

# Relationship between Dispositional Optimism and Academic Achievement of Form Two Students in Nyandarua County, Kenya

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**Abstract**— The purpose of this research was to examine the existing relationship between dispositional optimism and academic achievement of form two students in Nyandarua County, Kenya. The research was guided by Expectancy-Value theory and Stage-Environment Fit theory. Convergent mixed methods research design was adopted. The target population consisted of 16,813 form two learners within 173 public high schools in Nyandarua County. Purposive, stratified, proportionate and random sampling were used to select 391 students from 10 schools. Quantitative data were collected using a self-reported questionnaire comprising of items from the Life Orientation Test Revised. Students' academic achievement scores were obtained from school academic records. Qualitative data were collected through a semi-structured interview schedule. Using SPSS, quantitative data were analyzed descriptively and inferentially. Qualitative data were analyzed thematically as per the objectives of the study. The results indicated a significant positive correlation ( $r(376) = 0.46, p < .01$ ) between dispositional optimism and academic achievement. Between the sub scales of dispositional optimism, optimism correlated positively ( $r(376) = 0.60, p < .01$ ) with the respondents' academic achievement while pessimism correlated negatively ( $r(376) = -0.40, p < .01$ ) with academic achievement. From the findings, the study recommends that teachers and parents should foster positive expectations and intrinsic motivation among learners. The utility value for education should be nurtured within a stimulating learning environment so that learners can desire to set and attain academic goals.

**Index Terms**— Academic achievement, dispositional optimism, optimism, pessimism.

## I. INTRODUCTION

Students who attend formal schooling are equipped with the skills needed to support their country's political, social, and economic development. The degree to which these abilities are achieved causes disparities among citizens to either increase or decrease (Sosa et al., 2018). It makes sense that the Organization for Economic Cooperation and Development (OECD) considers student acquisition of pertinent values, attitudes, skills, and knowledge to be a major indicator of the effectiveness of educational systems (OECD, 2018). In addition, academic achievement, as reflected by test scores and grade points, is deemed as a key to unlock infinite career opportunities and job security (Nesa & Haider, 2020; Arul & Vimala (2012).

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Academic achievement is conceptualized by Arul and Vimala (2012) as the measure of knowledge gained from formal learning. When students fail to achieve academic goals, they are likely to fall into a vicious cycle of life disappointments (Tanyi & Egbe, 2019). Studies on academic underachievement have cited poor administrative leadership, low tutor motivation, poor pedagogical skills and insufficient instructional resources (Kariuki, 2018; Kimani et al., 2013; Wambugu, 2018). Nevertheless, it should be noted that these attributes are out of learner's control. Dweck et al. (2011) outlines the individual's role in the learning process. Research by Fan and William (2018) indicate that learners' motivational resources and proficiencies of their capacities play a major part in predicting academic achievement. One of the motivational resource considered in this research is dispositional optimism.

Optimism is defined as the overall belief that there will be more positive things in the future than unpleasant things (Scheier & Carver, 1985). As a result, dispositional optimism is an intrinsic and stable inclination that produces a condition of general adaptability to setbacks over time (Peterson, 2000). Optimism psychologists see optimism and pessimism as individual differences that reflect a person's future expectations. Under identical conditions, optimists work hard and see opportunities, whereas pessimists give up and focus on what is missing (Carver & Scheier, 2014). Armed with dispositional optimism, learners who face academic failures exert effort and continue with the confidence of overcoming and reaching their academic goals. This way, dispositional optimism is expected to correlate positively with academic achievement.

The interaction between dispositional optimism and academic achievement is evidenced by several global and regional studies. However, a majority of the studies are fragmented or carried out amongst an older sample of tertiary students. Largely, these studies cannot be generalized locally without caution, since they were done in developed and oriental countries. Varying the location setting, population age, methodology and research design would yield applicable findings to the current location of study.

The study objective was to establish the relationship between dispositional optimism and academic achievement among secondary school students in Nyandarua County.

For the above purpose to be realized, the research will be further explained from the following aspects: review of related literature, research design, methodology, findings, discussion, and conclusion.

## II. LITERATURE REVIEW

The Expectancy-value Theory of Achievement Motivation (Eccles et al., 1983) suggests that motivation for achievement related choices are determined by expectancy and subjective task value. Expectancy is the probable attainment of a goal through directed actions while value is the worth ascribed to the desired outcome (Vroom, 1964). In essence, learners are motivated to pursue a goal if they expect to succeed, and if they perceive the goal significant. This theory further postulates that individuals attempt to fit their behaviour on what seems desirable but also keep off from pursuing what is not beneficial. Expectancy is also about having a sense of confidence or doubt as regards achieving a goal. If an individual has sufficient confidence, they can engage and direct their effort towards a goal and sustain it. Without confidence, an action is not taken (Scheier et al., 2001).

A wide range of studies show a direct link on the relationship between dispositional optimism and academic achievement.

A study was carried out in Istanbul by Erdogdu (2020) to investigate whether academic achievement had a relationship with optimism and life satisfaction of school going children. 435 (220 males, 215 females) secondary school students with mean age of 16 years were surveyed using pro forma, LOT and Life Satisfaction Scale. Data were analysed using regression and Pearson moment correlation coefficient. It was found that optimistic thinking increased academic achievement, which in turn enhanced life satisfaction.

In a quest to confirm that academic performance is among important prerequisites in achieving life opportunities, Tus (2020) established the relationship between optimistic motivation and academic performance among senior secondary school students. A sample of 130 participants from a Catholic senior school in Philippines was assessed using the Academic Motivation Scale (AMS). A descriptive correlational design was used for research while the data was analysed through Pearson moment correlation. The researcher found the participants' motivation to be above average, while the level of academic performance very satisfactory.

A study with contradicting results was conducted by Wu (2018) in a survey among 349 Mississippi college students. Significance of career optimism, apparent barriers and academic persistence was tested. The variables were correlated through SPSS using a Social Cognitive Career Theory approach. From the findings, career optimism did not predict persistence towards graduation of participants. Although the study by Wu reported statistically significant negative association between career optimism and academic persistence, it was not conclusive on academic achievement. Similarly, Mackenzie et al. (2020) did a longitudinal study to investigate whether there is a statistical association between optimism and grade attainment among 334 university students. The results, obtained through path analysis indirectly indicated that academic performance was least predicted by higher amount of optimism. These findings may only be generalized within a sample of high achieving students in the university. By conducting a study among secondary school going children, the current research tested whether the analogy can hold across the teenage academic sample. More so, a convergent mixed method was the primary design, to confirm the analogy of the reviewed association albeit based on cross-sectional and correlational approach.

## III. RESEARCH METHODOLOGY

### a. Research Design

The study used a convergent mixed methods research methodology. According to Creswell (2018), this strategy entails gathering both quantitative and qualitative data independently and analyzing them individually before combining the results to see if the findings corroborate or contradict each other. Both types of data were gathered concurrently, with a questionnaire for quantitative data and an interview schedule for qualitative data. An impression of the thoughts, feelings, and behaviour of dispositional optimism were related to academic achievement in order to make future predictions. The design was considered appropriate for the study with the assumption that both qualitative and quantitative data provide different types of information. The quantitative information collected was used to test hypotheses to obtain an objective conclusion as proposed by Cooper and Schindler (2006).

### b. Sampling Techniques

The study used four sampling procedures: purposive, stratified, proportional, and simple random sampling. Purposive sampling was used to choose Nyandarua County, public secondary schools, and form two students. Stratified sampling was utilized to select schools with the county's list of public schools serving as the sample frame. As a result, stratification was based on school type and residential status. Using proportional sampling, 10 schools were chosen for sub-group representation based on the population size of each stratum (Stangor, 2014). Thus, one girls' boarding school, one boys' boarding school, 3 co-educational boarding schools and 5 co-educational day schools were picked. Simple random sampling was used to pick 391 students, from the 10 sampled schools. This enabled each participant equal and independent possibility of being picked (Cohen et al., 2017).

### c. Research Instruments

A questionnaire, a semi-structured interview schedule and an academic pro forma summary for students was used. While the questionnaire was adapted, the interview schedule was created by the researcher. The authors of the scales gave their permission for research use with proper citation. The questionnaire comprised of students' demographic information; school code, student's number, type of school and school's residential status. Additionally, it comprised of the Life Orientation Test-Revised (LOT-R) adapted from Scheier et al. (1994) with 10 items that measured dispositional optimism. Academic pro forma table was used to record data on students' academic performance for two terms. The interview guide for 40 students was administered to a sub-set of the 391 selected students.

### d. Data Collection Techniques

A research authorization letter was sought from Kenyatta University Graduate School, then an approval from the Kenyatta University Ethics Review Committee and a research permit from the National Commission for Science Technology and Innovation (NACOSTI). This gave way to obtaining research authorization from the Nyandarua County Commissioner, County Director of Education and all the principals of the selected schools. Informed consent was sort from the participants. On the designated date and time of data

collection, the researcher delivered research tools to the school for administration. The researcher in the company of class teachers administered the questionnaires with clear instructions on how to respond. Thirty minutes were allocated to fill the questionnaire after which the scripts were collected by the researcher.

Using the admission numbers of the respondents, the class teachers were requested to give 2022 end of term one and term two examination scores. The interview schedule followed immediately after filling of the questionnaires. Responses were recorded on the interview schedule sheet, a procedure that was undertaken within 40 minutes.

**e.Data Analysis**

After collection, the raw data from the questionnaires was coded, entered into the computer and cleaned to check for incorrect entries, missing data and possible outliers. Quantitative data were analyzed using descriptive and inferential statistics using SPSS. Descriptive statistics such as frequencies, percentages, measures of central tendency, and measures of variability was used to describe sample characteristics while graphs and frequency tables was used in data presentation. Inferential statistics was used to test hypotheses using suitable statistical tests at  $\alpha = 0.05$ . This led to the testing of the following null hypotheses:

$H_{01.1}$ : There is no significant relationship between optimism and academic achievement.

$H_{01.2}$ : There is no significant relationship between pessimism and academic achievement.

A bivariate correlation analysis was conducted to test the hypothesis using Pearson Product Moment Correlation Coefficient.

Qualitative data were collected from the selected 40 respondents, 20 boys and 20 girls. Notes were taken to record the responses given on the interview schedules. The results obtained from interviews were analyzed using thematic analysis technique. According to Braun and Clarke (2012), this technique involves identifying, examining and reporting patterns (themes) within data. On the steps followed while conducting thematic analysis, the researcher was guided by the guideline provided by (Akinyode& Khan, 2018). The guideline involves a five-step process including data logging, anecdotes, vignettes, data coding, and thematic networks.

IV. FINDINGS

**a.Return Rate of the Research Instruments**

All the 391 questionnaires were collected by the researcher on the spot. However, during data coding and cleaning, 378 of the expected questionnaires were used for analysis. Thirteen questionnaires were discarded because, 3 respondents' admission numbers could not be matched for exam scores, 6 responded in a defined pattern and 4 had large portions of incomplete responses.

**Table 1.**Return Rate of the Research Instruments

School type	QA	QR	%
Co-educational day	191	188	49.74
Co-educational	120	116	30.69

boarding			
Boys boarding	40	38	10.05
Girls boarding	40	36	9.52
Totals	391	378	100

*Note.* QA = Questionnaires administered; QR = Questionnaires returned; % = Percentage of the total returned questionnaires

**b.Demographic Information**

The types of school involved were boys, girls and co-educational. School residential status involved was day and boarding. As shown in **Table 2**, 188 respondents accounting for 49.1% were drawn from day schools and 50.3% from boarding schools. While the boarding schools had all varieties of gender represented, day schools with girls and boys only were not identified within the population of study.

**Table 2.**Demographic Information

	Frequency			Total	Percentage
	Girls	Boys	Co-Ed		
Valid Day school	-	-	188	188	49.7
Boarding school	36	38	116	190	50.3
Total	36	38	304	378	100

*Note.* Co-Ed = co-educational

**c.Descriptive Statistics of Respondents' Dispositional Optimism**

Descriptive statistics of the respondents' overall scores in dispositional optimism were analysed so as to get the mean, range, standard deviation, skewness and kurtosis. The findings are summarised in **Table 3**.

**Table 3.**Descriptive Statistics of Dispositional Optimism

	N	Range	Min	Max	M	SD	Sk	Kur
DO	378	24.00	6.00	30.00	20.70	5.84	-.73	-.24

*Note.* N = 378. Min = minimum; Max = maximum; M = mean; SD = standard deviation; Sk = skewness; Kur = kurtosis; DO = dispositional optimism

As indicated on **Table 4**, both optimism and pessimism had minimum scores of 3, maximum scores of 15 and a range of 12. Seemingly, more students scored higher on pessimism because optimism had a mean of 10.76 (SD = 2.54) as compared to pessimism which had a mean of 11.07 (SD 2.62). Majority of the respondents from the findings rated themselves low on expectation of success for the future which

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could be reflected on their studies and attainment of academic grades.

**Table 4.** Descriptive Statistics of Dispositional Optimism Sub Scales

	N	Range	Min	Max
Optimism	378	12.00	3.00	15.00
Pessimism	378	12.00	3.00	15.00
Valid N (listwise)	378			

Note. N = 378. Min = minimum; Max = maximum; M = mean; SD = standard deviation

As indicated on **Table 5**, dispersion of scores was least among students in co-educational boarding schools, whose minimum and maximum score on dispositional optimism was 22.00 and 26.00 respectively. Boys' boarding participants also had a low range of 6.00. The highest dispersion of scores was noted among co-educational day and girls' boarding schools whose range was 24.00 and 23.00 respectively. On average dispositional optimism score, boys boarding schools had the highest score ( $M=26.26$ ,  $SD=1.18$ ), followed by co-educational boarding schools ( $M=24.08$ ,  $SD=1.04$ ). The girls boarding schools came in third ( $M=20.78$ ,  $SD=9.38$ ) while the co-educational day schools trailed ( $M=17.47$ ,  $SD=5.25$ ). If the high academic grades boys boarding categories are required for admission is anything to go by, there is a likely indication that high academic achievers also possess high levels of optimism.

**Table 5.** Descriptive Statistics of Dispositional Optimism by School Type

Type of school	N	Min	Max	Range	M	SD
Boys boarding	38	22.00	28.00	6.00	26.26	1.18
Girls boarding	36	7.00	30.00	23.00	20.78	9.38
Co-educational day	188	6.00	30.00	24.00	17.47	5.25
Co-educational boarding	116	22.00	26.00	4.00	24.08	1.04
Total	378	6.00	30.00	24.00	20.78	5.84

Note. N = 378. Min = minimum; Max = maximum; M = mean; SD = standard deviation;

As indicated on **Table 6**, both day and boarding schools recorded similar range of scores whose minimum was 6.00 and maximum 30.00. On average, boarding schools obtained a higher mean score ( $M=22.73$ ,  $SD=5.72$ ) on disposition optimism than their day school counterparts ( $M=18.64$ ,  $SD=5.25$ ). This is a likely indication that boarding school participants possess optimism among other factors to enable them achieve academically.

**Table 6.** Descriptive Statistics of Dispositional Optimism by School's Residential Status

SRS	N	Min	Max	Range	M	SD
DS	188	6.00	30.00	24.00	18.64	5.72

BS	190	6.00	30.00	24.00	22.73	5.24
Total	378	6.00	30.00	24.00	20.78	5.84

Note. N = 378. SRS = school residential status; Min = minimum; Max = maximum; M = mean; SD = standard deviation; DS = day schools; BS = boarding schools

As pointed out on **Table 7**, the minimum t-score on academic achievement was 35.42 and the maximum 76.79. It is also indicated that the scores were skewed to the positive direction (.58), an indication that most of the respondents' performance was low. As regards kurtosis, the coefficient score was -.34 which indicated that the distribution was slightly platykurtic. Additionally, the table shows that raw scores were converted to standardized T-scores with a mean of 50 and a standard deviation of 10.

**Table 7.** Descriptive Statistics of Academic Achievement T Scores

	N	Range	Min	Max	M	SD	Sk	Kur
Ac Ach T-score	37	41.37	35.4	76.7	50.0	10.0	.5	-.34
Valid N (listwise)	37							

Note. N = 378. Ac Ach = academic achievement; Min = minimum; Max = maximum; M = mean; SD = standard deviation; Sk = skewness; Kur = kurtosis

The lowest minimum t-score (35.42) was recorded in co-educational day school while the highest minimum t-score (49.90) was recorded in a boys' boarding and co-educational boarding schools' category. On the other hand, the lowest maximum t-score was recorded in co-educational school and the highest minimum score from a boys' boarding category. Girls boarding category got the highest mean score of 67.43 ( $SD=3.77$ ,  $Range=28.96$ ), followed by boys boarding category ( $M=61.60$ ,  $SD=3.24$ ,  $Range=14.48$ ). Third on the list were the co-educational boarding schools and lastly co-educational day schools with means of 54.16 ( $SD=3.11$ ,  $Range=10.34$ ) and 41.75 ( $SD=3.77$ ,  $Range=12.41$ ) respectively.

**Table 8.** Descriptive Statistics of Academic Achievement T Scores by School Type

Type of school	N	Min	Max	Range	M	SD
BB	38	49.90	64.38	14.48	61.60	3.24
GB	36	47.83	76.79	28.96	67.43	8.74
Co-D	188	35.42	47.83	12.41	41.75	3.77
Co-B	116	49.90	60.24	10.34	54.16	3.11
Total	378	35.42	76.79	41.37	50.00	10.00

Note. N = 378. M = mean; SD = standard deviation; BB = Boys Boarding; GB = Girls Boarding; Co-D = Co-educational Day; Co-B = Co-educational Boarding

The findings on **Table 9** indicated that the lowest minimum score of 35.42 was obtained in the day school category as compared to the highest minimum score of 47.83 in the boarding school category. On the other hand, the lowest maximum score of 47.83 was obtained from a day school

while the highest maximum score of 76.79 was from a boarding school category. The average mean for academic achievement was higher in boarding school ( $M=55.56$ ,  $SD=9.13$ ) as contrasted to day school ( $M=44.38$ ,  $SD=3.77$ ).

**Table 9.** Descriptive Statistics of Academic Achievement T Scores by School's Residential Status

SRS	N	Min	Max	Range	M	SD
DS	188	35.4 2	47.8 3	12.41	44.3 8	3.77
BS	190	47.8 3	76.7 9	41.37	55.5 6	9.13
Total	378	35.4 2	76.7 9	41.37	50.0 0	10.00

Note. N = 378. SRS = school residential status; M = mean; SD = standard deviation; DS = day schools; BS = boarding schools

The obtained t-scores on **Table 10** were categorized into three; those with scores below 40 as low, between 41 to 59 as average and those with over 60 as high. 237 (62.7%) of all respondents had an average level of academic achievement. While 69 (18.3%) had a high level, 72 (19%) obtained low level of academic achievement.

**Table 10.** Academic Achievement Levels

Ac Ach levels	Frequency	Percent
Low	69	18.3
Moderate	237	62.7
High	72	19.0
Total	378	100.0

Note. N = 378. Ac Ach = academic achievement

**d. Hypothesis Testing**

To establish the relationship between dispositional optimism and academic achievement, the null hypothesis was tested;  $H_{01}$ : There is no significant relationship between dispositional optimism and academic achievement. A bivariate correlation analysis was done using Pearson Product Moment Correlation Coefficient. Findings in Table 11 indicate a statistically significant positive correlation between dispositional optimism and academic achievement,  $r(376) = 0.46$ ,  $p < 0.01$ . The implication is that, increase in dispositional optimism leads to a corresponding increase in academic achievement. From these findings, the null hypothesis was rejected and the alternative hypothesis accepted.

**Table 11.** Correlation between Dispositional Optimism and Academic Achievement

		Ac Ach
DO	Pearson Correlation	.46**
	Sig. (2-tailed)	.000
	N	378

Note. N = 378. Ac Ach = academic achievement; DO = dispositional optimism

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

After finding a significant positive relationship between dispositional optimism and academic achievement, the researcher advanced the test to find out if the findings are similar when the two subscales of dispositional optimism are correlated singly with academic achievement. The following supplementary null hypotheses were formulated;

$H_{01.1}$ : There is no significant relationship between optimism and academic achievement.

$H_{01.2}$ : There is no significant relationship between pessimism and academic achievement.

**Table 12** shows a positive significant relationship between optimism and academic achievement ( $r(376) = 0.60$ ,  $p < 0.01$ ). The first supplementary null hypothesis was rejected. The conclusion was that, a rise in optimism leads to a gain in academic achievement. Conversely, the relationship between pessimism and academic achievement was found to be negative and significant ( $r(376) = -0.40$ ,  $p < 0.01$ ). The second supplementary null hypothesis was thus rejected. The conclusion was that when scores for pessimism go up, results on academic achievement diminish.

**Table 12.** Hypotheses Testing of Optimism and Pessimism Subscales and Academic Achievement

		Ac Ach
Optimism	Pearson Correlation	.60**
	Sig. (2-tailed)	.000
	N	378
Pessimism	Pearson Correlation	-.40**
	Sig. (2-tailed)	.000
	N	378

Note. N = 378. Ac Ach = academic achievement

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

**e. Discussion of the Findings**

Findings indicated a statistically significant positive correlation between dispositional optimism and academic achievement. A further test indicated a positive significant relationship between optimism and academic achievement. On the contrary, the relationship between pessimism and academic achievement was negative and significant. The implication is that; dispositional optimism is an important factor in motivating students to attain their academic goals. The findings are in line with the expectancy-value theory of achievement motivation by Eccles et al. (1983). The theory postulates that students' motivation for achievement is determined by expectation of success and the perceived worth of the achieved goal. Inversely, students will fail to attain a goal if they foresee failure and if the attained goal has low significance to them.

These findings were in agreement with Karhu, et al (2022) on investigating the association between optimism, pessimism and cognitive abilities among young and middle-aged adults.

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It was observed that those who endorsed higher levels of optimism and lower pessimism were linked to higher reasoning skills. Contrary to this, those who displayed higher pessimism and lower optimism were linked to low memory output.

Icekson et al. (2019) observed that it is not always the case for higher optimism and lower pessimism to predict higher academic performance among students. To support this evidence through a longitudinal study, it was established that high optimism can be linked to academic non-performance if the participants' convictions of success are blown out of proportion. To sum it up, high dispositional optimism was linked to low academic performance when individuals were over-confident and bore unrealistic prospects.

Based on this discussion, regardless of the methodology, sample size, cultural setting and age difference, the current study established a significant relationship between dispositional optimism and academic achievement in Kenya. The relationship between optimism and academic achievement was significant and positive while pessimism and academic achievement was significant and inverse. Going by the relationship demonstrated across various dynamics, dispositional optimism plays a key role in determining students' motivation in academic achievement. Learners should be guided on self-motivation and the worth of academics so that they work hard to achieve the set goals.

The mixed results from the qualitative analysis that dispositional optimism can positively or negatively influence academic performance agree and disagree in equal measure with the findings of previous studies done.

**Table 13.** Summary of the Qualitative Analysis of Themes on Dispositional Optimism

Dispositional Optimism Themes	Girls	Boys	Total
Motivation	2 (20%)	3 (30%)	5 (50%)
Hardworking	1 (10%)	1 (10%)	2 (20%)
Lack of motivation	1 (10%)	0	1 (10%)
Lack of interest and motivation	1 (10%)	0	1 (10%)
Total	5 (50%)	4 (40%)	9 (90%)

### V. CONCLUSIONS AND RECOMMENDATIONS

#### a. Conclusions

Findings on the relation between dispositional optimism and academic achievement led to the conclusion that learners who possess optimism are more likely to do better than those who demonstrate pessimism. From these findings, there is likelihood that optimists' expectation to achieve influence their hard work, since they anticipate value from academics. On the other hand, pessimists are likely to give up trying, if they don't expect good academic results and if the cause of their pursuit is perceived as unrewarding.

#### b. Recommendations

Based on the findings of this research, it is recommended for teachers and parents to foster positive expectations and

intrinsic motivation among learners. The utility value for education should be nurtured within a stimulating learning environment so that learners can desire to set and attain academic goals. Additionally;

- i. Future researchers could consider looking at other psychological aspects such as intelligence, beliefs, emotions and attitudes, against academic achievement.
- ii. The study could be corroborated in other counties of Kenya.
- iii. Further research could be completed in private schools and other categories such as national, extra-county, county and sub-county categories.
- iv. The current study was purely cross-sectional. Future studies could consider longitudinal research to better understand cause-and-effect relationships among the study variables.

### REFERENCES

- [1] Akinyode, B. F., & Khan, T. H. (2018). Step by step approach for qualitative data analysis. *International Journal of Built Environment and Sustainability*, 5(3). <https://doi.org/10.11113/ijbes.v5.n3.267>
- [2] Arul, J. M., & Vimala, A. (2012). School environment and academic achievement of standard IX students. *Journal of Educational and Instructional Studies in the World*, 2(3), 2146-7463.
- [3] Braun, V., & Clarke, V. (2012, January). Thematic analysis. ResearchGate; American Psychological Association. [https://www.researchgate.net/publication/269930410\\_Thematic\\_analysis](https://www.researchgate.net/publication/269930410_Thematic_analysis)
- [4] Carver, C. S., & Scheier, M. F. (2014). Dispositional optimism. *Trends in Cognitive Sciences*, 18(6), 293-299. <https://doi.org/10.1016/j.tics.2014.02.003>
- [5] Cohen, L., Manion, L. & Morrison, K. (2017). *Research methods in education* (8th ed.). Routledge.
- [6] Cooper, D., & Schindler, P. (2006). *Business research methods* (11th ed.). McGraw-Hill International Edition.
- [7] County Director of Education (2021). Nyandarua County KCSE 2021 Examination Analysis. MOE, Nyandarua.
- [8] Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage publications.
- [9] Dweck, C. S., Walton, G., & Cohen, G. L. (2011). Academic tenacity: Mindsets and skills that promote long-term learning. Paper prepared for the Bill and Melinda Gates Foundation.
- [10] Eccles, J. S., Adler, T., Futterman, R., Goff, S. B., Kaczala, C.M., Meece, J., & Midgley, C. (1983). Expectancies, values and academic behaviours. In J. Spence, (Ed.), *Achievement and Achievement Motives*. W. H. Freeman. 1 (10%)
- [11] Erdogdu, Y. M. (2020). The mediating role of academic achievement in the relationship between optimism and life satisfaction. *Education and Science*, 46(205), 395-407. <https://doi.org/10.15390/EB0110898>
- [12] Fan, W., & Williams, C. (2018). The mediating role of student motivation in the linking of perceived school climate and achievement in reading and mathematics. *Frontiers in Education*, 3, 50. <https://doi.org/10.3389/educ.2018.00050>
- [13] Icekson, T., Kaplan, O., & Slobodin, O. (2019). Does optimism predict academic performance? Exploring the moderating roles of conscientiousness and gender. <https://doi.org/10.1080/03075079.2018.1564257>
- [14] Karhu, J. (2022). Dispositional optimism and pessimism in association with cognitive abilities in early and middle adulthood. *Personality and Individual Differences*, 196. <https://doi.org/10.1016/j.paid.22.111710>
- [15] Kariuki, J. K. (2018). Principal's transformational leadership and teachers' performance among public county secondary schools in Nyandarua County, Kenya. (unpublished master's thesis). Catholic University of Eastern Africa, Kenya.
- [16] Kimani, G. N., Kara, A. M., & Njagi, L. W. (2013). Teacher factors influencing students' academic achievement in secondary schools in Nyandarua, Kenya. *International Journal of Education and Research*, 3, 270. <http://hdl.handle.net/123456789/6929>

- [17] MacKenzie, L. R., Shanahanlan, L., Fischersarah, S., & Fortney, K. (2020). Hope and optimism as predictors of academic performance and subjective well-being in college students. *Learning and Individual Differences*, 81. <https://doi.org/10.1016/j.lindif.2020.101906>
- [18] Nesa, H., &Haider, Z. (2020). Impact of family environment on academic achievement among secondary school students. *UGC Care Journal*, 40(3).
- [19] Nyandarua County Education Office. (2019). KCSE Analyses 2016-2019, Nyandarua County.
- [20] OECD (2018). The future of education and skills. Education 2030.
- [21] Peterson, C. (2000). The future of optimism. *American Psychologist*, 55(1), 44-55.
- [22] Scheier, M. F., & Carver, C. S. (1985). Optimism, coping and health: Assessment and implication of generalized outcome expectancies. *Health Psychology*, 4(3), 219-247. <https://doi.org/10.1037//0278-6133.4.3.219>
- [23] Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67(6), 1063-1078. <https://doi.org/10.1037//0022-3514.67.6.1063>
- [24] Scheier, M. F., Carver, C. S., & Bridges, M. W. (2001). Optimism, pessimism and psychological well-being. In E. C. Chang (Ed.), *Optimism and pessimism: implications for theory, research and practice*. American Psychological Association, 189-216.
- [25] Sosa, K. H., Hofstijzer, M., Gortazar, L., & Ruiz, M. (2018). Education in the EU: Diverging Learning Opportunities. World Bank Group.
- [26] Stangor, C. (2014). *Research methods for behavioural sciences* (5th ed.). Wardsworht/Cengage learning.
- [27] Tanyi, E., &Egbe, G. (2019). The student's Adjustment Inventory (SAI) as a cultural tool: To measure the levels of adjustment of secondary students in Cameroon. *International Journal of Research and Innovation in Social Science*, 3(10), 2454-6186.
- [28] Tus, J. (2020). Academic stress, academic motivation, and its relationship on the academic performance of the senior high school students. *Impact factor*, 8(11).
- [29] Vroom, V. H. (1964). *Work and motivation*. Willey.
- [30] Wambugu, D. K. (2018). Influence of teachers' motivation on students' performance in KCSE in public secondary schools in Kinangop sub County Nyandarua County, Kenya. *Journal of Research & Method in Education*, 8(6), 7-12. <http://ir.mksu.ac.ke/handle/123456780/2242>
- [31] Wu, H. W. (2018). The role of career optimism and perceived barriers in college students' academic persistence: a Social Cognitive Career Theory Approach. Dissertations.