Correlates And Predictors Of Acdemic Engagement Among Secondary School Students In Meru County, Kenya

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Abstract: Reported low levels of academic engagement among the secondary school students has drawn attention and interest of many educational researchers because educational engagement determines how learners achieve in academics. This study was done to explore whether academic resilience and academic motivation are correlates of academic engagement among the secondary school students. The study also focused on determining the role of academic resilience and academic motivation in predicting students' engagement. This study was guided by ecological systems theory and self-determination theory. The targeted population in this study was 2992 form three students in Meru County and data was collected from a sample of 332 students. Data collection was done using a questionnaire which had three adapted scales namely; academic resilience scale (Martin & Marsh, 2006), academic motivation scale (Vallerand et al. 1992) and academic engagement scale (Fredricks et al. 2005). The collected data was analyzed using statistical package for social sciences and null hypotheses were tested using Pearson product moment correlation and multiple regression analysis tests. It was found that academic resilience had a significant moderate positive correlation with academic engagement, $r(332)=.33$, $p<.05$. Academic motivation was also found to have significant moderate positive correlation with academic engagement, $r(332)=.20$, $p<.05$. Multiple regression analysis revealed that academic resilience and academic motivation significantly predicted academic engagement. A predictive model for academic engagement was generated. The recommendations for further research were also given.

I. INTRODUCTION

Academic engagement is one of the psychological constructs which have drawn attention of most researchers and educators across the world. Ma and Wang (2022) define academic engagement as the level of involvement, participation and commitment that students demonstrate in their academic pursuits. The common aspects which characterize academic engagement include attending classes, maintaining active participation in discussions, completing assignments, studying as well as engaging in academic activities beyond classroom.

Fredricks and McColskey (2012) classified various forms of academic engagement into three domains namely; behavioral, affective and cognitive domains. Behavioral engagement entails observable actions and behaviors that learners display in the context of learning environment. Learners who have this form of engagement participate actively during lessons, follow teacher's instructions and in most occasions, they demonstrate a positive attitude towards learning tasks presented to them. In addition to participation in learning contexts, such learners participate actively in extracurricular activities. Kim et al. (2019) opines thatlearners who possess this trait of behavioral engagement tend to complete teacher's assignments on time always.

Affective engagement domain encompasses the learner's emotions towards academic tasks. The emotions include the state of feeling interested or enjoying being engaged in academic activities. Learners with affective engagement demonstrate good interaction with other learners. Cognitive engagement refers to learners' mental involvement that encompasses thinking, analyzing and processing information in learning activities. Learners who have cognitive engagement demonstrate mastery of skills, engage in problem solving activities during learning and think critically.

Learners demonstrate different levels of engagement in academics. Research studies have provided empirical evidence that the varying levels of academic engagement determine how well the learners succeed in academics (Al rashidi et al. 2016; Hancock & Zubrick, 2015; Krause & Armitage, 2016). The academic engagement of the learners has also been found to be a significant predictor of learners' academic achievement (Mutisya et al. 2019).

Low levels of academic engagement adversely affect the learners. According to Blondal and Adalbjamardoltir (2012), the common characteristics of learners with low levels academic engagement include chronic absenteeism, dropping out of school and displaying disruptive behaviors. In reference to Meru County which was the locale of this study, dropping out of secondary school and failing to sit for national examinations such as the Kenya Certificate of Secondary Education KCSE) while a candidate is registered for the examination as well as having unrest in schools are some of the factors which have been associated with learners who have low levels of academic engagement (Kibiki, 2018; Muguna, 2017; Mwingirwa, 2016). However, there is a dearth of studies on correlates of academic engagement among secondary school students in Meru County. It is against this background that this study was designed to explore whether academic resilience and academic motivation are correlates as well as significant predictors of academic engagement among secondary school students in Meru County.

Academic resilience refers to learners' ability to overcome challenges and setbacks in educational settings and learning processes and post good performance scores (Rojas, 2015). Academically resilient learners show perseverance, maintain a positive mind set, have high levels of self-efficacy and possess problem solving skills. Studies which have been conducted in Saudi Arabia and United States of America (U.S.A) have noted that there is a connection between academic resilience and academic engagement. These studies have established that the two variables are positive correlates as well as significant predictors of learners' academic performance (Umar et al. 2018; Luthans et al. 2016). Similar studies conducted in South Africa and Ethiopia reported that academic engagement and academic resilience are positive correlates (Malindi & Nyika, 2012; Argaw et al. 2019).

As per the findings of these studies, learners with high level of academic resilience are more engaged in academics and tend to perform better than learners with low levels of academic resilience. Since these studies have identified the two variables to be positive correlates, there arose a necessity to do a similar study in Kenya where little has been done to explain the relationship between academic resilience and academic engagement.

Academic motivation may be defined as learners' desires and interest towards learning tasks (Noyens et al. 2018). The extent to which the learners are motivated towards learning may be classified into three domains namely extrinsic motivation, intrinsic motivation and amotivation. Extrinsic motivation is manifested in earners who are motivated by external rewards or the learners who work hard in academics in order to avoid the negative consequences. Intrinsic motivation is evident in learners who have internal interest towards learning or enjoy the learning tasks. Amotivation on the other hand refers to lack of any motivation or absence of desire towards learning. Learners who have amotivation feel unable to make any accomplishment in learning tasks. The level of academic engagement depends on the domain of motivation which a learner possesses (Huaruni et al. 2018).

In a study that was conducted in Tanzania, it was reported that academic engagement and academic motivation were positive and significant correlates. Argaw et al. (2019) also concurred with the findings after relating the same variables in a study that was done in Ethiopia. Since studies done outside Kenya have reported that academic resilience and academic motivation are positive correlates of academic engagement, it was deemed necessary to do this study in Kenya in order to produce findings which may be generalized across Kenyan learners.

STATEMENT OF THE PROBLEM

Research studies have linked academic engagement to academic achievement of students. Many schools in Kenya as well as Merucounty have reported low levels of academic engagement among the students. This persistent problem has resulted to school drop outs, failure to sit for national examinations and low achievement in academics. This affects the quality of education and leads to reduced manpower thus hindering economic development of the country. This called for initiatives to avert the situation of low academic engagement by finding out the factors which may relate to and predict academic engagement. Therefore, the central problem of this study was to determine whether academic resilience and academic motivation are correlates as well as significant predictors of academic engagement among the secondary school students in Meru County, Kenya.

OBJECTIVES OF THE STUDY

This study had three objectives as follows:
- ✓ To establish the relationship between academic resilience and academic engagement.
- ✓ To test whether there is a relationship between academic motivation and academic engagement.
- ✓ To determine a predictive equation for academic engagement using academic resilience and academic motivation.

ALTERNATIVE HYPOTHESES

The following three alternative hypotheses were generated in relation to the objectives of the study.
- ✓ There is a significant relationship between academic engagement and academic resilience.
- ✓ A significant relationship exists between academic motivation and academic engagement.
- ✓ There is a significant predictive equation for academic engagement using academic resilience and academic motivation.

THEORETICAL FRAMEWORK

This study was guided by ecological systems (Bronfenbrenner, 1979) and self-determination (Deci & Ryan, 1985) theories.

ECOLOGICAL SYSTEMS THEORY

Ecological systems theory was advanced by Bronfenbrenner in 1979. This theory looks at the various interactions which people encounter in their lives. The ecosystem in which people interact with is divided into microsystem, mesosystem, exosystem, macrosystem and chronosystem levels.

Microsystem refers to the immediate environment in which an individual interacts directly with others. Family settings, interactions at school as well as peer interactions are examples of microsystem. In the microsystem, an individual experiences face to face interactions with others.

The level of mesosystem comprises of inter connections between different microsystems. The interactions between a child's family and the school where the child is schooling is an example of the mesosystem. Exosystem is a level that comprises of the various factors that affect an individual indirectly. The individual being affected does not have a direct connection with the factors. For instance, the parents' workplace and mass media are part of the exosystem.

Macrosystem is a level of the ecosystem which represents the cultural and societal influences which affect an individual whereas chronosystem refers to the historical factors and time influence on an individual.

The ecological systems theory was used in this study to explain resilience. People develop different levels of resilience depending on the level of the ecological system in which they are in. In educational settings, the learner's resilience is determined by their previous interactions at home as well as their present interactions at school. The school has all the levels of interactions which have been proposed by the ecological systems theory. The nature of the interactions at school shape the resilience of the learners to be either high, moderate or low. The level of resilience will in turn determine the learner's level of academic engagement.

This theory was appropriately used in previous studies to explain the relationship among the variables of the study. Mwangi et al. (2015) used the ecological systems approach in a study that explored the relationship between academic resilience and academic achievement with academic engagement as an intervening variable that mediated the relationship between the two variables.

SELF-DETERMINATION THEORY DECI AND RYAN, (1985)

Self-determination theory was advanced by Deci and Ryan (1985) to explain the concept of motivation. According to this theory, the level of motivation possessed by the learner depends on how determined the individual is. This theory divided motivation into three domains which are intrinsic motivation, extrinsic motivation and amotivation.

Intrinsic motivation refers to the inner drives and desires which arise from within an individual. The learners who possess intrinsic motivation have internal desires and interests which drive them towards accomplishing some set educational goals. Such learners are self-determined and make efforts to get self-engaged in academic activities.

Extrinsic motivation is a type of motivation which is driven by external rewards which may be offered in the environment. The learners who have extrinsic motivation may also work hard in academics in order to be praised by their parents or teachers. When learners have extrinsic motivation, they tend to engage in academic activities in order to achieve the set goals which are worth to be rewarded.

The third dimension of motivation is amotivation. Deci and Ryan (2000) opined that learners who possess amotivation are non-self-determined and they totally lack motivation. Such learners feel incompetent and they do not engage in academic activities.

This theory is appropriate for linking academic motivation and academic engagement because it helps to explain the interrelations between different levels of motivation and academic engagement. This theory explains why some learners have varying levels of both motivation and academic engagement. Mutisya et al. (2019) proved the theory to be appropriate when explaining the relationship between academic motivation and academic engagement in a study that reported a positive relationship between the two variables.

II. REVIEW OF RELATED LITERATURE

This section presents some literature which has been reviewed in efforts to understand the relationship among the variables of the study and the roles of the predictor variables in predicting the outcome variable.

RELATIONSHIP BETWEEN ACADEMIC RESILIENCE AND ACADEMIC ENGAGEMENT

Various research studies have been done to explore the relationship between academic resilience and academic engagement.

In attempt to determine whether academic resilience was a correlate of academic engagement among graduate students, Umar et al. (2018) conducted a study among students who were pursuing master's degree at a private university in Saudi Arabia. This study employed correlational research design and the data was collected from a sample of 350 students using questionnaires. Data analysis revealed that there was a significant positive relationship between academic resilience and academic engagement.

Luthans et al. (2016) did a study in USA with the aim of correlating academic resilience and academic engagement. This study used a cross sectional research design and a sample of 323 participants was drawn from two universities in the mid-western region of USA. Questionnaires were used to collect data from the respondents. Data analysis was done and hypotheses were tested using item response theory and hierarchical regression. The advanced null hypothesis that there was no significant relationship between academic

resilience and academic engagement was not supported as the findings established that there was a moderate significant relationship between academic resilience and academic engagement.

In another study in USA, McCain (2021) correlated academic resilience and academic engagement among black males who were pursuing various university degrees. In this study, 124 undergraduates were sampled. Data collection was done using questionnaires. The findings reported a significant positive correlation between the undergraduates' resilience and their engagement in academics. The findings of this study have a limitation in that they can only be generalized across university students of one gender.

A study was done in Italy to determine whether academic resilience of the high school students was related to their level of engagement towards academics (Romano et al. 2021). A total of 305 students were sampled and completed questionnaires. Pearson correlation established that there was a positive relationship between academic resilience and academic engagement of the high school students.

RELATIONSHIP BETWEEN ACADEMIC MOTIVATION AND ACADEMIC ENGAGEMENT

This section looks at some studies which have been previously conducted to explore the interrelationship between academic motivation and academic engagement.

In Malaysia, Mai et al. (2015) attempted to find out whether academic motivation was a correlate of academic engagement among the secondary school students. This study used a sample of 460 students. A descriptive research design was used. Data analysis revealed that there was a positive correlation between academic engagement and academic motivation.

Fundar (2017) did a study whose objective was to correlate academic motivation and academic engagement among high school students. This study was conducted in Ankara province of Turkey. The researcher sampled 500 students who participated in the exercise of completing questionnaires. The results which were reported from this study were that academic motivation and academic engagement were positive and significant correlates. Since the cultural and educational demands of Turkey are different from those of Kenya, it was necessary to conduct a similar study within the Kenyan setting to determine whether similar results would be obtained.

Another study that was done on the correlation between academic motivation and academic engagement was carried out in Spain. In this study, Marta et al. (2022) studied the variables among the secondary school students. The sample that participated in this study constituted of 603 students. The researchers established that academic motivation and academic engagement were positive and significant correlates.

Aboozar and Moitafet (2020) sampled 300 students in Iran in order to determine whether the motivation of the learners was related to their academic engagement. This study used correlational research design and hypothesis was tested using Pearson product moment correlation. The correlation results obtained showed that there was a positive and

significant relationship between academic motivation and academic engagement.

PREDICTION OF ACADEMIC ENGAGEMENT

The studies which are reviewed in this section focus on the role of academic resilience and academic motivation in predicting the academic engagement of learners in various levels of education.

Ellen et al. (2016) did a study that aimed at determining whether academic engagement was predictable from academic resilience and academic motivation. In this study, 880 elementary school learners were sampled to participate. Data collection was done using questionnaires. Regression analysis revealed that academic engagement was predictable from academic resilience and academic motivation.

Okoro (2020) studied whether academic resilience and academic motivation could predict academic engagement of the undergraduates in Nigeria. Questionnaires were used for collecting data which was analyzed using one way analysis of variance. From the findings of this study, it was found that academic motivation was a significant predictor of academic engagement whereas academic resilience did not significantly predict academic engagement of the university students.

Another study had been conducted in Nigeria to determine whether academic engagement was predictable from academic resilience and academic motivation (Oke et al. 2016). This study targeted 2160 high school students. The study used quantitative data that was collected using questionnaires. This study found that academic engagement was predictable from academic resilience and academic motivation.

Mutisya et al. (2019) did a study in Kenya on predictors of academic engagement. In this study, academic motivation was among the predictors which were studied. This study involved 580 secondary school students in Machakos County. Data analysis showed that academic motivation significantly predicted academic engagement of the secondary school students. This study addressed one predictor variable which has also been addressed in the current study.

III. METHODOLOGY

Correlational research design was deemed appropriate and used in this study. The researcher chose correlational research design because it enables determination of the extent and direction of relationship among the variables which were being studied. The correlational research design of predictive type helped in determining how academic resilience and academic motivation predicted the academic engagement of the secondary school students.

PARTICIPANTS

This study targeted 2992 form three students (males = 1618, females=1374). Out of the 2992 participants, the researcher sampled 341 participants to complete the questionnaires which yielded data for the study. The sampled group constituted 11% of the targeted population. The sample

was assumed to give satisfactory representation of the characteristics of the population under study as per the assertion by Gorard (2001) that the sample of a study should make at least 10 % of the population targeted. The participants were picked using random sampling. The form three class was considered on the basis that such learners have more than half of the secondary school curriculum and they are at a level of preparing to join form four which is the final year of their studies. Some questionnaires were excluded during coding due to some anomalies. A total of 332 questionnaires were used in data analysis.

RESEARCH INSTRUMENTS

Data was collected using a questionnaire. The questionnaire was sub divided into four sections. The first section contained the explanation as to the nature of the study and background information of the participants which included gender, category of the school and the age. The other three sections were the scales. The following scales were utilized in measuring the variables which were being studied. Academic resilience scale (Martin & Marsh, 2000) , academic motivation scale (Vallerand et al. 1992) and school engagement scale (Fredricks et al. 2005). All the three scales were adapted. Academic resilience and school engagement scale had their ratings based on five point Likert scale while the ratings of academic motivation scale were on a Likert scale of seven points.

DATA COLLECTION

The researchers obtained permits to collect data from the Graduate school of Kenyatta university and National Commission for Science Technology and Innovation (NACOSTI). Afterwards, permission to collect data in the targeted locale was sought from the national and county governments administrations of Meru county.

The researchers and the relevant school authorities arranged the dates for carrying out the exercise of collecting data. A briefing session was held just before starting the exercise of collecting data. The aim of the briefing session was to explain to the participants the purpose of the research, assure the participants confidentiality in handling the collected data and offer a promise of sharing the findings with them. Questionnaires were completed by the volunteers who accepted to participate after the briefing.

DATA ANALYSIS

The data that were collected were coded and keyed into the Statistical Package for Social Sciences (SPSS) program. The SPSS program was used to perform the following statistical tests: Pearson product moment correlation and regression analysis. The tests helped in testing the null hypotheses which had been advanced in this study.

IV. RESULTS

This section presents the findings which were obtained in this research study. The order of presentation of the findings follows the objectives of the study and the null hypothesis which had been formulated and tested in relation to that objective.

The first objective sought to test for existence of relationship between academic resilience and academic engagement. In relation to this objective, a null hypothesis was formulated as follows, "There is no significant relationship between academic resilience and academic engagement." Pearson product moment correlation test was performed to test this null hypothesis. The results which were obtained in the test were as presented in Table1.1

		Academic Engagement
Academic resilience	Pearson Correlation	.33**
	Sig. (2-tailed)	.00
	N	332

Table 1.1: Pearson Correlation test on Academic Resilience and Academic Engagement

As indicated in Table 1.1, there is a moderate significant positive correlation between academic resilience and academic engagement, $r(332)=.33$, $p<.05$. .

The null hypothesis which had been formulated was not supported by the findings. Therefore, the null hypothesis was rejected and it was held that academic resilience and academic engagement are positive correlates.

The second objective of this study was to determine whether there was a relationship between academic motivation and academic engagement. A null hypothesis was advanced that "there is no relationship between academic motivation and academic engagement." In order to test this hypothesis, Pearson product moment correlation test was performed on the data that was collected about the two variables. The results of the correlation were as presented in Table 1.2.

		Academic Engagement
Academic motivation	Pearson Correlation	.20**
	Sig. (2-tailed)	.05
	N	332

Table 1.2: Pearson Correlation Test on Academic Motivation and Academic Engagement

According to the findings in Table 1.2, there is a moderate significant and positive correlation between form three students' academic motivation and their academic engagement, with a value of r (332) =.20, $p<.05$. As a result, the null hypothesis was rejected. It was concluded that academic motivation and academic engagement are positive correlates. Therefore, an increase in motivation level leads to increased academic engagement among the students.

The third objective of this study sought to establish whether academic engagement of the secondary school students could be predicted using academic resilience and academic motivation. In regard to this objective, a null hypothesis was advanced that: "Academic resilience and academic motivation do not significantly predict the secondary school students' academic engagement." In order to test this

hypothesis, ANOVA test was done and the regression results which were generated were as presented in Table 1.3.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4974.16	2	2487.08	22.97	.00[b]
	Residual	35617.36	329	108.26		
	Total	40591.52	331			

a. Dependent Variable: Academic Engagement
b. Predictors: (Constant), Academic motivation, Academic resilience

Table 1.3: ANOVA for the Prediction of Academic Engagement by Academic Resilience and Academic Motivation

As per the findings presented in Table 1.3, it is evident that academic resilience and academic motivation strongly predict academic engagement of the students, $F_{(2, 329)} = 22.97$ and a p-value of .05. This led to rejection of the null hypothesis and it was held that academic resilience and academic motivation are significant predictors of students' academic engagement.

Regression analysis was used to determine the predictive weights of each predictor variable on academic engagement. Table 1.4 displays the results of the regression coefficients.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	44.18	2.85		15.51	.00
Academic resilience	.71	.13	.30	5.61	.00
Academic Motivation	.15	.07	.12	2.22	.03

Table 1.4: Regression Coefficients

Academic resilience had a regression value of ß =.71, p =.00, and academic motivation had a regression coefficient of ß=.15, p =.03.

The Model's prediction equation was: $\hat{y} = 44.18 + 0.30 x_1 + 0.12 x_2$

Where:

$\hat{y}$ = predicted academic engagement

x_1 = academic resilience,

x_2 = academic motivation.

According to the findings, Academic engagement changes by 0.30 and 0.12 units for every unit change in academic resilience and academic motivation respectively. These findings show that academic engagement can be predicted using academic resilience and academic motivation.

V. DISCUSSION OF THE FINDINGS

The findings to answer the question whether there was a relationship between academic resilience and academic engagement reported a positive relationship between the two variables. Therefore, students who have high levels of academic resilience are more engaged in academic tasks while students who have low levels of academic resilience are less engaged in academic tasks.

The findings were consistent to the findings of previous studies that looked at the same variables.

In a study that related academic resilience and academic engagement among students who were pursuing masters degrees, Umar et al. (2018) reported a positive correlation between the two variables. Similar findings were reported in U.S.A in a study that correlated academic resilience and academic engagement among undergraduates in some selected universities.

In African setting, Argaw et al. (2019) studied whether a correlation existed between academic resilience and academic engagement of elementary school learners. The researchers in this study reported that there existed a positive correlation between academic resilience and academic engagement. The reported findings of the current study corroborate these similar findings of earlier studies. All these studies stress the need to ensure that initiatives are put in place to increase the academic resilience of the learners in order to boost academic engagement of the learners.

The findings on the relationship between academic motivation and academic engagement reported a positive significant relationship between the variables. These findings agree with findings of previous studies which looked at the variables. Mai et al. (2015) reported similar findings after relating the academic motivation of the secondary school students with their engagement in academics. Navir (2017) also reported that there was positive correlation between academic motivation and learners' daily engagement in academics. A study that was conducted in Indonesia on correlation of the two variables also reported positive results (Ridwan et al. 2016). The current findings as well as the findings of the previous studies concur that learners' motivation towards academics should be enhanced in order to increase the learners' engagement towards academics.

The findings on prediction of academic engagement reported that academic resilience and academic motivation were significant predictors of students' academic engagement these findings corroborate previous findings which had been reported after studying the same variables in other countries. For instance, Oke et al. (2016) did a study in Nigeria with an objective of determining whether academic resilience and academic motivation predicted the academic engagement of the secondary school students. This study found that academic resilience and academic motivation significantly predicted the academic engagement of the secondary school students. Another recent study in Nigeria studied the predictive role of academic motivation and academic resilience on undergraduates' academic engagement and reported the two variables were significant predictors of learners' academic engagement (Ononye et al. 2022). Due to similarity of these findings, it may be concluded that academic resilience and academic motivation are significant predictors of academic engagement. Therefore, academic resilience and motivation should be nurtured for the learners to increase their engagement in academics thus enhancing their academic achievement.

VI. RECOMMENDATIONS FOR FURTHER RESEARCH

In this study, it has been outlined that there are three domains of motivation and three levels of academic

engagement. Further research is recommended on correlating different domains of academic motivation with different levels of academic engagement.

In order to obtain findings which may be used for comparison purposes, future research studies may investigate the same variables in other areas which do not have the same characteristics as Meru county.

The findings of this study may be generalized across secondary school students. It is recommended that further research may focus on learners of different levels of education.

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