hatsq** is not significant, then we fail to reject the null and we can conclude that our model is correctly specified or we do not have any model specification problem.

3.2.2 Ordinary List Square Regression Result and Interpretation

The OLS regression result is with the R^2 of 0.5720 and it means that out of the total variation within the model 57% are explained by the explanatory variables. In other word, the independent variables are able to explain more than 57% of the variation in the dependent variable.

The t- statistics is calculated with the null hypothesis that a parameter is zero, which means that the estimated variable has no effect on the dependent variable given that the other variables are in the model. In addition, according to the above OLS regression result pCGPA (preparatory CGPA), CNS (College of natural since) , CA (College of agriculture), CBE (College of Business and Economics), CE (College of Engineering) and dru (dummy variable which stands for students originally from rural area), are statistically significant at the level of 1%.

Table 8: Ordinary List Square Regression Result

**** Statistically significant at the level of 1%***				**Number of obs = 146**	
***** Statistically significant at the level of 5%***				**F(18, 127) = 9.43**	
****** Statistically significant at the level of 15%***				**Prob > F = 0.0000**	
D stands for dummy variable				**R-squared = 0.5720**	
				Root MSE = .4675	
UCGPA	**Coef.**	**Std. Err.**	**t**	P>t	Significance level
Age	-.0372567	.0361819	-1.03	0.305	
EER	.0010801	.0016398	0.66	0.511	
pCGPA	.0417926	.0046995	8.89	0.000	*
SH	-.0092643	.0898884	-0.10	0.918	
df	-.1950431	.0963421	-2.02	0.045	**
dru	.3270213	.1073938	3.05	0.003	*
CNS	-.5366167	.169947	-3.16	0.002	*
CA	-.8490314	.1871699	-4.54	0.000	*
CBE	-.6592885	.1536144	-4.29	0.000	*
CE	-.6556858	.1681561	-3.90	0.000	*
dactive	.1096331	.1511583	0.73	0.470	
dMp	-.0389109	.0900328	-0.43	0.666	
dMS	.3959292	.2433443	1.63	0.106	
dMT	.104713	.2483395	0.42	0.674	
dfco	-.0330043	.1001935	-0.33	0.742	
dAMOK	.2184861	.1065249	2.05	0.042	**
dOPTIMIST	.157563	.0955074	1.65	0.101	***
SHS	-.0043871	.0073547	-0.60	0.552	
_Cons	.3768797	1.126838	0.33	0.739	

The variable df (dummy variable which stands for female respondents), and d Am Ok (dummy variable which stands for respondents who are ok (fine) with the teaching methodology adopted by Raya university instructors) are statistically significant at the level of 5%. In addition, the variable dOPTIMIST (dummy that stands for respondents who are optimist about their future job opportunity) is statistically significant at the level of significance of 15%. On the other hand, the variable, age, EER (entrance exam result), SH (study hour), dactive (dummy variable which stands for students who participate actively in the cooperative learning program, MEL (categorical variable which stands for mothers education including dMp,dMS, dMT), dfco (dummy which stands for respondents who are allocated based on their first department choice), SHS(study hour square), and the constant terms are statistically insignificant.

3.3 Interpretation of the significant variables

PCGPA (preparatory CGPA) : the coefficient of this variable indicate that other things remain constant as the preparatory CGPA of the students increase by one then their university CGPA will increase by 0.041. **df** (dummy which stands for female respondents) : With ceteris paribus assumption if the respondent is female university student on average her university CGPA is lower than from that of male university students by 0.195. This is large grade difference between male and female university students as result mostly females are vulnerable to drop out.

College category (which stands for the college of the respondents) according to the above **OLS** regression the variable CSS (which stands for college of social science students) is considered as a base group. With ceteris paribus assumption, if the student is from college of natural science, on average his/her UCGPA will be lower than form that of college of social science students by 0.536. If the student is from college of agriculture, on average his/her UCGPA will be lower than from that of college of social science students by 0.849. If the students are from college of business and economics, on overage his/her UCGPA will be lower than from that of college of social science students by 0.659 and if the student is from college of engineering his/her UCGPA will be lower than from that of the base group by 0.655. **d Am Ok** (dummy variable which stands for respondents who are ok with the teaching methodology adopted by Raya university instructors): According to the result, students who are fine with the teaching methodology employed by their instructors a CGPA on average greater than from that of students who are not fin with the teaching methodology of the instructors. There is huge gape as a result we need to do a lot to solve the mismatch between teaching and learning styles. **dOPTIMIST** (dummy that stands for respondents who are optimist about their future job opportunity): according to the coefficient of this variable students who are optimist about their future job opportunity have a CGPA which is higher than from the that of pessimist students by 0.175.

4.2.2 Tobit Regression Result and Interpretation

Table 8: Tobit Regression result

Tobit regression			**Number of obs = 146**		
			LR chi2(18) = 121.16		
			Prob > chi2 = 0.0000		
Log likelihood = -92.347038			**Pseudo R2 = 0.3961**		
UCGPA	**Coef.**	**Std.Err.**	**t**	**P>t**	**Significance level**
Age	-.0338546	.0349974	-0.97	0.335	
EER	.0014363	.0015957	0.90	0.370	
pCGPA	.0424811	.0045204	9.40	0.000	*
SH	-.021406	.0866652	-0.25	0.805	
df	-.1919095	.092448	-2.08	0.040	**
dru	.3344134	.1031578	3.24	0.002	*
CNS	-.5461141	.162943	-3.35	0.001	*
CA	-.8573047	.1805042	-4.75	0.000	*
CBE	-.6740063	.147627	-4.57	0.000	*
CE	-.6650598	.1612774	-4.12	0.000	*
dactive	.108996	.1448787	0.75	0.453	
dMp	-.0459011	.086431	-0.53	0.596	
dMS	.3846683	.233245	1.65	0.102	
dMT	.0915945	.2380752	0.38	0.701	
dfco	-.0249824	.0960881	-0.26	0.795	
dAMOK	.2219606	.1021157	2.17	0.032	**
dOPTIMIST	.1628886	.0915559	1.78	0.078	***
SHS	-.0033481	.0070836	-0.47	0.637	
_cons	.1478617	1.095564	0.13	0.893	
/sigma	.4479817	.0268674			
Obs. summary:	**0 left-censored observations**				
	141 uncensored observations				
	5 right-censored observations at UCGPA>=4				

**** Statistically significant at the level of 1%***
***** Statistically significant at the level of 5%***
****** Statistically significant at the level of 10%***

The coefficient of OLS and Tobit model have the same sign or direction but the coefficient in the Tobit model is lower from that of the OLS model coefficient. The other difference between the two models is on the significance level of the independent variable called dOPTIMIST (dummy that stands for respondents who are optimist about their future job opportunity). In the OLS model, this independent variable was statistically significant at 15% but in the Tobit model, it is significant at 10%.

4. Conclusion and Policy Recommendation

Education can be considered as the engine for economic development and without the sustainable achievement in the educational sector, it is difficult to imagine development. As a result, it is important to study the constraints or determinants of academic performance and to forward future direction. Similarly, this research designed to investigate factors that affect the academic performances of undergraduate students and to achieve the stated objectives of the study a sample of 146 students was taken with the stratified sampling method.

After analyzing the collected information from primary respondents, the researcher develops the following conclusion and policy recommendation. The result obtained from the **OLS** and **Tobit** regression evidences that the variables like preparatory CGPA, Gender, Place of origin, College, teaching and learning style and student's expectation about their future job opportunity are statistically significant and they are the major determinants of students' academic performance.

As it is presented on the OLS and Tobit regression, result female university students have lower grade compered to male university students. The regression results of this study is in line with MogesEndalamaw (2017). Place of origin have also positive sign and students from rural area perform well above than students from urban area. When we see the college categorical variable, College of social science students perform well compared to the other college students on the other hand college of agriculture students have low performance than the other colleges. Students who are optimist about their future job opportunity perform well compared to students who are pessimist about their future job opportunity. With regards mismatch between teaching and learning styles, students who are not fine with the teaching methodology adopted by their instructors have lower

grade compared to that of students who are fine with the teaching methodology employed by their instructors.

As the regression result indicated, male respondents perform well than female respondents as a result the gender office of the university in collaboration with other concerned body should work on every possibilities to improve the academic performance of female university students. In order to enhance the overall performance of the students the university, the Ethiopian ministry of education and other concerning body should work on the students the student's educational background, on the mismatch between teaching and learning methodology, on the students' expectation about future job opportunity and there should be experience-sharing programs among the colleges of the university.

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