Determinants of Economics Students' Academic Performance: Case Study of Jimma University, Ethiopia

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Abstract- The main objective of this study is to identify the determinants of Economics Students' academic performance at Jimma University, Ethiopia. A Simple random sampling was used to select 100 students from senior students of Economics Department. The independent t-tests, pearson correlation and tobit model were used to investigate factors affecting students academic achievement. The outcome illustrates that university entrance exam score, family economic situation, sleep time and habit of study are the main determinants of students' academic performance. However, sex, residential place, study time and recreation time were found insignificant. Finally, the study recommends that universities, students' families and policy makers need to work hard towards improving students academic performance, by considering aforementioned determinants.

Index Terms- Determinants, Academic Performance, Tobit Model.

I. BACKGROUND AND JUSTIFICATION OF THE STUDY

Education is an important weapon for of achieving sustainable economic development. Today almost all countries are preoccupied with economic growth and social improvement. Education plays a key role in developing the ability of a country to absorb modern technology and capacity for self-sustaining growth and development. It is important in raising the productivity of a nation and hence can also be seen as vital components of growth and development (Todaro and Smith, 2012). This is because educated workers are more literate, analytical and deals with complex tasks.

The relationship between education and economic development has long been recognized in the development literature. There are two points in this regard. On one hand, Education is seen as a product of the development process. On the other hand, education is considered an essential resource in the development process (Gyimah-Brempong, 2010). It has a central place in building human capabilities and accelerates economic growth through knowledge, skills and attitude change. It is an input to economic growth, poverty and inequality reduction, health improvement, good governance, institutional development, and policy framework. As a result, the role of education as a major driver of economic development is well recognized. It is assumed to increase with progress in science and technology.

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. In the recent years, due attention is given to student academic performance measurement. Indeed, it is challenging aspects of academic literature (Mushtaq and Khan, 2012). Identifying the factors that influence students' performance is not a simple task. It has been the subject of ongoing debate among educators, academics, and policy makers (Sarwar, A. and Sarwar, S. M., 2012).

Attempts were made in the literatures is to identify the factors that affect students' academic performance and lead to students' success. So far most of the studies analyzed student academic performance on such issues like gender disparity, psychology, teacher's education and teaching style, class environment, socio economic factor and family education background. The finding of these studies varies from region to region and their results differ in cities and rural areas (Mushtaq and Khan, 2012).

Understanding the status and determinants of academic performance of students is essential for successful and effective intervention to bring quality education. In Ethiopia, so far, few studies were conducted in this regard. With the view of that this paper examines the socio-economic determinants of students' academic performance in Jimma University, with special focus to Economics department. The study may helpful for all students, parents, Universities administration and policy makers to design and implement the policies to improve the students' performance and the quality of education. The main objectives of this study were;

1. To find out the relationship between different factors and students academic performance using CGPA as outcome indicator.
2. To identify the determinants (factors which have more impact) of students' performance.

II. LITERATURE REVIEW: DETERMINANTS OF ACADEMIC PERFORMANCE

The academic performance of students in universities is a concern not only to the parents, administrators and educators, but also to companies in the labor market. Determinants of students' performance have received considerable attention in the education literature. Student performance is generally viewed as product of socio-economic, psychological and environmental factors. Hence, the factors are expected to vary from place to place (Ali et al, 2013). So far, various researchers conducted in their study in different parts of the globe to understand and identify the real determinants of university or college students' academic performance.

McCarty et al (2006), in Spain, identified main factors that influence student learning in college macroeconomics and microeconomics courses. The result shows that student gender, matching instructor and student gender, and Grade Point Average were significantly affect performance in principles of both microeconomics and macroeconomics. Student achievement from college entrance exam scores and class size are, however, found statistically insignificant.

Al-Mutairi (2011) investigated the factors affecting student performance in Arab Open University, Kuwait. The data were analyzed by using Ordinary Least Square (OLS) multiple regressions. The result reveals that the Grade Point Average of the student is affected by gender, age, marital status, score of the high school and nationality. Furthermore, the study outcome shows that younger students perform better than mature students and non-national students perform better than national student. As of Islam (2014) pre-admission qualification, level of attendance, probation status, time spend in study, father's education, parental support and involvement, major subjects of study, and gender of the students have been identified as significant determinants of academic success of students in Sultan Qaboos University (SQU), Oman.

Ali et al (2013) examined the factors affecting academic performance of graduate students of Islamia University of Bahawalpur Rahim, Pakistan. Using linear regression model, correlation analysis, and descriptive analysis, the result shows that age, father/guardian social economic status and daily study hours significantly contribute the academic performance of graduate students. In the same country, Mushtaq and Khan (2012) identified that communication, learning facilities and proper guidance shows the positive impact on the student performance. However, the family stress shows the negative impact on the student performance but the significant level is high.

According to Kanagi et al (2015) students' academic performance is strongly determined by Cumulative Grade Point Average (CGPA) of entry qualification and weakly influenced by entry qualification in Malaya University, Malaysia. The study outcome revealed that gender and place of origin are insignificant determinants of student's CGPA. In Africa, Martha (2005) showed that there was a significant relationship between parents' social economic status and academic performance and a significant relationship between former school background and academic performance in Uganda.

In Ethiopia, Bitew et al (2010) investigated the major factors that affect academic quality of Debre-Markos University, Ethiopia. The analysis was categorized into student related, instructor related, administrative staff and student family related variables. The study outcome reveals that student related variables such as previous academic background, tension, and student motivation are major factors to influence the academic performance of the students. In the same way, administrative related (like placement satisfaction and health) and instructors related (testing mechanism) factors are among major determinants affecting academic performance. However, family related factors are the least influencing factors to the academic achievement of the students. Weldegiorgis and Awel (2013) also revealed the significant effect of student's gender, national level entrance examination result and financial constraint on students'

academic performance in Ethiopia. However, factors like parents' background, student behavior, study hours, student's department placement found to have varying effects by class year and program.

As we have seen above it is difficult to draw a single conclusion regarding what determines the academic performance of students. Indeed, identifying factors affecting the academic achievements of students' is complex.

III. METHODOLOGY OF THE STUDY

3.1. Study Area Description

Jimma University, founded in 1983 as Jimma institute of health sciences, is one of the most renowned in Ethiopia with a student population of over 45,000. It is Ethiopia's first innovative community based education among higher academic institutions. At present, the university has seven colleges (College of Social Science and Humanities, College of Law and Governance, College of Natural Sciences, College of Business and Economics, College of Agriculture and Veterinary Medicine, College of Behavioral Sciences, College of Health Sciences), one school (School of post graduate studies) and one institute (Institute of Technology). The university has more than 54 and 110 programs in under and postgraduate studies, respectively. The Department of Economics at Jimma University was established in 2003 to meet the needs of economists with the aim of efficient resource utilization in the country.

3.2. Research Design and Data Sources

The study was based cross-sectional survey. The primary data was collected with the use of structured questionnaires from 100 students of Economics Department, Jimma University. The sample was taken from around 40% of the total targeted population. The study used both descriptive and inferential analysis. Descriptive statistics such as percentage, mean and standard deviation were used. The independent t-tests, pearson correlation and Tobit model were used to identify the factors affecting the academic performance of students. The study used **SPSS** and **Gretl** for data manipulation and analysis.

3.3. Model Specifications

In order to identify the determinants of Economics students' academic performance, the study used multiple regression model. The dependent variable, that is CGPA, varies its value between 0 and 4 points. Hence, the tobit model, in which academic merit is linked to individual, socio-economic and geographical characteristics, found appropriate.

It is defined as:
CGPA=f(Personal, Geographic, Family and Socio-economic variables)

Where:

Dependent variable: CGPA (Cumulative Grade Point Average). Most of the researchers around the world use Grade Point Average (GPA) as a measure of students' academic merit (for example see Mushtaq and Khan, 2012).

Independent variable, **R**$_i$: Economic situation of student Family *(economicsit)*, Discrete variable;University Entrance Exam by Ministry of Education, FDRE*, (entranceexam),* Continuous variable; Student's average daily sleep time*(sleeptime),*Continuous variable; Student's average daily study time*(studytime),*Continuous variable; Student's average daily recreation or refreshment time*(recrtime),*Continuous variable; Study place *(studyplace),* Discrete variable; How students' usually study*(howstudy),* Discrete variable and Distance from their home *(homedist),*Continuous variable.

IV. DATA ANALYSIS AND DISCUSSION

4.1.   Descriptive Analysis

The majority of the students are male (87 percent); this is indeed the typical representatives of higher academic institutions in Ethiopia, where the very majority is male students. The government, parents and policy makers need to work on female education. Respondents' mean age is 20.85 years. All of them are from three regions of Federal Democratic Republic of Ethiopia. About 73% of the respondents are from Oromiya Region, while 5% and 22% are from Ahmara and SNNP region, respectively. The average distance to students' home is 460 KM. The table (below) shows that 75% of students' are from rural area and 25% belong to urban area. In terms of family education, the majority of them are from literate (starting from read and write to secondary education) families. The main sources of families' income are agriculture and trade and businesses.

Table 1: Students' and their families' background

Features	Statistics	Features	Statistics
Age (Mean in Year)	20.85(SD=1.218)		
Sex of students		Father educational level	
Male	87	Illiterate	17
Female	13	Literate	83
	100%		100%
Region			
Oromiya	73	Mother educational level	
Amhara	5	Illiterate	42
SNNPs	22	Literate	58
	100%		100%
Place of origin		Main source of income for family	
Rural	75	Income from Agriculture	72
Urban	25	Income from commerce	17
		Salaries and Wages	7
		Others	4
	100%		100%
Distance from home (Mean in KM)=460(SD=32.3)			

Source: Own Survey and Computation, 2015

Regarding the economic situation, the majority of the students claimed that they are from medium level (non poor) families and for 90 percent of respondents' education expense is covered by their families.

Table 2: Economic and Financial issues of students

Features	Percentages	Features	Percentages
Economic situation of family		Financial support of students'	
		Family	90
Non poor	70	NGOs/Government	1
Poor	30	Others	9
	100%		100%

Source: Own Survey and Computation, 2015

All of the students are assigned to the University after they passed Entrance Exam prepared by National Examination Agency, FDRE. Their mean entrance exam score is 387.2/700 where 482 is the maximum and 320 is the minimum scores. As regard to their university academic performance, the mean CGPA for respondents is 2.98/4 point, while the maximum is

3.79/4 point and 1.92/4 point is the minimum. The pearson correlation shows a significant relationship between prior academic background (as measured by entrance exam score) and present academic achievement as measured by CGPA.

Table 3: Entrance Exam Score and CGPA correlation

	Mean	Minimum	Maximum	Correlation: CGPA and Exam	
Entrance exam	387.270	320.00	482.00	Pearson correlation	0.375
CGPA	2.9810	1.92	3.79	Sig.(2-tailed)	0.000
				N	100

Source: Own Survey and Computation, 2015

The students on average spent 7.44, 5.8 and 2hours per day for sleep, study and refreshment, respectively. The correlation test shows the strong relationship between sleep time and students' academic achievement as measured by CGPA.

Table 4: Time Management and CGPA

	Mean	Minimum	Maximum	Correlation: CGPA and sleep time	
Sleep time	7.55	4.00	12.00	Pearson correlation	0.262
Study time	5.8	2.00	12.00	Sig.(2-tailed)	0.009
Refreshment	3.25	1.00	8.00	N	100

Source: Own Survey and Computation, 2015

The majority respondents (about 60 percent) also notified that they usually prefer to study in the library and almost the same percent (61 percent) of the students reported they usually prefer to read or study alone.

Table 5: Students Reading Habit

Features	Percentages	Features	Percentages
Study place		With whom to study(Usually)	
Library	65	Alone	
Class room/space	8	With friends	61
Dormitory	27		39
	100%		100%

Source: Own Survey and Computation, 2015

4.2.   Independent t-tests Analysis

In order to examine if students' academic performance is determined by sex, place of origin, economic situation of family and habit of study, independent samples t-tests were employed.

Table 6: independent t-tests for basic variables

Outcome indicator	Treatment variables	Samples	Mean	Std. Error Mean	t-test for Equality of Means	
	Sex					
	Male	87	2.99	.3888	t	.771
	Female	13	2.90	.434	Sig.(2-tailed)	.443
CGPA	Residential place					
	Rural	75	2.97	.349	t	- .376
	Urban	25	3.01	.511	Sig.(2-tailed)	.710
	Economic Sit.					

Poor	30	2.82	.412	t	2.690
Non poor	70	3.04	.368	Sig.(2-tailed)	.008
Way of study					
Alone	61	3.057	.3988	t	2.481
With friend	39	2.86	.359	Sig.(2-tailed)	.015

Source: Own Survey and Computation, 2015

As indicated in the table 6, the performances of students' do not vary with gender (male or female) and residential place (rural or urban). Instead, economic situation of family and habit of study put effects on students' performance. For both variables, as the two tailed value (p-value) is less than 5%, we reject the null hypothesis and accept alternative hypothesis that the performance of student vary their habit of study and economic situation of their families.

4.3.   Tobit Model Analysis

The tobit model was used to capture the impact of determinants of students' academic achievement. Accordingly, the dependent variable, CGPA, was regressed against various explanatory variables. The tobit model fitted the data fairly well. Besides the model evaluation (goodness-of-fitness), it is, also, important to check their presence or absence of multicollinearity.

The VIF test confirms that multicollinearity is not a serious issue. Apart from these, the normality test was checked.

The independent t-tests and pearson correlation showed that family economic situation, habit of reading, sleep time and entrance exam score are highly associated with CGPA. Accordingly, the estimates of the tobit model are shown in Table 7. In general, **economicsit, entranceexam**, **studyhabit** and **sleeptime** have significant effects on CGPA and the signs on the parameter estimates support expectations.

The Economic situation of family was found to be a significant determinant of CGPA, at 1 percent level of significance. Its coefficient shows that a student from non poor family outperforms student from poor family. As expected, the coefficient of entrance exam was positively correlated with CGPA. It illustrates that students with higher prior academic background performs well in the University. It is statistically significant at 1 percent.

Table 7: Tobit Model Coefficient Estimates

Model: Tobit, using observations 1-100
Dependent variable: CGPA

	Coefficient	*Std. Error*	*z*	*p-value*	
const	0.2730	0.438978	0.6220	0.53391	
economicsitu	0.2017	0.0716527	2.8150	0.00488	***
entranceexam	0.0042	0.00102102	4.1268	0.00004	***
studyhabit	0.1750	0.0671839	2.6057	0.00917	***
sleeptime	0.059	0.0199119	3.0026	0.00268	***
Chi-square(8)	44.90434		p-value		4.16e-09
Log-likelihood	-29.70161		Akaike criterion		71.40321
Schwarz criterion	87.03423		Hannan-Quinn		77.72937

***indicate that the coefficients are statistically significant at 0.01 levels.

Source: Own Survey and Computation, 2015

The study habit, as measured by how to study (alone or with their friends), was found significant in affecting academic performance. A student who read alone performs better than a student who read with friends. Its coefficient was found to be statistically significant at 1 percent. In the same way, adequate sleep time is one factor responsible for better performance. The coefficient for the variable was found to be statistically significant at 1 percent.

V.   CONCLUSIONS AND RECOMMENDATIONS

Education is a key element in the development process of a nation. It is pivotal to identify the determinants of students'

academic performance and forward future direction. With the view of that, this study was intended to investigate factors influencing students' academic achievements. A sample of 100 students was taken with simple random sampling. The dependent variable, CGPA, was seen against main explanatory variables. The independent t-test, pearson correlation and tobit model shows that students performance is affected by economic situation of family, entrance exam score, sleep time and habit of study. The study suggests universities or government, to improve students' academic achievement, should take into account the following factors: Financial situation, prior academic background, reading habit of students and sleep time.

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Variance Inflation Factors Minimum possible value = 1.0 Values > 10.0 may indicate a collinearity problem	
economicsitu	1.017
entranceexam	1.015
studyhabit	1.013
sleeptime	1.012
VIF(j) = 1/(1 - R(j)^2), where R(j) is the multiple correlation coefficient between variable j and the other independent variables	
Test for normality of residual - Null hypothesis: error is normally distributed Test statistic: Chi-square(2) = 3.9856 with p-value = 0.1363	

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