SciencePG
Science Publishing Group

Empirical Investigation and Analysis of Factors Contributing to Students' Academic Performance

Mengistu Yismaw Alemu[1, *], Zemenu Sharew[2], Bedilu Alemu[3]

[1]Department of Economics, Debre Markos University, Debre Markos, Ethiopia

[2]Department of Biology, Rim Secondary School, Rim, Ethiopia

[3]Department of Marketing Management, Bahir Dar University, Bahir Dar, Ethiopia

Email address:

menyis.2012@gmail.com (M. Y. Alemu), solomonsharew8@gmail.com (Z. Sharew), bedilu.2010@gmail.com (B. Alemu)

[*]Corresponding author

Abstract: Education has long been recognized as a critical component of economic growth. Secondary education occupies a strategic place in the educational system that links the primary and university levels of education. Accordingly, the Ethiopian government has been working to ensure that secondary education is accessible for all. However, education has only increased in terms of schooling. We conducted this study to analyze factors that contribute to secondary school students' academic performance in Mecha district, Ethiopia. Data collected from 389 sample respondents were analyzed using both descriptive and regression analyzes. We found considerable mean differences between male and female students. The result of the multiple linear regression model also indicated that mothers' educational level, study time of students, student-teacher ratio, and negative peer pressure were the most factors determining students' academic performance. The result suggests that the average mark of students would increase, as their mothers became more educated. Furthermore, we documented that a higher student-teacher ratio contributed to low students' academic performance. Lastly, recommendations were made based on the findings of the study to policymakers and concerned bodies so that academic performance could be increased.

Keywords: Academic Performance, Language of Instruction, Student-Teacher Ratio, Peer Pressure

1. Introduction

Most notable endogenous growth models assert that investment in human capital will significantly contribute to economic growth and indeed foster development [22]. The quality of education and the academic performance of students play an important role in human capital development and producing the best quality graduates who will become manpower for the country and responsible for the country's economic and social development [2, 5]. Ethiopia is struggling with many economic and social problems, and optimism today about the country's future can be real by the education [26]. Accordingly, the educational policy of Ethiopia stipulated that secondary education is an instrument for national development and the government is working to sustain equitable access to quality secondary education. But as in many African countries, education has increased simply

in terms of schooling. And this rapid expansion of schooling has resulted in high pupil-teacher ratios, a shortage of teachers, overcrowding of schools, a scarcity of educational materials, and other problems. This, in turn, has affected the overall quality of education [6].

Secondary schools occupy a strategic place in the educational system that links the primary and university levels of education. According to [4] education at the secondary school level is supposed to be the bedrock and the foundation towards higher knowledge in tertiary institutions. In addition, international experience suggests that investing in secondary education is very important to avoid middle-level manpower shortages and to provide a strong foundation for high-quality tertiary education. Therefore, failure on national secondary education examinations (failure on the higher education entrance exam in the case of Ethiopia) spells doom for students whose lives become uncertain and

full of despair. Hence, the performance of students in secondary school determines whether the students will proceed to university or other tertiary institutions. Therefore, a student's life is determined by their academic performance in secondary school [20]. Then identifying and analyzing various factors affecting secondary school students' academic performance is essential to promote quality education and the country's development [17].

1.1. Statement of the Problem

Economists have long been recognized the fundamental role played by education in achieving economic growth. Human resources of a nation, not its physical capital or its natural resources determine the character and pace of its economic and social development. This is confirmed by the experience of newly emerging East Asian countries and Japan. However, the rapid expansion of educational opportunities does not necessarily promote human development and contributes to economic growth. For example, high levels of education in Costa Rica and the Philippines; hadn't brought about high rates of economic growth. According to [8, 10], this is because a high level of education with poor academic performers may increase failure and cost of education, which leads to a low level of human and economic development.
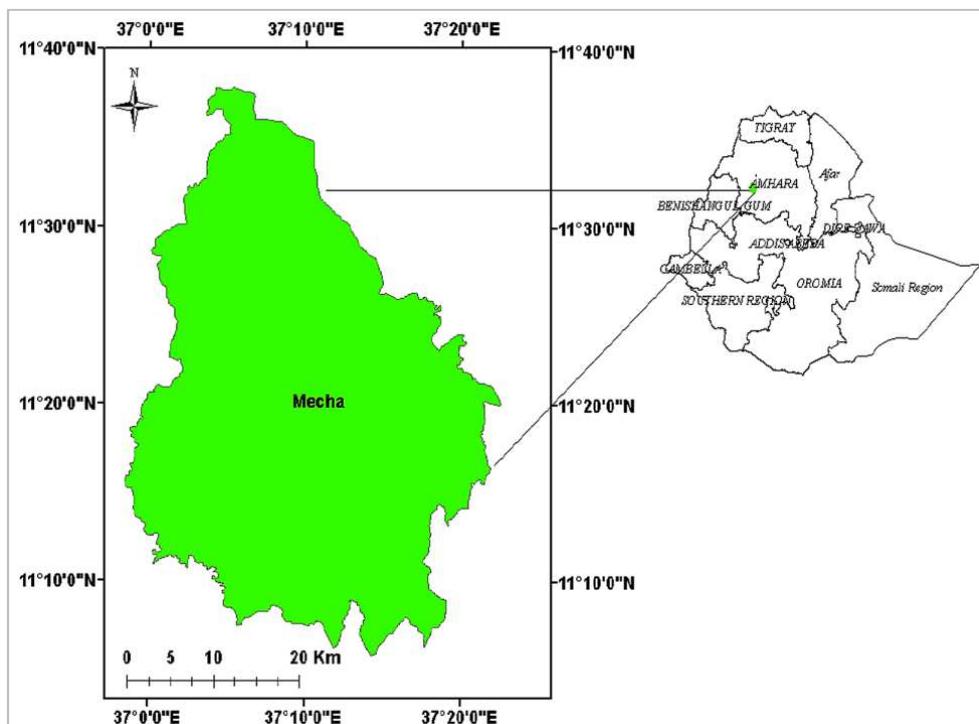
Educators and researchers have long been interested in exploring variables that contribute to the quality of learners. However, student outcomes are not the result of simple cause-and-effect relationships. Because education is a societal activity and no single factor can be taken in isolation as responsible for the variation in students' academic performance. But it is a systemic interaction of complex and dynamic factors that include the characteristics of teachers and students, as well as their institutional and cultural contexts [1, 10]. Then, examining to what extent student academic performance is associated with some demographic, socioeconomic, and institutional factors can be helpful to identify the main constraints and provide remedial policy options. Although several types of research have been done on this topic, most of these studies were carried out on qualitative methods in which the findings might not be representative and it would be difficult to test hypotheses. On the contrary, this study used both qualitative and quantitative approaches to analyze various factors that affect students' academic performance. Also, there are extensive exploratory investigations regarding factors that influence students' academic performance on a single subject. But this study gives great attention to analyzing factors contributing to students' academic performance in all subjects.

1.2. General Objective and Research Questions

The overall objective of this project is to investigate and analyze various factors contributing to students' academic performance in Mecha District secondary schools, Ethiopia. To achieve this objective the study, address the following research questions.

1. What is the impact of student-related characteristics on academic performance?
2. How do family-related factors affect the academic performance of students?
3. How do school-related factors affect a student's academic performance?

Source: [15]

Figure 1. *Map of Mecha District, Northwest Ethiopia.*

2. Material and Methods

2.1. Description of the Study Area

The study was carried out in Mecha woreda, which is one of the 13 Woredas found in the administrative zone of West Gojam, located 30 km south-west of the town of Bahir Dar, the capital of the Amhara region, Ethiopia. The climatic condition of the study area alternates between summer rainfall and winter dry season with a mean annual rainfall of 1500-2200 mm. The mean temperature is between 24-27°C and altitude ranges from 1800 to 2500 m.a.s.l. [23]. The livelihood of the district comes from mixed farming. It comprises crop production and livestock rearing [24].

2.2. Data Type and Source

The study used primary cross-sectional data gathered from 389 Mecha district secondary school respondents for the 2020/21 academic year. The data were collected using a structured questionnaire and the required sample size was determined using [27] formula. And to analyze the collected data, both descriptive and inferential (Econometrics) methods of data analysis were employed.

2.3. Conceptual Framework and Model Specification

The Education Production Function: To perform the econometric analysis, the study used the multiple linear regression model (MLRM), which was derived from the educational production function. The educational production function is a mathematical equation derived from the theory of production in economics that can help to transform educational resources into learning outcomes [16, 18]. And also, in this study, Ordinary Least Square (OLS) estimation technique was used for the analysis of the collected data.

The model used for the analysis, adopted from Greene (2012), is expressed as follows.

$$Y_i = \beta_0 + \sum_{i=1}^{n} \beta_i X_i + \varepsilon_i \qquad (1)$$

Where: Y_i is the academic performance (achievement) of the students measured in the average mark (AM); X_i is vectors of various explanatory variables; B_is are the estimated coefficients of the corresponding explanatory variables; ε_i is the error (disturbance) term.

3. Results and Discussion

3.1. Descriptive Results and Discussion

The summary statistics (Table 1) show that the average mark of students is 59.16 which is considerably less than the result (67.33) of a related study conducted in the country by [1]. And the minimum (33) and a maximum of (90) average marks and the standard deviation (10.68) indicate that there is a considerable gap between students' academic performance in the study area (Table 1).

Table 1. *Summary of continuous variables used in the models.*

Variable	Obs.	Mean	Std. Dev.	Min	Max
Average Mark (AM)	389	59.164	10.678	32	90
Age	389	19.357	3.244	14	32
Studying Time	389	4.026	2.153	0.5	12
School Distance	389	8.734	4.927	1.5	25

Also, it was found that the average mean score of male students (61.989) was higher than female students (55.949) and statistically significant at 1% level (Table 2). Studies mentioned various reasons that supported this result. For example, [13] argued that girls are kept at home to look after younger children or to do other household chores instead of studying and doing homework.

Table 2. *Academic performance between male vs female students.*

Group	Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
female	182	55.949	.669	9.037	54.627	57.271
male	207	61.989	.779	11.218	60.452	63.527
combined	389	59.164	.541	10.678	58.099	60.228
diff		-6.040	1.042		-8.089	-3.992
diff = mean(female) - mean(male)				t = -5.7966		
Ho: diff = 0				degrees of freedom = 387		
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 0.0000		Pr(|T| > |t|) = 0.0000		Pr(T > t) = 1.0000		

Table 3. *Educational Level and students' achievement.*

		Mean score of students	The educational level of student's mother
Average Mark	Pearson Correlation	1	.746**
	Sig. (2-tailed)		.000
	N	389	389
Mothers' educational level	Pearson Correlation	.746**	1
	Sig. (2-tailed)	.000	
	N	389	389

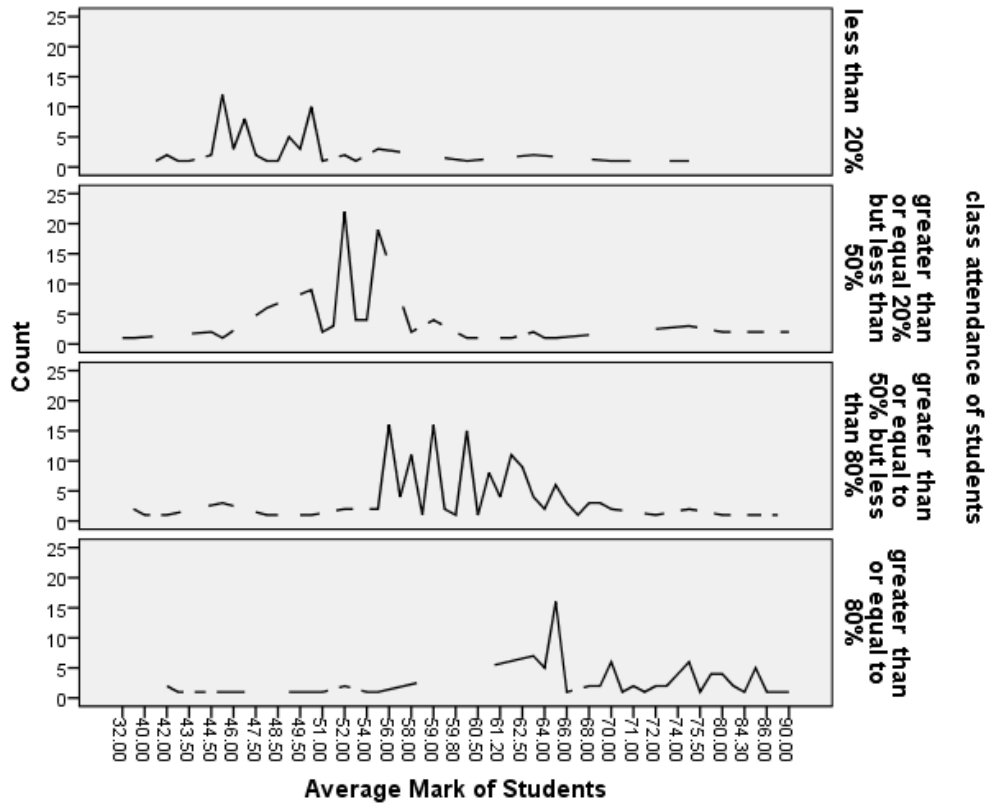**. Correlation is significant at the 0.01 level (2-tailed).

Figure 2. Distribution of the average mark of students per class attended.

Consistent with the study by [22], as a student attends more classes, the average mark of a student will increase. Accordingly, students who attend greater than 20% but less than 50% of the class score more average marks than students who attended less than 20% of the class. And also, students who attend greater than 50% but less than 80% of the class score more average marks than students attending greater than 20% but less than 50% of the class. Furthermore, students who attended more than 80% of the class scored more average marks than students who attended less than or equal to 50%, but less than 80% of the class (Figure 2).

Educated parents can contribute to their children's learning through their daily interactions with their children and participate in their children's schoolwork. Parents with higher educational attainment can also have higher aspirations and expectations for their children's occupation and education, which in turn can influence their commitment to learning [25]. The correlation was analyzed between the educational level of the students' mothers and students' average marks and the correlation was 0.746 with the significance level at 1%, which means that there is a higher and more significant correlation between those variables (Table 3).

The result presented in Table 4 shows that 35.22% of the respondents indicated that their mothers cannot read and write. Slightly more than half of the students (52.44%) who participated in the study indicated that their parents did not have formal education. However, some of the students (10.54%) indicated that their parents had a primary level of education. Moreover, it was found that only 1.54% of the student's mothers acquired a college degree and above. This

is an indication that most of the mothers in the area are under lack to basic educational exposure and this may affect the academic performance of students.

Table 4. Distribution of Students' Mother Educational Level.

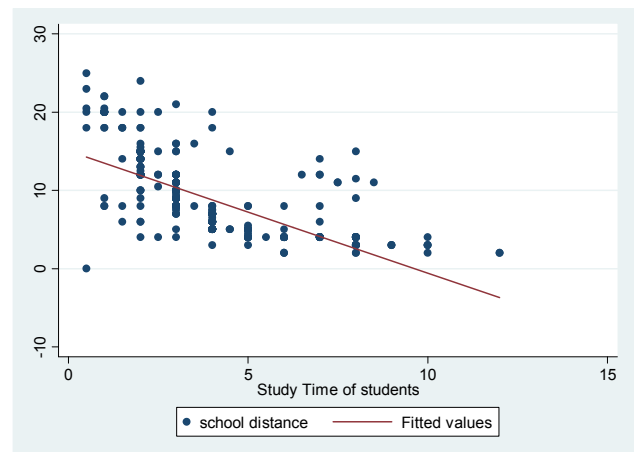| Mothers' educational level	Frequency	Percentage
Can't read and write	137	35.22%
Can read and write, but no formal education	67	17.22%
Primary education	41	10.54%
Secondary education	77	19.79%
Diploma	61	15.68%
College degree and above	6	1.54%
Total	389	100.00%

Figure 3. The relationship between study time and school distance.

Recent evidence suggested that as the student school is located very far from their residence, they perform less in their academic activity [7] This may be because, as the school is far from the student's home; the student spends most of his/her time on a trip that might be used to study and do other related academic activities. This is confirmed by the result shown in Figure 3. The figure verified that as the school is far from the parents' homes; the time allocated to study will decrease.

In most Sub-Saharan African states education is mostly carried out by missionaries, education during the colonial times stressed some values at the expense of others. However, Ethiopia has not really been colonized; yet, the education system that the Ethiopian government implemented was very similar to those that prevailed in African states that were colonized for longer periods [19]. The global spread of English and using it as a language of instruction has had a great impact on policies all over the world. The Ethiopian general secondary education curriculum covers three languages (mother tongue, English,

and Amharic), and the language of instruction is English. In this study, students were asked whether the language of instruction affects their academic performance, and 28.28% of the respondents very agreed with the question. And also, approximately half (59.64%) of the respondents were at least agreed that using English as a language of instruction affected their academic performance.

Moreover, Figure 4 shows that secondary schools in the study area were endowed differently with teaching/learning resources. Most of the respondents, such as 41.52%, 38.22%, 37.21%, and 21.91%, disagreed with the availability of equipped laboratories, libraries, ICT, and exercise books, respectively. The majority of the respondents did not agree with the availability of sufficient teaching/learning resources. For example, 61.48%, 61.45%, and 63% didn't agree with the availability of equipped laboratories, libraries, and ICT respectively. A relatively better result was found on the availability of exercise and course books; as evidenced by 60% of the respondents, at least agreed with the availability of sufficient exercise and course books.
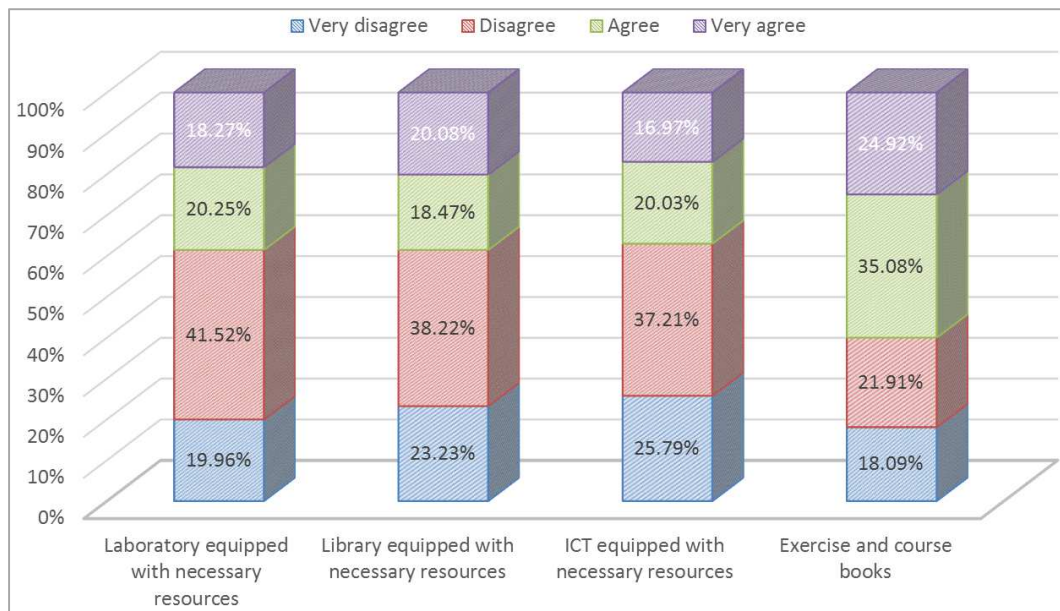

Figure 4. Teaching/Learning resources accessibility.

3.2. Econometric Results and Discussion

3.2.1. Regression Diagnostic Tests

Before analyzing the result, it is important to judge the efficiency of the model using some diagnostic tests. In particular, inferences based on OLS results can be valid depending on whether the classical linear regression model (CLRM) assumptions hold. Everyone may know that the

Multiple Linear Regression Model (MLRM) has important assumptions, such as that there should not be high (perfect) multicollinearity, heteroskedasticity, and specification error in the formulation of the model, and the like. Hence, after estimating the parameters, the next task is to test whether the assumptions of CLRM are satisfied or not. The result of the diagnostic test in Table 5 shows that the model does not have a heteroskedasticity and specification problem (omitted variable).

Table 5. Diagnostic test results from the OLS regression result.

Test	Ho	P-value	Decision	Interpretation
Breusch-Pagan/Cook-Weisberg test	Constant variance	0.1245	Accept Ho	U_i has constant variance (homoscedasticity)
Ramsey RESET test using the powers of the fitted values of Average Marks	The model has no omitted variables	0.2521	Accept Ho	The model has no omitted variables and specification problem

Also, if our objective is only an estimation, the OLS method will suffice. But point estimation is only one aspect of statistical inference, the other being hypothesis testing and prediction. Since the objective of the study is an estimation and hypothesis testing, it is necessary to specify the probability distribution of the disturbance term u_i, of which the OLS estimators are a linear function of it. Because any linear function of a normally distributed variable is itself normally distributed [11]. The normal probability plot (NPP) for u_i (residuals) showed that the distribution of the residual term is almost normal (Figure 5).
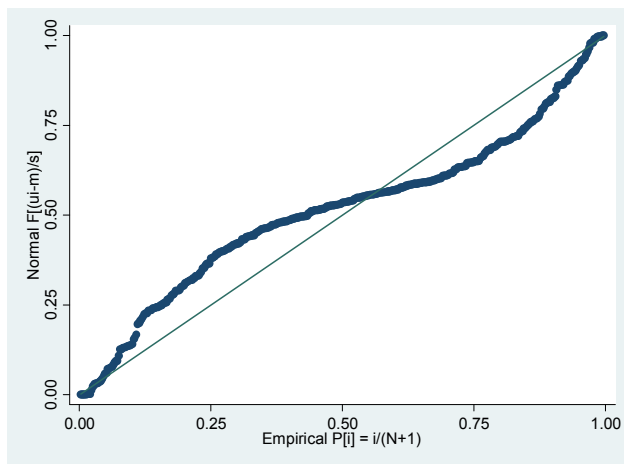

Figure 5. *Normal probability plot of the residual (Ui).*

The result of the Variance Inflation Factor (VIF) also shows that the model has no perfect multicollinearity problem (Table 6). The value of $R^2 = 0.7607$ (Table 7) shows that 76.07% of the variations in academic performance of the students were due to explanatory variables taken into account in the model. Furthermore, the p-value (Prob > F = 0.0000) shows that the overall model is highly significant.

Table 6. *Variance Inflation Factor (VIF) result for multicollinearity test.*

Variable	VIF	1/VIF
School distance	5	0.202
Study time	3.8	0.261
Access to teaching/learning resource	3.5	0.286
Positive peer pressure	3.3	0.299
Mother Education	2.5	0.403
Class attendance	2.4	0.415
Language of instruction	2.1	0.469
Negative peer pressure	1.3	0.787
Gender	1.2	0.870
student-teacher ratio	1.1	0.926
Teachers experience	1.1	0.926
Age	1.1	0.952
Stepparent	1.1	0.952
Income	1	0.962
Mean VIF	2.2	

3.2.2. Discussion of the Econometrics Result

As secondary schools are scattered over a great distance, parents don't want to send their daughters to school. This is because the journey may be unsafe for many girls at this school age who experience harassment and physical attack [12]. The school distance coefficient (-0.400) indicates that ceteris paribus, as the school is away by one kilometer (km) from the student's house, the average mark of a student will decrease by 0.4 point. The coefficient of students' study time shows that an hour increase in the study time of a student causes an increase in the average mark of a student approximately by 1.157 marks, keeping other variables constant. Consistent with the study by [3], the result of the study verified that students who attended more than or equal to 80% of the class scored 2.456 average marks more than students who attended less than 80% of the class. The coefficient of gender also shows that the average mark will increase by 1.237 marks if the student is male. This result is supported by [2], which revealed that the test score will decrease if the student is female.

Moreover, the result verified that as the student's mother becomes more educated, the average mark of students will increase. For example, a student whose mother had primary education scored 4.321 average marks more than students whose mother cannot read and write. A student whose mother completed secondary education scored 10.079 average marks more than a student whose mother cannot read and write. Furthermore, a student whose mother had a college degree and higher scored 39.037 average marks more than students whose mother cannot read and write. This finding was supported by [21] showed a positive correlation between the level of education of mothers and students' academic performance in Kenya.

The coefficient of student-teacher ratio shows that the increase in the student-teacher ratio causes a decrease in the academic performance of students. For example, the result shows that as the student-teacher ratio is greater than the national standard (1:40), scored an average mark of 9.773 less than students within the class size less than 1:40, keeping other factors constant. This may be due to the fact that, since the student-teacher ratio is small, teachers can have more time to spend with each student and check their academic progress [14].

It is understood that peer effects as one kind of externality, as they think that peers' performance may affect others' performance positively or negatively [9]. In harmony with the study by [14], the result related to peer pressure shows that negative peer pressure is highly significant than positive peer pressure. This implies that the students were highly influenced by negative ideas of their peers (ideas that could reduce their academic performance) than positive ideas (ideas that could increase their academic performance). As expected, the variable, accessing to teaching/learning resources affected students' performance positively. A student who very agrees with the statement that using English as a language of instruction (not the mother tongue) scored 3.563 average marks less than students who very disagreed with this statement. This may be due to various problems resulting from using a foreign language (English) as a language of instruction in secondary schools, such as little knowledge

being gained from the subject matter since learners do not understand English well.

Table 7. Estimated Model Result.

Source |	SS		df	MS	Number of obs = 387		
					F(35, 351) = 32.06		
Model |	33653.58		35	0.267	Prob > F = 0.0000		
Residual |	10587.80		353	0.008	R-squared = 0.7607		
					Adj R-squared = 0.7370		
Total |	44241.3816		386	.0319	Root MSE = 5.4764		
AM	Coef.	Std. Err.	P>t	AM	Coef.	Std. Err.	P>t
Age	-0.062	0.092	0.505	Students-Teacher Ratio			
StTime	1.157	0.269	0.000***	1	-5.542	1.243	0.000***
Experience	-0.006	0.106	0.953	2	-4.231	1.062	0.000***
Schdistance	-0.400	0.115	0.001***	3	-3.634	1.082	0.001***
Class Attendance				4	-3.298	1.334	0.014**
1	1.252	1.129	0.268	Positive Peer Pressure			
2	1.551	1.166	0.184	1	2.708	1.300	0.038**
3	2.456	1.323	0.064*	2	1.960	1.391	0.160
Gender	1.237	0.620	0.047**	3	-0.287	1.539	0.852
Family Income				4	-2.625	1.811	0.148
1	0.540	0.811	0.506	Negative Peer Pressure			
2	0.496	0.809	0.540	1	-4.952	1.584	0.002***
3	0.948	0.806	0.240	2	-4.650	1.581	0.003***
Mothers' Educational Level				3	-4.575	1.628	0.005***
1	1.137	1.015	0.263	4	-4.322	1.614	0.008***
2	4.321	1.278	0.001***	STEPP	-0.087	0.661	0.895
3	5.758	1.266	0.000***	Accessing to Teaching-Learning Materials			
4	11.831	1.406	0.000***	1	3.304	1.340	0.014**
5	17.127	2.748	0.000***	2	1.802	1.441	0.212
Language of Instruction				3	4.793	1.856	0.010***
1	-0.150	1.027	0.884	_cons	59.515	3.693	0.000***
2	-2.735	1.181	0.021**				
3	-3.563	1.299	0.006***				

Note: ***, **and * significant at 1%, 5% and 10% level significance, respectively.

4. Conclusion and Recommendations

Economists have long been recognized the fundamental role played by education in achieving economic growth. Ethiopia is one of the poorest countries in the world today. And an estimated 44 percent of the country's population, nearly 70 million people survive below the poverty line. Despite these daunting difficulties, optimism today about the country's future is palpable. These contextual factors are believed to be highly relevant by education. However, as in many African countries, education has been thought of simply in terms of the amount of schooling that an individual has attained. This rapid expansion of educational opportunities does not necessarily promote human development and contributes to growth. This is because a high level of education with poor academic performers may increase failure and the cost of education which leads to a low level of human and economic. Therefore, many developing countries are now focusing on the development of human capital and the rapid expansion of educational opportunities. Educators and researchers have long been interested in exploring the variables that contribute to the quality of learners. However, student outcomes are not the result of simple cause-and-effect relationships, and no single factor can be taken in isolation as responsible for the variation in student academic performance. But it is a systemic interaction of complex and dynamic factors that include the characteristics of teachers and students, as well as their institutional and cultural contexts. Consequently, this study attempted to identify and analyze the students, schools, families, and institutional factors that affected the academic performance of secondary school students.

The result of the study showed that male students scored higher average marks than female students. So, the government should develop an appropriate policy to support and improve the academic performance of female students through adjusting special support for female students. And also, it was found that as the students' mother becomes more educated, the average mark of students will increase. This requires the government and the ministry of education to come up with policy formulation and implementation that encourage mothers to get the opportunity of education. The estimated result also showed that as the school is far away from students' parents' homes, the average mark of the student will decrease. Then, the government needs to make secondary schools accessible near students' homes. Moreover, the result of the study verified that students within a class size more than the national standard student-teacher ratio (1:40); scored lower average marks than students within a class size of less than the national standard. Therefore, the Ethiopian Ministry of Education should reduce the nationally standardized student-teacher ratio as much as possible.

References

[1] Abewa, D., & Edemealem, H. (2019). Parent-Student Interactions and Parent School Relationships as Predictors of Academic Achievement of Students at Basoliben Woreda Secondary School, North West Ethiopia. *Science Research*, 7 (4), 44. https://doi.org/10.11648/j.sr.20190704.11

[2] Ali, S., Haider, Z., Munir, F., Khan, H., & Ahmed, A. (2013). Factors Contributing to the Students Academic Performance: A Case Study of Islamia University Sub-Campus. *American Journal of Educational Research*, 1 (8), 283–289. https://doi.org/10.12691/education-1-8-3

[3] Arulampalam, W., Naylor, R. A., & Smith, J. (2008). *Am I Missing Something? The Effects of Absence from Class on Student Performance*. 51.

[4] Atkinson, E. S. (1999). Key Factors Influencing Pupil Motivation in Design and Technology. *Journal of Technology Education*, 10 (2). https://doi.org/10.21061/jte.v10i2.a.1

[5] Battle, J., & Lewis, M. (2002). The Increasing Significance of Class: The Relative Effects of Race and Socioeconomic Status on Academic Achievement. *Journal of Poverty*, 6 (2), 21–35. https://doi.org/10.1300/J134v06n02_02

[6] Begna, T. N. (2017). Public Schools and Private Schools in Ethiopia: Partners in National Development? *International Journal of Humanities, Social Sciences and Education*, 4 (2). https://doi.org/10.20431/2349-0381.0402010

[7] Costa, R. P., Vieira, C., & Vieira, I. (2017). How far is too far? An analysis of students' perceptions of the impact of distance between university and family home on academic performance. *European Review Of Applied Sociology*, 10 (15), 28–40. https://doi.org/10.1515/eras-2017-0007

[8] Crosnoe, R., Johnson, M. K., & Elder, G. H. (2004). School Size and the Interpersonal Side of Education: An Examination of Race/Ethnicity and Organizational Context*. *Social Science Quarterly*, 85 (5), 1259–1274. https://doi.org/10.1111/j.0038-4941.2004.00275.x

[9] Duncan, G. J., Boisjoly, J., Kremer, M., Levy, D. M., & Eccles, J. (2005). Peer Effects in Drug Use and Sex Among College Students. *Journal of Abnormal Child Psychology*, 33 (3), 375–385. https://doi.org/10.1007/s10802-005-3576-2

[10] Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). *FACTORS AFFECTING STUDENTS' QUALITY OF ACADEMIC PERFORMANCE: A CASE OF SECONDARY SCHOOL LEVEL*. 15.

[11] Greene, W. H. (2012). *Econometric analysis* (7th ed). Prentice Hall.

[12] Hirago, M. D. (2014). *FACTORS AFFECTING THE FEMALE STUDENTS ACADEMIC PERFORMANCE IN PREPARATORY SCHOOL: THE CASE OF KACHA BIRRA WOREDA, KAMBATA-TEMBARO ZONE, SOUTHERN NATIONS, NATIONALITIES AND PEOPLES REGIONAL STATE, ETHIOPIA*. 111.

[13] Hirway, I., & Mahadevia, D. (1996). *Critique of Gender Development Index*. 11.

[14] Johnson, K. (2011). *The Peer Effect on Academic Achievement Among Public Elementary School Students*. 17.

[15] Kassie, G. W. (2018). Agroforestry and farm income diversification: Synergy or trade-off? *The case of Ethiopia. Environmental Systems Research*, 6 (1), 8. https://doi.org/10.1186/s40068-017-0085-6

[16] Kostakis, A. (1987). Differences Among School Outputs and Educational Production Functions. *Sociology of Education*, 60 (4), 232. https://doi.org/10.2307/2112559

[17] Luttah Waseka, E., & M. W. Simatwa, E. (2016). Student Factors Influencing Academic Performance of Students in Secondary Education in Kenya: A Case Study of Kakamega County. *Educational Research*, 07 (03). https://doi.org/10.14303/er.2016.138

[18] Monk, D. H. (1989). The Education Production Function: Its Evolving Role in Policy Analysis. *Educational Evaluation and Policy Analysis*, 11 (1), 31–45. https://doi.org/10.3102/01623737011001031

[19] Negash, T. (2006). *Education in Ethiopia: From crisis to the brink of collapse*. Nordiska Afrikainstitutet.

[20] Nyagosia, P. O. (2011). *DETERMINANTS OF DIFFERENTIAL KENYA CERTIFICATE OF SECONDARY EDUCATION PERFORMANCE AND SCHOOL EFFECTIVENESS IN KIAMBU AND NYERI COUNTIES, KENYA*. 109.

[21] Ogweno, P. O., Kathuri, N., & Obara, J. (2014). *Influence of Family Characteristics on Academic Performance of Students in Secondary Agriculture, in Rachuonyo North Sub County, Kenya. 2* (2), 13.

[22] Romer, D. (1993). Do Students Go to Class? Should They? *Journal of Economic Perspectives*, 7 (3), 167–174. https://doi.org/10.1257/jep.7.3.167

[23] Salew, D. (2018). Identification and distribution of intermediate host snails in Mecha woreda, Amhara, North West of Ethiopia. *Biodiversity International Journal*, 5 (2), 441–445. https://doi.org/10.15406/bij.2018.02.00097

[24] Tassew, A., & Seifu, E. (2009). *Smallholder Dairy Production System and Emergence of Dairy Cooperatives in Bahir Dar Zuria and Mecha Woredas, Northwestern Ethiopia*. 9.

[25] Walter, K., Beth, W., & Box, P. O. (2018). Influence of Parental Level of Education and Parental Income on Students' Academic Performance in Public Day Secondary Schools. *Journal of Education and Practice*, 11.

[26] World Bank. (2005). *Education in Ethiopia: Strengthening the Foundation for Sustainable Progress*. The World Bank. https://doi.org/10.1596/978-0-8213-6226-6

[27] Yamane, T. (1967). Statistics: An Introductory Analysis, 2nd Edition, Harper and Row, NewYork, USA.