

# Emotional self - regulation and Academic Achievement among Form Two Students in public Secondary Schools Nairobi County, Kenya

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**Abstract:** Low academic achievement has been of great concern worldwide for a long time. Research studies that have been done, attribute this to various causes including environmental and psychological factors. More specifically, the aim of this study was to investigate the relationship between students' emotional self-regulation and academic achievement in Nairobi County, Kenya. Golman's Mixed Model of Emotional Intelligence theory guided the study. The study adopted a correlational research design in order to establish the relationship between the variables. The target population was all year 2019 form two students in public secondary schools in Nairobi County. Purposive, stratified and simple random sampling procedures were used to select location, level and participants respectively. A total of 738 questionnaires for students selected from eight public secondary schools in Nairobi County were analyzed. Emotional self-regulation scale for Adolescents and Children was adopted and used to measure students' emotional self-regulation. Students' academic achievement was inferred from their examination grades obtained from school records. A pilot study was conducted involving 34 students in one co-educational day school within the county to establish and enhance validity and reliability of the study instruments. Data collected was analyzed using both descriptive and inferential statistics. Hypotheses were tested at a = .05 level of significance. The results revealed that emotional self-regulation was positively and significantly correlated to academic achievement ( $r(738) = .0074, P < .005$ ). Among the two levels of emotional self-regulation, only cognitive reappraisal reported a statistically significant correlation with academic achievement. Expressive suppression and academic achievement revealed a weak negative statistically non-significant relationship. Therefore, the study recommended that educators consider teaching students emotional intelligence skills to foster use of proper emotional control strategies in order to enhance academic achievement.

**Key words:** Academic Achievement, Emotional self-regulation, cognitive reappraisal, Expressive Suppression.

## I. OBJECTIVE/ HYPOTHESIS OF THE STUDY

The objective of the study was to determine the relationship between students' emotional self-regulation and academic achievement. The study was guided by the following alternative hypothesis:

Ha 1: There is a significant relationship between students' emotional self-regulation and academic achievement.

## Introduction/ background of the study

Low academic achievement is a major concern for individual students and society in general. This is because academic achievement is used as a yardstick to measure an individual's level of education. Honken and Ralston (2013) opined that academic achievement is important in both concrete and abstract reasons. They proposed that, a good GPA in high school increases a student's chance of admission into college of choice, improves their eligibility for scholarship and eventually job opportunities. Even in the work place, newly graduated students are considered for job placement on the basis of their academic achievement. Researchers all over the world have demonstrated that low academic achievement can negatively affect students' expected participation in development (Ali, Gasim & Torim, 2014).

Academic achievement is mainly determined by grades achieved in national examinations at the end of school level. As a result, great importance has been attached to good grades by most in the society. Because of this, many reforms within the education sector continue to be undertaken globally in respect to education systems in an attempt to improve academic achievement (Kgosikebotha, 2013). Indeed governments all over the world continue to channel a lot of resources towards improvement of education. Additionally, education has been entrenched in countries' constitution as a basic need for all.

Since evidence has shown that students' personal factors do influence academic achievement, this study investigated emotional self-regulation as a predictor of academic achievement. Emotions are important in academic achievement because they influence how individuals behave in social environments such as learning. At the same time, motivation in learning situations may be influenced by emotions. More so, for secondary school students who are in mid adolescence which has been known to be a period of emotional challenges (Fanaji, Monashi, & Shikembi, 2015). According to Pekrun (2017), intense emotions can affect academic learning and psychological health. This influence may be positive or negative.

Globally, studies have reported low academic achievement in examinations, a situation that has seen governments search for intervening measures. In the United States of America, the government and schools has continued to initiate reform measures within the education sector in order to improve academic outcomes. Unfortunately, as reported by McWilliams (2015) majority of students still do not perform well. Obrentz (2012) argued that although past research had been done to point out factors affecting academic achievement, more research is required as changes in the education sector emerge each day.

The problem of low academic achievement has been reported as one of the many crises facing educational systems in many African countries. In Nigeria, Duze (2011) reported that low quality of education was causing concern in the government. Similar sentiments were expressed by Ali et al. (2014) who reported low academic achievement in Biology among university students in the Kano state of Nigeria. On their part, Zakariya and Bamidele (2015) reported low academic achievement in Mathematics among university students. The same situation was observed in Botswana leading the public and educationists to raise concerns about the country's standards of education (Kgosikebotha, 2013). This was also noted by Mphale and Mhlauli (2017) who reported that, academic achievement in Botswana had been on a downward trend since 2010. Similar observations were made by Mwakwinja (2017) who noted a deterioration of educational standards and quality based on the high numbers of students who failed examinations at levels below university. It is due to this situation that the researcher decided to conduct this study.

#### *Significance of the study*

The outcome of the study is likely to assist the Ministry of Education through the Kenya Institute of Curriculum Development (KICD) to recognize the importance of emotions and emotional self-regulation in learning situations. Thus, facilitate the designing of materials and programs geared towards equipping teacher trainees with necessary skills on emotional self-regulation for onward transmission to learners in schools.

In addition the study outcome may be useful to school administrators and teaching staff as they might focus on equipping students with appropriate emotional regulation strategies to enhance emotional control. Finally, it is envisaged that, the results of this research may provide additional literature on factors that predict academic achievement, hence become a point of departure for future research.

#### *Theoretical Framework*

##### *Mixed Model of Emotional Intelligence (Goleman, 2001)*

Goleman (2001) popularised the model of emotional intelligence that equips one with the ability to not only understand complex emotions, such as two emotions at the same time, but to also distinguish and transition from one to

the other successfully. According to the theory, the role of emotional intelligence is to enable one control and manage emotions. The link between the model and the current study is that students who apply emotional intelligence are able to regulate their emotions hence concentrate better in school work culminating in high academic achievement. Research studies conducted in the area of education has found a connection between emotional intelligence and academic success (Nzomo, 2012; Sinha and Suman (2013).

## II. REVIEW OF RELATED LITERATURE

Empirical studies that have directly examined the correlation between emotional self-regulation and academic achievement were hardly available. However, the few available literature findings indicate that emotional regulation strategies relate differently with academic achievement.

In a longitudinal study aimed at investigating the role of children's emotional self-regulation and initial success among American preschool children, Calvins et al. (2010) used 325 five year olds of the original 447 recruited at two years. The researchers reported that emotional self-regulation of participants correlated positively and significantly with academic achievement. The results of the study were however based on pre - schoolers while the current study involved students in secondary school. Given that students in adolescence may still be struggling with emotional issues, results would allow room for comparison. Additionally, the longitudinal research design used may have affected reliability of results due to time related threats such as attrition. The current study used students' self - report method that improves the validity and reliability of results.

In another study, Al-badareen (2016) did a study on how emotional self-regulation and academic achievement correlated using the Cognitive Emotional Regulation questionnaire (ERQ). The results showed a significant joint effect and relative influence of cognitive reappraisal and expressive suppression on academic achievement. Al-badareen's results seem to support earlier research findings that emotional self-regulation strategies influence academic achievement. These results were derived from a sample of undergraduate students, while the current study targeted high school students. Further, data on emotional self-regulation was evaluated using the ERQ questionnaire. The current study used Emotional Regulation Questionnaire for Children and Adolescents (ERQ-CA) scale. This gives room for comparison of the results given the differences in the study sample, instruments and location.

In another study, Hafiz (2015) investigated the association between the two strategies of emotional regulation and academic achievement. The sample comprised 127 Psychology undergraduates between ages 21-25 years old from the International University of Malaysia (ILUM). The study sample was made up of students from different cultural backgrounds. Data was collected using an Emotional Regulation Questionnaire (ERQ). Research findings revealed

no significant correlation between the emotional self-regulation strategies and students' academic achievement. Further, a regression model revealed no predictive weight when the two strategies were combined. A notable difference between the two studies is in the sample and data collection technique. The university students used may have achieved higher levels of emotional self-regulation due to their age. The current study used the Emotional Regulation Scale for Children and Adolescents to collect students' data which may have accounted for the differences in results. Comparison could also be drawn from the difference in age and class level.

The relationship between intelligence and academic achievement in science performance was conducted in India by Chemundeswari (2013) using Emotional Intelligence scale. A total of 321 higher level secondary school students participated in the research. Participants were selected from different categories of schools namely Central Board, State Board and Matriculation Board schools (equivalent to public schools in Kenya). The schools followed different education systems. The found out that's students from Central and Matriculation Board schools had a higher emotional intelligence and performed better in science unlike those from State Board Schools private are equivalent to public schools in Kenya. Therefore the current study was necessary to compare the results with those of students in Africa following a different education system.

In a correlational study, Verzeletti et al. (2016), used 663 Italian adolescent students and an Emotional Regulation Questionnaire (ERQ), to establish the part played by emotional self-regulation strategies and psychosocial wellbeing in adolescence. Their results indicated that more reliance on cognitive reappraisal related positively to better wellbeing outcomes as well as positive emotions. However, a greater reliance on expressive suppression was conversely associated with lower wellbeing levels and negative emotions. It is worth noting that the sex difference in the specific emotional self-regulated strategies, a major objective in the current study, was not investigated.

A related study was conducted in Italy by Mega et al. (2014), using a sample of 5805 undergraduates. They used the self-regulated, Learning, Emotions and Motivation Computerized Battery (LEM-B) composed of three self-report questionnaires. The undergraduate students' had a mean age of 22 years old. The main objective was to find out how academic achievement was predicted by emotions, self-regulated learning and motivation. Results reported a significant influence of emotions on self-regulated learning which in turn influence academic outcome. The finding was based on university students who are likely to have developed better emotional control than the secondary school students in the current study. Furthermore, there was a difference in the use of measuring scales. The LEM-B questionnaire was used in the reported study while the current study used ERQ-CA scale to measure emotional self-regulation. Considering the difference in sample, location and instruments, it will be

interesting to compare findings with those of a similar research in Kenya.

A related study by Bahrami (2017), explored the relationship between cognitive emotional regulation and academic buoyancy with self-handicapping as a mediator. The sample consisted of 323 Iranian students who were randomly selected using a multi-grade cluster sampling method. The researcher used a descriptive correlation design. Results indicated a significant correlation between positive cognitive emotional self-regulation and academic achievement. Additionally, students with emotional regulation skills could overcome social challenges and control behaviour to facilitate improved academic achievement. The multi-grade cluster sampling used reviewed literature is prone to higher sampling error. Therefore, a similar study was necessary using purposive sampling method which gives a more generalizable result, and in a different location.

In Africa, Amalu (2018) did a study on the correlation between academic achievement and emotional intelligence with age, intrinsic and extrinsic motivation as the moderating variables, in Nigeria. The sample comprised 375 high school students from Benue State, within Markudi Metropolis. Participants' average age was 15 years and they were drawn from public and private schools. The Emotional Intelligence scale and achievement Test in Mathematics were used to collect data. Descriptive statistics and Multiple Regression were used to analyze data. A positive correlation was revealed between emotional intelligence and academic achievement. Additionally, combined emotional intelligence components impacted significantly on academic performance as they aided in regulating and controlling emotions, a resource that enables academic achievement. The current study set out to further those findings by examining the predictive value of different variables; emotional self-regulation and risk taking on academic achievement given students in a different environmental location.

Although the sampled students were generally of the same age as those in the current study, the data collection instrument and analysis method were different. Emotional Intelligence (EI) scale and achievement test in Mathematics were used to measure students' emotional intelligence. In the current study, emotional self-regulation used the Emotional Regulation Questionnaire for Children and Adolescents (ERQ-CA) scale and achievement test in Mathematics. Academic achievement was inferred from students' end of term average score for eight subjects. Comparison in findings will be interesting considering the difference in data collection and analysis methods.

Local research studies that have notably examined the correlation between emotional self-regulation and academic achievement were not easily available. Therefore, the association was deduced using studies that examined factors that can be related to current variables. Such variables include anxiety which is a type of emotion. Mukholwe (2015), using a

correlational survey and 354 (203 boys, 156 girls) Form Four students in Kakamega County, investigated some correlates of examination anxiety (a negative emotion) and students' academic performance in public schools. He found out that a majority of students experienced exam anxiety drawing conclusions that exam anxiety related negatively and significantly to academic performance/achievement. Similar findings were reported by those by Aloka et al. (2014), who examined how anxiety levels affect academic achievement among Form Three students in Langata District. Using 180 students (90 boys, 90 girls) in a survey, they found out that academic achievement is likely to be influenced negatively by high anxiety levels. The study investigations were based on only one negative emotion (anxiety). Thus, another study with more inclusivity in terms of more types of emotions both positive and negative, and with a larger sample size to make results more generalizable was necessary.

In yet another related study, Gicharu and Sindabi (2013) investigated academic achievement as influenced by adolescence developmental changes. They used 375 Form Three students with a mean age of 17 years from Nakuru public secondary schools, and 51 teacher counsellors. Their finding revealed a significant negative relationship between students' emotional behaviours and achievement. All the same, the relation between the specific developmental (emotional) changes and academic achievement was not reported. In addition, the relationship among emotional self-regulation strategies was not revealed. This relationship featured prominently in the present study.

Generally, earlier studies reviewed reported a positive link between emotional self-regulation and academic achievement. A noteworthy factor is that, majority of research studies reviewed were conducted in the first and second world countries hence differences in terms of cultural milieu compared to the Kenyan environment. Further, at the local scene, there is a scarcity of studies conducted on emotional self-regulation and academic achievement. Given the fact that, emotional self-regulation is important in academic achievement, the researcher found it worthy to conduct another study in order to enhance the literature that is available.

#### *Research design*

Data was collected using correlational research design. It is deemed appropriate when the purpose is to assess the relationship between or among two or more psychological variables (Creswell, 2018). Consequently it was found suitable for this study whose major objective explored the correlation among emotional self-regulation and academic achievement. The design entails collection of two or more sets of data so as to test the correlation among them. Furthermore, correlational research is useful in trying to make predictions on behavior. The relationship among the predictor variable in the current study can only be examined for prediction purposes hence the research design.

#### *Locale of the study*

Nairobi County was preferred as location of study due to its declining academic achievement. Statistics from the Ministry of Education (MOE) in 2016, 2017 and 2018 indicate that the mean grade for Nairobi County has been below C+, which is the minimum for University entry. Additionally, examination results indicated that many of the schools had a mean score of D+, while the overall performance of the county has been below the national average. The study targeted the entire Form Two class in Nairobi County from public high schools during the year 2019. Going by statistics from the Nairobi County Director's office (2019), there were approximately 31,420 Form Two students. The accessible population for the level was 9076 students (5457) boys, 3619 girls) in 8 public secondary schools (two boys' boarding, three girls' boarding, one boys' day and two co-educational day)

#### *Sampling techniques*

The procedures used to select participants included; purposive sampling, stratified sampling plus simple random sampling. Through purposive sampling, Nairobi County and Form Two class were selected. Purposive sampling allows for the researcher to obtain a sample with required characteristics according to study objectives (Mugenda & Mugenda, 1991).

#### *Research instruments*

The study used a self-administered questionnaire, and pro forma summary for students' examination results.

### III. QUESTIONNAIRE

#### *Emotional self-regulation questionnaire scale*

The emotional self-regulation of participants was measured by use of the Emotional Regulation Questionnaire for Children and Adolescents (ERQ-CA) (revised version) Gross and John (2004). The scale has 10 items with two subscales: Cognitive Reappraisal and Expressive Suppression. The first subscale contains 6 items while the second one has 4 items. The ERQ-CA was preferred for the current study due to its sound internal consistency as well as stability (Gullone & Taffe 2011). An equally sound and convergent validity of .86 when used with students of similar age as those in the current study was reported. The ERQ-CA was found to be a suitable measure of two specific emotional regulation strategies from childhood through adolescence. Similarly, the pilot study reported an internal consistency of between .72 and .75. Finally, according to Kothari (2008), a questionnaire is a convenient tool for collecting data in survey studies because it is easy to administer particularly when large samples are involved. She also opines that a well-designed questionnaire can yield dependable and reliable findings.

#### *Pro forma summary of students' examination results*

Academic achievement scores were obtained from academic records in the various schools and recorded in Academic Achievement Table. Eight compulsory subjects were used to

provide mid and end-of-term one examination results for 2019. The results of the two examinations were worked out to produce the average score. T-scores were then obtained from the standardized scores to enable comparability among participants from the various schools. The scores were categorized into low, average and high levels. The decision to use students' grades was informed by the fact that it is not only a powerful way of presenting data but a cost effective one as well. Additionally, other researchers have used it in related studies with positive outcomes (Mutweleli, 2014; Otanga, 2016; Ng'ang'a, 2019).

*Data collection*

Permission to collect data was requested from school Principals. The questionnaires were administered by the researcher at the convenience of participants as advised by the respective administrations in each school. Instructions on how to correctly fill the questionnaires were carefully given by the researcher. Form Two class teachers were requested to assist in the exercise and to also avail records of students' academic performance. This was to enable the researcher access each participant's scores for mid-term and end of term one examination.

*Data analysis*

Descriptive and inferential statistics were applied to analyze data. The quantitative data was first obtained then coded for statistical analysis using the Statistical Package for Social Sciences (SPSS), version 21. Demographic information of participants was given using statistical procedures while hypotheses were subjected to inferential statistical procedures for testing. Data analysis was guided by the following null hypothesis:

H<sub>01</sub>: There is no significant relationship between emotional self-regulation and academic achievement. Statistical test: Pearson's Product Moment Correlation Coefficient.

IV. FINDINGS

*General information*

*Return rate of research instrument*

The total number of questionnaires provided to participants was 914. Of these, 748 were collected, translating to an 82% return rate. Among the questionnaires returned, 10 of them, accounting for 1.3% were rejected due to the respondents marking one answer for all the questions or leaving more than five questions unanswered. Therefore, the exact number of questionnaires included in the analysis was 738 translating to an 86.5% of participation 56.5% or 417 males, 31.9% or 319 females and 2 'no response'. Tabulation of actual sample size used in the study is shown in Table 1.

The segment presents a general summary of the research instruments' return rate in regards to the target population. It also discusses participants' demographic data.

Table 1: Participants' return rate

TOS	Target Return rate			Actual Return Rate		
	B	G	Total	B	G	Total
BB	324	-	324	251	-	251
GB	-	234	234	-	217	217
COED	168	127	295	105	102	207
BD	61	-	61	61	-	61
NR						2
Total	553	361	914	417(57.08)	319(42.64)	738 (100)

Note: TOS= Type of School; BB=Boys Boarding; GB=Girls Boarding; COED=Co-educational Day; BD= Boys' Boarding; NR=No Response; B = Boys; G = Girls

Table 2: Distribution of participants by sex

Sex	Frequency	Percent
Male	417	56.5
Females	319	43.2
No response	2	0.3
Total	738	100.0

Note. N = 738

As presented in Table 2, a larger portion of participants 417 (56.5% were males, while 319 (43.2%) were females. 2(0.3%) did not respond. A possible reason for the sex variation could be attributed to irregular spread of male and female students in the sampled schools.

*Description of participants' emotional self-regulation*

Participants' level of emotional self-regulation was determined by using total scores attained by participants' in the overall emotional self-regulation scale. They were also used to compute their means, standard deviation, skewness and kurtosis. Table 3 presents the results.

Table 3: Participants' levels of emotional self-regulation

ESR	Frequency	M	SD	Sk	Kur
Low ESR	55 (7.5)	33.59	5.74	-0.722	1.47
Moderate ESR	402 (54.5)				
High ESR	281 (38.1)				

Note. M = Mean; SD=Standard Deviations; Sk = Skewness; Kur=Kurtosis; ESR= Emotional Self – Regulation

Results in Table 3 revealed that less than a quarter of the participants were rated as having low level of emotional self-regulation. More than half had moderate levels of emotional self-regulation. Those participants categorized as being high in emotional self-regulation were less than half of the total number. The mean score was 33.59 (SD = 5.74) indicating that on average, the participants had a moderate level of emotional

self-regulation. This could be due to the fact that about half of the participants were aged over 17 years and may therefore have developed higher levels of emotional control. Coefficient of skewness was - 0.72, pointing to the fact that the scores were negatively skewed. This suggests that participants who rated themselves highly on emotional self-regulation were more. The kurtosis value was 1.47 implying that the emotional self-regulation scores were normally distributed. The emotional self-regulation variable had two sub-scales: cognitive reappraisal and expressive suppression. Participants' scores on emotional self-regulation were subjected to further analysis to calculate the descriptive statistics for each individual sub-scale. The results are shown in Table 4.

Table 4: Descriptive statistics for emotional self-regulation sub-scales

Subscale	N	Range	Min	Max	M	SD	Sk	Kur
CR	738	24	6	30	21.38	4.11	-0.78	.031
ES	738	16	4	20	12.21	3.79	-0.23	.493

Note. N 738 CR= Cognitive Reappraisal; ES= Expressive Suppression; Min = Minimum; Max = Maximum M = Mean; SD = SD Standard Deviation; Sk = Skewness; Kur = Kurtosis

As Table 4 shows, the range for CR and ES was 24 and 16 respectively while maximum and minimum scores stood at 6 and 4. The mean score for cognitive reappraisal was 21.38 (SD = 4.11) indicating that on average, the participants had a moderate level of cognitive reappraisal. The mean score of expressive suppression was 12.21 (SD = 3.79) indicating that on average, the participants had a moderate level of expressive suppression. Participants' scores in cognitive reappraisal were negatively skewed (-0.78). Expressive suppression subscale scores were also negatively skewed (-0.23) suggesting that the participants rated themselves highly on both subscales. The kurtosis scores were below 2, an indication of normal distribution of scores.

*Descriptive analysis of participants' academic achievement scores*

The participants' examination results at end of term one, were transformed first into Z-score then into T-score. Scores for participants' academic achievement are shown in Table 5 following the descriptive analysis.

Table 5: Descriptive analysis of participants' academic achievement

N	Range	Min	Max	M	SD	Sk	Kur
738	49	26	75	52.36	9.69	-.41	-.26

Note. N=738 Min = Minimum; Max = Maximum; M = Mean; SD = Standard Deviation; Sk = Skewness; Kur = Kurtosis

As observed in Table 5, the range was 49, meaning that the lowest academic achievement score was 26, while the highest was 75. The mean score was (52.36 SD 9.69), indicating that on average, the participants had a moderate level of achievement. The results suggested a skewed and negative score indicating a high performance in majority of students probably due to the participants' level of emotional self-

regulation where majority had moderate rating. The academic achievement scores were of a normal distribution as implied by (-.41) kurtosis score. Initially, scores had first been converted to T-scores (M = 50, SD = 10) which were then used to place participants' in categories. The categories ranged from low, average through to high. Low achievement category fell between 26-42, average 43-59 and high at 60-75 range. Additional analysis was performed to determine the participants' distribution across categories. Table 6 presented the results.

Table 6: Participants' levels of academic achievement

Academic Achievement	Frequency	%
Low	128	17.3
Average	421	57.0
High	189	25.6
Total	738	100.0

Note. N = 738

Table 6 reveals that over half of participants were in the average level category of academic achievement. Approximately, a quarter of participants were in the high academic achievement category, while less than a quarter were in the low academic achievement category.

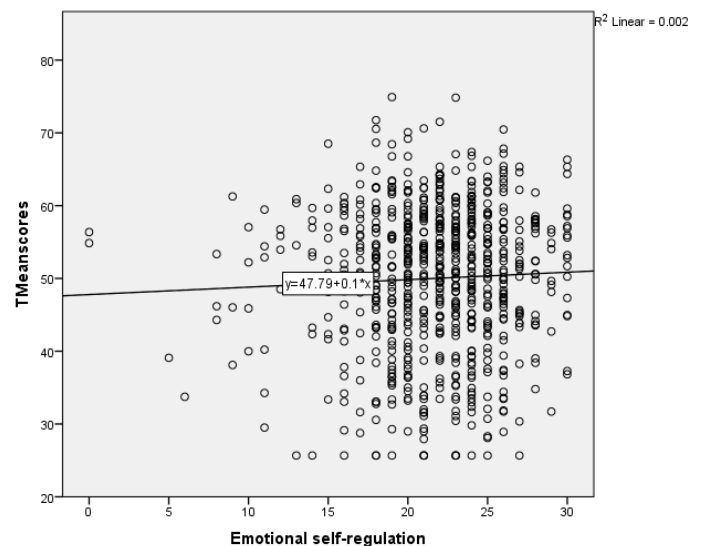
*Hypothesis testing*

The following null hypothesis was tested to determine the correlation between emotional self-regulation and academic achievement

H<sub>01</sub>: There is no significant relationship between students' emotional self-regulation and academic achievement.

Figure 1

Pearson Product Moment Correlation Coefficient was used to conduct a bivariate analysis of correlation to test this hypothesis: Figure 1 shows the findings:



*Scatter Plot on the Relationship between Emotional Self-regulation and Academic Achievement*

Scatter Plot in Figure 1 shows that there was a linear correlation between emotional regulation and academic achievement. The correlation was weak ( $R^2=0.2\%$ ). This implied that emotional self-regulation use contributed 2% to academic achievement. Higher scores of emotional self-regulation correlated with higher scores of academic achievement ( $y = 47.79+0.1x$ ) A Pearson Product Moment Correlation Coefficient ( $r$ ) was run to test the strength of the relation. Table 7 presents the results of the test.

Table 7: Correlation between emotional self-regulation and academic achievement

		Mean score
Emotional self-regulation	Pearson Correlation	.100**
	Sig. (2-tailed)	.007
	N	738

Note. N = 738

\*\* Correlation is significant at  $p < .01$  level (2-tailed)

Table 7 showed a positive relationship between emotional self-regulation and academic achievement,  $r(738) = .100, p < 0.05$ ; a correlation that was significant. The implication here is that, as emotional self-regulation improved, a commensurate improvement in academic achievement was observed. This finding may have been expected given that most studies reviewed showed that emotional self-regulation leads to positive outcomes.

The following two levels of ESR were used to formulate supplementary null hypotheses in-order to further test the hypothesis:

$H_{01.1}$ : There is no significant relationship between students' cognitive reappraisal and academic achievement.

$H_{01.2}$ : There is no significant relationship between students' expressive suppression and academic achievement.

To test these hypotheses, Product Moment Correlation Coefficient was used to conduct a bivariate correlation analysis. Table 8 shows the findings.

Table 8: Correlation between subscales of emotional self-regulation and academic achievement

		CR	ES
Academic	Pearson Correlation	.074*	.071
Achievement	Sig. (2-tailed)	.045	.054
	N	738	738

Note. N= 738; CR = Cognitive reappraisal; ES = Expressive Suppression

\*Correlation is significant at the 0.05 level (2-tailed).

Table 8 reveals a positive and statistically significant correlation between cognitive reappraisal and academic

achievement,  $r(738) = .074, p < 0.05$ . Based on the finding, the first supplementary null hypothesis was rejected. The conclusion therefore was that, cognitive reappraisal was significantly correlated with academic achievement. Hence, the implication that cognitive reappraisal occasioned high academic achievement. Contrastingly, a weak positive correlation, that was not statistically significant between expressive suppression and academic achievement,  $r(738) = .071, p > 0.05$ , was observed. Due to this result, the second null supplementary hypothesis was thus accepted. The researcher's conclusion therefore was that, expressive suppression was not significantly related to academic achievement. This implied that different levels of emotional self-regulation related differently with academic achievement. The fact that cognitive reappraisal correlated significantly with academic achievement could be because this particular strategy has more to do with control of emotions. The opposite happens in expressive suppressing where such emotions remain suppressed thereby interfering with concentration in school work leading to low academic achievement.

V. DISCUSSION OF THE RESULTS

The study was to determine the relationship between emotional self-regulation and academic achievement. A positive and statistically significant relationship was found between emotional self-regulation and academic achievement as shown in Table 7. Further analysis was conducted to establish how significantly specific subscales of emotional self-regulation correlated with academic achievement. A positive statistically significant correlation was found between the first sub-scale of emotional self-regulation (cognitive reappraisal) and academic achievement. Contrastingly, a weak positive relationship that was statistically non-significant was found between the second sub-scale (expressive suppression) and academic achievement as is evident in Table 8. An important implication may be that even in adolescence, some students are able to regulate their emotions quite competently more so, when they employ suitable emotional regulation strategies.

Although both subscales had a correlation with academic achievement, cognitive reappraisal showed better prediction strength to academic achievement. This may be due to the fact that a student who applies cognitive reappraisal strategy that allows some rethinking to modify meaning hence changing emotional impact, perform better. The contrary may hold true for participants who use expressive suppression where one inhibits expression of emotions which in turn inhibits learning.

The result of the study on the association between emotional self-regulation and academic achievement validates the emotional intelligence theory Goleman (2001), one of the theories that the current study was anchored on. Emotional intelligence theory posits that when an individual applies emotional intelligence, they are able to regulate their emotions. With better control of emotions, a student could

concentrate more in school work leading to positive outcomes including high academic achievement.

The study results corroborated those by Calvins et al. (2010) in a longitudinal study among American kindergarten children who reported a significant relationship between emotional self-regulation and academic achievement. Calvin et al. (2010) used children of a different level of schooling, methodology, culture and environment. This may imply that despite such differences, emotional self-regulation is positively correlated to academic achievement. The results also supported those by and Amalu (2018) in a study of secondary school students from Oyo and Benue States, Nigeria. The study investigated the relationship between emotional intelligence and academic achievement with age, intrinsic and extrinsic as moderating variables. Its findings suggested that emotional intelligence which assists in emotional self-regulation positively related to academic achievement. Similar results were reported by Chamundeswari (2013) in a research conducted using a sample of higher level post primary school students. The study's major objective was to find out whether students' emotional intelligence was positively and significantly correlated with academic achievement in science. Results showed that students with higher emotional intelligence demonstrate improved performance in science than students with low emotional intelligence.

The findings supported those by Nzomo (2012) who conducted a study using secondary schools in Nairobi County investigated emotional intelligence of principals and its effects on learners' academic co-curricular performance/achievement. The researcher reported a statistically significant relationship between principals' emotional intelligence and learners' performance in academic and co-curricular activities. The results were also in line with those reported by Sinha and Suman (2013) among high school students where emotional intelligence correlated positively with academic achievement.

The results were also in tandem with those of Bahrami (2017) among university students in that there is a significant relationship between positive cognitive emotional regulation and academic achievement. This was supported by the research findings of Verzeletti (2016) who studied the relationship between emotional regulation strategies and psychosocial wellbeing in adolescence. Their results indicated a positive relationship between cognitive reappraisal strategy as well as positive outcomes in related areas, one of which could be academic achievement. Similarly, as in the current study, results also revealed a negative relationship between expressive suppression and lower wellbeing levels and negative emotions.

These results also corroborate earlier findings by Al-Badareen (2016) that emotional self-regulation strategies influence academic achievement. They are also consistent with those of Mega et al. (2014) who reported a significant influence of emotions on self-regulated learning and motivation which in consequently influence academic achievement.

Locally, Mukholwe (2015) reported a significantly negative relationship between anxiety which is type of emotion and academic performance/achievement. The findings seem to echo those of (Aloka et al. 2014; Gicharu & Sindabi 2013) who found a positive relationship between emotions and academic achievement. These findings may therefore seem to propose that regardless of differences in methodology, study location and cross-cultural differences, emotional self-regulation is a key aspect in academic achievement.

The results were however inconsistent with those reported by Halim (2015) among psychology students in a Malaysian University. The main objective was to identify any relationship between students' emotional self-regulation strategies (cognitive reappraisal and expressive suppression) and academic achievement. The study found a significant relationship between cognitive reappraisal and academic achievement while a non-significant relationship was found between expressive suppression and academic achievement. A regression model revealed that none of the two strategies predicted academic achievement.

## VI. CONCLUSION

In conclusion, objective one of the study was to investigate the correlation between the students' emotional self-regulation and academic achievement. Emotional self-regulation was found to have a relationship with academic achievement that was positive and significant. On analyzing the two subscales of emotional self-regulation both were positively related to academic achievement with cognitive reappraisal significantly predicting academic achievement. This is probably because students who engage more in cognitive reappraisal as a strategy are able to rethink and share their emotions enabling adaptive outcomes in such students (Carlson et al. 2015). On the other hand, expressive suppression, when used, discourages individuals from being aware of their feelings. This makes such individuals resist seeking or receiving help leading to poor coping abilities. It therefore hinders learning which may lead to low academic achievement. Finally, from a majority of studies explored, it seems that emotional self-regulation correlate with academic achievement regardless of level of schooling, cross-cultural differences, methodology and location.

## VII. POLICY RECOMMENDATION

The study objective sought to establish the relationship between emotional self-regulation and academic achievement. A positive statistically significant relationship was revealed. The recommendation therefore, is for secondary school curriculum to include content geared towards application of appropriate emotional self-regulation strategy to enable students rethink emotional experiences before acting. This may prove to be beneficial in learning resulting in high academic achievement.

### *Recommendation for further research*

The study was correlational in nature meaning that it was deficient on causal inferences. Future studies could therefore



consider other approaches such as mixed method in investigating academic achievement. Longitudinal study design could also be used by future researchers in order to follow developmental changes in emotional self-regulation behaviors.

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