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Full Length Research Paper

Relationship between intrinsic teacher motivation and teacher amotivation and student academic performance in public secondary schools in Gem Sub-County, Kenya

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ABSTRACT

Studies on teacher motivation indicate low teacher motivation results in low student academic performance. The purpose of this study was to determine the relationship between teacher motivation and student academic performance in public secondary schools in Gem Sub-county, Kenya. The objective of the study was to establish the relationship between intrinsic teacher motivation and teacher amotivation on student academic performance. The study was guided by the Conceptual Framework based on Self-Determination Theory and adopted correlation and descriptive research designs. The study population was 41 principals and 180 teachers from 41 public secondary schools. A sample of 36 principals from 36 schools was picked through a saturated sampling technique given that 5 schools were used for the pilot study. The purposive sampling technique was used to select 110 teachers who had taught the same class from form three to form four between 2013-2014. Work Self-Determination Index was used to measure teacher motivation. The reliability of the instruments was established by the test-retest method and a coefficient index of 0.791 was accepted. The study showed that intrinsic teacher motivation had a weak, positive and significant relationship with student academic performance (r =.327; N=110; p <.05) and accounted for a 9.9% variation in student academic performance. Teacher amotivation had a weak, positive and significant relationship with student academic performance (r =.218; N=110; p<.05) and accounted for a 3.9% variation in student academic performance. The study noted that increased teacher motivation enhances student academic performance. The findings of this study would inform the stakeholders in education in coming up with strategies to enhance teacher motivation to improve student academic performance.

Keywords: Intrinsic motivation, amotivation, academic performance, relationship, teacher, student.

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Introduction

Background of the study

Motivation is a psychological process that influences individual behaviour with respect to the attainment of workplace goals and tasks (Bennell, 2004). A review of empirical studies on teacher motivation in Bangladesh, India and Pakistan indicates a widespread low or decreasing level of teacher motivation resulting in lower quality of education (Bennell and Akyeampong, 2007). Similarly, a study conducted across Zambia, Papua New Guinea and Malawi found that teachers' motivation was both fragile and declining leading to low student academic performance. Teachers reported having low self-esteem in their roles and felt they were not respected by the community (Voluntary Service Overseas (VSO), 2002).

Jemila (2013) in a case study of public secondary schools in Nyamagana Sub-County, Mwanza indicated the effects of motivation factors on teachers' performance in Tanzanian education institutions. There was an inadequate motivation of teachers and consequently low performance in public secondary schools.

Correspondingly, Onyambu (2009) stated low teacher motivation in Masimba Division, Masaba South Sub-County in Kenya. The study also resulted in low student academic performance in public secondary schools.

The sources of motivation can be either extrinsic or intrinsic. In extrinsically motivated behaviors, actions are performed to achieve some results, such as earning rewards or avoiding a negative consequence (Covington, 2000). Bates (1979) and Deci et al. (1991) studies showed that intrinsic motivation was a desire to engage in an activity purely for participating in and completing a task. Alam and Farid (2011) conducted a study on factors affecting teacher motivation at the Secondary School level in Rawalpindi City in India. The population of the study included the teachers of class X in the Secondary Schools of Rawalpindi City. The study concluded that teachers were not satisfied with their socio-economic status, choice of profession, student behavior, and examination stress. In Bennell and Ayempong's studies (2007) across Sub-Saharan Africa, teacher motivation was low due to low accountability, low pay, low vocational and occupational status, and poor working and living conditions. Similarly, Nyakundi (2012) also conducted a study on factors affecting teacher motivation in public secondary schools in Thika West Sub-County, Kiambu County Kenya. From the findings of the study, it concluded that job satisfaction, reward system, professional training and development, and work situational factors affect employee motivation.

According to Deci and Ryan (1985), intrinsic motivation refers to the motivation necessary to engage in an activity because that activity is enjoyable and satisfying. Demir (2011) carried out a study on teacher intrinsic motivation as a predictor of student engagement to perform in Turkey and found that student engagement in performance was predicted significantly by primary school teachers' intrinsic motivation. Uyulgan and Akkuzu (2014) also conducted a study on an overview of student teachers' academic intrinsic motivation at Dokuz Eylul University in Turkey. The study pointed out that teachers that have a higher level of Academic Intrinsic Motivation (AIM) have a high likelihood of practicing teaching as a profession. Hence, they are likely to produce better results. A study carried out by Aacha (2010) in Masaka District in Uganda also revealed that there was a significant positive relationship between intrinsic teacher motivation and teachers' performance based on student academic performance. These findings indicate that there is a relationship between intrinsic teacher motivation and student academic performance. However, these studies did not establish the relationship between each component of intrinsic teacher motivation and student academic performance in public secondary schools.

In Siaya Sub-County, a report of 2015 by the County Education Office revealed that teachers were devoting less time to co-curricular activities, teaching preparation and marking. In addition, deteriorating standards of professional conduct including serious misbehaviour and the poor professional performance had been observed in some secondary schools within Siaya Sub-County. These were indicators of a lack of motivation among teachers thereby affecting performance in core functions like teaching effectively to produce results (Anusu, Barasa and Omulando, 2014). Likewise, in Gem Sub-County, reports of teachers' absenteeism, tardiness and general misconduct such as drunken behaviour were on the increase and these could be symptoms of low teacher motivation in the Sub-County (Gem Sub-County Education Office, 2012).

Indicators of teacher motivation include absenteeism, cooperation, lateness, class attendance, commitment to teaching and student academic performance. Five schools in Gem Sub-County had been recording poor student academic performance compared to other schools in the Sub-County in the Kenya Certificate of Secondary Education examination between the years 2011-2013. This prompted the Teachers Service Commission to conduct a preliminary survey in those five schools to establish the reason for the dismal performance. Table 1 gives the results of the preliminary survey conducted in Gem Sub-County on teacher motivation.

Table 1 reveals that between 2011 and 2013 absenteeism was reported in 4(80%) schools, lack of cooperation from teachers in 3 (60%) schools, lateness in 4 (80%) schools, missing classes in 5 (100%) schools and resignation from teaching in 1 (20%) school. Statistics also show that a large population of teachers in Secondary schools in Gem-Sub-County had enrolled in institutions of higher learning to pursue additional professional courses hoping to quit the teaching profession for other jobs perceived to be more satisfying (Mande, 2012). This implies that many teachers were resigning from teaching to join other jobs indicating that there was low teacher motivation in the Sub-County resulting in low student academic performance.

Atieno and Mercy (2019) carried out a study on the influence of performance appraisal on the motivation of public secondary school teachers in Gem Sub-County Kenya and found that performance rewards have a positive and significant effect on teacher motivation which increases student academic performance. However, the study did not analyze the relationship between teacher motivation and student academic performance focusing on the motivational constructs, intrinsic motivation and amotivation.

For three years (2011-2013), Gem Sub-county had been the lowest-performing Sub-county in terms of student academic performance compared to neighbouring Siaya, Ugenya and Ugunja Sub-counties. Table 2 shows that in the period between the years 2011 and 2013, Ugenya Sub-county had a mean of 6.023 followed by Siaya with a mean of 5.904 then Ugunja with a mean of 5.350 and finally Gem Sub-County with mean

Table 1. Preliminary survey by TSC shows indicators of low teacher motivation from 2011 to 2013 in Gem Sub-County.

Low teacher motivation related cases	Total schools	Number of schools in which cases were reported	Percentage %
Absenteeism	5	4	80
Lack of teacher co-operation	5	3	60
Lateness	5	4	80
Missing class	5	5	100
Resignation from teaching	5	1	20

Source: T.S.C Office Gem Sub-County (2014).

Table 2. KCSE results for Ugenya, Siaya Ugunja and Gem Sub-Counties between 2011 and 2013.

Pos	Sub County	Mean 2011	Mean 2012	Mean 2013	Average
1	Ugenya	6.140	6.023	5.905	6.023
2	Siaya	6.007	5.707	6.005	5.904
3	Ugunja	5.277	5.353	5.429	5.350
4	Gem	5.255	5.232	5.208	5.231
	Siaya County	6.3017	6.1946	6.0875	6.1846

Source: Siaya, Ugenya, Ugunja and Gem Sub-counties (2014)

of 5.231.

Table 2 shows the Kenya Certificate of Secondary Education (KCSE) results of Gem Sub-County compared to neighbouring Ugenya, Siaya and Ugunja Sub-Counties between the years 2011 to 2013. For three years Gem Sub-County had been the lowest-performing Sub-County compared to the three Sub-counties in KCSE results. The poor performance is linked to low teacher morale, dissatisfaction, ineffectiveness, lack of commitment and teacher effort, professional development and goal attainment. The low motivation index of teachers has a direct impact on teaching and learning output within the public secondary schools in Gem Sub-County which has been dismal (Atieno and Mercy, 2019).

Objectives of the study

The purpose of this study was to determine the relationship between teacher motivation and student academic performance in public secondary schools in Gem Sub-county Kenya. The specific objectives of the study were to establish the relationship between:

i. Intrinsic teacher motivation and student academic performance.
ii. Teacher amotivation and student academic performance.

Conceptual framework

The conceptual framework based on self-determination theory by Rayn and Connel (1989) guided this study. Figure 1 illustrates the Conceptual Framework that indicates the various variables that play a role in teacher motivation in secondary schools. Self-Determination Theory is a macro theory of human motivation and personality that concerns people's growth tendencies and innate psychological needs. It focuses on the degree to which human behaviour is self-motivated and self-determined. According to this theory, intrinsic motivation and each type of extrinsic motivation are reflected in different reasons for behaving and these reasons provide a means for assessing the type of motivation. Teacher motivation can be measured using six motivational constructs including; intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation and amotivation where the mean of each sub-scale is multiplied by the weights corresponding to the underlying levels of self-determination (Ryan and Connell, 1989). This study focused on intrinsic motivation and amotivation.

The framework in Figure 1 shows the relationship between the independent and the dependent variables of the study. The dependent variable was student performance determined by the mean scores produced by participating teachers in the Kenya Certificate of Secondary Education while the independent variables were intrinsic teacher motivation and teacher amotivation. The intervening variables in this study were students' entry behaviour and teaching/learning resources. The researcher, however, held these intervening variables constant to enable the determination of the relationship between the independent and dependent variables.

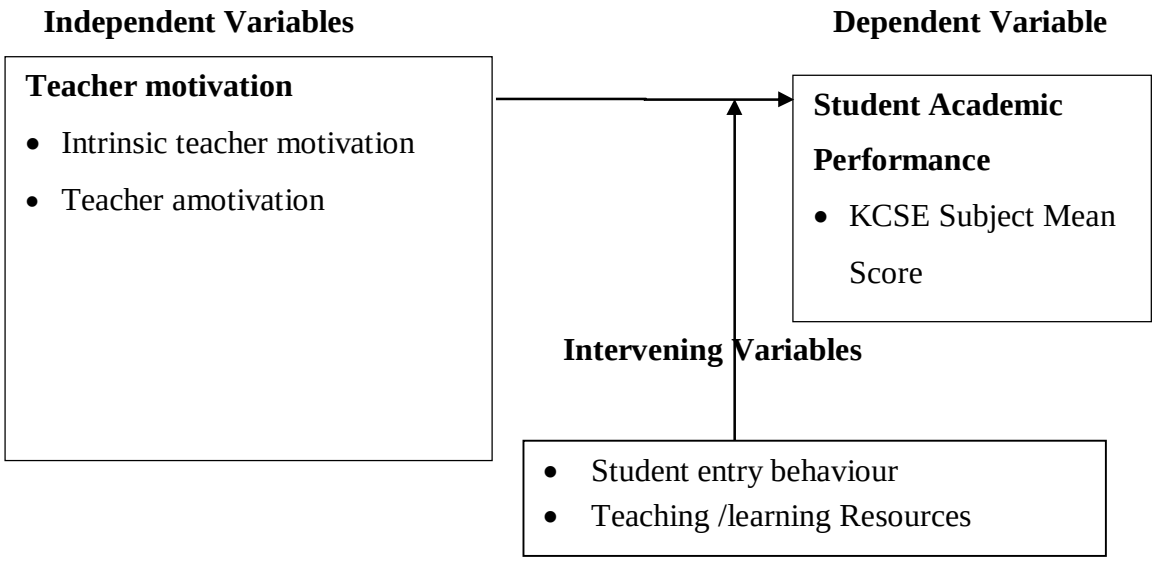

Figure 1. Conceptual framework showing the relationship between independent and dependent variables of the study.

RESEARCH METHODOLOGY

The study adopted both descriptive survey and correlational research designs. A descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Kombo and Tromp, 2009). This design was relevant to the study since questions raised in the study required collecting information through interview schedules and questionnaires. Correlation design was also deemed appropriate for this study because it gives a measure of the extent to which values on one variable can be predicted from values on the other variables (Coolican, 1994). Correlation research was important because it helped in establishing the relationship between teacher intrinsic motivation and student academic performance.

The study targeted 41 principals and 180 teachers employed by the Teachers Service Commission (TSC) in public secondary schools in Gem Sub-County (Sub-County T.S.C Director of Education Gem Sub-County 2014). The study used a saturated sampling technique to pick 36 principals in the public secondary schools in Gem Sub-County since it gave room to all the principals in the schools to participate. Five principals participated in the pilot study. In addition, a purposive sampling technique was used to select 110 teachers who had been teaching the same class from form three to form four from 2013 to 2014. Purposive sampling is used where a particular sample is needed.

The research instruments used by the researcher were a document analysis guide, principal interview schedule and teacher questionnaires. To establish the reliability of the instruments, a test-retest pilot study on the instruments was done on five principals and nineteen teachers which were not included during the actual study and were 10% of the study population (Gall et al., 2003). Pearson's product-moment correlation was done and a reliability coefficient of 0.791 was obtained from the teachers' questionnaire. According to Frankel and Wallen (2003), an alpha value of 0.7 and above is considered suitable to make group inferences that are accurate enough. The findings were used to remove inconsistencies, ambiguities and weaknesses to make the instrument reliable.

The researcher sought permission from National Commission for Science, Technology and Innovation (NACOSTI). The schools were accessed with permission from the County Commissioner and County Director of Education, Siaya County.

RESULTS AND DISCUSSION

Teacher intrinsic motivation and student academic performance

The study sought to establish the relationship between intrinsic teacher motivation and student academic performance. The teacher motivation questionnaire was used to obtain information regarding intrinsic teacher motivation. Table 3 shows the level of ratings of intrinsic teacher motivation.

From Table 3, no teacher had Very Low intrinsic motivation. However, 17 (15.45%) teachers were Low intrinsically motivated, 70 (63.64%) teachers had Moderately Low intrinsic motivation and 23(20.91%) teachers had High intrinsic motivation. No teacher had High intrinsic motivation. It was, therefore, concluded that

Table 3. Ratings of Teacher Intrinsic Motivation, *n* = 110.

Intrinsic motivation index	Frequency (*F*)	Percentage (%)
0.00 – 4.80	00	0.00
4.81 – 9.60	17	15.45
9.61 – 14.40	70	63.64
14.41 – 19.20	23	20.91
19.21 – 24.00	00	0.00
Total	**110**	**100**

Interpretation of Intrinsic Motivation Indices:
00 – 4.80=Very Low intrinsic motivation; 4.81 – 9.60 = Low intrinsic motivation; 9.61 – 14.40=Moderately Low intrinsic motivation; 14.41 - 19.20 = High intrinsic motivation; 19.21 - 24.00 = Very High intrinsic motivation.

teachers in Gem Sub-County had Moderately Low intrinsic motivation, meaning that teachers were not performing their duties for satisfaction or inherent pleasure in it. They were neither engaged in teaching for its own sake nor because teaching was enjoyable nor interesting. This conforms to Ryan and Deci (2000), who pointed out that people who have intrinsic motivation are doing an activity to attain inner satisfaction from the activity. According to Self Determination Theory, those who find a job more intrinsically motivating will spend a higher degree of effort or intensity on the activity (Cerasoli et al., 2014), meaning that teachers in Gem Sub-County were not spending more time and effort in performing their duties.

Additionally, teacher enthusiasm and peer relationship with students in Gem-Sub County was low. This is because intrinsic motivation is related to a teacher's enthusiasm (Patrick et al., 2000) and peer relationships (Molley et al., 2011) which play a role in facilitating student motivation towards their academic performance. Intrinsic teacher motivation is also related to instructional practices used by the teacher such as facilitating student inner will or interest and providing guidance to students which has a positive relationship with student academic performance (Reeve and Jang, 2006). Therefore, this implies that there was limited use of teaching styles that aims at promoting students' inner motivational resources such as their interests and values meaning that teachers were not using practices such as allowing choice for students, spending time to communicate with students, offering encouragement and providing rationales to students. Similarly, teachers were not using instructional practices that promote students' skills relevant to creativity such as problem-solving, transfer of knowledge strategies, task engagement, creativity skills and collaboration (Hong et al., 2011). Interview findings agreed with these findings, where the principals argued that teacher intrinsic motivation was low. In this respect, a principal stated:

> There is a low intrinsic teacher motivation level; teachers are not taking much of their time to adequately prepare for the lessons, and they are not doing a lot of research to ensure that the content is well delivered and the objective well achieved. Teachers do not always show a lot of interest in their work nor do they perform their duties because the work is enjoyable but always want some monetary rewards especially if the work is done outside the normal lesson hours. Teachers hardly engage students in more academic work such as more assignments and continuous assessment tests which they should mark quickly and revise with the students. There is a strong relationship between intrinsic teacher motivation and student academic performance.

To establish the relationship between intrinsic teacher motivation and student academic performance, data on intrinsic teacher motivation and student academic performance were correlated and regression analysis was computed. Table 4 shows a correlation matrix between intrinsic teacher motivation and student academic performance.

Table 4 indicates that the relationship between intrinsic teacher motivation and student academic performance had a correlation coefficient of 0.327, which indicates the presence of a weak and positive relationship. Hence as intrinsic teacher motivation increases, student academic performance also increases. This relates to Ngala and Odebero (2010) who found out that there is a positive relationship between intrinsic teacher motivation and student academic performance. The findings of this study also concur with Demir (2011) who found out that there is a positive relationship between teacher motivation and student engagement to perform. Teachers who are intrinsically motivated feel that they are teaching because they have been chosen to do so voluntarily and because the activity of teaching represents a challenge to their existing competencies and requires them to use their creative capabilities, increasing student academic performance. Furthermore, teachers who are intrinsically motivated engage in teaching because teaching interests them and they teach freely even going the extra mile with

Table 4. Correlation matrix between performance and intrinsic motivation.

		Student academic performance
Intrinsic motivation	Pearson Correlation	.327
	Sig. (2-tailed)	.000
	N	110

students without demanding any material rewards hence increasing student academic performance. To determine the extent of the relationship between intrinsic teacher motivation and student academic performance adjusted R square was used. This gave the coefficient of determination as 0.099 meaning that 9.9% of the variation in performance is attributed to intrinsic motivation. To confirm whether intrinsic teacher motivation is a significant predictor of student academic performance or not, an Analysis of Variance (Table 5) was generated.

From Table 5, it can be concluded that intrinsic teacher motivation is a significant predictor of student academic performance (F (1, 108) = 12.932; p = .000). This study is in agreement with Aacha (2010) whose study findings revealed that there was a significant positive relationship between intrinsic teacher motivation and student academic performance. In addition, the Linear Regression Analysis (Table 6) was generated to show the actual prediction power of intrinsic teacher motivation on student academic performance.

The coefficients in Table 6 give the actual prediction power of intrinsic motivation on student academic performance. The regression equation is:

$Y = 2.889 + 0.197X_1$

where Y represents the dependent variable, student academic performance

X_1 represents the independent variable, teacher intrinsic motivation

The coefficient for intrinsic motivation is 0.197 meaning that for every unit increase in teacher intrinsic motivation, a 0.197 unit increase in student academic performance is predicted. The table also indicates that the p-value is 0.000 meaning that, intrinsic motivation results in a significant (p=.000) increase in the level of student academic performance by 0.197. For instance, when the intrinsic teacher motivation level is 6, student academic performance is predicted as 4.071 and when intrinsic teacher motivation is 7, student academic performance is predicted as 4.268 which is a 0.197 increase in performance.

Table 5. Analysis of variance between intrinsic teacher motivation and student academic performance.

Model		Sum of Squares	*Df*	Mean Square	*F*	Sig.
1	Regression	19.370	1	19.370	12.932	.000
	Residual	161.768	108	1.498		
	Total	181.138	109			

a. Dependent Variable: Performance
b. Predictors (Constant) intrinsic motivation.

Table 6. Linear regression analysis of intrinsic motivation and student academic performance.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.889	.681		4.240	.000
	intrinsic motivation	.197	.055	.327	3.596	.000

a. Dependent Variable: Performance

The findings concur with Noels et al. (1999) who stated that intrinsic motivation is considered to be highly self-determined because the reason for doing the activity is linked solely to the individual positive feeling while performing the task. Intrinsically motivated are more absorbed by their jobs; they may utilize more development opportunities to increase their work effort and may be more involved in the work of their colleagues which would promote their interpersonal performance (Guay et al., 2000). Students who are taught by teachers

who have intrinsic motivation, therefore, have a better chance of performing higher than teachers who are just extrinsically motivated.

Teacher amotivation and student academic performance

The second research question was "what is the relationship between teacher amotivation and student academic performance"? Teacher amotivation level was determined as shown in Table 7.

Table 7 indicates that 7(6.36%) teachers had Very Low amotivation, 43(39.09%) teachers had Low amotivation, 57(51.82%) teachers had Moderately Low amotivation, 3(2.73%) teachers were Highly amotivated and no teacher was Very Highly amotivated. Generally, teachers in Gem Sub-County have Moderately Low amotivation meaning that teachers in Gem Sub-County were competent and therefore were not lacking intention or willingness to perform their duties according to Deci et al. (1989). Additionally, when people do not believe that the behaviours produce reliable outcomes, they become amotivated (Ryan, 1995). It, therefore, means that teachers in Gem Sub-County valued the behaviours, teaching tasks meant a lot to them and they always wanted to do it. It also means that teachers were attending school regularly, reporting to school in time, attending all the lessons as indicated in the master timetable and were also cooperative. Interview findings confirmed these findings when a principal argued that there was low teacher amotivation. The principal stated that:

> There is a low teacher amotivation level; teachers are partially intrinsically motivated and partially extrinsically motivated. Quite a number of teachers are competent and are willing to teach well especially when extrinsically motivated. Teachers sometimes engage students in more academic work, spend time communicating with students, guide and counsel them and even offer encouragement to students indicating that they are partially willing to help the students achieve their academic goals. There is a weak relationship between teacher amotivation and student academic performance.

Table 7. Ratings of teacher amotivation, *n* = 110.

Amotivation Index	Frequency (*F*)	Percentage (%)
0.00 – 4.80	7	6.36
4.81 – 9.60	43	39.09
9.61 – 14.40	57	51.82
14.41 – 19.20	3	2.73
19.21 – 24.00	00	0.00
Total	**110**	**100**

Interpretation of Amotivation Indices:
00 – 4.80 = Very Low Amotivation;
4.81– 9.60 = Low Amotivation;
9.61–14.40 = Moderately Low Amotivation;
14.41- 19.20 = High Amotivation;
19.21-24.00 = Very High Amotivation.

To establish the relationship between teacher amotivation and student academic performance, data on teacher amotivation and student academic performance were correlated as shown in Table 8.

From Table 8 the numerical value of the correlation coefficient is 0.218, which indicates the presence of a weak, positive and significant (p=0.022) relationship between amotivation and student academic performance. With a coefficient correlation of 0.218, the coefficient of determination is 0.039 indicating that amotivation singly explains a 3.9% variation in student performance. To confirm whether teacher amotivation is a significant predictor of student academic performance or not, an Analysis of Variance (Table 9) was generated.

Table 9 indicates that teacher amotivation is a significant predictor of student academic performance (F(1, 108)=5.389; p=0.022). To give the prediction power of teacher amotivation on student academic performance, Linear Regression Analysis (Table 10) was computed.

Table 10 gives the actual prediction power of teacher amotivation on student academic performance. The regression equation is:

$$Y = 6.171 + 0.094X_1$$

where Y represents student academic performance
X_1 represents teacher amotivation.

The coefficient for amotivation is 0.094 meaning that for

Table 8. Correlation matrix between teacher amotivation and student academic performance.

		Student academic performance
Amotivation	Pearson Correlation	.218
	Sig. (2-tailed)	.022
	N	110

Table 9. Analysis of variance between teacher amotivation and student academic performance.

Model		Sum of Squares	*Df*	Mean Square	*F*	Sig.
1	Regression	8.609	1	8.609	5.389	.022
	Residual	172.528	108	1.597		
	Total	181.138	109			

a. Dependent Variable: Performance
b. Predictors: (Constant), amotivation.

Table 10. Linear regression analysis of amotivation and student academic performance.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.171	.393		15.701	.000
	Amotivation	.094	.040	.218	2.322	.022

a. Dependent Variable: Performance.

every unit increase in amotivation, a 0.094 unit increase in student academic performance is predicted. *p*=.022 meaning that, amotivation results in a significant increase in student academic performance by 0.094. The formula connecting performance and amotivation is shown below:

Conclusion

Regarding the findings of the study on the relationship between intrinsic teacher motivation and student academic performance, the study concluded that intrinsic teacher motivation had a weak, positive and significant relationship with student academic. On the relationship between teacher amotivation and student academic performance, the study concluded that teacher amotivation had a weak, positive and significant relationship with student academic performance. Based on the findings, the study concluded that teacher motivation had a moderate, positive and significant relationship with student academic performance.

RECOMMENDATION

The study recommends that teacher motivation should be increased to enhance student academic performance in public secondary schools. There is a need for an increase in teacher intrinsic motivation and teacher amotivation to enhance student academic performance.

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