Synergy Between Governance and Capitation Grant on Academic Performance in Primary Schools in Morogoro Region, Tanzania

Omari Mzee[1*]   Gabriel K. Nzalayaimisi[2]   Damian M. Gabagambi[3]

1.Department of Development Studies – Sokoine University of Agriculture (SUA), Tanzania

2.Department of Agricultural Extension and Community Development – Sokoine University of Agriculture (SUA), Tanzania

3.School of Agricultural Economics and Business Studies – Sokoine University of Agriculture (SUA), Tanzania

Abstract

Primary education, accounting for over 40% of the national education budget from 2008/09 to 2012/2013 under decentralised school governance, was the first most funded sector in Tanzania with expectations that it would give intended outcomes. However, there are reports of declining pass–rates in the Primary School Leaving Examinations. Nonetheless, there is not enough empirical evidence to support the effect of school governance and capitation grant, as important school system components, on education outcomes. Hence, based on this problem, the study was conducted in Morogoro Region from August, 2014 to November, 2014 and used hierarchical linear regression to examine the effect of school system components on pupils' pass–rate in Primary School Leaving Examination. It was found, from the regression results, that the combination of the capitation grant and other selected school system components, excluding school governance, had a significant effect on pass–rate, while the combination of school governance and other selected school system components had no significant effect on pass–rate. However, school governance improved Teacher Pupil Ratio prediction. The findings of the study demonstrate the need for the Government to devise strategies to adequately implement the Capitation Grant Policy, enhance community–based monitoring in primary schools and improve learning in primary schools.

Keywords: Capitation grant, education, school governance

1. Introduction

Education is generally defined as the process of initiating and preparing a person through training in his environment about norms, skills, knowledge, and values of the society so as to play active roles in society (Amaele, 2013; Komba *et al*., 2014). Thus, education, particularly primary education, is essential for the development of society (Rafiq *et al*., 2013). Primary education, compared to other levels of education, provides children with a good preparatory ground for further education, and its social benefits outweigh the social costs (Adesina, 2011). One of the goals of primary education is to prepare a child to pursue secondary education. Hence, a number of countries, including Tanzania, have been investing in schools and teachers to improve the educational achievement of students (Wei *et al*., 2012; Akiri, 2013). Nevertheless, there are reports of declining quality of primary education in developing countries, including Tanzania.

The Government of Tanzania introduced capitation grant (CG) in 2002 as a recurrent mechanism to compensate for the abolition of school fees with raising academic achievements of the pupils as one of its goals. The CG targets at providing teaching and learning materials such as textbooks and chalk, and for administration purposes (URT, 2012). The budget for primary education, therefore, increased from TZS 299.4bn in 2002/03 to TZS 961bn in 2011/12 (TZS means Tanzanian shillings). Moreover, the primary education sector accounted for 46.6%, 47.6%, 44.1%, 40.0%, and 55.8% of the national education budget for 2008/09, 2009/10, 2010/11, 2011/12 and 2012/13, respectively. The Government has also been implementing the School Based Management (SBM) and the Education and Training Policy (ETP) of 1995 by devolving governance of the funds to school committees under the Primary Education Development Programme (PEDP) of 1999. Despite these efforts, the Primary School Leaving Examinations (PSLE) pass–rates fluctuated greatly between 70.5% in 2006 and 30.7% in 2012 (URT, 2014) and were below the National Strategy for Growth and Reduction of Poverty (NSGRP) pass–rate target of 75% for girls and boys by 2010. The pass–rates in Morogoro Region were 35.2%, 55.6%, 56.1%, 51.7%, 54.6%, 61.4% and 28.0% in 2004, 2005, 2008, 2009, 2010, 2011 and 2012 respectively (URT, 2014). Also, some pupils completed the primary education cycle without appropriate mastery of the reading, writing and arithmetic skills (3Rs).

The decline in pass–rate might have been contributed by internal and external classroom factors (Mushtaq and Khan, 2012). The relationship is supported by theories, such as the Open System Theory (OST)(Heneveld, 1994; Bertalanffy, 1950 in Haque and Rehman, 2014). Several studies have been conducted to investigate this relationship (Serra *et al*., 2011; Eweniyi, 2012; Bloom *et al*., 2015; Kiprono *et al*., 2015). Nonetheless, their findings are not enough to conclude on the combined effect of governance and CG, as important school system components, on education outcomes. Hence, the study from which this paper is based, attempted to examine the effects of CG and school governance by answering three questions: is there a capitation grant effect on academic

performance of a pupil? Is there a school governance effect on academic performance of a pupil? How much is a combined effect of CG and school governance on pupils' academic performance? While there are various definitions of governance, this paper defines school governance as the decision making process by a school committee in CG spending for the betterment of school performance.

2. Literature Review
2.1 Theoretical framework
The Open Systems Theory (OST) is used in the study as a guiding framework in analysing the effects of capitation grant (CG) and school governance on academic performance of a pupil. As described by Bertalanffy's (1950) Open System Theory (OST), cited by Haque and Rehman, 2014), organizations, in this case Government primary schools (GPSs), as systems are surrounded and draw certain inputs from the environment, transform them, and discharge the outputs to the external environment in the form of goods and services and responds to the environment through the procedure of feedback. Inputs are the various resources needed to run an activity such as financial resources. The transformation processes are how an activity is carried out. The outputs are system returns to the environment. The environment includes the social, political, and economic forces that impinge on the organization. The feedback allows the environment to recognise operation of the system and stimulates the system to adjust itself and ultimately helps the organization to survive in the environment. Negative feedback indicates a potential for failure and the need to change the way things are being done (Haque and Rehman, 2014). The theory is used with expectation that it will contribute in informing practice in GPSs. According to Boer et al. (2015), the value of any theoretical contribution will be determined by its utility in informing practice and/or future research.

The OST is based on five principles: parts that makeup the system are interrelated, health of overall system is contingent on subsystem functioning, importing and exporting material from and to the environment, permeable boundaries that can allow materials to pass through, and relate openness by regulating permeability. The systemic boundary is about rules that regulate interaction. According to Eicher (1984) in Mlozi et al. (2013), in any productive process, the quality of the output depends upon that of inputs. Financial resources are the key inputs for school development and a combination of prudent budgeting, strict implementation, and good reporting for funds (Ayeni and Ibukun, 2013). The school committees are responsible in this endeavour as they have various roles including the following: approve whole school development plans and budgets, to operate bank accounts and efficiently and effectively manage funds received for implementation, to ensure safe custody of property acquired using PEDP funds, and prepare and submit accurate and timely physical and financial progress reports to LGAs (URT, 2012).

The OST is relevant in determining the synergy between school governance and CG and some school factors influencing the academic performance of a pupil. This paper adapts three open system backed frameworks: the Chen's (2011) analytical framework of school outcome, the Heneveld's (1994) framework on factors that contribute to school effectiveness, and the Hofman et al. (2002)s' relationships between governance and pupils achievement. The Heneveld's framework, for instance, has been used in research related to this in Guinea, Kenya, Madagascar, Senegal and Uganda (Heneveld, 1994).

2.2 An overview of factors affecting pupils' academic performance in schools
The academic performance of pupils can be affected by internal as well as external classroom factors. Internal classroom factors include class schedules, class size, learning facilities, teachers' roles in the class, and pre-primary classes (Mushtaq and Khan, 2012). External classroom factors include funds, school leadership, the ability to manage public funds, and effective school governance. Various studies have been conducted to investigate the relationships between internal and external classroom factors, and students' academic performance.

On the impact of educational funding, Benhassine et al. (2015), examining the Moroccan labelled cash transfer programme, found that it had no effect on student test scores. Earlier, the scholarship programme in China evaluated by Yi et al. (2014) had no significant impact on students' test scores. On the other hand, Das et al. (2013), examining a school block grant programme in India, found that it had little or no effect. Baird et al. (2011) observed that the unconditional cash transfers in Malawi had no significant impact on students' test scores. Similarly, Osei et al. (2009), using regression analysis, found that the capitation grant had no significant impact on Basic Education Certificate Examination (BECE) pass rates in Ghana.

Empirical studies on class size and Pre-primary classes showed relationships to academic achievement. It was demonstrated that teachers who work with smaller classes were often associated with students who demonstrated significantly higher achievement (Bibb and McNeal, 2012). Duflo et al. (2015) found that class size led to higher test scores, but the increase was not statistically significant in Kenya. In Nigeria, Eweniyi (2012) found that pupils with formal kindergarten education performed better than those without. Hence, pre-primary classes were important for the high performance of the pupils in primary schools.

Effective teaching and learning also requires school leadership, the ability to manage public funds, effective school governance and suitable teaching and learning materials and conducive environment (Bloom *et al.*, 2015; Glewwe and Muralidharan, 2015; Serra, 2011). According to Bibb and McNeal (2012), giving schools more money does not necessarily raise students' achievement, but rather how the money is spent can raise student achievement. Glewwe and Muralidharan (2015) assert that poor governance in developing-country education systems may be a first order constraint in translating inputs into outcomes. Bloom *et al.* (2015), measuring variation in management practices across schools in several countries, found that school management scores were correlated with students' test scores, quality of governance and degree of school leadership. Earlier, Serra (2011), investigating the relationship between accountability systems (top-down and bottom-up) and education outputs in Albanian primary schools, found a strong positive correlation between top-down accountability and students' excellence in mathematics.

Several reforms based on School–Based Management (SBM) approach have been attempted around the developing countries (Pradhan *et al.*, 2014; Santibanez *et al.*, 2014; Glewwe and Maiga, 2011). Glewwe and Maiga (2011) presented experimental evaluations of the Amélioration de la Gestion de l'Education àMadagascar (AGEMAD) programme in Madagascar, which aimed to strengthen school management at the district, sub-district, school and teacher levels; they found no impact on student test scores of the intervention. Pradhan *et al.* (2014) conducted an experimental evaluation of a series of interventions that aimed to enhance community participation in school management in Indonesia and found no significant impact on test scores for most of the interventions. Similarly, Santibanez *et al.* (2014), using a difference–in–differences strategy to evaluate an SBM programme in Mexico, found that the program had no general impact on students' test scores in school measures.

Nonetheless, the findings are not enough to conclude on the combined effect of governance and capitation grant, as important school system components, on education outcomes. Generally, on the basis of the Open System Theory (OST), it can be presumed that school governance and school funds have an influence on academic performances of pupils.

2.3 Hypotheses based on the open system theory
Based on the open system theory (OST), the study from which this paper originates had two hypotheses as conceptualised in Figure 1: "there is no significant effect of capitation grant and other school system components on pupils' academic performance" and "there is no significant effect of school governance and other school system components on pupils' academic performance". Figure 1 depicts the conceptual framework that shows the effect of school factors on pupils' academic performance.
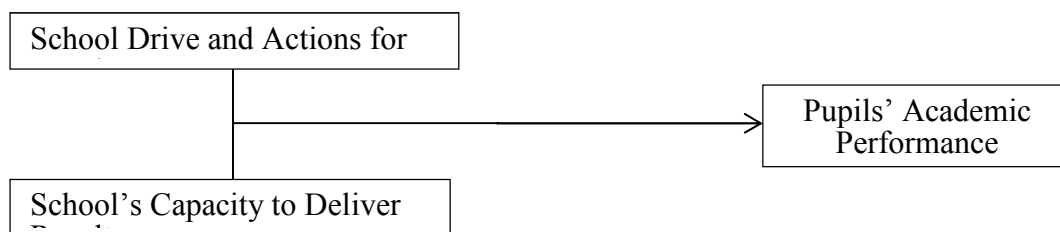
Source: Adapted from Chen (2011), Heneveld (1994), and Hofman *et al.* (2002)
Figure 1: Independent and dependent variables investigated in this study

The pupils' academic performance, indicated by pass–rate (PR), is conceptualised as dependent on the dimensions of school's capacity to deliver results, and school drive and actions for results. The school's capacity to deliver results is indicated by Pupil Toilet Ratio (PTR), school distance to council head office (SDCHO), Pupil Desk Ratio (PDR), Classroom Pupil Ratio (CPR), Teacher Pupil Ratio (TPR) and Pre–Primary Classes (PPC). The school drive and actions for results is indicated by capitation grant disbursed to school (CGDS), good governance attributes (effectiveness–GGAE, rule of law–GGARL and accountability–GGAA), and leadership quality of school heads (years in the position–LQSHYP, and financial management training–LQSHFMT).

3. Research Methodology
3.1 Description of the study area
The study from which this paper originates was conducted in Morogoro Region in Tanzania Mainland from August, 2014 to March, 2015. The region is administratively divided into seven districts namely Gairo, Kilombero, Kilosa, Morogoro, Mvomero, Ulanga and Malinyi. The region had 829 Government primary schools (GPS) in the year 2012. The region was selected purposively based on poor pass–rate and number of rural–based primary schools. The Morogoro regional primary school leaving examination (PSLE) pass-rate of 2012 dropped to 28% from 56.1% in 2008 (URT, 2014), meaning that 72% of standard VII leavers in the region failed the PSLE. Also, in 2012, the region had the largest number of 404 rural–based primary schools located at a distance

equal or more than 76 km from councils head office. According to URT (2010), the more remote a school is located from the council headquarters, the lower is the quality of facilities. In addition, like in many other regions in Tanzania mainland, all GPS in the region were recipient of capitation grant (CG) (URT, 2012).

3.2 Research design and sampling

The study adopted a cross-sectional research design, whereby data were collected at one point in time. According to Mlozi *et al*. (2013), the design is relatively feasible, economical and the data collected could easily be analysed to determine relationships among variables. The sample for the study was 102 randomly selected schools from 829 Government primary schools in Morogoro Region. These schools were stratified into three groups based on 2007/08 – 2011/12 average PSLE pass–rates: schools having less than 41% pass rate as low performing; schools having pass–rate ranging from 41% to 60% as medium performing; and schools having pass–rate of 61% and above as high performing. From a school list in each group, a sub–sample of 34 primary schools was obtained randomly using a table of random numbers, to give a total of 102 primary schools. According to Bailey (1994), the bare minimum number of cases for a sample or sub–sample in which statistical data analysis is to be done is 30 and that in most cases 100 cases is taken. In addition, the sample size of 102 was enough as it was far above 10% of the study population (i.e. 83 GPSs) (Adongo and Jagongo, 2013). A total of 102 copies of a questionnaire were administered to School Heads from August, 2014 to November, 2014. The School Heads were preferred because they were secretaries to school committees (SCs) and had the responsibility of preparing school budgets (income and expenditure) and submit them to the SCs for authorization. The questionnaire included three types of construction: closed items, open ended items, and scale items. The scale items included a five-point Likert scale (i.e. 1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, 5: strongly agree) from which the responses of choice were taken by the respondents. Documentary review was also used to determine the pupils' academic performance based on PEDP II period from the 2007/08 fiscal year to the 2011/12 fiscal year.

3.3 Regression analysis

The unit of analysis for the study from which this paper originates was a school; the school is in-charge of most managerial decisions (Barrera–Osorio *et al*., 2009). The analysis of data involved the use of hierarchical linear regression model (Raychaudhuri *et al*., 2010; Bibb and McNeal, 2012). Based on this model, the relationships between pupils' academic performance and number of explanatory variables were computed as depicted in the following three equations.

$$Y_1 = C + \beta_1 PTR + \beta_2 SDCHO + \beta_3 PDR + \beta_4 CPR + \beta_5 TPR + \beta_6 PPC + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (1)$$

$$Y_2 = C + \beta_1 CGDS + \beta_2 PTR + \beta_3 SDCHO + \beta_4 PDR + \beta_5 CPR + \beta_6 TPR + \beta_7 PPC + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots \quad (2)$$

$$Y_3 = C + \beta_1 GGAE + \beta_2 GGARL + \beta_3 GGAA + \beta_4 LQHTYP + \beta_5 LQHTFMT + \beta_6 CGDS + \beta_7 PTR + \beta_8 SDCHO + \beta_9 PDR + \beta_{10} CPR + \beta_{11} TPR + \beta_{12} PPC + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad (3)$$

Equations 1and 2 depict the effect of school system components on the academic achievement of a pupil in Primary School Leaving Examination (PSLE) while controlling for capitation grant (CG) and governance, and governance respectively. Equation 3 shows the combined effect of CG and governance and some explanatory factors on the academic achievement of a pupil in PSLE. Y is academic performance in terms of pupils' average pass rate (PR) in PSLE from 2007/08 to 2011/12; C is a constant; and β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9, β_{10}, β_{11}, and β_{12} are the effects of independent variables on pass rates. PTR is Pupil Toilet Ratio, total number of pupils per hole. SDCHO is the road distance in kilometres from a school to Council's Head Office. PDR is Pupil Desk Ratio, total number of pupils per desk. CPR is Classroom Pupil Ratio, total number of pupils per classroom. TPR is Teacher Pupil Ratio, total number of pupils per teacher. PPC is Pre-Primary Classes, represented by a dummy with school without pre-primary classes the score is 0 and the school with pre-primary classes the score is 1. CGDS is capitation grant disbursed to school, average CG a school received from the 2007/08 fiscal year to 2011/12 fiscal year. GGAE is respondent's level of agreement or disagreement to a statement indicating effectiveness in CG spending as good governance attribute. GGARL is respondent's level of agreement or disagreement to a statement indicating rule of law in CG spending as good governance attribute. GGAA is respondent's level of agreement or disagreement to a statement indicating accountability in CG spending as good governance attribute. LQSHFMT is leadership quality of a school head indicated by financial management training represented by a dummy whereby without training the scores is 0 and with training the score is 1. LQSHYP is leadership quality of a school head shown by years in the position. Ɛ is the error term of the model. Some variables for participation were accommodated in the study as variables for accountability and effectiveness. Likewise, there were other potential pedagogical predictors of pupils' achievement such as teachers' knowledge which were not included in the analysis because they were beyond the scope of this study.

The compliance of the regression model with the set of assumptions of normality, linearity and homoscedasticity was tested based on the values of parameters indicated below:

- Normality (Kolmogorov-Smirnov Z test): *Decision*–reject null hypothesis " the test variables were not significantly different from normal" if it is significant (Asymp. 2-tailed, $p \leq 0.050$) (Pallant, 2010)
- Standard Residual: *Decision*–no outliers if it is between -3.3 and 3.3 (Field, 2009)
- Durbin Watson Value (Test for Independent errors): *Decision*–residual items are independent/uncorrelated if it equals 2; raises concern if it is less than 1 or greater than 3; better if it is close to 2 (Field, 2009)
- Variance Inflation Factor (VIF) (test for multicollinearity): *Decision*–multicollinearity if it is greater than 10 (Pallant, 2010); regression may be biased if it is greater than 1 (Bowerman and O'Connel, 1990 in Field, 2009)
- Tolerance (test for multicollinearity): *Decision*–serious problem with regression model if it is less than 0.1; potential problem with regression model if it is less than 0.2 (Menard, 1995 in Field, 2009; Pallant, 2007)

Having tested compliance of data with linear regression assumptions, quantitative data were used to test two hypotheses using computer programme software, the Statistical Package for Social Sciences (SPSS) version 16 with the level of significance set at $p \leq 0.05$. The hypotheses tested were, "there is no significant effect between capitation grant and other school system components on pupils' academic performance" and "there is no significant effect between school governance and other school system components on pupils' academic performance". The interpretation of the results for hypothesis testing was based on F ratio, beta (β) values, R squared (R^2), adjusted R^2, R^2 change, the F–change, and the significance of these values as described by Allua and Thompson (2009), Field (2009), and Pallant (2010). The significance of R^2 was tested using an F-ratio testing hypothesis that the F-ratio was significantly different from zero.

4. Results and Discussion
The findings of the study are presented as: description of the study variables, analysis of the regression model (i.e. compliance of the study variables with linear regression assumptions) and relationships of school performance factors (i.e. interaction effects of school system components).

4.1 Study variables and compliance with assumptions of normality, linearity and homoscedasticity
Table 1 gives the description of the dependent variable as well as 12 independent variables involved in the study from which this paper originates. Generally, results from the selected primary schools in Morogoro Region show a mean PSLE pass-rate of 48.78% which is very close to the regional pass-rate average of 50% recorded from 2008 to 2012 (URT, 2014). The pass-rates in the region were 35.2%, 55.6%, 56.1%, 51.7%, 54.6%, 61.4% and 28.0% in 2004, 2005, 2008, 2009, 2010, 2011 and 2012 respectively.

Based on the values of parameters and visual inspections of histograms, Q to Q plots, bivariate scatterplots and box plots, the regression model could give credible results as it complied with the underlying assumptions of normality, linearity and homoscedasticity. The Kolmogorov Smirnov test results (0.048) show that the test variables were not significantly different ($p \leq 0.05$) from normal. Also, the Durbin Watson test values (1.49) were close to 2, meaning that they were not below 1 and not above 3, which implies that the assumption of independent errors was met as described by Field (2009). In addition, the study found that the average Variance Inflation Factor (VIF) for test variables (1.47) was far below 10 and was close to 1 as suggested by Field (2009). Equally, the tolerance value for pass-rate (0.71) was well above the acceptable range of 0.2 suggested by Menard (1995) cited by Field (2009) and Pallant (2007). Hence, this suggests that multicollinearity of data was not a threat.

4.2 Effect of capitation grant and other school system components on pupils' academic performance
The study sought to test whether there was effect of capitation grant disbursed to schools (CGDS) and some selected school system components, excluding school governance, on academic performance of a pupil. Hence, the null hypothesis, "there is no significant effect of capitation grant and other school system components on pupils' academic performance". The test of significance results, with reference to model 2 in Table 2, reveal that the variance explained by the model was 36.4% and that CGDS explained significantly 3.3% of variance and thus null hypothesis was rejected ($R^2 = 0.364$, $\Delta R^2 = 0.033$, $\Delta F = 4.847$, $p < 0.05$). This means that 33.1% of variance was explained by other school system components in the model. The findings also show that 1% change in CGDS significantly caused 19.9% of the variance in pass–rate (β = 0.199, t = 2.202, $p < 0.05$). This implies that for CGDS to have its 100% contribution in the improvement of pupils' academic performance in the study area, it was supposed to be five times of the disbursed amount. However, Osei *et al*. (2009), using regression analysis, found that the capitation grant had no significant impact on Basic Education Certificate Examination (BECE) pass rates in Ghana. The probable explanation could be contextual differences of the study areas. In general, the results of this study confirm the OST, as described in Boer *et al*. (2015), by showing that as CGDS increases so does the pass–rate, meaning that the outcome is dependent on input in the study area. According to Boer *et al*. (2015), the value of any theoretical contribution will be determined by its utility in informing practice and/or future research.

4.3 Effect of school governance and other school system components on pupils' academic performance
The study sought to test whether there was effect of school governance (Good Governance Attributes: effectiveness–GGAE, rule of law–GGARL, accountability–GGAA, and leadership qualities in terms of school head's years in the position–LQSHYP and school head's financial management training–LQSHFMT) and some selected school system components on academic performance of a pupil. Hence, the null hypothesis, "there is no significant effect of school governance and other school factors on pupils' academic performance". The test of significance results, with reference to model 3 in Table 2, reveal that the variance explained by the model was 40.6% and that school governance explained non-significantly 4.2% of variance and thus null hypothesis was not rejected ($R^2 = 0.406$, $\Delta R^2 = 0.042$, $\Delta F = 1.212$, $p > 0.05$). This means that 36.4% of variance was explained by other school system components in the model. The results imply that the quality of governance is important in explaining the academic performance of pupils though non-significant. The probable explanation for non-significance could be school committees' lack of management skills. Duflo *et al.* (2015) demonstrated that training school management committees to evaluate the performance of contract teachers had a significantly positive impact on students' test scores. This would suggest that improvements of both CGDS and school governance were important for pupils' academic performance in the study area. This is due to the fact that explanation of academic performance of pupils could be reduced by 4.2% if there were non–adherence to good governance principles as compared to that of 3.3% if the capitation grant was not disbursed. Generally, though non-significant, the findings confirm the Open System Theory (OST) by showing that parts making up the system are interrelated. According to Boer *et al.* (2015), the value of any theoretical contribution will be determined by its utility in informing practice and/or future research.

4.4 Combined effect of capitation grant and school governance on pupils' academic performance
The study sought to find a combined effect of capitation grant (CG) and school governance on pupils' academic performance. The results in Table 2 models 1 to 3 reveal that the combination of capitation grant disbursed to schools (CGDS) and school governance contributed to 7.5% of variance (combined $\Delta R^2 = 0.033 + 0.042$) in the total variance ($R^2 = 0.406$). Furthermore, when combined with CGDS and school governance, the Teacher Pupil Ratio (TPR) had its prediction of pupils' academic performance raised from 62.5% ($\beta = -0.625$, $t = -5.249$, $p < 0.01$) to 68.1% ($\beta = -0.681$, $t = -5.710$, $p < 0.01$). This implies 1% change in TPR impacted on 62.5% and 68.1% of the variance in pass–rate in different direction in models 1 and 3 respectively. Hence the aspect of TPR was supposed to be given a priority in the study area. Bibb and McNeal (2012) showed that teachers who worked with smaller classes were often associated with students who demonstrated significantly higher achievement. However, many developing countries, including Tanzania, lack enough qualified teachers to match the needs of rapidly–expanding school systems, and the reluctance of qualified teachers to serve in rural areas where the needs of the expanding education system are the greatest (Glewwe and Muralidharan, 2015). It was shown in the final report of the Public Expenditure Tracking Survey for Primary and Secondary Education of 2010 in Tanzania that the more remote a school is located from the council headquarters, the fewer teachers it receives and the lower is the quality of facilities (United Republic of Tanzania–URT, 2010). Hence, improvement of academic achievement of students requires investment in both schools and teachers. Tshabangu and Msafiri (2013), did a study on the notions of students, teachers, heads of school and education officers from both urban and rural schools in Northern Tanzania and found that investment on education had not gone far enough to meet citizens' expectations and satisfaction on quality education. This would suggest that the improvements of CGDS, school governance and TPR were important for academic performance of a pupil in the study area. The findings, therefore, confirm the Open System Theory (OST), as described in Boer *et al.* (2015), by demonstrating that parts making up the system are interrelated, and health of overall system is contingent on subsystem functioning. According to Boer *et al.* (2015), the value of any theoretical contribution will be determined by its utility in informing practice and/or future research.

5. Conclusion and Recommendations
The study sought to determine the effects of school system components on academic performance of pupils in Government primary schools (GPSs) in Morogoro Region, Tanzania. The study attempted to test two hypotheses: there is no significant effect of capitation grant (CG) and other school system components on pupils' academic performance, and there is no significant effect of school governance and other school system components on pupils' academic performance. On the basis of key findings, it is concluded that CG disbursed and the number of teachers had an influence on the academic performance of pupils. Moreover, school governance is important as it improves the predictions of both the CG and teacher pupil ratio. The study, with reference to the Open System Theory (OST), has shown a significant relationship between inputs (CG and teachers) and academic performance of a pupil; and a relationship between school governance and inputs (CG and teachers). Generally, the results show that neither CG nor teachers alone can maximise attainment of intended pupils' performance unless they intermingle with adequate in-school processes such as good governance. Hence improving any one of these

components, while leaving others may not lead to intended outcomes. The results are important in the implementation of Primary Education Development Programme (PEDP). The local councils and other stakeholders in Morogoro Region are, therefore, urged to implement the Capitation Grant Policy by developing strategies to improve quality of learning in Government primary schools (GPSs) in the following three ways:

- To budget for the minimum of TZS 25 000.00 per pupil per year as CG (i.e. at least five times the amount that has been disbursed in Government primary schools). This also requires timely disbursement. Given the tight fiscal constraints under which the local councils operate, they can ensure sustainability of the CG by attracting donations through regular fund–raising campaigns. Likewise, parents should make sure that all school-age-children are enrolled to primary schools.
- Collaborate with Prevention and Combating of Corruption Bureau (PCCB) and Civil Society Organisations (CSOs) to enhance community–based monitoring in GPSs through intensive interventions such as well coordinated meetings with village councils over specific aspects of school governance. This also has to be corroborated with financial management training provided to school committees. Similarly, school committees are urged to adhere to good governance principles in CG spending. This strategy can eliminate problems that may hinder adherence to good governance principles in GPSs.
- To intensify inspections of teachers through School Quality Assurance Officers (SQAOs). In addition, they have to consider the possibility of introducing performance–linked pay for teachers, and introducing employment contracts to instil commitment of the teacher in delivery of lessons. Furthermore, in order to prepare future education actors of high integrity, all education actors including parents are urged to be ethical and committed so that to inculcate a sense of commitment and rule abiding to their children.

On the other hand, further research is recommended to go beyond the CG by assessing the efficiency of public spending for primary education in primary schools involved in the study. This should take into consideration the impact of school funds including teachers' salaries (the unit cost of educating a pupil) on the school performance which was beyond the scope of this study.

Acknowledgement

References

Adesina, A. E. (2011). Perceived impact of primary education on the attainment of Nigeria Vision 2020. *Mediterranean Journal of Social Sciences* 2(5): 61 – 69.

Adongo, K. O. and Jagongo, A. (2013). Budgetary control as a measure of financial performance of state corporations in Kenya. *International Journal of Accounting and Taxation* 1(1): 38 – 57.

Akiri, A. A. (2013). Effects of teachers' effectiveness on students' academic performance in public secondary schools Delta State – Nigeria. *Journal of Educational and Social Research* 3(3):105 – 110.

Allua, S. and Thompson, B. (2009). Basics of research: Inferential statistics. *Air Medical Journal* 28(4): 168 – 171.

Amaele, S. (2013). Quality education, the best pro-active measure to examination malpractices in our formal institutions of learning. *Journal of Economics and Sustainable Development* 4(12): 62 – 69.

Ayeni, A. J. (2012). Improving school and community partnership for sustainable quality assurance in secondary schools in Nigeria. *International Journal of Research Studies in Education* 1(2): 95 – 102.

Ayeni, A. J. and Ibukun, W. O. (2013). A conceptual model for school-based management operation and quality assurance in Nigerian secondary schools. *Journal of Education and Learning* 2(2): 36 – 43.

Bailey, K. D. (1994). *Methods of Social Research*. (4th Edition), The Free Press, New York. 588pp.

Baird, S., McIntosh, C. and Ozler, B. (2011). Cash or condition? evidence from a cash transfer experiment. *Quarterly Journal of Economics* 26(4): 1709 – 1753.

Barrera-Osorio, F., Fasih, T. and Patrinos, H. A. (2009). Decentralised decision-making in schools: The theory and evidence on school-based management. [siteresources.world bank.org/ Education/Resources] site visited on 10/06/2012.

Benhassine, N., Devoto, F., Duflo, E., Dupas, P. and Pouliquen, V. (2015). Turning a Shove into a Nudge? A labeled cash transfer for education. *American Economic Journal Economic Policy* 7(3): 86 – 125.

Bibb, W. E. and McNeal, L. (2012). The relationship between per pupil expenditures and student achievement in Tennessee. *American International Journal of Contemporary Research* 2(3):191– 198.

Bloom, N., Lemos, R., Sadun, R. and Van Reenen, J. (2015). Does management matter in schools. *Economic*

Journal 125: 647 – 674.

Boer, H., Holweg, M., Kilduff, M., Pagell, M., Schmenner, R. and Voss, C. (2015). Making a meaningful contribution to theory. *International Journal of Operations and Production Management* 35(9): 1231 – 1252.

Chen, D. (2011). School–based management, school decision-making and education outcomes in indonesian primary schools. [documents.worldbank.org/curated/ en/64107146804223 7111/pdf] site visited on 9/11/2016.

Das, J., Dercon, S., Habyarimana, J., Krishnan, P., Muralidharan, K. and Sundararaman, V. (2013). School inputs, household substitution, and test scores. *American Economic Journal: Applied Economics* 5(2): 29 – 57.

Duflo, E., Dupas, P. and Kremer, M. (2015). School governance, teacher incentives, and pupil-teacher ratios: Experimental evidence from Kenyan Primary Schools. *Journal of Public Economics* 123: 92–110.

Eweniyi, I. T. (2012). Formal Kindergaten experience as a predictor of academic achievement of primary five pupils in english language. *International Journal of Academic Research in Business and Social Sciences* 2(10): 383 – 390.

Field, A. (2009). *Discovering Statistics Using Statistical Package for Social Sciences.* (3rd Ed.), SAGE, London. 822pp.

Glewwe, P. and Maïga, E. W. H. (2011). The impacts of school management reforms in Madagascar: do the impacts vary by teacher type? *Journal of Development Effectiveness* 3(4): 435 – 469.

Glewwe, P. and Muralidharan, K. (2015). Improving school education outcomes in developing countries: evidence, knowledge gaps, and policy implications. [www.bsg.ox.ac.uk/ sites/www.bsg.ox.ac.uk/ files/documents/RISE_WP-001] site visited on 9/11/2016.

Haque, S. and Rehman, N. (2014). Modern organisation theory: Analyzing the complexity of coordination and cooperation in the modern organisations. *International Journal of Management and Sustainability* 3(5): 261 – 268.

Heneveld, W. (1994). *Planning and Monitoring the Quality of Primary Education in Sub-Saharan Africa.* The World Bank, Washington DC. 68pp.

Hofman, R. H., Hofman, W. H. A. and Guldemond, H. (2002). School governance, culture, and student achievement. *International Journal of Leadership in Education* 5(3): 249 – 272.

Kiprono, F. J., Nganga, M. and Kanyiri, J. (2015). An assessment of school management committees' capacity in the implementation of FPE funds in public primary schools: A Survey of Eldoret East District, Kenya. *International Journal of Education and Research* 3(3): 243–260.

Komba, C. K., Hizza, E. L. and Jonathan, W. T. Y. (2014). Factors influencing academic performance of ward secondary schools: A case of selected schools in Moshi Municipality and Moshi District, Tanzania. *Journal of Co-operative and Business Studies* 2(1): 1 – 18.

Mlozi, M. R. S., Kaguo, F. E. and Nyamba, S. Y. (2013). Factors influencing students' academic performance in community and Government built secondary schools in Tanzania: A case of Mbeya Municipality. *International Journal of Science and Technology* 2(2): 174 – 184.

Mushtaq, I and Khan, S. N. (2012). Factors affecting student's academic performance. *Global Journal of Management and Business Research* 12(9): 16 – 22.

Osei, R. D, (2009). Effects of capitation grant on education outcomes in Ghana. [depot.gdnet. org/cms/files/GDN-UNDP-ISSER-Paper1.pdf] site visited on 15/02/2012.

Pallant, J. (2007). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows.* (3rd Ed.), Open University Press, McGraw Hill. 352pp.

Pallant, J. (2010). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows* (4th Ed.), Open University Press, McGraw Hill. 368pp.

Pradhan, M., Suryadarma, D., Beatty, A., Wong, M., Gaduh, A., Alisjahbana, A. and Artha, R. P. (2014). Improving educational quality through enhancing community participation: Results from a randomized field experiment in Indonesia. *American Economic Journal: Applied Economics* 6(2):105– 26.

Rafiq, H. M. W., Fatima, T., Sohail, M. M., Saleem, M. and Khan, M. A. (2013). Parental involvement and academic achievement: A study on secondary school students of Lahore, Pakistan. *International Journal of Humanities and Social Science* 3(8): 209 – 223.

Raychaudhuri, A., Debnath, M., Sen, S. and Majumder, B.G. (2010). Factors affecting students' academic performance: A case study in Agartala Municipal Council Area. *Bangladesh Journal of Sociology* 7(2):1 – 34.

Santibanez, L., Abreu-Lastra, R. and O'Donoghue, J. L. (2014). School based management effects: Resources or governance change? Evidence from Mexico. *Economics of Education Review* 39:97–109.

Serra, D., Barr, A. and Packad, T. (2011). Education Outcomes, School Governance and Parent's Demand for Accountability: Evidence from Albania. [https:// open knowle dge.wo

rldbank.org/bittream/handle/10986/19879/wps5643.pdf] site visited on 10/11/2016.

Tshabangu, I. and Msafiri, A. (2013). Quality education in Tanzania: Perceptions on global challenges and local needs. *International Journal of Asian Social Science* 3(3): 800 – 813.

United Republic of Tanzania (2010). *Public Expenditure Tracking Survey for Primary and Secondary Education in Mainland Tanzania*: Government Printers, Dar es Salaam, Tanzania. 122pp.

United Republic of Tanzania (2012). *Evaluation of the Impact of the Primary Education Development Programme Phase Two 2007 – 2011*. Ministry of Education and Vocational Training, Dar es Salaam, Tanzania. 141pp.

United Republic of Tanzania (2014). *Pre-Primary, Primary and Secondary Education Statistics 2013: Regional Data*. Prime Ministers Office Regional Administration and Local Government, Dodoma. 120pp.

United Republic of Tanzania (2010). *Public Expenditure Tracking Survey of Primary and Secondary Education, Final Report February 2010, Dar es Salaam*. Ministry of Education and Vocational Training, Dar es Salaam, Tanzania. 122pp.

Wei, Y., Clifton, R. A. and Roberts, L. W. (2012). School resources and the academic achievement of Canadian students. *Alberta Journal of Educational Research* 57(4): 460 – 478.

Yi, H., Song, Y., Liu, C., Huang, X., Zhang, L., Bai, Y., Ren, B., Shi, Y., Loyalka, P., Chu, J. and Rozelle, S. (2014). Giving kids a head start: The impact and mechanisms of early commitment of financial aid on poor students in Rural China. *Journal of Development Economic* 113: 1–15.

Table 1: Descriptive statistics of academic performance and performance predictors in selected primary schools in Morogoro Region (n=102)

Variables	Mean	Standard Deviation
Pupils' Academic Performance – *Pass-Rate* (PR)	48.78	23.95
Good Governance Attribute – *Effectiveness* (GGAE)	4.06	0.75
Good Governance Attribute – *Rule of law* (GGARL)	3.57	1.05
Good Governance Attribute – *Accountability* (GGAA)	4.15	0.68
Leadership Quality – *Years in the Position* (LQSHYP)	2.03	0.89
Leadership Quality – *Financial Management Training* (LQSHFMT)	0.23	0.43
Pupil Toilet Ratio (PTR)	67.08	3.27
School Distance from Council Head Office (SDCHO)	37.13	3.42
Capitation Grant Disbursed to School (CGDS)	2 238 081.00	1.49
Pupil Desk Ratio (PDR)	4.12	2.14
Classroom Pupil Ratio (CPR)	73.00	4.29
Teacher Pupil Ratio (TPR)	49.85	2.32
Pre-Primary Classes (PPC)	0.61	0.49

Table 2: Parameter estimates (β) and model parameters for some academic performance predictors (n = 102)

	Model 1				Model 2				Model 3			
	SE	β	t	p	SE	β	t	p	SE	β	t	p
School Drive and Action for Results												
Governance – *Effectiveness* (GGAE) (Score: 1-5)									3.119	- 0.021	- 0.212	0.832
Governance – *Rule of law* (GGARL)(Score: 1-5)									2.118	- 0.114	- 1.222	0.225
Governance – *Accountability* (GGAA) (Score: 1-5)									3.530	0.112	1.106	0.272
Leadership Quality –*Years in the position* (LQSHYP)									2.429	- 0.157	1.727	0.088
Leadership Quality –*Financial management training* (LQSHFMT) (dummy)									4.978	0.132	1.488	0.140
School's Capacity to Deliver Results												
Capitation Grant Disbursed to School (CGDS)					0.000	0.199	2.202	0.030	0.000	0.222	2.429	0.017
School Distance to Council Head Office (SDCHO) (km)	0.079	0.037	0.331	0.742	0.080	0.096	0.845	0.400	0.084	0.160	1.339	0.184
Pupil Desk Ratio (PDR) (Ratio)	0.976	0.061	0.630	0.530	0.957	0.070	0.741	0.461	0.975	0.061	0.629	0.631
Classroom Pupil Ratio (CPR) (Ratio)	0.051	0.032	0.347	0.730	0.050	0.020	0.228	0.820	0.051	0.046	0.499	0.619
Teacher Pupil Ratio (TPR) (Ratio)	0.123	- 0.625	- 5.249	0.000	0.121	- 0.642	- 5.491	0.000	0.123	- 0.681	- 5.710	0.000
Pre-Primary Classes (PPC) (dummy)	4.167	- 0.007	- 0.082	0.936	4.163	- 0.041	- 0.477	0.634	4.249	- 0.064	- 0.740	0.461
F ratio		7.840				7.684				5.038		
Sig. F		0.000				0.000				0.000		
Model Parameters												
R^2		0.331				0.364				0.406		
Adjusted R^2		0.280				0.317				0.324		
R^2 – Change		0.331				0.033				0.041		
F – Change		7.840				4.847				1.212		
Sig. F – Change		0.000				0.030				0.310		

Note: Model 1: Predictors (constant): PTR, SDCHO, PDR, CPR, TPR, and PPC

Model 2: Predictors (constant): CGDS, PTR, SDCHO, PDR, CPR, TPR, and PPC

Model 3: Predictors (constant): GGAE, GGARL, GGAA, LQHTYP, LQHTFMT, CGDS, PTR, SDCHO, CGDS, PDR, CPR, TPR, and PPC

Dependent variable: Pupil's Pass Rate (PR)