

Relationship Between Students' Sense of Belonging and Academic Performance among Form Five Students of the North East Region in Botswana

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DOI: <https://doi.org/10.47772/IJRISS.2026.100400083>

Received: 03 April 2026; Accepted: 09 April 2026; Published: 28 April 2026

ABSTRACT

Research on academic achievement has shown a global decline in performance. A similar trend is evident in the North East region of Botswana, where form five students have experienced a drop in academic outcomes. This poor performance has led to many students missing opportunities to progress to tertiary institutions for further studies. Consequently, this study sought to examine the relationship between students' sense of belonging and academic performance among form five students in the North East region of Botswana. The study was anchored in the self-determination theory proposed by Deci and Ryan (2000). A correlational research design using a quantitative approach was adopted. The target population consisted of 2,632 form five students drawn from all three public senior secondary schools, while the sample included 407 students from these schools. Sampling techniques applied were purposive sampling, proportionate stratified sampling, and simple random sampling. Data collection instruments included the Psychological Sense of School Membership Scale (PSSMS) developed by Goodenow (1993) and students' academic records. Both descriptive and inferential statistical analyses were conducted using SPSS Version 25. Pearson's product-moment correlation analysis was used to test the hypotheses at a significance level of 0.05. The findings indicated that students' sense of belonging ($r = .289, p < .001$) had a significant positive correlation with academic performance. Based on these findings, it is recommended that teachers and counsellors foster collaborative learning environments through structured group projects and mentorship programs that deliberately encourage positive peer relationships and support academic collaboration among students.

Keywords: Academic Performance, Sense of Belonging, Senior Secondary Schools

INTRODUCTION

Academic performance is a key indicator used to measure and evaluate the level of educational achievement in many regions across the world. As a result, it has attracted significant attention from scholars and other stakeholders in the education sector, with findings playing a vital role in enhancing accountability among teachers and school administrators.

Academic performance, which stems from formal education systems within any society, is essential for the economic growth and development of every nation globally. However, the quality of academic performance is declining, making it a worldwide concern. This downward trend is also evident in developed European countries. According to Harper (2023), results from the Organisation for Economic Co-operation and Development 2022 Programme for International Student Assessment revealed an unprecedented decline in student achievement globally. Between 2018 and 2022, average scores in reading, science, and mathematics across OECD countries fell, indicating that a considerable number of secondary school students are performing poorly. The report further highlights that Europe experienced a marked decline in educational outcomes, particularly in countries such as Germany, Iceland, Netherlands, Norway, and Poland, all of which recorded notable setbacks.

Experts have also pointed out the multifaceted nature of this decline and the significant influence of persistent challenges within education systems. In many cases, institutions lack adequate resources to support students,

making the level of assistance provided by teachers and school staff a critical factor (Harper, 2023). Schmid and Garrels (2021) further note that students who struggle academically often constitute the majority of those seeking help from their parents with homework, suggesting that engagement in homework may reflect a learner's need for additional support.

A study conducted in Nigeria by David (2021) reports poor academic outcomes in public examinations, with only 13.76% of candidates attaining passes in the required five subjects, while 83% failed. Most students who took examinations administered by various examining bodies performed poorly and did not achieve the minimum credit passes necessary for progression to higher education institutions. In a related context, Okoth et al. (2020) contend that data from Kenya show below-average academic performance between 2010 and 2016, particularly in Kuria West Sub County, where only a small number of students qualified for university admission. This suggests limited transition to postsecondary education and, ultimately, reduced employment prospects for many learners.

Although Botswana has achieved notable progress in educational reforms, difficulties remain in ensuring equitable academic outcomes. Future initiatives should focus on reducing disparities and ensuring that targeted academic standards are attained through consistent policy implementation and well-planned interventions. The Tertiary Education Statistics Botswana indicates that the proportion of candidates attaining Grade C or higher in core subjects has declined, with only 34.2% of the 32,470 Botswana General Certificate of Secondary Examinations candidates progressing to tertiary education. This reflects a notable decline of 16.8% compared to the 2019/20 rate of 51.0%. Mphale and Mhlauli (2022) argue that concerns have been raised about declining academic performance across all levels of education in Botswana, including the Primary School Leaving Examination, Junior Certificate Examination, and the Botswana General Certificate of Secondary Education. Ramothonyana et al. (2021) identify contributing factors such as insufficient teacher support and weak school leadership. Despite recommendations for possible solutions, including improving classroom interaction and implementing learner-centered teaching approaches, the decline in performance has continued.

Students' sense of belonging in educational environments has increasingly been acknowledged as a key factor influencing academic performance, personal well-being, and intrinsic motivation. Verbree et al. (2025) define sense of belonging as students' perception of inclusion, comfort, and support from both the school and their peers within academic settings. Existing research highlights that a low sense of belonging can adversely affect academic performance, especially among students from marginalized or minority backgrounds.

MATERIALS AND METHODS

Research Design

This study adopted a correlational research design. Taherdoost (2022) explains that correlational approaches aim to examine two key aspects of relationships between two or more variables within a sample or across an entire population, specifically to establish whether such relationships exist. This design was therefore appropriate, as the study focused on the relationship between students' sense of belonging and their academic performance.

Study Locale

The study was conducted in the North East District and focused on all form five students across three senior secondary schools in the region. The area was selected because it has consistently failed to achieve the target pass rate of 60% in each senior secondary school over the past five years, as reported in the Botswana Examinations Council (2024) BGCSE Results Summary. This shortfall has consequently led to a decline in the rate at which students transition to tertiary institutions.

Population Selection

Purposive, stratified and simple random sampling were used to draw the sample of this study. Krejcie & Morgan (1970) table of sample determination was used to get a total of 407 students.

Description of Research Instruments

Data collection instruments comprised a students' questionnaire and a proforma summary of students' examination results. The questionnaire was selected because, as noted by Kothari (2013), it is a highly appropriate tool for data collection in survey research, particularly when dealing with large sample sizes. He further explains that questionnaires are easy to administer and efficient, making them well suited for collecting quantitative data in this study.

The Psychological Sense of School Membership scale (PSSMS)

To assess the students' sense of belonging, Psychological Sense of School Membership (PSSM) Scale by Goodenow (1993) was adapted. Academic performance was measured using end of the term mean grade scores that were obtained from school examination records.

Academic Performance Records

The scores of students' academic performance was collected from the school records. Form five class teachers were requested to provide records of students' academic performance. This enabled the researcher to get the entry marks for each individual and the end of term one summative examinations. The scores were standardized using T- scores to allow comparability between participants from different schools.

Data Collection and analysis Procedure

The researcher sought for informed consent from the participants after which data collection began. Clear instructions on how to fill the questionnaires were given by the researcher. The tools were administered through the help of the class teachers. Data obtained were analysed using Pearson Correlation and findings presented in tables.

RESULTS

The results are presented in line with the study objectives. First, the description of variables is given, followed by hypothesis testing, interpretation and discussion of the results.

Relationship Between Students' Sense of Belonging and Academic Performance

The participants' scores on the students' sense of belonging were analyzed to get the range, mean, standard deviation, and skewness. The results are shown in Table 4.1.

Table 4.1 Descriptive Statistics for the Scores on Students' Sense of Belonging

N	Range	Min	Max	M	SD	Sk	Kur
375	3.50	1.22	4.72	3.23	0.65	-0.34	-0.31

Note: $N = 375$; Min = Minimum; Max = Maximum; M = Mean; SD = Standard Deviation; Sk = skew; Kur = Kurtosis

Table 4.1 shows that students' sense of belonging had a moderately neutral mean score ($M = 3.23$, $SD = 0.65$). The scores ranged from a minimum of 1.22 to a maximum of 4.72, with a standard deviation of 0.65 indicating the average spread from the mean. The distribution was negatively skewed ($Sk = -0.34$), suggesting that more students scored above the mean than below it. However, the skewness and kurtosis values ($Kur = -0.31$) indicate that the variable was reasonably normally distributed.

The scores were further analyzed by the specific subscales. This is highlighted in Table 4.2.

Table Error! No text of specified style in document..2 Description of Sense of Belonging Subscale Scores

Subscale	Range	Min	Max	M	SD	Sk	Kur
Peer Relationships	4.00	1.00	5.00	3.33	0.77	-0.33	-0.25

Student-Teacher relationships	4.00	1.00	5.00	3.24	0.79	-0.34	-0.20
Sense of acceptance	4.00	1.00	5.00	3.08	0.94	-0.17	-0.37
Sense of attachment	4.00	1.00	5.00	3.16	0.94	-0.12	-0.75

Min = Minimum; *Max* = Maximum; *M* = Mean; *SD* = Standard Deviation; *Sk* = skew; *Kur* = Kurtosis

As illustrated in Table 4.2, students indicated the highest level of sense of belonging within the peer relationships subscale ($M = 3.33, SD = 0.77$). This implies that learners felt closely connected to and supported by their classmates, reflecting strong social ties within the school setting. Student-teacher relationships also demonstrated positive engagement and mutual respect, with a relatively strong average score ($M = 3.24, SD = 0.79$). In contrast, the sense of acceptance recorded the lowest mean ($M = 3.08, SD = 0.94$), suggesting that respondents did not consistently feel valued, included, or acknowledged as important members of the school community. The score ranges fell within the minimum and maximum possible limits, with sense of acceptance and attachment ($SD = 0.94$) showing slightly greater variability around the mean. Overall, the distribution patterns across the subscales were similar, indicating no significant differences in score variation.

The sense of belonging scores were further categorized into three equal groups: high, moderate, and low. This classification followed the recommendation of Goodenow (1993), since no standard normative sample was provided during the development of the instrument. Scores ranging from 1.00 to 2.33 were classified as low, those above 3.67 as high, and scores within this range were considered moderate, as presented in Table 4.3.

Table Error! No text of specified style in document..3 Sense of Belonging Levels

	Frequency (%)	<i>M</i>	<i>SD</i>
High	101 (26.9)	3.99	0.22
Moderate	243 (64.8)	3.07	0.38
Low	31 (8.3)	1.97	0.29

M = Mean; *SD* = Standard Deviation

The findings in Table 4.3 indicate that most respondents (64.8%) exhibited a moderate level of sense of belonging within their school. Approximately one-quarter (26.9%) reported a high sense of belonging, suggesting a stronger feeling of acceptance and connection within the school community (agree and strongly agree responses). In contrast, only 8.3% of the participants indicated lower levels of attachment to their school.

The researcher also provided a summary of the academic performance scores, as presented below.

Table Error! No text of specified style in document..4 Description of Academic Performance Scores

	Range	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Kur</i>
Raw Score	70.00	13.00	83.00	46.88	12.83	0.25	-0.08
T Score	54.66	23.51	78.17	50.0000	10.00	0.25	-0.08

Min = Minimum; *Max* = Maximum; *M* = Mean; *SD* = Standard Deviation; *Sk* = skew; *Kur* = Kurtosis

Table 4.4 indicates that the mean academic performance score prior to transformation was 46.88%, with a large spread around the mean ($SD = 12.83$). The scores also exhibited a wide range (Range = 70), which reduced to 54.66 after transformation. The distribution showed a negative skew ($Sk = 0.25$), suggesting that a greater number of scores fell below the mean.

Additionally, academic performance scores were categorized using a letter grading system to provide a clearer picture of achievement distribution within the sample. Scores above 75% were assigned Grade A, those between 60% and 75% were classified as Grade B, scores ranging from 45% to 59% as Grade C, 30% to 44% as Grade D, and scores below 30% as Grade E. Table 4.5 presents a summary of this grading classification.

Table Error! No text of specified style in document..5 Academic Performance Scores by Respondents’ Grading

	Frequency (%)	<i>M</i>	<i>SD</i>
A	2(0.5)	78.09	0.11
B	66(17.6)	65.2	3.96
C	193(51.5)	51.16	3.75
D	109(29.1)	39.35	3.18
E	5(1.3)	25.16	1.64

M = Mean; *SD* = Standard Deviation

Most scores ranged between 45% and 59%, as shown in Table 4.5, with 51.16% of the sample earning a C grade. This was nearly matched by the D grade at 29.1%, showing that more than half the sample reached only a lower-middle performance level. In general, the score distribution formed a bell curve, concentrated in the C and D grades, with far fewer students at either end of the scale.

Hypothesis Testing on the Relationship Between Students’ Sense of Belonging and Academic Performance

To test the relationship between students’ sense of belonging and academic performance, null hypothesis given below was stated:

H₀₁: There is no significant relationship between students’ sense of belonging and academic performance.

This hypothesis was tested using correlational analysis, that is, through computing Pearson product moment correlation coefficient. The results are depicted in Table 4.6.

Table 4.6 Correlation Test on the Relationship Between Sense of Belonging and Academic Performance

Sense of Belonging	<i>R</i>	<i>Df</i>
Academic performance	.289**	373

Note. ** = Correlation significant at .01 level (2-tailed); *R* = Correlation Coefficient; *Df* = Degrees of freedom

Table 4.6’s findings indicate a positive, weak, yet significant correlation between students’ sense of belonging and their academic performance, $r(373) = .289, p = .000$. The null hypothesis was rejected, leading to the conclusion that students who had a stronger sense of belonging—particularly in terms of peer and student relationships, along with feelings of attachment and acceptance—exhibited significantly higher performance.

Analyses presented in Table 4.7 sought to determine which dimension of sense of belonging had the better relationship with academic performance.

Table Error! No text of specified style in document..7 Relationship between the dimensions of Sense of Belonging and Academic Performance

Academic performance	<i>R</i>	<i>Df</i>
Peer Relationships	.251	373
Student Teacher relationships	.245	373
Sense of acceptance	.164	373
Sense of attachment	.206	373

Note. ** = Correlation significant at .01 level (2-tailed); *R* = Correlation Coefficient; *Df* = Degrees of freedom

Table 4.7 indicates that every dimension of the sense of belonging was significantly associated with students’ academic performance scores. Peer relationships ($r(373) = .251, p = .000$) and student-teacher relationships

$(r(373) = .245, p = .000)$ showed the strongest correlations with students' academic performance, respectively. These were stronger than the associations with sense of attachment ($r(373) = .206, p = .000$) and acceptance ($r(373) = .164, p = .000$). This implies that interpersonal relationships—both with peers and teachers—play a key role in influencing students' academic results. However, considering the significance of the latter dimensions, the study underscores the importance of students feeling valued and connected within their school environment.

DISCUSSION

The results of this study are consistent with Gülşen (2024)'s research, which explored the relationship between sense of school belonging and academic performance. The meta-analysis identified a statistically significant yet moderate effect of school belonging on academic performance. Stronger student ties to their school via positive peer and teacher interactions foster greater emotional commitment to learning, boosting motivation and engagement that result in better academic outcomes.

Likewise, Matheka et al. (2025) studied 614 doctoral students in Kenyan universities, revealing through structural equation modeling that sense of belonging directly impacts academic performance. Their findings showed that feeling valued and connected in the educational community promotes greater perseverance in difficult tasks and stronger academic self-regulation.

This study's results on peer relationships as the top predictor align with Yong et al. (2025), who used qualitative methods to assess university students' belonging. Their work highlighted how social ties substantially affect students' well-being and academic involvement. Meaningful peer bonds in school provide collaborative learning, emotional backing during challenges, and motivation via social accountability, all of which elevate academic performance.

However, certain studies offer differing results that merit consideration. Felizario et al. (2024) examined 240 Grade 12 students in the Philippines with a descriptive-correlational approach and detected no significant relationship between classroom sense of belonging and perceived academic performance. This difference likely stems from their use of subjective performance assessments instead of objective records, which can introduce bias and undermine indicator reliability. Moreover, cultural differences in educational structures and societal views on achievement might moderate the belonging-performance connection across settings.

Discrepancies in study results could also arise from developmental and contextual elements specific to various educational levels. Makwinja (2020) studied younger children in Botswana and observed that peer relationships held little value, unlike in this study's adolescent sample. This contrast indicates that peer ties' role in academic achievement may grow with age, as teens depend more on social networks for motivation and stress coping amid key transitions.

The study's results add importantly to Self-Determination Theory by showing how sense of belonging shapes academic intentions via normative beliefs and acceptance. When students sense acceptance and value in their school community, they form more favorable views of academic involvement and firmer resolve to tackle tough tasks. This framework illustrates how belonging fosters conditions for success by bolstering students' confidence in reaching academic goals. Practically, interventions focused on strengthening peer ties and school connectedness could boost academic results. Theoretically, these insights deepen knowledge of social integration in education, offering evidence that belonging strongly predicts success for African adolescents.

CONCLUSIONS

Based on the finding that a significant and positive relationship exist between students' sense of belonging and academic performance, this study concludes that high level of students' sense of belonging is associated with high academic performance among students. This indicates that students with greater school connectedness attain better academic performance. The prevalence of moderate belonging levels in participants points to students having essential psychological foundations for academic achievement. It highlights the need for stakeholders to build inclusive settings and implement accountability measures to enhance student connectedness.

RECOMMENDATIONS

The study established an association between students' sense of belonging and students' academic performance. This points to the importance of teachers and counselors prioritizing collaborative learning settings to nurture positive peer bonds and promote academic teamwork among students. Moreover, educators ought to adopt intentional strategies for building relationships, such as routine one-on-one check-ins, tailored feedback sessions, and classroom activities that cultivate psychologically safe spaces.

This study centered on Form Five students, who face a pivotal educational transition. Future studies should investigate these associations at various educational stages and track how sense of belonging evolves through secondary school.

Declaration of Interests

This research was undertaken as a requirement for a Master's degree at Kenyatta University, with complete funding from the government of Botswana.

Conflicts of Interests

The corresponding author and coauthors declare the absence of any conflict of interest during the research process.

Data Availability Statement

The raw data used in this study can be availed upon request from corresponding author.

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