## Linkage between Teacher Autonomy and Public Primary School Pupils' Academic Performance in Tanzania Local Government Authorities

Stephen James Kamugisha<sup>1</sup>, Orest Masue<sup>2</sup>, and Henry Mollel<sup>3</sup>

<sup>1</sup>Institute of Rural Development Planning,
Department of Development Finance and Management Studies, Dodoma
<sup>2,3</sup>Mzumbe University
School of Public Administration and Management, Morogoro

Correspondence concerning this article should be addressed to Stephen James Kamugisha. E-mail: <a href="mailto:skjkamugisha@gmail.com">skjkamugisha@gmail.com</a>

#### **Abstract**

Tanzania government has implemented many initiatives to promote pupils' academic performance in primary schools for more than a decade. However, many school pupils in public primary schools still achieve low academic performance. The specific objective of this study was to examine the linkage between teacher autonomy and pupils' academic performance. A survey was conducted in four Local Government Authorities (LGAs) which included Ngara, Kibondo, Tanga City and Mafinga Town. Sample size of the study was 354 teachers selected from ninety-five (95) public primary schools. Multi-stage with stratified simple random sampling was used to select the sample size while purposive sampling procedure was used to select 16 key informants including eight (8) head teachers and eight (8) standard seven pupils. Methods of data collection consisted of questionnaires, interviews and documentary review. Quantitative data were analysed using binary logistic regression while qualitative data were analysed thematically. Major findings showed that teacher autonomy model explained the variance on pupils' academic performance by (0.09) which was too small while leaving 91% of variance to other factors outside teacher autonomy model. Furthermore, teacher autonomy had small odd ratio = (.51) and was significant (p < .001); which indicated that the odds of high teacher autonomy were (0.5) times more likely to achieve pupils' academic performance compared to low teacher autonomy. Further findings also showed that teacher autonomy marginal effects were negative implying that one-unit change in teacher autonomy reduced the probability on pupils' academic performance by (9%) and was significant (p < .001). Based on key informants, high autonomy made teachers to behave in a manner that affected the outcome variable. Thus, it was concluded that teacher autonomy affected pupils' academic performance. The study recommended that educational stakeholders needed to implement teacher autonomy at minimum level.

Keywords: academic performance, autonomy, pupils, teacher

Pupils' academic performance is positively linked with a nation's socio-economic development (Shahjahan et al., 2021). In this regard, Tanzania has implemented

many initiatives to promote pupils' academic performance in primary schools for almost more than a decade. Some of those initiatives include the Big Results Now in education of 2013 and the Education Sector Development Plan (ESDP) 2016/2017 to 2020/2021 (United Republic of Tanzania [URT], 2018; World Bank Group, 2014). However, it is noted that on average many school pupils still achieve low academic performance (United Nations Children's Fund [UNICEF], 2024). Furthermore, the consolidated academic results by *TAMISEMI* (2022) show that the average scores out of 300 points by 18,222 public primary schools from six subjects examined in 2021 = 126.51points while in 2020 was 107 out of 250 points from five examined subjects. The points scored suggest that public primary school pupils on average had correct answers in their examinations equivalent to 42.17% in 2021 and 42.8% in 2020. The respective trends from the two years' period imply that Tanzania is challenged with low pupils' academic performance in many public primary schools.

Low school pupils' academic performance in Tanzania is further characterized by variations among parties and subject wise. Pupils' scores on average are lower in Mathematics and English compared to other subjects as reported by Kassim et al. (2024) and TAMISEMI (2024). UNICEF (2024) further observes that some regions such as Dar es Salaam, Arusha and Iringa attain high academic performance in all subjects than Tanga, Mtwara and Tabora which exhibit low achievement in pupils' academic performance. Some districts such as those in rural areas achieve low pupils' academic performance compared to districts in urban areas as suggested by Katera & Msafiri, (2020). Private primary schools achieve better academic performance than public schools in all subjects (UNICEF, 2024). Low academic performance also differs between public primary schools themselves. For instance, some public schools such as Mbwei, Mhezi, Mangika, Nkoloi, Bosha, Hondelo, Kilole and Makole in Lushoto district have persistently shown low pupils' academic performance compared to counterparts in Iringa, Geita and Dar es Salaam between 2015 and 2023 (HakiElimu, 2019; Kahangwa & Kafanabo, 2023; National Examinations Council of Tanzania [NECTA], 2022). The circumstances as mentioned above imply that the government initiatives being implemented to promote school pupils' academic performance across public primary schools do not adequately address the problem.

In explaining the factors which significantly influence pupils' academic performance, quantitative researchers such as Jerrim et al. (2023); Ertürk (2023) and Findik et al.(2023) suggest that teacher autonomy in schools is effective on pupils' academic performance. However, the assertion above has not been supported by Day (2020) who notes in his qualitative research that an increased teacher autonomy affects students' academic performance. There are disagreements among researchers about the influence of teacher autonomy on pupils' academic performance.

Researchers who observe little contribution of teacher autonomy on pupils' academic performance imply that teachers need low autonomy

opportunities to achieve pupils' academic performance. While, those which consider a positive linkage between teacher autonomy and pupils' academic performance suggest that schools need to implement high teacher autonomy for achieving school pupils' academic performance. Based on the immediate assertion above, teachers should be granted high autonomies relating to teaching plans preparation, school administrative processes, personal knowledge, skills development and pupils' discipline standards(Koçak, 2018).

Despite the fact that there are disagreements among researchers regarding teacher autonomy and pupils' academic performance, primary schools' context in Tanzania offers scanty knowledge on the linkage between teacher autonomy and pupils' academic performance. Therefore, this study is conducted to integrate both quantitative and qualitative findings as opposed to previous researchers who have inclined towards understanding the phenomena from either the quantitative or the qualitative perspective. The study may come up with depth knowledge on the researched phenomena. In this regard, the objective of the study is to examine the linkage between teacher autonomy and pupils' academic performance in public primary schools.

#### **Literature Review**

#### **Theoretical Model of the Study**

The theoretical model which underpins this study is the Job Characteristics Model (JCM) established by Hackman and Oldham in the developed world in 1970s and 80s (Casey et al., 2021). The theory has been reviewed to learn theoretical assumptions attached to teacher autonomy. In this regard, JCM proposes that autonomy is one of the core job characteristics and refers to "the degree to which the job provides substantial freedom, independence and discretion to the individual in scheduling the work and determining the procedures to be used in carrying it out" (Guise, 1988, p. 41). JCM further stipulates that high job autonomy has a tendency to increase employees' work outcomes (Kamani, 2020). Based on such proposition, the JCM believes that high teacher autonomy influences pupils' academic performance significantly.

JCM emphasizes that schools have to enrich autonomy in the teachers' job in order to achieve pupils' academic performance. In the matter of fact, employees such as teachers may need autonomy in their jobs to become more creative, critical thinkers and solvers of the problems that hinder pupils' academic performance. However, the assumption of the JCM need to be tested in Tanzanian public primary schools to determine its effectiveness on pupils' academic performance. The study could determine viability of JCM on pupils' academic performance in the developing world such as Tanzania.

# **Empirical Literature**

A search of empirical literature has been undertaken in reputable electronic databases such as Dimensions Database, ERIC and Pub Med. A search of empirical literature in the databases was conducted to get previous empirical studies for review and establish a research gap. In doing so, the study has obtained

and reviewed several empirical studies previously conducted on the linkage between teacher autonomy and academic performance. One study conducted by Lyle et al.(2024) reports that professional teacher autonomy is negatively linked with pupils' academic performance in the United States (US). The study above is not sufficient in providing a conclusion because it has been conducted outside Tanzanian contexts. The learning environment among school pupils in Tanzania differs from their counterparts in the US.

Another study conducted by Sahilu et al.(2021) in some parts of Ethiopia has found that teacher and school autonomy have weak relationship with pupils' academic performance. The study above has used quantitative data to study the relationship between the researched variables. This study intends to combine both quantitative and qualitative data to determine if the study could generate different findings from the study mentioned above. A study conducted by Piza et al.(2020) in Brazil has shown that teacher autonomy is positively linked with pupils' academic performance in the public sector. The findings of the study above need to be confirmed by this study in Tanzania. The findings reported by the study above does not give assurance that teacher autonomy has similar positive linkage with pupils' academic performance in Tanzania. Both countries are quite differentiated in terms of culture, economic development and geographical locations. Derakhshan et al.(2020) have conducted a study among Iranian teachers and found that teacher autonomy is positively related to English teachers' performance. Likewise, the teacher work environment in Iran differs from that where teachers work in Tanzania. Therefore, the findings of the study conducted in Iran cannot be sufficient in allowing researchers to conclude on the linkage between teacher autonomy and pupils' academic performance in Tanzanian school settings.

A study by Shafque et al. (2024) has found that teacher autonomy is positively linked with students' academic performance in higher education. The study has been conducted in tertiary level of education where students are adults than schoolchildren in primary education. Therefore, the study cannot be relied on for knowledge about pupils' academic performance in lower levels of education system in Tanzania. Based on the reviewed empirical literature, it is noted that most previous studies have been conducted using mainly the quantitative methodology. The study intends to employ both quantitative and qualitative methodology to examine the linkage between teacher autonomy and pupils' academic performance. A combination of both methodologies will generate depth knowledge based on participants' opinions and quantitative data.

### The Conceptual framework of the Study

The conceptual framework of the study as displayed in Figure 1 exhibits the linkage between the independent and dependent variable. The dimensions used to measure the variables are also illustrated in relevant parts of the conceptual framework. However, the framework exhibits that there is no significant linkage between teacher autonomy and pupils' academic performance.

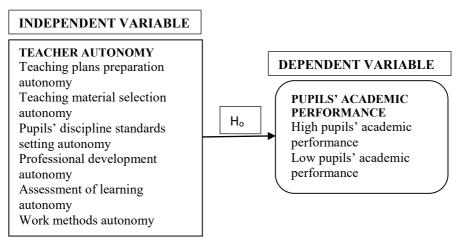


Figure. 1: The conceptual framework of the study

Source: Authors, 2024

# Hypothesis of the Study

Based on the conceptual framework above, the study sought to test the following null hypothesis ( $H_0$ ):

**H<sub>o</sub>:** Teacher autonomy has no significant linkage with pupils' academic performance

#### Methods

The study employed mixed methods approach using a convergent parallel-mixed method. It was used because it was considered to have the ability to save costs during the data collection period. Study areas consisted of four Local Government Authorities (LGAs) including Ngara, Kibondo, Tanga City and Mafinga Town out of approximately 185 LGAs. Research design was a survey in which the researchers collected responses physically from teachers working across different geographical locations. Target population of the study were 3,047 teachers being employed in public primary schools in the study areas. Sample size consisted of 354 teachers who were teaching in the selected public primary schools for at least three years' period when data collection began. The contribution to the sample size by each study areas was that Ngara produced 92 (26%) teachers, Kibondo 92(26%), Tanga City 98(28%) and Mafinga Town Sampling procedures consisted of both multi-stage with 72(20%) teachers. stratified simple random sampling and purposive sampling procedures. At least eight (8) stages were implemented during multi-stage with stratified simple random sampling using a lottery technique. The study ensured that small strata particularly related to urban LGAs secured adequate representation during implementation of multi-stage sampling procedures.

In the end, the study had two (2) rural LGAs out of (139) by drawing Ngara and Kibondo LGAs. Other two (2) LGAs which were drawn included Tanga City and Mafinga Town out of (46) urban LGAs. Ninety-five (95) public

primary schools were also selected whereby Ngara had (26) schools selected out of (110) schools, Kibondo = 25 out of (81) schools, Tanga City = 25 out of (41) schools and Mafinga Town had (19) schools selected out of (27) schools. Seventy-nine (79) public primary schools that were selected had high pupils' academic performance while (16) showed low performance based on the threshold that was established by this study. Sixteen (16) key informants were selected purposively and included: eight (8) head teachers and eight (8) standard seven pupils. Key informants were selected based on the virtue of their position and they had experiences of working with primary school teachers. In this study, primary data were collected by interviews and questionnaires being adapted from Hackman and Oldham's Job Diagnostic Survey. Secondary data were collected by documentary review of the National Primary School Leaving Examination results for 2020 to 2022 in the selected public primary schools. Permission to use academic results was sought from head teachers of the selected public primary schools.

#### Variables and their Measurement Level

Variables and measurement level are exhibited in Table 1. It is observed that pupils' academic performance was a binary variable categorized into (0) = low pupils' academic performance and (1) = high pupils' academic performance. The two categories were prepared based on secondary data of the National Primary School Leaving Examinations for 2020 to 2022 in the selected schools. Low pupils' academic performance was the percentage of class seven performance in overall average grades A, B and C below 79.6% as the national average of academic performance declared by NECTA in 2022. High pupils' academic performance was the percentage of class seven performance in overall average grades A, B and C at or above 79.6% as the national threshold described above. The percentage of pupils' academic performance was calculated and distributed to teachers who were selected as respondents of the study in selected schools. Teacher autonomy was a computed on a set of five Likert Scale points ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Scale points for all teacher autonomy dimensions were summed together to generate a composite mean score which was used during measurement. Potentially, the mean score ranged from a minimum of 1.0 to 5.0 points.

Table.1 Variables and their Measurement Level

S/N	Set of Variables	<b>Dimensions Description</b>	Type of Variables	Coding	
1.	Pupils' Academic Performance (Independe nt Variable)	Low academic performance: refers to the percentage of class seven performance in overall average grades A, B and C below the national average reported by NECTA in 2022 High academic performance: refers to the percentage of class seven performance in overall average grades A,B and C at or above the national threshold reported by NECTA in 2022	Binary/Dichoto mous	(0) = Low pupils' academic performance (1) = High pupils' academic performance	
2.	Teacher Autonomy (Independe nt Variable)	Teaching plans preparation autonomy: Freedom to plan teaching activities without interference	Ordinal	(1) = Strongly Disagree (2) = Disagree (3) = Neutral (4) = Agree (5) = Strongly Agree	
		Teaching material selection autonomy: Freedom to choose teaching material with no interference	Do	Do	
		Pupils' discipline standards setting autonomy: Freedom to make decisions regarding pupils' disciplines	DO	Do	
		Assessment of learning autonomy: Freedom to administer pupils' assessment without interference	Do	Do	
	uran Authors	Work methods autonomy: Freedom to select teaching methods without interference	Do	Do	

Source: Authors, 2024

### **Quantitative and Qualitative Data Analysis Procedures**

Inferential statistics were used to analyse the quantitative data regarding the linkage between teacher autonomy and pupils' academic performance. Therefore, the dichotomous nature of the dependent variable made the study to employ binary logistic regression model. Binary logistic regression was employed because it assumed that the dependent variable was divided into two categories which could be predicted by an independent variable measured as ordinal variable as suggested by Huddar (2023). The quantitative findings were presented by logistic regression estimates which included the model's Likelihood ratio (LR) Chi-square, Pseudo R<sup>2</sup>, p-values, the odd ratio (OR) and the marginal effects which assessed the probability influence of teacher autonomy on pupils' academic performance. Statistical Analysis System (SAS) was used to analyse the quantitative data. P-value less than (0.05) was regarded as significant in the quantitative findings. The p-value above was chosen because quantitative researchers mostly use it to report significant findings. Qualitative data were analysed thematically from which opinions of head teachers and standard seven pupils were presented by descriptions and quotations within the findings.

#### **Ethical Considerations**

Permission to undertake this study was sought from Regional and Local Government Administration in the four study areas. Before the sample elements gave responses, the purpose of the study was explained for them to make an informed consent. Both, anonymity and confidentiality also were respected during data collection and findings reporting.

### **Findings**

# Linkage between Teacher Autonomy and Pupils' Academic Performance

The findings on teacher autonomy model for pupils' academic performance are displayed in the first part of Table 1. The respective findings are essential to determine teacher autonomy goodness of fit on pupils' academic performance. It is observed from Table 1 that the Likelihood Ratio Chi-square (1) = 33.98 and significant (p < .001). But, the findings of Pseudo  $r^2 = (0.09)$  which indicates that teacher autonomy model has small predictive strength on pupils' academic performance. Based on the findings, teacher autonomy model explains the variance on pupils' academic performance by only 9% while other factors beyond teacher autonomy model can explain the variance by 91%. Thus, the pseudo  $r^2$  suggest that teacher autonomy model has no significant linkage with pupils' academic performance. The findings from pseudo  $r^2$  are sufficient evidence that are used by this study to reject the null hypothesis of the model on pupils' academic performance.

Further findings of teacher autonomy as a variable are displayed in part two of Table 1. It is noted that teacher autonomy is significant (p < .001). Because of the fact that the model indicates low predictive strengths, it can be suggested that teacher autonomy has low significant linkage with pupils' academic performance. Similarly, most interviewed head teachers in the study areas also

support that teacher autonomy has low chances for achieving pupils' academic performance as they are heard commenting:

Schools can grant some limited autonomy to teachers, but teachers especially the young generation need to be monitored to ensure that what they teach helps to attain pupils 'academic performance. Excessive autonomy makes teachers abuse their teaching responsibilities. ... Teachers with an increased autonomy will guide their pupils anyhow without following the educational standards. ...... Because of autonomy other teachers will tend to teach anything they want without using the material recommended to achieve the goals of education" (Interviews, January to March, 2023).

Most interviewed class seven pupils in the study areas also comment the following words about teacher autonomy:

...too much teacher autonomy can affect our academic performance.... When teachers are too autonomous, they will not give us quality examinations. ....... They will use inappropriate books during lessons and communicate their subject contents using improper language that we do not understand.... They will teach anything that they want which may not help achieve good academic performance.... (Interviews, January to March, 2023).

Based on the above quotations, it is observed that head teachers and standard seven pupils who participated in the interviews also perceive that teacher autonomy harms pupils' academic performance in public primary schools. According to key informants interviewed, teachers with excessive autonomy tend to abuse teaching responsibilities, violate educational standards, prepare irrelevant contents, use unauthorized material, communicates with school pupils poorly, which in turn affect pupils' academic performance. Thus, quantitative and qualitative findings support one another that teacher autonomy has no significant linkage with pupils' academic performance in public primary schools. It is further observed that teacher autonomy odd ratio = .51 (95% Confidence Interval [CI] .398, .664) indicating that the odds of high teacher autonomy are 0.51 times more likely to achieve pupils' academic performance compared to low teacher autonomy. The findings show that teacher autonomy has too small odds to influence pupils' academic performance compared to low teacher autonomy. Thus, teacher autonomy odds provide more evidence showing that teacher autonomy has no significant linkage with pupils' academic performance.

Apart from small teacher autonomy odds, it is observed from part three of Table 2 that teacher autonomy marginal effects = -.09 and are significant (p < .001). The findings suggest that teacher autonomy marginal effect on pupils' academic performance are negative and significant. The findings suggest that one-unit change in teacher autonomy reduces the probability on pupils' academic performance by almost 9% significantly. Slight positive changes in teacher autonomy therefore has a tendency to reduce pupils' academic performance

significantly. Henceforth, teacher autonomy marginal effects proceed to impose further evidence, which show that teacher autonomy has no significant linkage with pupils' academic performance. Based on the findings above, the study does not have adequate evidence that can be used to reject the null hypothesis. An increased teacher autonomy based on the findings affects pupils' academic performance. Therefore, the null hypothesis of the study is maintained and stresses that teacher autonomy has no significant linkage with pupils' academic performance.

Table 2
Logistic Regression Findings on Teacher Autonomy

1.	Summary of Findings on Teacher Autonomy Model									
	Likelihood Ratio						33.98			
	Chi square (	(1)								
	Prob > Chi-	Square		< . 001						
	Pseudo R <sup>2</sup>	_								
							0.09			
2.	2. Teacher Autonomy Odd Ratio									
	Odd Ratio	-	P-			[95% Conf.	Interval			
			values							
	.51		.001			.398	.664			
3.	Marginal Effects									
		(dy/dx)	Std.	Z	P-values	[95% Conf.	Interval			
			Error							
		09	.017	-5.91	.001	131	066			

Source: Field Data, 2024

### **Discussion of the Findings**

Based on the findings, it is also noted that teacher autonomy model has small predictive strength on pupils' academic performance. Teacher autonomy model can only explain the variance by a small percentage while leaving almost 91% of variance to be explained by other factors outside the model. When teacher autonomy model increases, it does not have much influence on pupils' academic performance. The findings almost support Sahilu et al. (2021), and Lyle et al. (2024) who report a negative linkage between teacher autonomy and pupils' academic performance. Therefore, teacher autonomy model does not predict pupils' academic performance significantly.

Key informants including head teachers and standard seven pupils also support that teacher autonomy affects pupils' academic performance. Teacher autonomy encourages teachers to abuse teaching responsibilities, violate educational standards and preparation of irrelevant educational materials for school pupils. Thus, the findings do not support Piza et al. (2020) who report a positive linkage between teacher autonomy and pupils' academic performance in public education sector in Brazil. The differences between the findings probably suggest that teacher autonomy can have a reductive effect on pupils' academic

performance in African settings compared to Brazil that is located in Latin American settings.

It is also observed from the findings that teacher autonomy odd ratio on pupils' academic performance is too small. The findings suggest that the odds of high teacher autonomy are (0.51) times more likely to achieve pupils' academic performance compared to low teacher autonomy. High teacher autonomy therefore affects pupils' academic performance. Based on the findings, teacher autonomy in fact has no significant linkage with pupils' academic performance. The findings of the study partly continue not to support those obtained by Derakhshan et al. (2020) reporting a significant linkage between autonomy and learners' academic performance. Thus, the findings of this study refute those that emphasize that teacher autonomy is connected positively with pupils' academic performance.

It is further observed from the findings that teacher autonomy has significant negative marginal effects on pupils' academic performance. The findings suggest that small changes in teacher autonomy reduces the probability for pupils' academic performance by 9% and based on the findings such reduction is significant. The findings do not corroborate with Shafque et al. (2024) who report a positive relationship between teacher autonomy and student learning. The findings from marginal effects also are used by this study to emphasize that teacher autonomy has no significant linkage with pupils' academic performance.

Therefore, the findings of the study are important evidence for retaining the null hypothesis which states that teacher autonomy has no significant linkage with pupils' academic performance. There are greater chances that pupils' academic performance may tend to decrease because of an increased teacher autonomy. Based on such circumstances above, the study also suggests that the findings do not support the JCM assumption on autonomy. The JCM originally assumes that job autonomy among employees are essential for achieving performance and work effectiveness. It is observed from this study that such assumption does not work in the aspects of teachers and their associated pupils' academic performance. JCM assumption on teacher autonomy is less important for public primary school pupils' academic performance in the study areas.

#### **Conclusion and Recommendations**

Teacher autonomy significantly lowers pupils' academic performance in public primary schools. High teacher autonomy affects pupils' academic performance. The more teachers attain autonomy in their teaching responsibilities; the likelihood of pupils' academic performance also reduces significantly. High teacher autonomy encourages them to behave in a manner that affects pupils' academic performance. High autonomous teachers tend to teach school pupils using improper textbooks, poor educational standards and may fail to abide with the recommended assessment techniques. On the contrary, low teacher autonomy implies that it increases chances on pupils' academic performance. The study recommends that stakeholders need to reduce teacher autonomy during teaching plans preparation, educational material selection and

ensuring that teachers are strictly guided in their decisions for individual professional development.

### Policy Implication, Limitation and Further Research

Currently, the education and training policy (2014) restricts teacher autonomy by requiring them to use recommended text books during classroom teaching. The policy has to be enriched further by reducing other forms of teacher autonomies relating to teaching plans preparations, professional development, pupils' discipline standards setting and work methods autonomy. Reduction of teacher autonomy by the education and training policy will raise pupils' academic performance across public primary schools. Nonetheless, the study is limited in the sense that it involves a small sample size compared to the number of teachers employed in public primary schools located in approximately 185 LGAs. A similar study can be conducted by using a larger sample size of teachers from huge quantity of primary schools to confirm the linkage between teacher autonomy and pupils' academic performance.

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