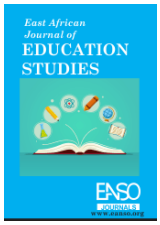
East African Journal of Education Studies, Volume 5, Issue 2, 2022
Article DOI: https://doi.org/10.37284/eajes.5.1.716



East African Journal of Education Studies
eajes.eanso.org
Volume 5, Issue 2, 2022
Print ISSN: 2707-3939 | Online ISSN: 2707-3947
Title DOI: https://doi.org/10.37284/2707-3947

Original Article

An Analysis of Rural-Urban Learning Performance Inequality in Malawi Primary Education

Yudai Ishii[1*] *& Elizabeth Selemani Meke*[2]

[1] Kobe University, 103-B29 20 Noboli, Takatsuki, Osaka 569-0046, Japan.
[2] University of Malawi, P. O. Box 280, Zomba, Malawi.
[*] Author for Correspondence ORCID ID: https://orcid.org/0000-0002-2358-557X; Email: yuudai9120@gmail.com

Article DOI: https://doi.org/10.37284/eajes.5.2.716

Date Published: *20 Jun 2022*

Keywords: *Malawi, Primary Education, Rural-Urban Inequality, Learning Performance.*

ABSTRACT

The promotion of regional equity has become an important topic in Sub-Saharan Africa (SSA). In Malawi, this issue is particularly important because of facing wide regional inequalities concerning income and living standards. In the field of education, the rural-urban learning performance inequality has been a persistent issue to be addressed, but there has not been enough evidence suggesting what causes were behind rural-urban student performance inequality in Malawi. This study examines how family, teacher, school, and community factors are associated with reading scores in Malawi from two perspectives, vertical inequality and horizontal inequality. This research analyses Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) data collected in 2013 through ordinary least squares (OLS) regression and quantile regression. The results indicate that there is an obvious rural-urban gap significantly in each factor and a variation in the effect among different performance levels. One of the important findings is that the education level of school heads above senior secondary education and management training for school heads have a significant and positive relationship with student reading scores in the rural area. Thus, deploying more qualified school heads and carrying out school head training in rural might improve student outcomes. Furthermore, community involvement is positively associated with learning outcomes in urban and it may be a determinant of student achievement in Malawi. Further study about this topic should be needed to set a more sophisticated theoretical framework, use more recent data, and a time-series analysis with data long after the implementation would provide a clearer picture of the policy's effects.

Article DOI: https://doi.org/10.37284/eajes.5.1.716

APA CITATION

Ishii, Y. & Meke, E. S. (2022). An Analysis of Rural-Urban Learning Performance Inequality in Malawi Primary Education *East African Journal of Education Studies*, *5*(2), 194-211. https://doi.org/10.37284/eajes.5.2.716.

CHICAGO CITATION

Ishii, Yudai & Elizabeth Selemani Meke. 2022. "An Analysis of Rural-Urban Learning Performance Inequality in Malawi Primary Education". *East African Journal of Education Studies* 5 (2), 194-211. https://doi.org/10.37284/eajes.5.2.716.

HARVARD CITATION

Ishii, Y. & Meke, E. S. (2022) "An Analysis of Rural-Urban Learning Performance Inequality in Malawi Primary Education", *East African Journal of Education Studies*, 5(2), pp. 194-211. doi: 10.37284/eajes.5.2.716.

IEEE CITATION

Y. Ishii, & E. S. Meke. "An Analysis of Rural-Urban Learning Performance Inequality in Malawi Primary Education", EAJES, vol. 5, no. 2, pp. 194-216, Jun. 2022.

MLA CITATION

Ishii, Yudai & Elizabeth Selemani Meke. "An Analysis of Rural-Urban Learning Performance Inequality in Malawi Primary Education". *East African Journal of Education Studies*, Vol. 5, no. 2, Jun. 2022, pp. 194-211, doi:10.37284/eajes.5.2.716

INTRODUCTION

Quality of education is still regarded as a big issue in the context of developing countries. In fact, there is an increasing number of studies confirming the learning crisis. The majority of children around the world can attend school, but a large proportion of them are not learning (UNESCO, 2013).

On the other hand, within countries, some students could learn more than others, but the differences between the urban area and rural areas have appeared to widen the learning performance gap (Banerjee & Duflo, 2011). From this perspective, an important concern in the study is to clarify which factors that estimating learning performance inequality from rural government schools to urban government schools. Previous studies were carried out on the rural-urban education gap, but the debates on learning performance inequality were still as disturbing and persistent as social issues in SSA (Arteaga & Glewwe, 2019).

In Malawi, access to education was improved because of the introduction of the Free Primary Education (FPE) policy in 1994 (World Bank–UNICEF, 2009). However, quality was a big issue in the context of Malawi. In fact, Malawi tended to rank near the bottom in the region for grade 6 reading, according to the Southern and Eastern Africa Consortium for Monitoring Educational Quality SACMEQ IV, which was conducted in 2013. In fact, as for reading scores in Sub-Saharan Africa (SSA), there has been a big gap between urban areas and rural areas, so urban areas of SSA were statistically significant in the differences in reading scores. However, previous studies have not concluded what causes were behind learning performance inequality in the context of Malawi.

Problem Statement

There has been a growing number of debates about the measurement of education quality, and student learning outcomes are recognised as literacy and numeracies (UNESCO, 2004). On the other hand, there have been debates on the difference between urban and rural vertical educational inequality concerning education like school resources and student background. In general, urban pupils performed better than their rural counterparts (Luschei & Fagioli, 2016). For instance, increasing investment in school resources was a necessary condition for reducing the rural-urban vertical performance gap (Wokadala, 2016). On the other hand, Ramnarain and Hlatswayo (2018) argued that differences in physical and human resources for schools were important determinants of the rural-urban literacy gap. Thus, the results of the debates were mixed concerning learning performances and

Article DOI: https://doi.org/10.37284/eajes.5.1.716

previous studies have not provided conclusive evidence empirically.

Moreover, governments and international donors have been focusing on enhancing quality improvement in lagging areas to deal with shortcomings of educational policy reform in Malawi. In fact, the mean reading score for students in urban schools (484.0) was higher than the mean reading score of students in rural schools (450.1) in 2013 (MoEST, 2013). Thus, there has been a growing need to analyse the effective factors that could decrease the significant rural-urban inequality under the scarcity of resources, management, and capacity. However, it has not been enough to discuss and clarify the reasons for horizontal disparities across the entire distribution.

Based on those problem statements, this study has set two research questions as follows:

- What is the vertical difference between urban and rural government schools with regard to the influences of student, family, school, and community on pupil's learning performance?
- What is the horizontal difference between urban and rural concerning the influences of each variable on reading scores at different points?

Objectives of Study

Two specific objectives were set corresponding to the two research questions mentioned above. The first was to reveal the difference between urban and rural government schools about the influences of family, teacher, school, and community factors on pupils' learning performance. The second was to clarify the effect of family, teacher, school, and community factors on student performance, varying among different performance levels.

Significance of Study

In the literature, there were mixed results concerning the influences of each factor on pupils' learning performances and there have been some previous studies revealing considerable vertical gaps in learning performances between urban and rural pupils in SSA. However, previous research has not provided conclude of debates and it was not clear in discussing the rural-urban differences concerning learning performances. Thus, this study can contribute to pursuing the determinants of education quality from the viewpoint of rural-urban vertical inequality in Malawi.

Furthermore, this study applies an estimation strategy, considering the possibility that the effect of family, teacher, school, and community factors on student performance varies depending on school performance level. Previous studies have addressed this type of issue by comparing regression results of different groups, but there have been few applications through horizontal comparisons between urban and rural at different points of distribution.

LITERATURE REVIEW

Potential Factors Influencing Student Performance

Factors associated with student performance are divided into four categories, student background including individual and family, teacher background, school background, and community background.

As for the student background, Tesema and Braeken (2018) argued that there was a difference in learning outcomes from a gender perspective in unfavoured girls. A previous study stated that grade repetition and absenteeism were commonly found to be associated with low performance (Adu-Gyamfi, 2014; Lewin, 2015). In the case of Malawi, pupils less likely to repeat a class scored very high scores in both reading and mathematics (Mulera et al., 2017). Lewis et al. (2016) stated the vast majority of people speak native and local languages rather than languages of instruction in SSA. Furthermore,

Article DOI: https://doi.org/10.37284/eajes.5.1.716

students with low socioeconomic status (SES) often fail to learn adequately because they are unable to afford school-related fees such as school lunch, boarding costs, or school uniforms (Dudaitė, 2016; Sikora et al., 2019). On the other hand, parents having lower level of education tend to attach a lower value to their children's schooling and force children to work at home or do not provide adequate support for their children's learning (Mahuro & Hungi, 2016).

Abalde (2014) and Wokadala (2016) indicated the importance of school inputs like teachers or school resources to enhance educational quality. Teachers' education and certification have a positive association with students' scores on achievement tests. Zhang (2006) argued that physical and human resources for schools were important determinants of enhancing literacy skills. Studies emphasised that teacher quality including teacher training and teacher experience was strongly associated with student performance (Abdallah et al., 2014; Munawaroh, 2017).

Furthermore, several studies reviewed the impact of school resources on learning outcomes, using test scores in reading. The quality of facilities might be more important in the more disadvantaged settings of developing countries (Yu, 2007). Reducing class size is the most frequent suggestion for improving the quality of education, but it is a costly strategy (Hattie, 2005). The management and behaviour of the school head also influenced learning outcomes directly (Makore & Shukuru, 2017; Burhanuddin, 2018).

Plus, Barnett (2013) and Taniguchi and Hirakawa (2016) pointed out that community support and community participation explained more of the variance in student achievement than other types of factors. In Latin America, where there are multiple cases of delegation of teachers' appointments and dismissals to parents and communities, studies have shown that they are effective in student attendance, teacher attendance, and student academic performance (Bruns et al., 2011). In a paper on community participation and students' outcomes in rural Bangladesh, Alam (2015) found that cooperation from the community contributes to achieving quality primary education no matter the location of the school. Thus, student performance would be influenced by student background, teacher background, school background, and community background and this study set independent variables to analyse the student performance through regression analysis.

Rural-Urban Vertical and Horizontal Inequality in Student Performance

As for rural-urban differences, previous studies pointed out the determinants tended to group factors associating students' learning outcomes into four categories such as family background, teacher background, school background, and community background. Azano and Biddle (2019) stated that there were a lot of factors affecting learning performances, such as learners, their families, and schools, and the impact of student, family as well as school characteristics on student achievements varies along with the test achievement distributions. Ramos et al. (2016) found that learning performance inequality could be explained by family factors. On the other hand, Sumida (2021) argued that the urban-rural learning gap in recent years was attributed mostly to differences in school and family characteristics. However, those studies could not reveal how the differences between rural and urban areas concerning performance distribution (Anlimachie, 2019). In the case of Uganda, in both urban and rural areas, there has been a different point of distribution between urban and rural concerning student performances (Sakaue, 2014). Furthermore, the rural-urban education production function was different across achievement distributions. Moreover, most of the rural-urban learning achievements gap was explained by student background characteristics (Sanfo & Ogawa, 2021). The previous study discussed the only rural-urban gap in the context of developing countries and the

Article DOI: https://doi.org/10.37284/eajes.5.1.716

results of the debates were mixed. Thus, those debates could not always explain how each rural and urban were different at different points of distribution.

METHODOLOGY

Analytical Framework

Previous studies were primarily qualitative approach, so it is needed to investigate how each background affect students' learning outcomes by conducting a more rigorous quantitative study. To accomplish this study uses a model of ordinary least squares (OLS) regression and quantile regression as the analytical framework of the study. Student performance is a dependent variable of reading scores. On the other hand, independent variables include family, individual students, teacher, school, and community factors. This analysis aims to build a comparative framework to analyse the effect of educational inputs on outputs in terms of educational quality.

Hypotheses

This study has set two types of hypotheses as follows.

> *In both urban and rural areas, family, teacher, school, and community backgrounds significantly correlate with student performance.*

Parents' behaviour and practices might explain learning differences among students (Mahuro & Hungi, 2016). Lewis et al. (2016) argued that in SSA, the vast majority of people speak native and local languages rather than the languages of instruction. Lounkaew (2013) indicated that the impact of student, family as well as school characteristics on student achievements varies along with the test achievement distributions between urban and rural. Urban-rural learning gap in recent years was attributed mostly to differences in school and family characteristics (Sumida, 2021).

> *In both urban and rural government schools, the effect of family, teacher, school, and community backgrounds on reading scores varies at different points in their conditional distribution.*

In the Uganda case, Sakaue (2014) argued that a significant positive effect of the payment of an additional amount on top of the teacher's regular salary occurred in urban government schools from the viewpoint of the performance distribution. Furthermore, the rural-urban education production function was different across achievement distributions. Moreover, most of the rural-urban learning achievement inequality was explained by student background characteristics (Sanfo & Ogawa, 2021).

Empirical Model

This study established a model of school-level outcomes and ordinary least squares (OLS) regression results for all factors in this study.

In order to examine the influence of family, school, and community factors on pupils' learning outcomes, this study applied the following model at the school level used by Burger (2011).

$$yi=B0+FiB1+SiB2+ui \quad (1)$$

where *yi* is the educational outcome of the school, represented by average per-school scores on the reading test of school *i*; *Fi* is a vector of non-school input variables in school *i,* which are related to the social environment and aggregated per school as well; and *ui* is an error term.

Furthermore, the model estimated in quantile regression was specified as:

$$yi=B0\theta + FiB1\theta + SiB2\theta + ui \text{ with } Q\theta\,(yi \mid Fi, Si) = B0\theta + FiB1\theta + SiB2\theta \quad (2)$$

Where the function $Q\theta\,(yi \mid Fi, Si)$ denoted the θth ($0<\theta<1$) conditional quantile of the school performance (*yi*) distribution. Coefficients at

Article DOI: https://doi.org/10.37284/eajes.5.1.716

different quantiles were calculated by least absolute value estimation (Sakaue, 2014).

Data

This study would apply a quantitative approach and employ the microdata of the SACMEQ IV from 2013. SACMEQ consists of 15 Ministries of Education in Southern and Eastern Africa. Its mission was to develop the capacities of education planners to apply scientific methods to monitor and evaluate the conditions of schooling and the quality of education. In Malawi, 57,885 grade six pupils, 6,667 teachers, and 2,507 school heads, which were selected using a stratified two-stage cluster sample design, were surveyed. However, there were some dropping observations with missing values or non-applicable values because a large number of schools did not provide complete information.

The specific sampling framework was as follows. In the first stage, schools were selected in each region in proportion to the number of students in the target population. Then, students at each selected school were randomly sampled (MoE, 2013). On the other hand, those who teach relevant subjects in the three largest grade 6 classes were selected by the data collectors from each selected school. Questionnaires were administered to students, teachers, and principals to provide information on the general conditions of the school and the background of the students and teachers.

Father education level and mother education level would be used if their education levels were above secondary education. Pupil SES was a composite variable. It was composed of 13 materials: newspaper, magazine, radio, TV, VCR, cassette, telephone, fridge, car, motorcycle, bicycle, water, and electricity. Pupil 12 years old variable would be the reference category in this analysis. The education level of the class teacher was utilised if the class teacher had above secondary education. Classroom resource was also a composite variable and standardised by calculation. It included a blackboard, chalk, wallchart, cupboard, bookshelf, classroom library, teacher table, and teacher chair. The education level of the school head was used if the school head had above secondary education. School equipment was a composite variable and standardised. It was composed of 11 resources: school library, school hall, staffroom, head office, playground, typewriter, electricity, computer, computer room, and science activities. Original data contained both government and nongovernment cases. This study dropped observations on private schools before running regressions. It was because it intended to explore appropriate interventions for government-owned schools to clarify differences between rural and urban. The community meeting was a composite variable including community meetings with parents yearly, monthly, and school head contact with the community. Furthermore, the North area variable would be the reference category in this analysis.

Article DOI: https://doi.org/10.37284/eajes.5.1.716

Table 1: Definition of Variables

Variables	Definition	Type
Dependent Variables		
Reading score	Student reading test score in grade 6	Numerical
Independent Variables		
Pupil's sex	Student gender: 1 if the student is girl, 0 otherwise	Dummy
Pupil age 13	Student age: 1 if the student is 13 years old, 0 otherwise	Dummy
Pupil age above 14	Student age: 1 if the student is above 14 years old, 0 otherwise	Dummy
Father education	Student's father's education level, if its father has up to above secondary education	Dummy
Mother education	Student's mother education level, if its mother has up to above secondary education	Dummy
Repeat (at grade 6)	Student repeats at Grade 6; 1 if the student repeats at once, 0 otherwise	Dummy
Speak English at home	Students speak English at home; 1 if student speak at home, 0 otherwise	Dummy
Pupil's SES	Standardised value of total of 14 items possession at home	Dummy
Homework help	Homework help: 1 if student was helped by parents while doing homework, 0 otherwise	Dummy
Class teacher's sex	Teacher gender: 1 if the student is girl, 0 otherwise	Dummy
Class teacher's age	Class teacher age	Numerical
Class teacher education level	1 if teacher's education level is Senior Secondary and above, 0 otherwise	Dummy
Class teacher in-service course	Inservice course training attended	Numerical
Class teacher experience	Class teacher years of experience	Numerical
School head's sex	1 if school head is female, 0 otherwise	Dummy
School head's age	School head age	Numerical
School head education level	1 if school head's education level is tertiary, 0 otherwise	Dummy
School head training	1 if school head training is carried out, 0 otherwise	Dummy
Class resources	Standardised value of total of 8 items availability at school; White board, Chalk, Wall chart, Cupboard, Bookshelf, Classroom Library, Teacher table, Teacher chair	Dummy
School Equipment	Standardised value of total of 8 items availability at classroom; Library, School Hall, Staff room, Head office, Playground, Fence, Piped water, Typewriter	Dummy
School size	School size; Total enrolment at grade 6	Numerical
Teaching student	Community help; 1 if community help pupil learning, 0 otherwise	Dummy
Paying exam fees	Community support for exam fees; 1 if community provide exam fees, 0 otherwise	Dummy
Providing school meal	Community support for school meal; 1 community support for school meal, 0 otherwise	Dummy
Providing textbooks	Community support for textbook; 1 if community support for textbook, 0 otherwise	Dummy
Community meeting	Standardised value of parent meet with teacher and school head	Dummy
School Location	School location; 1 if school in urban area, 0 otherwise	Dummy
School Type	School type: 1 if school is private, 0 otherwise	Dummy

Source: Created by the author based on SACMEQ IV (2013)

Article DOI: https://doi.org/10.37284/eajes.5.1.716

Table 2: Descriptive Statistics

VARIABLES		Observations	Mean	SD	Min	Max
Student Achievement	Reading score	519	498.7	49.10	374.8	720.2
Family Factors	Pupil sex (Girl=1)	519	0.472	0.500	0	1
	Pupil age 12 years old	519	0.118	0.322	0	1
	Pupil age 13 years old	519	0.123	0.329	0	1
	Pupil age above 14 years old	519	0.759	0.428	0	1
	Father education level	519	0.173	0.379	0	1
	Mother education level	519	0.112	0.315	0	1
	Pupil SES	519	5.164	2.848	0	13
	Speak English at home	519	0.0983	0.298	0	1
	Repeat at grade 6	519	0.297	0.457	0	1
	Homework help	519	0.782	0.413	0	1
Teacher Factors	Class teacher's sex (Female=1)	519	0.345	0.476	0	1
	Class teacher's age	519	35.33	8.784	22	57
	Class teacher education >SS	519	0.844	0.363	0	1
	Class teacher Inservice course	519	1.763	2.380	0	10
	Class teacher experience	519	9.520	7.561	1	30
	Classroom resource	519	0.0758	0.947	-1.991	1.618
	Homework given	519	0.834	0.372	0	1
School Factors	School head's sex (Female=1)	519	0.121	0.327	0	1
	School head's age	519	46.93	5.863	36	63
	School head education >SS	519	0.900	0.301	0	1
	School head training	519	0.748	0.435	0	1
	School size	519	134.9	137.3	17	1,040
	School equipment	519	-0	1	-1.770	2.260
	School location (Urban=1)	519	0.245	0.430	0	1
	School type (Private=1)	519	0.193	0.395	0	1
Community Factors	Teaching students	519	0.435	0.496	0	1
	Paying exam fees	519	0.287	0.453	0	1
	Providing school meal	519	0.220	0.414	0	1
	Providing textbooks	519	0.210	0.408	0	1
	Community meeting	519	-0	1	-1.028	0.971

Source: Created by the author based on SACMEQ IV (2013)

Article DOI: https://doi.org/10.37284/eajes.5.1.716

RESULTS

Comparing OLS Regression Results

There are some clear trends in the reading results from SACMEQ IV and there was a correlation significantly between family, teacher, school, and community factors and primary education quality. Family factors were almost all statistically significant except for pupil SES and pupils who speak English at home. Students' age and sex had a negative association, meaning that younger boys tend to perform better at reading. Some teacher factors positively influenced student performance. Teacher education level, teacher experience, and class resources were statistically significant, but teacher sex and in-service training were not. Some school factors like education level of head teachers, head teachers for teacher training, and school equipment were constantly statistically significant, but the effect of school head age and sex disappeared in SACMEQ IV data. Finally, community factors tend to have little impact on student performance. Only paying exam fees was statistically significant.

As for rural-urban vertical differences concerning family factors, girl students have negatively associated with reading scores in urban areas. Pupils aged above 14 years old were negatively associated with student performance in both urban area and rural area, while pupils aged 13 years old were not statistically significant. On the other hand, parents' education level, especially the father's education level, was positively associated with reading scores in an urban area, while their mother's education level has affected positively in the rural area. Moreover, the variable of homework help by parents could have a positive correlation with student performance between urban areas and rural areas depending on their parents' education level in each area. Pupils repeating grade 6 have a tendency with negative significance in both urban and rural areas.

According to teacher factors, class teacher education level, class teacher experience, and class resources have a positive statistically significance on reading scores, especially in urban areas. Thus, teachers in urban areas are more educated than those in rural areas and classrooms in urban areas have more resources than those in rural areas. On the other hand, in-service courses for the class teacher and homework given were not statistically significant but tended to indicate positive student performance.

As for school factors, the education level of the head teacher and school head of teacher training has a significant and positive relationship with school performance in government schools, especially in rural areas. In addition, school equipment has positively correlated to student performance, especially in urban areas. It indicates that urban schools have more resources than rural schools.

As for community factors, community teaching, community providing examination fees, and community meetings with teachers have a positive significance regarding student performance in urban areas. On the other hand, the community providing school meals have statistically significant in rural areas. Community-providing textbook was not significant but had a positive correlation with student performance. Thus, community financial contribution and involvement could affect student learning performance positively.

Quantile Regression Results

In order to clarify the second hypothesis, quantile regression analyses were conducted for the 10^{th}, 25^{th}, 50^{th}, 75^{th}, and 90^{th}, percentiles. The results of regressions for urban and rural government schools were listed separately.

According to urban government schools, pupils aged above 14 years old was negatively correlated to student performance in the lower part, 10^{th}, 25^{th}, and 50^{th} percentiles at different student performance level in urban areas, while pupil aged 13 years old was not statistically significant. Furthermore, students who speak English at home were positively significant in the lower part, only 10^{th} percentiles in urban areas. Class teachers who were female positively correlated to student

Article DOI: https://doi.org/10.37284/eajes.5.1.716

performance in the lower part, 10th percentile in urban areas. Class teacher education level above senior secondary education, class teacher experiences and class resources were positively associated with student performance in the upper part, 50th, 75th, and 90th percentiles in urban areas. In addition, school size was negatively correlated to student performance, and school equipment was positively correlated to reading scores in the lower part, 10th and 25th percentiles of urban areas. As for community factors, teaching by community and community meetings have a positive statistically significant in the upper part, 75th and 90th percentiles of urban areas, while community providing examination fees were positively associated with student performance in the lower part, 10th, 25th, and 50th percentiles of urban government schools. Therefore, there would be horizontal inequality within urban areas concerning student performance based on family, teacher factors, school factors and community factors.

In government schools in rural areas, girl pupils aged above 14 years old were negatively correlated to reading scores in the lower part, 10th, 25th, and 50th percentiles in rural areas. Pupil repetition in a class more than once is negatively associated with student performance in the upper part, 75th and 90th percentiles in rural areas. Furthermore, pupils taught homework by parents recorded a positive statistically significance, especially in the upper part of rural area. Education level of school head above senior secondary education and school head of teacher training could be positively associated with student performance in the upper part, 75th and 90th percentiles of quantile regression. On the other hand, school size and school equipment in rural areas were positively correlated to student performance in lower part, 10th and 25th percentiles. As for community factors, community providing examination fees and providing school meals have a positive statistically significant in the lower part, 10th, 25th, and 50th percentiles of rural areas. Thus, even in rural areas, there was a horizontal educational inequality regarding student performance based on school factors and community factors.

Article DOI: https://doi.org/10.37284/eajes.5.1.716

Table 3: OLS regression results for government schools

Reading Test Score Variables		Full		Urban		Rural	
Family Factors	Pupil sex	-7.269*	(-1.932)	-7.805*	(-1.920)	-5.423	(-1.443)
	Pupil age 13	-5.843	(-0.744)	-2.989	(-0.380)	0.390	(0.049)
	Pupil age >14	-25.747***	(-3.824)	-25.954***	(-3.834)	-19.283***	(-2.902)
	Father education	11.168*	(1.724)	11.577*	(1.686)	3.052	(0.513)
	Mother education	4.940	(0.687)	3.835	(0.505)	11.751*	(1.719)
	Pupil SES	-0.640	(-0.765)	0.006	(0.007)	-0.580	(-0.759)
	Speak English at home	-0.229	(-0.033)	3.775	(0.484)	-1.733	(-0.276)
	Repeat at grade 6	13.349***	(-3.211)	-11.093**	(-2.486)	-9.677**	(-2.343)
	Homework help	10.472**	(2.128)	9.462*	(1.746)	9.416**	(1.973)
Teacher Factors	Class teacher sex	-0.188	(-0.032)	9.164	(1.434)	7.981	(1.424)
	Class teacher age	-0.707	(-1.211)	-0.795	(-1.159)	0.075	(0.123)
	Class teacher >SS	18.496***	(2.623)	27.334***	(3.401)	8.985	(1.283)
	Class teacher Inservice courses	1.160	(1.236)	1.625	(1.483)	1.511	(1.542)
	Class teacher experience	1.565**	(2.087)	2.123**	(2.520)	0.694	(0.842)
	Homework given	4.841	(0.900)	3.867	(0.658)	2.337	(0.423)
	Class recourse	3.907*	(1.649)	8.049***	(3.342)	-1.102	(-0.477)
School Factors	School head sex	3.765	(0.541)	-0.413	(-0.057)	0.527	(0.077)
	School head age	0.504	(1.111)	0.605	(1.306)	0.975**	(2.186)
	School head >SS	20.834***	(2.700)	1.275	(0.147)	17.776**	(1.989)
	School head training	13.201**	(2.247)	-0.148	(-0.024)	11.563**	(2.209)
	School size	-0.045*	(-1.736)	-0.064**	(-2.413)	-0.064**	(-2.418)
	School equipment	5.407*	(1.888)	8.775***	(3.183)	4.242	(1.587)
Community Factors	Teaching students	4.246	(0.773)	10.624*	(1.864)	-2.832	(-0.489)
	Paying exam fees	10.850*	(1.822)	17.132***	(3.122)	7.576	(1.376)
	Providing school meal	4.837	(0.814)	11.790	(1.635)	16.627**	(2.521)
	Providing textbooks	9.058	(1.479)	10.243	(1.500)	7.420	(1.237)
	Community Meeting	1.700	(0.759)	4.442*	(1.756)	0.591	(0.277)
Urban		14.400	(1.606)				
Private		25.597***	(3.217)				
Constant		455.201***	(13.398)	457.521***	(13.421)	409.690***	(12.311)
Observations		519		474		464	
R-squared		0.313		0.293		0.247	

Notes) Robust t-statistics in parentheses

Article DOI: https://doi.org/10.37284/eajes.5.1.716

Reading Test Score Variables	Full	Urban	Rural

*** p<0.01, ** p<0.05, * p<0.1*

Source: Calculated by the author based on SACMEQ IV Survey (2013)

Table 4: Quantile regression results for urban government schools

Reading test score (Government School in urban area)										
VARIABLES	**Percentiles**									
	10%		**25%**		**50%**		**75%**		**90%**	
Family Factors										
Pupil sex	-5.99	(-1.15)	-9.34*	(-1.79)	-10.15**	(-2.21)	-6.63	(-1.02)	-2.77	(-0.30)
Pupil age 13	-6.68	(-0.70)	0.37	(0.04)	-2.05	(-0.21)	2.33	(0.20)	-3.51	(-0.18)
Pupil age >14	-35.42***	(-3.09)	-24.40***	(-2.93)	-24.92***	(-3.37)	-13.75	(-1.18)	-22.17	(-1.24)
Father education	4.45	(0.54)	10.11	(1.50)	7.94	(1.04)	12.60	(1.05)	15.76	(0.86)
Mother education	7.85	(0.73)	3.15	(0.36)	8.24	(0.77)	-1.78	(-0.11)	-5.21	(-0.25)
Pupil SES	0.77	(0.79)	-0.59	(-0.48)	-1.21	(-1.06)	0.63	(0.34)	1.51	(0.72)
Speak English at home	24.98***	(2.84)	3.09	(0.46)	2.99	(0.52)	-5.18	(-0.44)	-1.92	(-0.08)
Repeat at grade 6	-9.22	(-0.98)	-10.11	(-1.50)	-7.95	(-1.44)	-6.02	(-0.81)	-11.45	(-1.64)
Homework help	10.68	(1.50)	9.93	(1.21)	9.54	(0.87)	10.43	(1.11)	4.05	(0.34)
Teacher Factors										
Class teacher sex	18.48*	(1.68)	11.86	(1.28)	11.01	(1.53)	-2.84	(-0.22)	15.73	(0.73)
Class teacher age	0.096	(0.09)	-1.01	(-0.99)	-1.39	(-1.41)	-1.64	(-1.40)	-1.29	(-0.77)
Class teacher>SS	14.78	(0.76)	17.86	(1.47)	26.70**	(2.15)	26.80*	(1.76)	25.84	(1.32)
Class teacher Inservice	1.87	(1.31)	0.96	(0.67)	0.63	(0.55)	2.27	(1.55)	1.07	(0.56)
Class teacher experience	1.07	(0.74)	2.37*	(1.77)	2.49**	(1.97)	2.58*	(1.70)	3.43*	(1.80)
Homework given	10.77	(1.27)	1.40	(0.19)	3.60	(0.35)	4.51	(0.40)	22.24	(1.50)
Class recourse	1.77	(0.37)	1.72	(0.41)	4.97*	(1.72)	11.78**	(2.42)	17.40***	(3.64)
School Factors										
School head sex	3.67	(0.27)	1.60	(0.11)	3.27	(0.32)	5.65	(0.43)	-7.57	(-0.48)
School head age	0.54	(0.70)	0.54	(0.56)	0.10	(0.14)	0.97	(0.79)	1.01	(0.63)
School head >SS	0.55	(0.03)	-1.33	(-0.09)	-2.48	(-0.22)	-5.90	(-0.41)	6.31	(0.46)
School head training	2.24	(0.22)	6.95	(0.99)	8.43	(1.03)	-6.72	(-0.54)	-3.12	(-0.22)
School size	-0.098**	(-2.43)	-0.07*	(-1.83)	-0.06	(-1.64)	-0.04	(-0.68)	-0.07	(-0.90)
School equipment	9.044**	(2.13)	9.64**	(2.40)	3.58	(1.03)	2.87	(1.05)	1.79	(0.41)
Community Factors										
Teaching students	-5.12	(-0.84)	8.06	(0.97)	11.13	(1.63)	14.82**	(1.98)	17.48	(1.44)

Article DOI: https://doi.org/10.37284/eajes.5.1.716

Reading test score (Government School in urban area)										
VARIABLES	**Percentiles**									
	10%		**25%**		**50%**		**75%**		**90%**	
Paying exam fees	21.04***	(2.67)	18.29**	(2.20)	23.74***	(2.84)	16.43*	(1.75)	7.06	(0.62)
Providing school meal	11.28	(0.84)	18.82*	(1.86)	16.61	(1.53)	16.85	(1.38)	9.58	(0.43)
Providing textbooks	8.98	(0.94)	11.54	(1.63)	5.55	(0.47)	3.15	(0.23)	1.66	(0.08)
Community meeting	4.16	(1.06)	4.96	(1.45)	1.35	(0.47)	5.39*	(1.76)	6.86	(1.45)
Constant	**394.2*** **	**(6.87)**	**448.4*** **	**(5.35)**	**502.1*** **	**(8.77)**	**486.9*** **	**(5.48)**	**466.5*** **	**(5.07)**
Observations	**474**		**474**		**474**		**474**		**474**	
Pseudo R2	**0.17**		**0.15**		**0.15**		**0.19**		**0.27**	

*Notes) *** p<0.01, ** p<0.05, * p<0.1*
t-statistics in parentheses (using standard errors with bootstrapping method

Source: Calculated by the author based on SACMEQ IV Survey (2013)

Table 5: Quantile regression results for rural government schools

VARIABLES	**Reading test score (Government School in rural area)** **Percentiles**									
	10%		**25%**		**50%**		**75%**		**90%**	
Family Factors										
Pupil sex	-4.23	(-0.94)	-8.79*	(-1.85)	-12.99***	(-3.05)	-6.72	(-1.12)	-0.13	(-0.03)
Pupil age 13	1.82	(0.18)	-1.19	(-0.14)	6.39	(0.50)	-1.89	(-0.14)	-15.72	(-1.08)
Pupil age >14	-21.56***	(-2.86)	-20.80***	(-3.03)	-14.23	(-1.18)	-13.34	(-1.26)	-25.68	(-1.57)
Father education	6.41	(0.70)	6.55	(0.93)	-0.19	(-0.02)	11.90	(1.59)	2.30	(0.23)
Mother education	12.85	(1.42)	9.26	(1.13)	6.67	(0.71)	12.57	(0.95)	10.52	(0.77)
Pupil SES	0.99	(1.12)	-1.01	(-1.45)	-1.31	(-1.13)	-1.24	(-1.31)	0.13	(0.09)
Speak English at home	11.34	(1.11)	4.03	(0.60)	7.45	(1.01)	-4.15	(-0.63)	-19.99	(-0.93)
Repeat at home	-9.22	(-1.21)	-6.45	(-0.80)	-6.46	(-1.25)	-9.06*	(-1.75)	-17.10**	(-2.33)
Homework help	8.98	(1.33)	11.70**	(2.47)	8.16*	(1.70)	9.21*	(1.86)	20.32***	(3.48)
Teacher Factors										
Class teacher sex	3.30	(0.28)	3.97	(0.39)	9.57	(1.26)	13.29*	(1.66)	4.07	(0.32)
Class teacher age	0.002	(0.003)	-0.17	(-0.25)	-0.52	(-0.69)	-0.02	(-0.02)	-0.46	(-0.35)
Class teacher >SS	-5.54	(-0.40)	9.92	(1.06)	8.29	(1.12)	15.52	(1.57)	10.56	(0.67)
Class teacher Inservice	1.78	(1.18)	1.20	(0.79)	1.39	(1.08)	0.53	(0.39)	0.16	(0.10)
Class teacher experience	0.43	(0.45)	1.14	(0.93)	1.04	(0.88)	1.35	(0.91)	2.14	(1.16)
Homework given	3.00	(0.49)	-1.33	(-0.20)	-0.10	(-0.01)	1.31	(0.19)	4.31	(0.44)

Article DOI: https://doi.org/10.37284/eajes.5.1.716

VARIABLES	Reading test score (Government School in rural area) Percentiles									
	10%		**25%**		**50%**		**75%**		**90%**	
Class recourse	-5.86	(-1.64)	-4.02	(-1.04)	-2.27	(-0.83)	0.67	(0.27)	2.02	(0.51)
School Factors										
School head sex	4.99	(0.33)	3.02	(0.31)	1.56	(0.17)	-1.77	(-0.15)	6.52	(0.46)
School head age	1.16*	(1.88)	1.16	(1.53)	0.77	(1.14)	1.09	(1.59)	0.89	(0.90)
School head > SS	24.94	(1.55)	14.93	(1.15)	18.98	(1.27)	18.67	(1.45)	25.57*	(1.93)
School head training	6.35	(0.90)	7.91	(1.33)	13.16*	(1.87)	12.57**	(2.09)	12.80	(1.16)
School size	-0.09*	(-1.96)	-0.06	(-1.43)	-0.04	(-0.90)	-0.07	(-1.30)	-0.06	(-1.05)
School equipment	5.09	(1.08)	7.00**	(2.22)	1.84	(0.48)	0.21	(0.06)	-3.50	(-0.71)
Community Factors										
Teaching student	-3.89	(-0.49)	-3.17	(-0.39)	1.72	(0.20)	6.07	(0.92)	7.50	(1.04)
Paying exam fees	20.60***	(2.88)	12.37	(1.47)	10.71	(1.35)	11.15	(1.55)	7.08	(0.79)
Providing school meals	15.78	(1.55)	20.53**	(2.46)	14.46*	(1.92)	11.57	(1.34)	20.51	(1.21)
Providing textbooks	14.03	(1.27)	6.67	(0.94)	2.13	(0.25)	3.39	(0.44)	8.22	(0.60)
Community meeting	1.41	(0.46)	2.42	(0.96)	-1.99	(-0.88)	-0.22	(-0.07)	1.54	(0.30)
Constant	**359.6*** **	**(7.97)**	**390.4*** **	**(6.36)**	**436.8*** **	**(9.73)**	**408.6*** **	**(9.55)**	**452.3*** **	**(7.71)**
Observations	**464**		**464**		**464**		**464**		**464**	
Pseudo R2	**0.19**		**0.14**		**0.13**		**0.16**		**0.22**	

*Notes) *** p<0.01, ** p<0.05, * p<0.1*
t-statistics in parentheses (using standard errors with bootstrapping method)

Source: Calculated by the author based on SACMEQ IV Survey (2013)

Article DOI: https://doi.org/10.37284/eajes.5.1.716

DISCUSSION

The results of this study indicated that there was a rural-urban vertical inequality and a variation significantly in the influence among different performance levels within urban and rural government schools. Pupils repeating at grade 6 have a tendency to have negative significance in both urban and rural areas and this result was consistent with the previous study, indicating that pupils having fewer repeating a class scored very high in student performance compared with those who experienced repetition (Taniguchi, 2017; Mulera et al., 2017; Thomson, 2018; Sikora et al., 2019). Thus, it would be needed to deal with grade repetition without lowering the standards of learning performances by employing strategies such as early intervention, collaboration with parents, and supplementary instructions in the entire area to decrease rural-urban inequality. The effect of parental education was more consistently in favour of urban areas (Li & Qiu, 2018).

Class teacher education level, class teacher experience, and class resources have a positive statistically significance on reading scores, especially in urban areas. This is also consistent with previous studies, mentioning urban schools generally have more resources, qualified teachers, and better facilities, such as books, learning materials, and educational equipment (Luschei & Chudgar, 2015; Wokadala, 2016; Bashir et al., 2018). Based on these results, teacher factors can enhance the student performance level gradually and help decrease learning performance inequality, but most teacher factors affect positively urban areas and the effect of them varies across the entire urban area. Thus, the government is required to consider how to distribute its educational resource equally and enhance management and capacity at the school level efficiently.

Furthermore, an important finding was that the education level of the school head and school head of teacher training has a significant and positive relationship with student performance in government schools in the rural area. This finding was consistent with previous studies in the case of Malawi (Sakaue, 2014; Sumida, 2021). Based on this regression analysis, deploying more qualified head teachers and training for class teachers by school heads in rural improve school performance and reduce rural-urban learning performance inequality in the context of Malawi. On the other hand, school equipment was positively associated with student performance, especially in the urban area, and this result was consistent with previous studies (Lounkaew, 2013; Nkambule & Mukeredzi, 2017).

In addition, community factors concerning financial support from parents, such as community teaching, providing examination fees, and community meetings, emerged as a significant variable explaining student performance, especially in the urban area, while community providing school meals had a positive statistically significant in the rural area. Thus, the results of the community factors varied concerning each community's involvement and the effect of them varied across the entire of rural and urban, even though reducing educational inequality. This result was consistent with previous studies confirming the influence of community participation and involvement (Sakaue, 2014; Blimpo et al., 2015; Taniguchi & Hiralawa, 2016).

CONCLUSION

This study investigated the relationship between each variable and student academic performance from the viewpoint of rural-urban vertical and horizontal inequality. The purpose of this paper is to reveal the influences of family, teacher, school, and community background that decrease the rural-urban gap concerning the student performance of government schools in Malawi. There are two objectives in this study. The first was to clarify rural-urban vertical inequality concerning the student performance by comparing urban and rural.

Article DOI: https://doi.org/10.37284/eajes.5.1.716

The second was to explore the horizontal difference between urban and rural government schools regarding pupils' learning performance by dividing several percentiles of different student performance levels.

However, this study should be needed to consider when interpreting these results because the quantitative data used in this study precluded causal inferences. There were also issues with omitting variables. Though using aggregate variables could abbreviate the influences of this problem, it was likely that another bias, called aggregation bias, would affect estimation results (Hanushek et al., 1996). Furthermore, selection bias and measurement error bias were not solved because of the limitation of data.

Further study about this topic should be needed to set a more sophisticated theoretical framework, add more important variables and treat the several potential biased using richer data sets. Plus, using more recent data would be an important improvement and a time-series analysis with data long after the implementation would provide a clearer picture of the policy's effects. Finally, the analysis of regional gaps in learning performances, which are also found in the analyses of this study, would be proposed for future study.

REFERENCES

Abalde, M. (2014). School Size Policies: A Literature Review. *OECD Education Working Papers*, 106, OECD Publishing.

Abdallah, H., M. N. Fuseini, A. M. Abudu, & Y. Nuhu. (2014). Dilemma of Basic School Pupils in Northern Ghana with Respect to their Learning Context. *Education Research International*, 2014, 1-13.

Adu-Gyamfi, E. (2014). The Effect of Illegal Mining on School Attendance and Academic Performance of Junior High School Students in Upper Denkyira West District of Ghana. *Journal of Education and Human Development*, 3(1), 523-545.

Alam, S. (2015). Effect of community factors on primary school learners' achievement in rural Bangladesh. *Journal of Learning for Development*, 2(1), 1-22.

Anlimachie, M. A. (2019). Enacting Relevant Basic Education to Bridge the Rural-Urban Inequality in Ghana; The Prospects and Approaches for Investigating Rural Educational Realities. *International Journal of Humanities and Social Sciences*,11 (1), 42-58.

Arteaga, I., & P. Glewwe. (2019). Do Community Factors Matter? An Analysis of the Achievement Gap between Indigenous and Non-indigenous Children in Peru. *International Journal of Educational Development*, 65, 80-91.

Azano, A. P., & C. Biddle. (2019). Disrupting Dichotomous Traps and Rethinking Problem Formation for Rural Education. *The Rural Educator*, 40 (2), 4-11.

Banerjee, A., & E. Duflo. (2011). *Poor* Economics: A Radical Rethinking of the Way to Fight Global Poverty. New York: Public Affairs.

Barnett, E. (2013). An analysis of community involvement in primary schools in Malawi. *International Journal of Education Development*, 33: 497-509.

Bashir, S., Lockheed, M., Ninan, E., & Tan, J. P. (2018). Facing forward: Schooling for learning in Africa. Washington, DC: World Bank.

Blimpo, M. P., David, K. E., & Nathalie, L. (2015). *Parental Human Capital and Effective School Management: Evidence from The Gambia.* Conference Paper. RISE Conference 2015. Research on Improving Systems in Education (RISE).

Article DOI: https://doi.org/10.37284/eajes.5.1.716

Bruns, B., D. Filmer, D. & Patrinos, A. (2011). *Making schools work: New evidence on accountability Reforms*. Washington, D.C.: World Bank.

Burger, R. (2011). School effectiveness in Zambia: The origins of differences between rural and urban outcomes. *Development Southern Africa*, 28(2), 157-176.

Burhanuddin, B. (2018). The Influence of School Principal's and Teacher's Performance on Students' Learning Achievement. *Journal of Innovative Studies on Character and Education*, 2(1), 136-152.

Dudaitė, J. (2016). Impact of Socio-economic Home Environment on Student Learning Achievement. *Independent Journal of Management & Production,* 7(3), 854-871.

Hanushek, E.A., Rivkin, S. G., & Taylor, L. L. (1996). Aggregation and the estimated effects of school resources. *The Review of Economics and Statistics*, 78(4), 611-627.

Hattie, J. (2005). The paradox of reducing class size and improving learning outcomes. International Journal of Educational Research, 43(2005), 387-425.

Jean-Baptiste M.B. Sanfo., & Ogawa, K. (2021). Explaining the rural- urban learning achievements gap in Ethiopian primary education: a re-centered influence function decomposition using Young Lives data. *Education Economics*, 29(3), 269-297.

Lewin, K. (2015). Educational Access, *Equity, and Development: Planning to Make Rights Realities.* United Nations Educational, Scientific, and Cultural Organization, Paris.

Lewis, M. P., Simons, G. F., & Fennig, C. D. (2016). *Ethnologue: Languages of the world* (19th ed). Dallas, TX: SIL International.

Li, Z., & Z. Qiu. (2018). How does Family Background Affect Children's Educational Achievement? Evidence from Contemporary China. *The Journal of Chinese Sociology,* 5 (13), 1-21.

Lounkaew, K. (2013). Explaining Urban–Rural Differences in Educational Achievement in Thailand: Evidence from PISA Literacy Data. *Economics of Education Review*, 37 (2013).

Luschei, T. F., & Chudgar, A. (2015). Evolution of policies on teacher deployment to disadvantaged areas. Paris, France: UNESCO.

Luschei, T. F., & Fagioli, L. P. (2016). A vanishing rural school advantage? Changing urban/rural student achievement differences in Latin America and the Caribbean. *Comparative Education Review*, 60(4), 703-745.

Mahuro, G. M., & N. Hungi. (2016). Parental Participation Improves Student Academic Achievement: A Case of Iganga and Mayuge Districts in Uganda. *Cogent Education*, 3 (1), 1-12.

Makore, O. M., & Shukuru, S. H. (2017). Academic achievement of students not only depends on the process of teaching and learning but also effectiveness of staff management. *Advances in Economics, Business and Management Research,* 45, 96-101.

MoEST. (2013). SACMEQ IV Study Malawi-Country Report.

Mulera, D., Ken, N., & Nyirongo, R. (2017). Analysis of factors affecting pupil performance in Malawi's primary schools based on SACMEQ survey results. *International Journal of Educational Development*, 54, 59-68.

Munawaroh. (2017). The Influence of Teaching Methods and Learning Environment to the Student's Learning Achievement of Craft and Entrepreneurship Subjects at Vocational High

Article DOI: https://doi.org/10.37284/eajes.5.1.716

School. *International Journal of Environmental & Science Education,*12(4), 665-678.

Nkambule, T., & Mukeredzi, T. G. (2017). Pre-service teachers' professional learning experiences during rural teaching practice in Acornhoek, Mpumalanga Province. *South African Journal of Education*, 37(3), 1-9.

Ramnarain, U., & Hlatswayo, M. (2018). Teacher beliefs and attitudes about inquiry-based learning in a rural school district in South Africa. *South African Journal of Education*, 38(1), 1-10.

Ramos, R., J. C. Duque, & S. Nieto. (2016). Decomposing the Rural-Urban Differential in Student Achievement in Colombia using PISA Microdata. *Estudios de Economía Aplicada,* 34(2), 379-412.

Sakaue, K. (2014). An Analysis of Urban-Rural Differences in School Effectiveness: The Case of Ugandan Primary Education. *Comparative Education: Bulletin of the Japan Comparative Education Society,* 49, 136-155.

Sikora, J., M. R. Evans, & J. Kelley. (2019). Scholarly Culture: How Books in Adolescence Enhance Adult Literacy, Numeracy and Technology Skills in 31 Societies. *Social Science Research,* 77 (2019), 1-15.

Sumida, S. (2021). Obstructive and promotive factors for access to school and learning in primary school in Zambia. *International Journal of Comparative Education and Development,* 19(1), 2-19.

Taniguchi, K. (2017). Determinants of Student Mobility in Primary School in Rural Malawi. *World Journal of Education,* 7(2), 19-30.

Taniguchi, K., & Hirakawa, Y. (2016). Dynamics of community participation, student achievement and school management: the case of primary schools in a rural area of Malawi. *Compare: A Journal of Comparative and International Education,* 46 (3), 479-502.

Tesema, M. T., & J. Braeken. (2018). Regional Inequalities and Gender Differences inAcademic Achievement as a Function of Educational Opportunities: Evidence from Ethiopia. *International Journal of Educational Development,* 60 (2018), 51-59.

Thomson, S. (2018). Achievement at School and Socioeconomic Background – An Educational Perspective. *NPJ Science of Learning,* 3(5), 1-2.

UNESCO. (2013). The Global Learning Crisis: Why Every Child Deserves a Quality Education. EFA Global Monitoring Report. Paris: UNESCO.

Wokadala, J. (2016). Examining Effects of School and Teacher Inputs on Productive Efficiency of Ugandan Primary Schools: A Stochastic Frontier Analysis. *Advances in Social Sciences Research Journal*, 3(11), 93-105.

World Bank – UNICEF. (2009). Abolishing School Fees in Africa: Lessons from Ethiopia, Ghana, Kenya, Malawi, and Mozambique. World Bank, Washington, DC.

Yu, G. (2007). Research evidence of school effectiveness in Sub-Saharan Africa. *EdQual Working Paper, 7.*

Zhang, Y. (2006). Urban-rural literacy gaps in Sub-Saharan Africa: The roles of socioeconomic status and school quality. *Comparative Education Review*, 50(4), 581-602.

