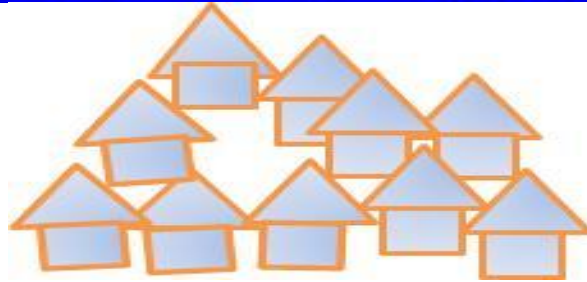
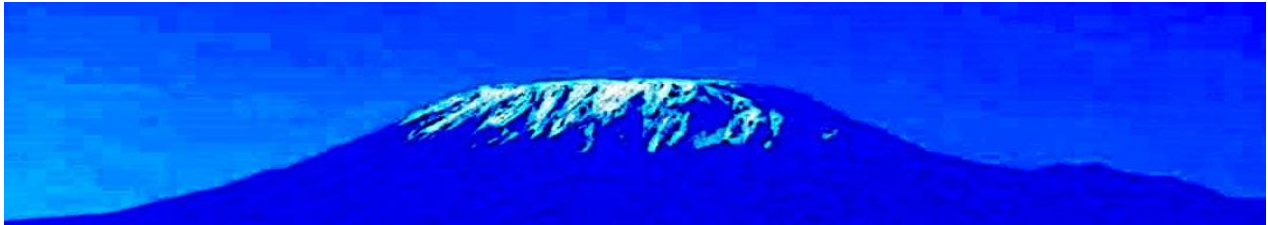


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Influence of Public Private Partnership Framework on Improving the Quality of Education: A Case of Primary Schools in Kilimanjaro Region, Tanzania

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Abstract

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The extent to which Public Private Partnership (PPP) model has improved the quality of primary education in Tanzania is not empirically known. Specifically, this paper aimed at identifying roles played by private educational partners and examine the extent to which the PPP framework has improved the quality of education in Kilimanjaro Region. Thirty primary schools were randomly selected from two strata (16 with PPP and 14 without PPP schools). A total of 60 teachers and 240 pupils were randomly selected and data were collected through structured questionnaires, key informant interviews and observation. Difference-in-difference (DiD) and t-test were run to examine the influence of PPP roles in improving the quality of education. Renovation and construction of classrooms and connection of water sources within school compounds had significant influence of improving quality of primary education at $p \leq 0.05$. Schools with PPP were found to have better academic performance with mean score of 14.6 points compared to non-PPP schools (8.9 points). It is concluded that PPP schools stand a better chance to improving the quality of primary education than non-PPP schools. It is recommended that; local governments and schools' administration should collaborate adopt the PPP model to improve the quality of education

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1.0. Introduction

Since the mid-19th century, there has been an expansion of the private sector's role in provision of public services, particularly health and education in many countries in the world. For over five decades in Africa, the partnership between the public and private sectors has been promoted as a key strategy for increasing efficiency, generating resources and improving governance and quality of social service delivery, particularly to the poor (Ivona and Dean,2018).

Budgetary constraints and acknowledgement of the private sector efficiencies and know-how are among the principal reasons why governments are taking economic and political decisions to accelerate the use of the private sector by adopting the Public Private Partnership (PPP) model to deliver social services which would have been previously offered by the public sector. Other driving forces that made many governments to team up with the private sector, that is PPP, are based on conscious policy design, inefficiency of the public sector to provide quality services to all people and, on the other hand, by voluntary demand-driven factors of increased needs to access quality social services. Structural adjustment programmes imposed by international monetary institutions also enforced many of the developing countries to open doors to private organizations and individuals to support and invest in provision of social services in pursuit of complementing government efforts towards development (Murphy, 2016).

In this paper PPP model was defined as a collaborative arrangement between a governmental body and a private development partner to provide the public goods either an asset or a service for improved quality of primary education in regard to this study. Private development partner was referred to organizations (for-profit and not-for-profit), philanthropic groups and individuals that are collaborating with the government entities through implementing different education related roles in the process of providing/improving the quality of primary education. In this paper school academic performance was considered and defined as the end result of the whole processes of improving the quality of primary education. Furthermore the paper has considered that better or poor school academic performance is directly influenced by the roles played and implemented by both, public entities and private partners.

In most of the newly industrialized countries; particularly China, India and Hong Kong the roles of the PPP framework and contributions resulting from it are well documented and known to the general public. For example the PPP model has proved to contribute substantially to provision of quality services to many people of China, particularly in the health sector where ten health centres were built and operated through PPP in the rural villages of Fujian province. Between 1994 and 2000 more than 2,500 pupils from poor families in Tai Po Rural District of Hong Kong accessed primary school through a voucher system which was organized through the PPP framework. PPP studies conducted in the education sector, particularly in Russia have shown that the PPP model has led to significant contributions in the quality of education whereby 102,000 science books were provided to 102 public primary schools (Tat'jana, 2019). A study by Barrera-Osorio et, al (2016) on the private partners involvement in education policy in Uganda and Ghana revealed that interventions done under the PPP model in education have assisted to improve the quality of education but its actual contributions were not scientifically documented nor known to the general public. Verger and Moschetti (2016) asserted that lack of scientific documentation may lead information and experience generated from any PPP intervention fail to reach others. Scientific documentation of such PPP interventions is essential for providing the contemporary professionals and future generations with the opportunities to know, learn, and benefit from the past knowledge and experiences.

For the PPP model to bring about significant contributions to improved quality of education, it depends on the type and number of roles played by a certain private partner. Roles played through

the PPP framework in this study refer to any kind of intervention done and type of support provided by any private educational partners towards improving the quality of education. International development partners are of great advantage as they always have capital, expertise and experiences on the same business, but their support is of a short period. Also, local partners do contribute little and sometimes are reluctant to donate although they do support development of countries for a long period and sustainably. It is argued that the nature of educational partners being local or international does not guarantee significant contributions; it is rather the roles they play that do contribute improvement of the quality of education (Mpamila, 2007).

In response to the globalised framework of Jomtien and Dakar as well as the Millennium Development Goals (MDGs), many sub-Saharan African governments were advised to adopt the PPP framework in order to achieve Universal Primary Education and increase access to good quality of education as an important means to achieve the millennium development goals by the end of 2015. The Government of Tanzania adopted the use of the PPP model for services delivery, particularly education from the late 1970s, and in the mid-1990s there was an increase in participation of the private partners in the provision of education services at all levels. The Tanzania's Public Private Partnership policy was officially established in November 2009, the PPP Act/laws were established later in June 2010 and its enforcing regulations were established in June 2011. Due to many changes, the PPP Act/laws were amended in 2014 and the PPP regulations were amended in the 2015/2016 financial year.

In Tanzania, many private educational partners, both local and international, collaborate and support the government by playing various roles of improving the quality of primary education. According to Itika et al., (2011), Tanzania has provided a more positive experience of a case where aid donors have particularly been supportive towards improving the quality of social services including education. Also, a study by TEN (2004, cited by Mpamila, 2007) remarked that many private educational partners have participated and done a number of interventions for provision and improvement of quality education in Tanzania, but their significant contributions were not yet documented and known to the public.

Based on the empirical literature reviewed above the researcher also affirms that, the PPP model is an important instrument for fostering socio-economic development, but its actual contribution has hardly scientifically documented nor known to the general public in most developing countries. Verger A, and Moschetti (2016) asserted that the dual roles that private educational partners play should be identified, and the actual extent of their contributions towards improving the quality of education should be documented and well known to the beneficiaries and the general public.

In spite of the long use and many roles played by private educational partners through the PPP model the extent to which the model has influenced the likelihood of improving the quality of primary education in Tanzania is not empirically known. Since there was little supportive evidence to suggest that the PPP framework has significantly contributed to improving quality of education in Tanzania, there was a need to conduct this study to fill in the gap and document the empirical findings. Specifically, the objectives of this paper were two; identify roles played by private educational partners through the PPP model towards improving the quality of primary education and examine the extent on which PPP model has improved the quality of primary education in Kilimanjaro Region. The paper also answers the research question 'What were the roles/interventions played by private educational partners towards improving the quality of primary education in Kilimanjaro Region?' Moreover, this paper has two hypotheses that were tested; there is no significant difference in the quality of primary education in schools with and those without PPP in Kilimanjaro Region, and roles played by private educational partners have no significant contribution on improving the quality of primary education in Kilimanjaro Region.

1.1. Theoretical Framework

This study was guided by the stakeholder theory as advocated by Stephen Ross and Barry Mitnick (1967, cited by Verger, Bonal and Zancajo, 2016). Stakeholder theory is based on the assumption that the collaboration and relationship synergies that exist among different partners (the government and private partners) are basically aimed to improve the provision of quality socio-economic services to its people. The relationships occur when these partners invite each other to work in a collaborative manner by sharing their expertise, resources and experiences based on the outlined appropriate collaboration framework. It is believed that in cooperating different stakeholders in the provision of public services is more likely expected to respond to broader educational challenges than to narrow this responsibility to a single partner particularly the central government (Kuznyetsova and Maslov, 2022). A study by Gali and Schechter (2020) on the roles of private education partners showed a significant improvement in the arithmetic performance among standard four primary schools pupils in the south province of Ghana. This paper has considered one variable of identifying the roles/interventions that are played by private education partners towards improving the quality of primary education. Also the over whole actual contributions of the private partner(s) towards improving the quality of primary education were determined.

1.2. Methodology

Study area

This paper is based on a research which was conducted in Moshi District Council and Moshi Municipality in Tanzania. The districts were selected purposively due to the facts that they have many private educational partners which they had been collaborating with since the 1960s (URT, 2014a).

Study design

The study used a cross-sectional research design whereby data were collected at a single point in time. The design has been recommended to be used in social sciences by several scholars including Frey (2018) and Gorard (2013) due to its effectiveness in data collection.

Sampling unit, Sampling procedures and Sample size

Two strata of with and without PPP schools were identified with an assistance of District Education Officers and a total of thirty schools were randomly selected from the strata of the two local government authorities studied. Sixteen primary schools that were being supported and operated by both partners (with PPP schools) and another fourteen primary schools that were purely public with no support from any private partner (without PPP schools) were randomly selected. The schools were selected based on the criteria that they were or not collaborating with private educational partner(s) in provision of quality education. From each selected school, two teachers were randomly selected, making a total of 60 teachers from all the schools, although the analysis was done based on thirty teachers only just to avoid repetition of the same information collected at a school. Also, eight pupils were randomly selected from two classes; standard IV and standard VII, giving a total of 240 pupils in all the thirty schools that were studied.

Data collection methods

Data based on roles of private educational partners and kinds of support provided were collected through structured interviews using a questionnaire and observation through the use of a checklist of items. Key informant interviews using an interview guide were also used to collect supportive information based on the roles played and support provided by private educational partners. Secondary data about school academic performance (with and without PPP) was collected where by yearly reports of the standard seven national examinations for the previous eight years (2008 to 2015) were accessed. Empirical information related to the study topics were collected through

documentary review where-by numerous books, journals and published and unpublished materials were accessed and reviewed as listed in the reference list.

Data analysis

The collected quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) and Ms Excel software. Descriptive statistics were computed and analyzed to determine frequencies, percentages, minimum and maximum values of individual variables, and averages of support provided. Moreover, inferential analysis was done whereby difference-in-difference (DiD), t-test and an ordinal logistic regression models were run to examine the influence of PPP roles/interventions towards improving the quality of education. 'Counterfactual analysis model' was used to test the first hypothesis whereby the difference in-different of school academic performance (outcome) between with and without PPP schools was calculated to determine the actual contribution of the PPP framework to improving the quality of education in Kilimanjaro region. Counterfactual analysis technique shows what would have happened if a participant had not participated in a programme. In other words, the counterfactual has shown the quality of education (school academic performance) of non - PPP schools in the absence of PPP interventions. Here, evaluating attribution required comparing what happened to the outcome with an intervention (the factual) to what would have happened to the outcome without it (the counter) was done. Two groups were identified; a group of PPP schools participants (treatment) and a group of non-PPP schools participants (control) that were statistically identical in the absence of the PPP interventions. If the two groups were identical, except only one group that participated in the programme and the other one did not, then we can be sure that any difference in outcomes is associated to the programme that is PPP interventions (Verger and Moschetti, 2017). A main advantage of the counterfactual analysis model over others is that, it rules out other potential factors that can affect the outcome under consideration. Also, if properly implemented, it is able to precisely estimate the magnitude of impact of a project or intervention on intended outcomes (Gali and Schechter, 2020).

Thereafter the ordinal logistic regression model was used to test the second hypothesis whose null hypothesis states that 'roles played by private educational partners have no significant contribution on improving the quality of primary education in Kilimanjaro Region'. School academic performance for eight years (2008 - 2015) was considered as an outcome (Y) in an ordinal logistic regression model used. Three categories of school academic performance was determined; best performers (80 – 100%), average performers (79 – 41%) and poor performers (40 – 0%).

The empirical model for this analysis was specified according to Abbott and McKinney (2013) as given in the equation below:

$$P(y = 1) = \frac{e^{\alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k \dots}}{1 + e^{\alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k}}$$

Where:

P (y) = the probability of the success alternative occurring

e = the natural log

α = the intercept of the equation

β_1 to β_k = coefficients of the predictor/independent variables

x_1 to x_k = predictor/independent variables entered in the regression model

k = number of independent variables

X_1 = Number of toilet holes constructed by PPP

X_2 = Number of classrooms renovated or constructed by PPP

X_3 = Number of teachers' houses renovated or constructed by PPP

X_4 = Number of desks provided by PPP

X_5 = Number of textbook provided by PPP

- X₆ = Did PPP construct modern kitchen to the school 0=No, 1= Yes
- X₇ = Did PPP construct/connect water system/points to the school 0=No, 1= Yes
- X₈ = Did PPP provide/support food programme at the school 0=No, 1= Yes
- X₉ = Did PPP finance seminars to school committee members and teachers 0=No, 1= Yes
- X₁₀ = Did PPP provide exercise books, pens and pencils to pupils 0=No, 1= Yes
- X₁₁ = Number of teachers' offices renovated or constructed by PPP

In this study:

$P(y = 1)$ = The probability of a school being considered as the best academic performer. Outputs from the ordinal logistic regression model were interpreted based on β -coefficients for measuring the direction of the impact (positive or negative) of predictor variables, Wald statistics for measuring the magnitudes of the impact, and p-value for testing significance of the impact of the studied predictors.

2.0 Findings and Discussion

2.1. Education level of teachers

The findings, as presented in Table 1 show that, 53.3% of the interviewed teachers had attained certificate education, and seven teachers (23.3%) had attained a university degree in education (Table1). The study findings also indicated that most of the studied PPP schools were staffed with teachers with certificates in education (grade A), the level that is recognized for teaching in primary schools in Tanzania. These findings indicate that the government has ensured that a basic factor for quality education provision is adhered to all schools. URT (2014b) reports that a well-qualified teacher is an important factor for effective delivery of lessons due to mastering subject matters and pedagogic content knowledge, a condition which leads to provision of quality education. Various private educational partners, particularly Childreach International and FT-Kilimanjaro, have financed teachers to attend various on job training seminars that have also improved teachers' work of teaching hence improved quality of education between pupils and teachers themselves.

Table 1: Education level of teachers

Levels of education	Frequency (n=30)		Per cent
	Male	Female	
Primary education plus Modules	1	0	3.3
Certificate in education (Grade A)	6	10	53.3
Certificate in education plus form six	0	1	3.3
Diploma in education	4	1	16.6
Degree in education	3	4	23.3
Sub-total	14	16	-
Total	30		100.0

Total number of teachers and pupils in the schools studied

The findings in Table 2 show that schools in Moshi Municipality had more pupils (9,452) compared to their counterpart schools in Moshi District Council where the total number of pupils was 6,260. Also, Table 2 shows that schools in Moshi Municipality had more teachers (280) compared to 200 teachers in Moshi District Council. Furthermore, Table 2 shows that, regardless of the differences in the number of pupils and teachers, the pupil teacher ratios (PTR) in the studied schools were almost the same; the PTR in Moshi Municipality was 1:34 while in Moshi District Council it was 1:31. This was a very good ratio between pupils and teachers as most of the schools adhered to the set national standards of 1:40. Also, Table 2 shows that, within a district, there was a variation of PTR; some schools had high PTR while others had low PTR. This indicates that there was a problem of allocating teachers to the schools. Commenting on this during a focus group

discussion (FGD) a board member of Shirimatunda primary school said: “*Teachers do collide with district educational administrators to be re-allocated to urban schools with conducive environment and few pupils*”. High school PTR was thought to be caused by high enrolment rate in the schools due to school environment being good, a situation which was influenced by the roles done through PPP. In regard to this the head teacher of Benjamin Mkapa Primary School said: “*Some of the parents are lobbying strategically for their children to be placed to this school due to the school having conducive environment for teaching and learning for both teachers and pupils*”.

Table 2: Pupils teacher ratio (PTR) of the studied schools

Primary Schools in Moshi Municipality				Primary Schools in Moshi District Council			
Name of school	Pupils	Teachers	PTR	Name of school	Pupils	Teachers	PTR
Mandela	1062	23	1:46	Katanini	763	20	1:38
Azimio	1017	24	1:42	Kiyungi Mpya	543	14	1:39
Kaloleni	1069	20	1:56	Ronga	261	4	1:65
Jitegemee	996	20	1:50	Kiyungi	413	18	1:23
Muungano	382	16	1:24	James Ole	422	11	1:38
				Mallya			
J.K.Nyerere	426	19	1:23	Dr.Omary Juma	195	12	1:16
Kilimanjaro	709	19	1:37	Benjamin	1025	16	1:64
				Mkapa			
Shirimatunda	718	27	1:27	Arusha chini	381	13	1:29
Kiborloni	734	22	1:33	Kisaseni	153	6	1:26
KilimanjaroEdA	388	14	1:28	Himo-Pofo	365	15	1:24
FM.Foundation	455	20	1:23	Maria Magareth	178	12	1:15
Mnazi	757	21	1:36	E	433	15	1:29
Samaria Eng	293	15	1:20	Rongoma	363	18	1:20
Msandaka	388	14	1:28	Imani	265	6	1:44
Mt.Kilimanjaro	57	6	1:10	Pre&Prschl	500	20	1:25
				Kidia			
				Bethel Eng			
Total	9,452	280	1:34		6,260	200	1:31

Roles played by private educational partners

It was found that private educational partners that were collaborating with schools that were studied had implemented a number of interventions that focused on improving the quality of primary education in Kilimanjaro Region. The findings as presented in Table 3 show types of interventions implemented and kinds support provided by private educational partners in the studied schools.

Table 3: Implemented interventions and kinds of educational supports provided by private educational partners

PPP roles and kinds of educational supports provided to schools/pupils	Teachers' Responses	
	N	%
Installation of water system (tap points, pump machine and storage tanks)	42	12.5
Provision of school uniforms, shoes & bag	32	9.5
Provision of food /cooking materials (maize, beans & 50kgs of sugar monthly) to pupils	28	8.3
Renovation and construction of modern toilets for pupils	23	6.8
Construction of modern kitchen/cooking stoves	19	5.6
Provision of subject text books	17	5.0
Provision of computers & installation of internet/ network system	16	4.7
Provision of exercise books, pens and pencils	14	4.1
Financing School, Water, Sanitation and Hygiene project (SWAS)	14	4.1
Renovation and construction of classrooms	13	3.8
Renovation and construction of teachers offices	12	3.5
Renovation and construction of teachers' houses	12	3.5
Free transport to teachers, go and from school	12	3.5
Payment of school fees to pupils	10	2.9
Construction of play grounds and provision of playing tools	10	2.9
Supply of free electricity and water	9	2.6
Construction of school fence and library	8	2.3
Supporting children's rights education projects	8	2.3
Construction of dining hall	6	1.7
Provision of pupils desk, chairs and tables	6	1.7
Provision of irrigation canes	6	1.7
Provision of Mosquito nets	4	1.1
Provision of Vegetable seeds for gardening	6	1.7
Charging soft rent to teachers staying in the organization houses	4	1.1
Payment of salaries to three teachers' doing remedial classes at Ronga primary school	2	0.5
Construction of resting hall for pupils at Ronga Primary School	2	0.5
Financing seminars to members of the school board and teachers teaching lower classes (class I and II)	2	0.5
Renovation and construction roofed corridors for classrooms and teachers' offices	2	0.5
Total	334	100.0

Multiple responses

The related identified interventions were later grouped into one whereby three categories of PPP roles were formed. The formed categories of PPP roles played in the studied schools were; renovation and construction of school infrastructure, provision of teaching and learning materials, and quality education support services. These roles are discussed in detail in the following sub sections.

Renovation and construction of school infrastructure

The paper revealed that improvement of the school infrastructure is among the purposes for collaboration between government entities and private educational partners. Most of the respondents (98%) agreed and declared that the assessed school infrastructure have close and direct influence towards improving the quality of primary education. The results in Table 3 show that private educational partners have played great roles towards increasing and improving the number of school infrastructures. Also Tables 3 depict various interventions that were

implemented and focused on school infrastructure. The interventions included; renovation and construction of classrooms, toilet holes, roofed corridors, teachers' houses, libraries, modern kitchens, dining halls, teachers' offices and provision of desks, chairs and tables. It was found that construction of modern toilets and kitchen was mostly implemented while few numbers of teachers' houses, desks, tables and dining halls were renovated and constructed to the studied schools (Table 3). The results coincide with those of a study by Gali and Schechter (2020) who asserted that modern toilets are of great importance as they modernize pupils while modern kitchens assist pupils to fully participate in the learning process.

2.2. Provision of teaching and learning materials

The paper also revealed that government entities and private educational partners in Kilimanjaro region collaborated with the aim to ensure that all pupils/schools had sufficient teaching and learning materials. The results in Table 3 show that private educational partners have played significant roles that ensured school age children were enrolled to attend school and access needed materials for learning. Table 3 also shows various interventions that were implemented by private educational partners to ensure that this objective was met. The interventions that were done on this categorical role included; provision of subject text books, computers, exercise books, pens and pencils. Table 3 also shows that provision of text books to pupils was the intervention that was mostly done while few numbers of computers, exercise books, pens and pencils were provided to the studied schools. Lack of electricity and absence of safe and standard classrooms caused some schools not to be provided with computers as well as not being connected to internet services. These results correspond with those of a study by Crawford (2017) who asserted that lack of electricity in any learning institution hinders it from providing quality education due to the fact that learners are not doing practicals based on modern tools recommended in their training curricula such as computers. Availability and accessibility of teaching and learning materials particularly subject text books, computers, exercise books, pens and pencils; has a positive influence on improving the quality of education.

2.3. Other support services implemented to improve the quality of education

The services were assessed as non-instructional activities that were implemented in order to support the whole process of improving the quality of education hence increased academic performance of pupils. According to Verger, Bonal and Zancajo (2016) the support services towards improving the quality of education include water, electricity, meals/food, transport, remedial classes, security, and their facilities. These services have often been found to cost significantly more in public schools than in private schools hence need of support from private development partners. Table 3 also shows different interventions that were implemented by private partners to ensure that stated supportive services were available to support the process of improving the quality of education. Among the activities that were implemented to ensure that this objective was met were; installation of water systems (tap points, pump machine and water storage tanks), provision of school uniforms, shoes, bags, provision of food /cooking materials (maize, beans and sugar) as well as construction of play grounds and provision of playing tools. Other supportive services implemented were free transport to teachers, payment of school fees to pupils from poor families, construction of school fences, financing remedial classes to pupils as well as financing seminars to members of the school board and teachers teaching lower classes particularly classes I and II. Table 3 also shows that many schools were connected with water systems (tap points, pump machines and water storage tanks). Also, provision of food/cooking materials to pupils was among the services that were mostly implemented at the studied schools. These services were mostly implemented in order to increase pupils' academic performance as previously pupils lacked concentration while learning in the classroom due to starvation. Also pupils in the study areas were wasting a lot of time just walking long distances to fetch water.

All in all, it was found that renovation and construction of school infrastructure were among the roles that were mostly implemented by private educational partners at what schools in Kilimanjaro Region. Provision of support services for quality of education was the second service to be implemented while provision of teaching and learning materials was implemented at few schools.

The extent on which PPP framework has influenced/improved the quality of education

The study examined the extent to which the PPP roles/interventions have contributed to improving quality of education in Kilimanjaro region. Counterfactual analysis model was first done, whereby the school academic performance with and without PPP interventions was determined. Then counterfactual was calculated by finding the difference in difference (DiD) of the PPP schools and non-PPP schools as a control group (Verger A, and Moschetti, 2016).

The results in Table 4 show that PPP schools had better academic performance with a mean score of 14.6, compared to non-PPP schools which scored a mean of 8.9 with a mean difference of 7.5. Furthermore, the results in Tables 4 and 5 show that there was a statistical difference in the quality of education (school academic performance in standard seven national examinations) between with and without PPP schools. In regard to these results, the first studied null hypothesis (There is no significant difference in the quality of primary education in schools with and those without PPP in Kilimanjaro Region) is rejected and the alternative is confirmed. Thus, the most plausible reason that caused this difference is that the PPP schools received educational supports that were aimed to improve the quality of education while the other group (non PPP schools) did not.

Table 4: Difference in difference (DiD) for the quality of education (academic performance in std seven national exams) between with and without PPP schools

School	Without PPP		Differences	Schools	With PPP		Differences	DiD
	Before	After			Before	After		
Kiborloni	79	85	6	Mandela	78	99	21	15
Mnazi	80	91	11	Kaloleni	78	92	14	3
Rongoma	78	91	13	Jitegemee	79	97	18	5
Msandaka	76	79	3	J.K.Nyerere	77	98	21	18
Kisaseni	77	86	9	Kilimanjaro	80	100	20	11
Kidia	70	75	5	Shirimatunda	78	84	6	1
Himo-Pofo	77	85	8	Ronga	76	79	3	(5)
Dr.Omary Juma	76	92	16	Benjamini	79	93	14	(2)
				Mkapa				
Total			71				117	60
Mean			8.9				14.6	7.5

Table 5: Academic performance differences in standard seven national examinations between with and without PPP schools

School category	n	Mean	Mean differences	T	Sig
With PPP schools	8	14.6	7.5	2.75	0.008
Without PPP schools	8	8.9			

After determining significant contributions of PPP, the study used an ordinal logistic regression model to examine the extent to which each PPP intervention/role contributed to improving academic performance of the studied schools. Outputs of the ordinal logistic regression model were summarized and presented in Tables 6 and 7.

The omnibus (goodness of fit) coefficient test value was less than 0.05 (0.022) indicating that the model was highly significant and fit to handle the variables while the Hosmer and Lemeshow test showed a significant value that was above 0.05 (0.890) indicating that the model was also worthwhile. Also, Table 7 shows that between 53.8% and 72.5 % of the model variability was strongly explained by the independent variables entered in the model. In regard to these results, the studied second null hypothesis (Roles played by private educational partners have no significant contribution on improving the quality of primary education in Kilimanjaro Region) is rejected and the alternative is confirmed. The extent to which each PPP intervention contributed to the improving the academic performance of the studied primary schools is shown in Table 6.

Table 6: Variables in the Equation

Variables	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Classrooms renovated and constructed by PPP	3.690	2.395	2.375	0.023*	4.662	0.367	4376.092
Desks provided by PPP	0.010	0.061	1.028	0.868	1.314	0.896	1.139
Toilet holes renovated or constructed by PPP	0.607	0.441	1.898	0.168	1.835	0.774	4.351
Teachers' houses renovated or constructed by PPP	0.791	1.420	1.590	0.207	5.993	0.370	3.963
Teachers' offices renovated or constructed by PPP	0.389	3.346	3.645	0.046*	4.966	0.843	1.505
PPP provided food	0.036	1.448	2.879	0.456	7.355	0.762	0.983
PPP constructed modern kitchen	0.962	2.963	1.234	0.026*	2.258	0.0785	0.456
PPP constructed/connected water system/points	0.769	0.969	4.397	0.042*	5.221	0.0678	1.096
Books provided	0.007	0.035	2.044	0.074	1.007	0.941	1.079
Whether PPP provided exercise books, pens and pencils	-0.931	0.432	8.034	0.203	0.008	0.0567	0.768
PPP financed seminars to school committee members and teachers	-0.353	1.459	7.059	0.809	0.006	0.040	6.251
Constant	-23.130	13.421	2.970	0.085	0.026		

*Statistically significant at the 5% level

Table 7: Summarized outputs of the model

Omnibus test (Sig)	Hosmer and Lemeshow (Sig)	Cox and Snell's R Square	Nagalkerke'sR Square
0.022	0.890	0.538	0.725

The regression results in Table 6 show that renovations and construction of classrooms, teachers' offices, and modern kitchens as well as construction and connection of water systems/points to the school had significant influence on improving the quality of education (school academic performance) at $p \leq 0.05$. These findings are in line with a study by Barrera-Osorio *et al*, (2016) who found the significant influence of the school infrastructures to the students' academic performance.

Renovations and construction of classrooms, as shown in Table 6, had significant positive influence on improving pupils academic performance in the national examination ($\beta = 3.690$) at $p \leq 0.05$. The Wald statistic value implies that, if other factors in the model remain constant, an increase in number of classrooms by a unit will increase the likelihood of improving the school academic performance (best performer) by 2.375 chances. The exponential β coefficient (odds ratios) shows that renovations or construction of classrooms was 4.662 times more likely to affect the school from improving the quality of education. This finding is supported by an observation reported in a study by Gali and Schechter (2020) that revealed the need for renovating and constructing more classrooms in rural primary schools of Southern Uganda so as to provide conducive school environment for teaching and learning between pupils and teachers. For all surveyed schools to have sufficiency PCR, they were supposed to have 1,511 classrooms, but there were only 1,016 classrooms with a deficit of 495 classrooms. In regard to these findings, more interventions focusing on constructing classrooms in the studied areas are needed in order to cope with the larger number of pupils enrolled in the primary schools. If the government and private partners respond positively to this role, the school academic performance in Kilimanjaro region will significantly be improved.

Construction of modern kitchens was also found to have significant influence on improving the quality of education in the study area. The results on Table 4 show that, modern kitchens had a positive relationship and significant influence on the improvement of the school academic performance ($\beta = 0.962$) at $p \leq 0.05$. The Wald statistic value implies that, if other factors in the model remain constant an increase in a unit of modern kitchen will increase 1.234 chances of school improved academic performance (best performer). The exponential β coefficient (odds ratios) shows that renovation or construction of modern kitchens was 2.258 times more likely to affect the school from improving the academic performance of pupils. These findings are not surprising; they are in line with findings of a study by Wokadala and Barungi (2015) who found that modern kitchens that utilize and use small energy do influence and contribute to the process of improving quality of education at all school levels. In regard to this, more intervention focusing on the construction of modern kitchens that use less energy are highly needed to ensure qualities of good education are adhered to the studied public primary schools.

Construction and connection of water systems/points to the school was also found to have a positive relationship and a significant influence on the improvement of school academic performance ($\beta = 0.769$) at $p \leq 0.05$. The Wald statistic value of this variable implies that, if other factors in the model remain constant an increase in number of constructed and connection of water storage/points to the school by a unit will increase the likelihood of improving the pupils academic performance (best performers) in the national examination by 4.397 chances. The exponential β coefficient (odds ratios) shows that construction and connection of water points was

5.221 times more likely to affect the school from improving the quality of education. This finding is supported by an observation reported in a study by Lwaitama and Mpamila (2008) that revealed the need of connecting schools with water services as well as providing water storage facilities. This will reduce pupils' chores of fetching water from far distance hence concentrate and use more of their time for learning while at school. Intervention based on construction of water points and connecting schools with water services need to be capitalized. This will reduce wastage of time that used on fetching water hence more time will be spent for teaching and learning among pupils and teachers.

Provision of exercise books, pens and pencils to pupils as well as financing seminars to school committee members and teachers had negative influence on improving the quality of education, while other remaining factors entered in the model had positive influence, although they were not statistically significant. For example a unit increase in financing seminars to school committee members and teachers reduces the odds of the school to improve academic performance by a factor of about 0.006 (Table 6).

3.0 Conclusion and Recommendation

It was found that the private educational partners that were collaborating with primary schools in Kilimanjaro Region had implemented a number of interventions/roles that have assisted to improve the quality of education. The interventions were grouped into three categories, namely renovation and construction of school infrastructure, provision of teaching and learning materials and quality education support services. In view of these results, it is concluded that government alone cannot provide quality social services to all people due to its resource inadequacy and multiple roles it plays; hence there is a need for collaborating with private partners. In connection to this conclusion, it is recommended that the Central Government and local governments in Tanzania should open doors and provide friendly and conducive environment to private development partners. This will inspire private development partners to support and invest in provision of social services, particularly education in pursuit of complementing the government efforts towards improving the quality of primary education.

There is significant contribution of the PPP framework towards improving the quality of education whereby schools with PPP interventions were found to have better academic performance with a mean score of 14.5 points, compared to non-PPP schools that scored a mean of 8.9 points. The outputs for ordinal logistic regression analysis showed that most of the factors entered in the model had positive influence on improving the pupils' academic performance, except two factors (provision of exercise books, pens and pencils; and financing seminars to school committee members and teachers). Since most of the described interventions had positive influence on improving the quality of education, it is concluded that PPP schools stand a better chance to improve school academic performance than non-PPP schools. In regard to this conclusion, it is recommended that PPP interventions should continue being implemented by being replicated to other schools or parts in Kilimanjaro Region. Also the Central Government, local governments, schools' administration and the whole community should be flexible and look for strategies for collaborating with private partners (both local and international) because the PPP model has been found to be an effective tool that assists to reduce educational challenges facing primary schools.

Implications of the study findings to the practices, body of knowledge and theory

The findings of this study have indicated that PPP model can also be practised in social services sectors that are not productive by nature and with less commercial aspects such as education. This result has the potential to influence educational practitioners and administrators to use the

PPP model in the education sector to reduce educational challenges hence improve the quality of primary education.

The partnership between the public and private sectors (PPP model) has been promoted as a key strategy for risks and resource sharing towards improving provision of quality of social services, particularly quality primary education. Regardless of the significance of the PPP model being recognized worldwide but its actual contribution towards improving the quality of primary education in Moshi District Council and Moshi Municipality was not empirically known. Findings of this study has provided a confirmation that private partners through the PPP model implemented several interventions that had a significant contribution towards improving schools' academic performance. Also the study used the "counterfactual analysis technique"; the methodological approach that provided an alternative way of determining the actual contributions of the PPP model in improving the quality of primary education. The study confirmed that joint efforts; collaboration between private partners and the public entities has significant contribution on addressing challenges of social services sector particularly primary education.

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POLICY BRIEF

Influence of Public Private Partnership Framework on Improving the Quality of Education: A Case of Primary Schools in Kilimanjaro Region, Tanzania

The use of private partners to meet public needs dates back to the 18th century throughout the world. Most of the governments in the world have opened doors and used the PPP model as a developmental tool in various sectors. Building on lessons from other sectors; including health, transport and electricity; the PPP model has significantly contributed to improving the provision of quality services to many people to these sectors.

The main requirements that precipitate many governments to enter into PPPs are to attract private capital investment, increase efficiency and use available resources more effectively, share risks and foster implementation of public service related projects. Structural adjustment programmes, imposed by international monetary institutions particularly IMF, also enforced many of the developing countries to open doors to private organisations and individuals to support and invest in provision of social services in pursuit of complementing government efforts towards development. In such partnership it is the government entities that seek for collaboration from private partner(s), and sometimes the private partner (s) do search for opportunities to work with the government entities in a given policy outcome.

In the education sector the PPP model is important particularly when the public sector alone does not have enough capacity to deliver educational services and assets effectively to all parts of the country. According to PPP education studies conducted in many parts of the middle economy countries, particularly in Northern Brazil and India, the use of the PPP model in the education sector has led to significant improvement in the quality of education. The PPP model has improved the quality of education by making school environment more conducive for teaching, learning through construction of school infrastructures, provision of teaching and learning materials and support of other educational services hence good academic performance among students.

The government of Tanzania adopted the use of the Public Private Partnership (PPP) model as a development strategy for service delivery improvement particularly education since the late 1970s. The paper answered the research question 'What were the roles/interventions played by private educational partners and its actual influence towards improving school and pupils' academic performance in Kilimanjaro Region. The study adopted the stakeholder theory that was advocated by Stephen Ross and Barry Mitnick in 1967. The key strength of this theory is based on the assumption that collaboration and relationship synergy exist between different partners (the government as the principle and private partners as the agents in which they work together toward achieving a desired policy outcome.

Study findings showed that private educational partners that were collaborating with the public primary schools had implemented a number of interventions that focused on improving pupils' academic performance in Moshi District Council and Moshi Municipality in various ways. Implemented interventions included; renovation and construction of school infrastructure, provision of teaching-learning materials, and financing/provision of quality education support services like water service connection and support of food projects. Analysis indicate that the implemented PPP interventions have significantly contributed on improving pupils' academic performance in the studied schools. The results indicate that schools with PPP had better academic performance with a mean score of 14.6, compared to schools without PPP which scored a mean of 8.9 with a mean difference of 5.7.

Lessons learnt from this study and that are recommended for practice include; the PPP model is an effective development tool that assist the government on improving pupils' academic

performance in a given school. Also involvement of private development partners in the provision of education assist public schools to reduce and overcome educational challenges hindering them to provide quality primary education. PPP schools stand a better chance to improve schools'/pupils' academic performance than schools without PPP. It is recommended that authorities of Moshi District Council and Moshi Municipality should set strategies that will inspire more private development partners to continue supporting and investing on improving teaching and learning environment as well as schools'/pupils' academic performance in Kilimanjaro Region. School administrators and management of Kilimanjaro region should create supportive environment for private partners to continue collaborating with more primary schools facing educational challenges in the region.