Academic Motivation and Achievement: A Stratum-Based Analytical Study

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Abstract

Academic motivation plays a crucial role in determining students' academic achievement across various demographic strata. This study aims to analyse the relationship between academic motivation and academic performance among students based on gender, locality (rural vs. urban), academic stream (Arts vs. Science), and economic background (APL vs. BPL). A quantitative survey-based approach was adopted, involving a sample of school students from diverse socio-economic and academic backgrounds. Data were collected using a standardized Academic Motivation Scale and academic performance records. Statistical analyses, including Mean, SD and Pearson product moment correlation analysis were employed to examine the influence of motivation on academic success across different strata. The findings reveal a significant positive relationship between academic motivation and academic performance across all groups. However, variations were observed in the strength of this relationship based on demographic factors. Female students exhibited higher intrinsic motivation, while Science students demonstrated a stronger link between motivation and performance. Additionally, while socio-economic status influenced academic resources, motivation acted as a mediating factor in bridging performance gaps. This study underscores the universal importance of academic motivation in fostering student achievement, regardless of demographic and socio-economic differences. Educational interventions should focus on enhancing student motivation through targeted strategies to improve learning outcomes across all strata.

Keywords: Academic Motivation, Academic Achievement, Stratum-Based Analysis

Introduction

Academic motivation is a crucial determinant of students' academic performance, influencing their engagement, persistence, and overall success in educational settings. Motivation drives students to pursue learning goals, influencing their cognitive efforts and shaping their achievement levels (Deci & Ryan, 1985). Academic motivation is often categorized into intrinsic and extrinsic motivation, where intrinsic motivation stems from personal interest and enjoyment, while extrinsic motivation is driven by rewards or external pressures (Schunk, Pintrich, & Meece, 2014). Understanding how motivation affects academic achievement across different student strata is essential for developing targeted educational interventions. Stratified analysis in education considers variations in motivation and achievement across different groups, such as gender, socioeconomic status, geographic location, and academic discipline. Research suggests that students from higher socioeconomic backgrounds often exhibit higher academic motivation and performance due to better access to resources and support systems (Eccles & Wigfield, 2002). Similarly, disparities exist between rural and urban students, with urban students often displaying greater academic motivation due to better learning environments and opportunities (Singh & Jha, 2017).

This study aims to examine the relationship between academic motivation and achievement across different student strata, identifying patterns and disparities that may exist. By conducting a stratum-based analysis, this research will provide insights into how different student groups experience academic motivation and its subsequent impact on performance. Understanding these relationships is crucial for educators, policymakers, and researchers to develop strategies that enhance motivation and academic success for all students.

Review of Related Literature

Vosoogh et al. (2021) investigated the role of self-efficacy as a mediator between classroom climate and students' educational motivation among high school students in Iran. The findings revealed that while classroom climate had a significant positive correlation with academic motivation ($r=0.41$), the relationship was no longer significant when self-efficacy was introduced, highlighting self-efficacy as a crucial determinant of motivation.

Kogei (2021) examined academic motivation and self-efficacy as predictors of academic performance among secondary students in Kenya. The study found a significant correlation between these psychological factors and academic achievement ($p=0.000$, $\alpha = 0.05$),

emphasizing the importance of fostering motivational environments. It also highlighted gender disparities in motivation and self-efficacy, recommending targeted interventions.

Shahid et al. (2019) focused on academic motivation and self-efficacy among teachers and students in Pakistan, using a qualitative approach. Key factors affecting self-efficacy included resource limitations and social media distractions.

Chanda and Guha (2018) studied the impact of self-efficacy on learning ability among West Bengal higher secondary students. The results indicated no significant relationship between different levels of self-efficacy (low, moderate, high) and students' learning ability.

Ojha (2018) explored self-efficacy differences based on gender and school management type among higher secondary students in Purulia, West Bengal. The study found no significant differences in self-efficacy across these demographic variables.

Domenech-Betoret et al. (2017) examined self-efficacy, academic achievement, and satisfaction, identifying expectancy-value beliefs (such as achievement and process values) as mediators in the relationship. The findings suggest that students' beliefs about the value of their studies shape the impact of self-efficacy on academic success.

Crede and Kuncel (2008) conducted a meta-analysis examining the relationship between study habits, learning strategies, motivation, and academic performance. Their findings suggest that motivation, alongside effective study skills, significantly predicts academic achievement. The study emphasizes that while intelligence plays a role, motivation and learning strategies contribute substantially to academic success. The authors argue for the importance of fostering academic motivation to enhance student performance.

Dent & Koenka (2016) conducted a meta-analysis to examine the relationship between self-regulated learning (SRL) and academic achievement across childhood and adolescence. The study highlights that SRL, which includes key components such as motivation, cognitive strategies, and metacognition, significantly impacts academic performance. The authors found that students with higher self-regulation skills, including intrinsic motivation and goal-setting, tend to perform better academically. The study also emphasizes the importance of fostering self-regulated learning strategies to enhance students' long-term academic success.

Donker et al. (2014) conducted a meta-analysis on the effectiveness of learning strategy instruction in enhancing academic performance. Their study, published in the Educational Psychology Review, examined various instructional strategies such as cognitive,

metacognitive, and motivational interventions. The findings revealed that motivation plays a crucial role in improving learning strategies, as students with higher motivation tend to adopt better self-regulated learning techniques. The study emphasizes that interventions targeting motivation can significantly enhance academic achievement.

Claessens et al. (2007) conducted a comprehensive review of time management literature, emphasizing its role in academic success. The study found that time management skills, significantly influenced by motivation, enhance students' ability to allocate study time efficiently, reduce stress, and improve performance outcomes. The researchers highlighted that self-discipline and intrinsic motivation are key determinants in effective time management, which directly correlates with academic achievement. The findings suggest that fostering motivation-based time management strategies can lead to better educational outcomes.

Dembo and Eaton (2000) explored the interplay between self-regulation and academic motivation in middle school students, emphasizing how self-regulated learning strategies contribute to academic success. Their study found that students who actively regulate their learning process by setting goals, managing time effectively, and employing metacognitive strategies tend to perform better academically. Motivation was identified as a key factor in maintaining self-regulatory behaviors, with intrinsic motivation leading to deeper engagement in learning tasks. The study highlights the importance of fostering both motivation and self-regulation in educational settings to improve student outcomes.

Douglas et al. (2016) investigated the relationship between time management behavior, work engagement, and academic success. Their study found that students who effectively managed their time and engaged more in their coursework demonstrated higher academic performance. Motivation was identified as a key factor influencing both time management and work engagement, suggesting that motivated students were more likely to adopt productive learning strategies. These findings reinforce the importance of fostering motivation in educational settings to enhance achievement.

Objective of the study

- To find out the relationship, if exists between academic motivation and academic performance of 11grade Male, Female, Rural, Urban, Science, Arts, APL and BPL students.

Hypothesis of the study

$H_{01.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade students.

$H_{02.}$**:** There is no significant relationship between the academic motivation and academic performance of 11th grade male students.

$H_{03.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade female students.

$H_{04.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade rural students.

$H_{05.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade urban students.

$H_{06.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade arts students.

$H_{07.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade science students.

$H_{08.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade APL students.

$H_{09.}$ There is no significant relationship between the academic motivation and academic performance of 11th grade BPL students.

Methodology of the study

Main variables: Academic motivation (independent variable), Academic performance (dependent variable)

Classificatory variables: Gender (Male and Female), Locality (Rural and Urban), Income BPL and APL), Stream (Science and Arts)

Population of the study: The population for the study consisted of school students from West Bengal. This included students from various socio-economic backgrounds, studying in both urban and rural regions. The target population covered students enrolled in secondary schools across five administrative divisions in West Bengal: Presidency, Medinipur, Burdwan, Malda, and Jalpaiguri.

Sampling technique and sample of the study: The Multistage sampling technique was used in the study. The sample for the study included 459 students from the selected schools across the chosen districts (Nadia, Bankura, East Burdwan, Murshidabad, and Cooch Behar) in West Bengal. This sample size was designed to provide a comprehensive and representative view of the student population, accounting for factors such as urban-rural distribution and socio-economic diversity.

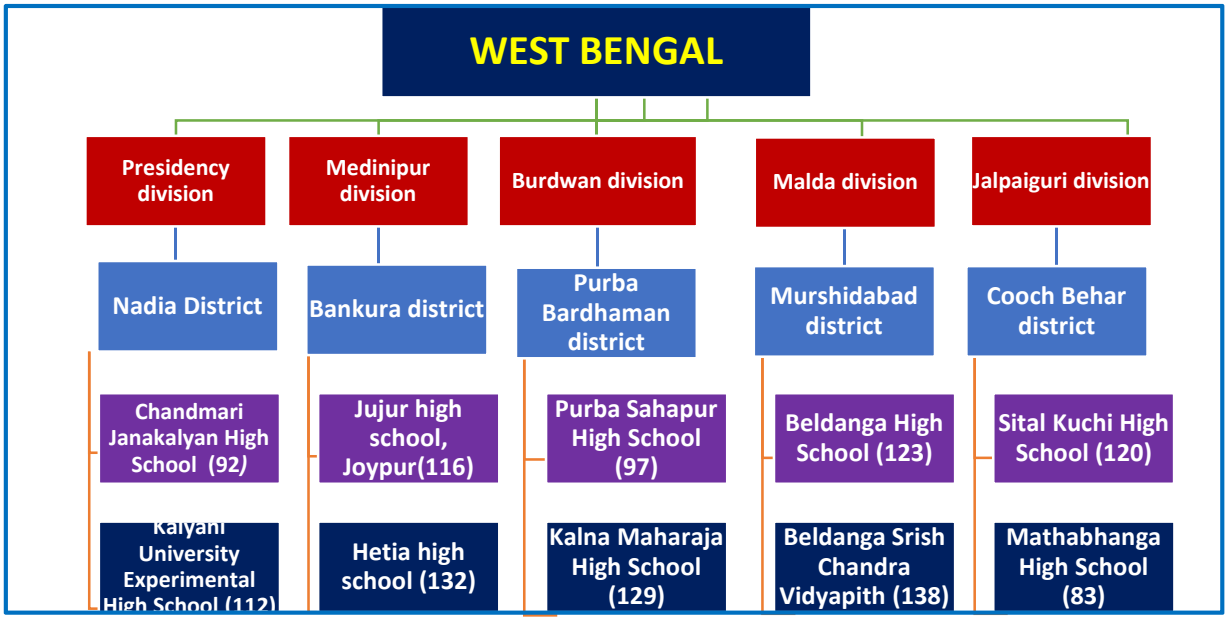

Figure 1: Sampling distribution

Data Analysis and Interpretation

H_{01}. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade students.

Table 1: 'r' value between Academic Motivation and Academic Performance among 11th grade students

Group	Number	Measure	'r' value
11th grade students	459	Academic Motivation Academic Performance	0.530**
			**Significant at 0.01 level

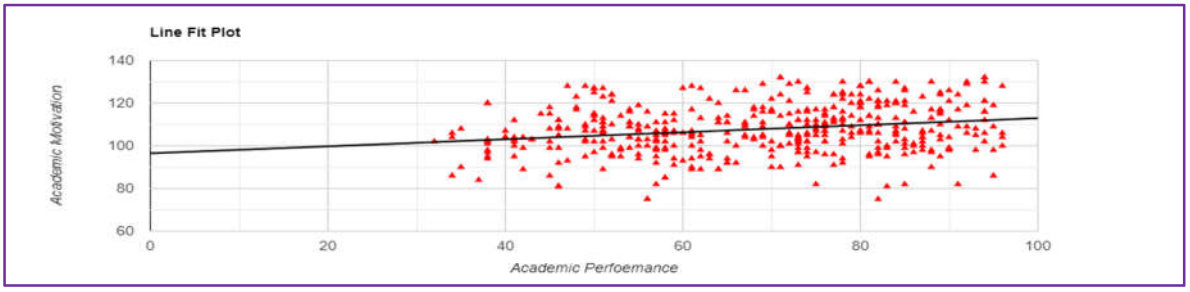

Figure 2: Scatter diagram of Academic Motivation and Academic Performance of 11th grade students

Interpretation: The Pearson correlation coefficient, represented by 'r', is calculated to be 0.530. This value is higher than the significance limit of 0.088 at the 0.05 level, indicating a statistically significant relationship. Since the 'r' value is significant, the null hypothesis stating that there is no significant relationship between Academic Motivation and Academic Performance for 11th grade students can be rejected. However, the correlation of 0.530 suggests that the relation between Academic Motivation and Academic Performance is relatively Moderate positive correlation. This indicate that higher levels of Academic Motivation are associated with better Academic Performance in this group.

H_{02}. There is no significant relationship between the Academic Motivation and Academic Performance of the 11th grade male students.

Table 2: r value between Academic Motivation and Academic Performance among 11th grade male students

Group	Number	Measure	'r' value
11th grade male students	281	Academic Motivation	0.491**
		Academic Performance	
****Significant at 0.01 level**			

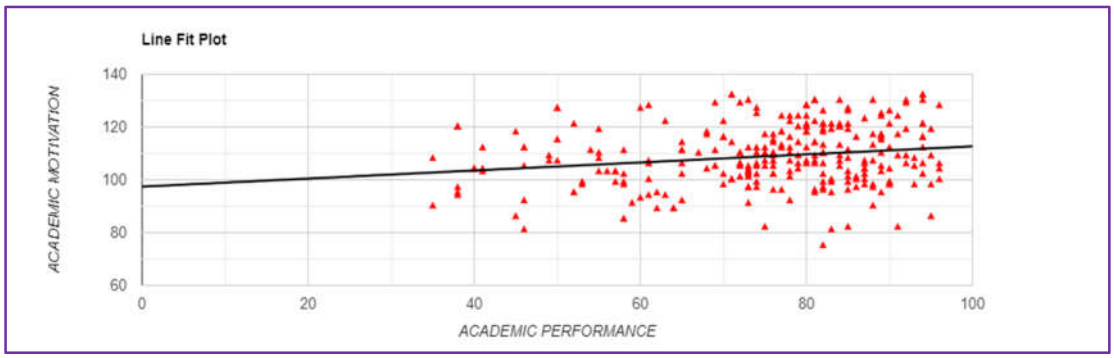

Figure 3: Scatter diagram of Academic Motivation and Academic Performance of 11th grade male

Interpretation: The Pearson correlation coefficient, the calculated r value of 0.491 is higher than the critical value of 0.113 at 0.05 level, indicating a statistically significant relationship between Academic Motivation and Academic Performance among 11th grade male. This suggests that higher Academic Motivation is associated with better Academic Performance in this group. Since the r value is significant, the null hypothesis stating that there is no significant relationship between Academic Motivation and Academic Performance for 11th grade male can be rejected. This finding highlights the importance of Academic Motivation in influencing Academic Performance in this demographic.

H_{013}. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade female students.

Table 3: Relationship between the Academic Motivation and Academic Performance of 11th grade female students

Group	Number	Measure	'r' value
11th grade female students	178	Academic Motivation	0.405**
		Academic Performance	
****Significant at 0.01 level**			

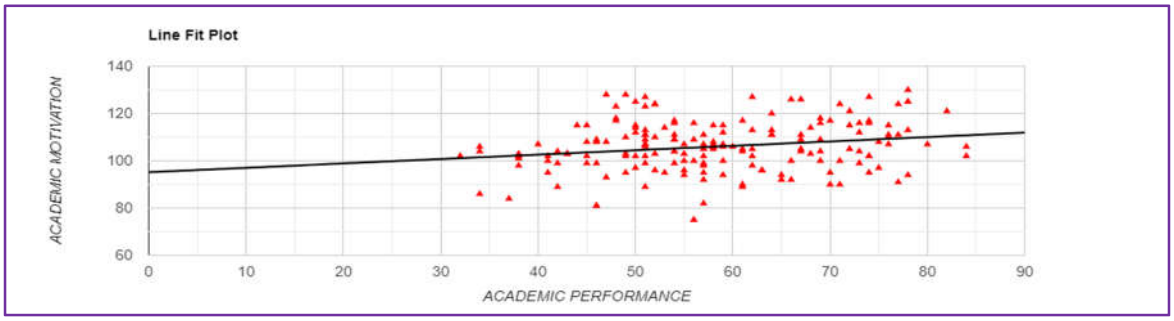

Figure 4: Scatter diagram of Academic Motivation and Academic Performance of 11th grade female students

Interpretation: The Pearson correlation coefficient, the calculated 'r' value 0.405 exceeded the critical value 0.138 at a 0.05 significance level, making the result statistically significant. This finding leads to the rejection of the null hypothesis, concluding that a significant positive relationship exists between Academic Motivation and Academic Performance for 11th grade girls. In practical terms, this suggests that enhancing motivation may positively impact academic success within this group.

H_{04}. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade rural students.

Table 4: relationship between the Academic Motivation and Academic Performance of 11th grade rural students.

Group	Number	Measure	'r' value
11th grade Rural students	269	Academic Motivation	0.390**
		Academic Performance	
**Significant at 0.01 level			

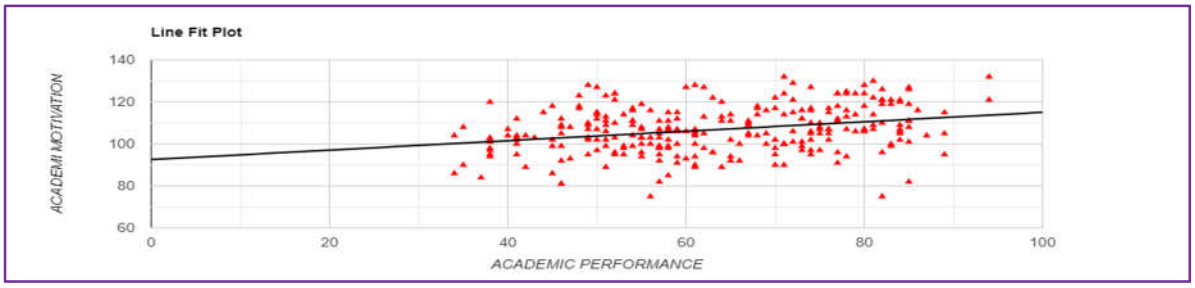

Figure 5: Scatter diagram of Academic Motivation and Academic Performance of 11th grade rural students.

Interpretation: The Pearson correlation coefficient, the calculated r value 0.390, exceeded the critical value 0.113 at a 0.05 significance level, indicating statistical significance. Therefore, the null hypothesis is rejected, suggesting that there is a significant positive relationship between Academic Motivation and Academic Performance among 11th grade rural students. This finding implies that higher motivation levels are associated with better academic outcomes for rural students in this grade.

H015. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade urban students.

Table 5: Relationship between the Academic Motivation and Academic Performance of 11th grade urban students

Group	Number	Measure	'r' value
11th grade Urban students	190	Academic Motivation Academic Performance	0.534**
			**Significant at 0.01 level

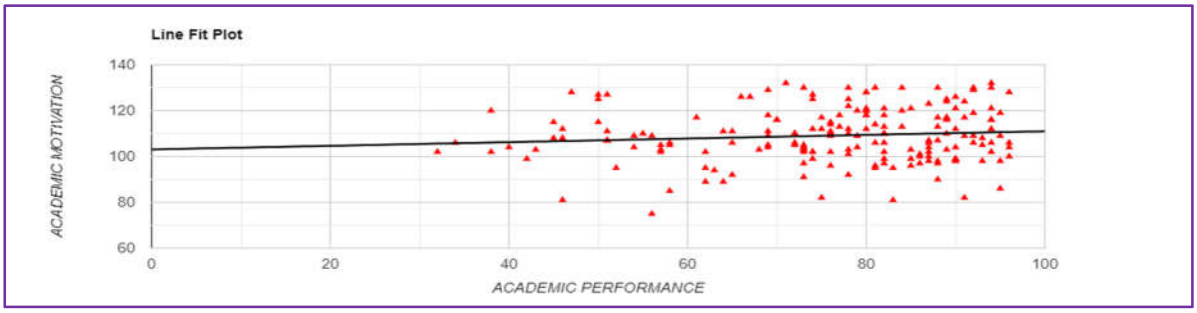

Figure 6: Scatter diagram of Academic Motivation and Academic Performance of 11th grade urban students

Interpretation: The Pearson correlation coefficient the calculated r value 0.534 is higher than the critical value of 0.138 at a 0.05 significance level, confirming statistical significance. This leads to the rejection of the null hypothesis, indicating a significant positive relationship between Academic Motivation and Academic Performance among urban 11th graders. This suggests that higher Academic Motivation is linked to better performance in this demographic.

H016. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade Arts students.

Table 6: Relationship between Academic Motivation and Academic Performance of 11th grade Arts students

Group	Number	Measure	'r' value
11th grade Arts students	259	Academic Motivation Academic Performance	0.483**
			**Significant at 0.01 level

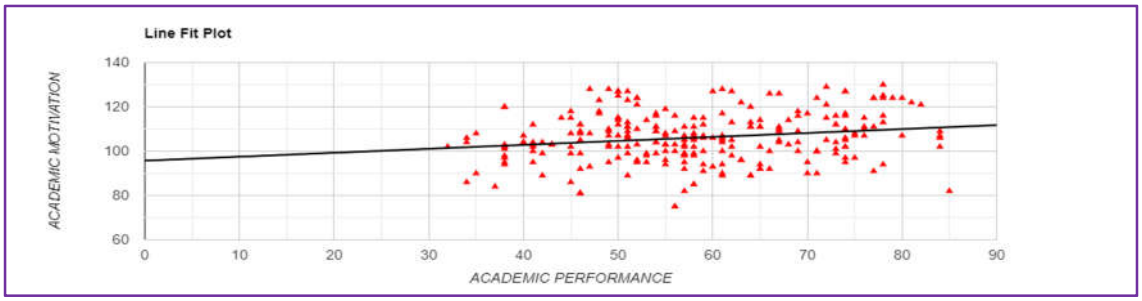

Figure 7: Scatter diagram of Academic Motivation and Academic Performance of 11th grade Arts students

Interpretation: The Pearson correlation coefficient r value 0.483 exceeded the critical value 0.113 at the 0.05 significance level, making the result statistically significant. This leads to the rejection of the null hypothesis, suggesting a significant positive relationship between Academic Motivation and Academic Performance for 11th grade Arts students. The findings imply that higher Academic Motivation is associated with improved Academic Performance in this group.

H_{07}. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade science students.

Table 7: Relationship between the Academic Motivation and Academic Performance of 11th grade science students

Group	Number	Measure	'r' value
11th grade Science students	200	Academic Motivation	0.612**
		Academic Performance	
**Significant at 0.01 level			

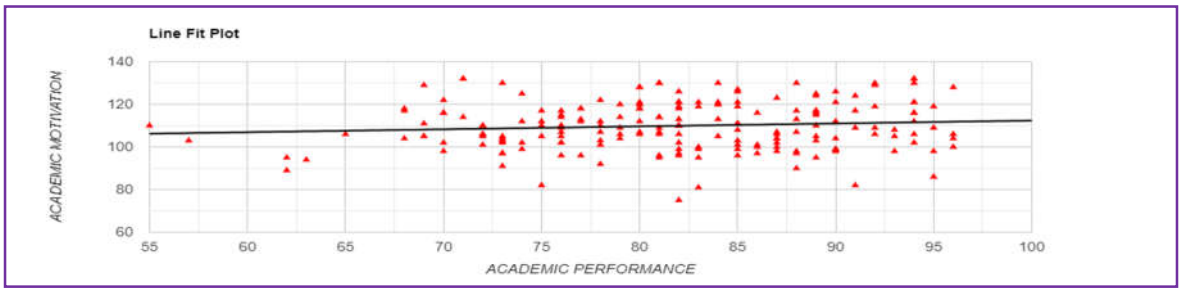

Figure 8: Scatter diagram of Academic Motivation and Academic Performance of 11th grade science students

Interpretation: The Pearson correlation coefficient the r value 0.612, it is particularly higher than the critical value 0.138 at the 0.05 significance level, indicating statistical significance. As

a result, the null hypothesis is rejected, showing a significant positive relationship between Academic Motivation and Academic Performance among 11th-grade science students. This finding suggests that higher levels of motivation are closely associated with better Academic Performance in this group.

H_{018}. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade APL students.

Table 8: Relationship between the Academic Motivation and Academic Performance of 11th grade APL students

Group	Number	Measure	'r' value
11th grade APL students	197	Academic Motivation	**0.483****
		Academic Performance	
			**Significant at 0.01 level

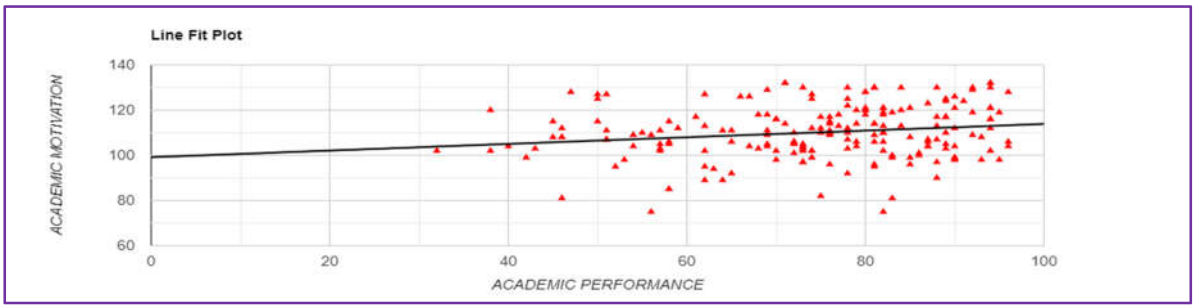

Figure 9: Scatter diagram of Academic Motivation and Academic Performance of 11th grade APL students

Interpretation: The Pearson correlation coefficient the r value 0.483, it is greater than the critical value 0.138 at a 0.05 significance level, indicating statistical significance. Therefore, the null hypothesis is rejected, showing a significant positive relationship between Academic Motivation and Academic Performance among 11th grade APL students. This result suggests that higher Academic Motivation is associated with better Academic Performance for students from APL backgrounds.

H_{09}. There is no significant relationship between the Academic Motivation and Academic Performance of 11th grade BPL students.

Table 9: Relationship between the Academic Motivation and Academic Performance of 11th grade BPL students

Group	Number	Measure	'r' value
Eleven grade BPL students	262	Academic Motivation Academic Performance	0.440**
			**Significant at 0.01 level

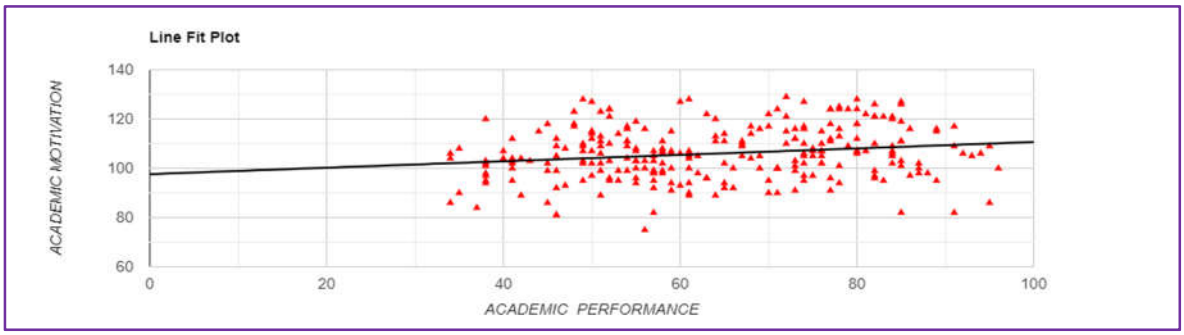

Figure 10: Scatter diagram of Academic Motivation and Academic Performance of 11th grade BPL students

Interpretation: The Pearson correlation coefficient the r value 0.440 exceeded the critical value 0.113 at the 0.05 significance level, indicating statistical significance. Consequently, the null hypothesis is rejected, demonstrating a significant positive relationship between Academic Motivation and Academic Performance for 11th-grade BPL students. This finding implies that higher Academic Motivation is positively linked to better Academic Performance in this demographic group.

Findings and discussion objective 4

6.5.1. Findings of objective 4

- **Overall 11th-grade students**: Higher levels of academic motivation were strongly associated with better academic performance.
- **Gender**: Both 11th-grade male and female students demonstrated a significant relationship between their academic motivation and performance.
- **Locality**: The relationship was significant among both rural and urban students, academic motivation plays a crucial role in academic success, regardless of geographical location.

- **Stream**: Students from both the Arts and Science streams showed a positive relationship between academic motivation and academic performance.
- **Family Income**: The relationship held true for both Above Poverty Line (APL) and Below Poverty Line (BPL) students, indicating that the impact of academic motivation on performance transcends economic backgrounds.

Discussion

This study reaffirms the strong correlation between academic motivation and academic performance across various demographic groups, including gender, locality, academic streams, and economic background. Consistent with prior research (Pintrich & Schunk, 2002; Robbins et al., 2004), motivated students tend to engage more, persist longer, and use effective learning strategies, leading to higher academic achievement. Gender differences align with findings by Meece et al. (2006), while studies by Singh (2011) and Shukla (2015) support the role of motivation in both rural and urban students. Research by Wigfield and Eccles (2000) highlights subject-specific motivational variations, and studies by Sirin (2005) and Jeynes (2002) suggest that motivation helps mitigate socio-economic disparities. The findings emphasize motivation as a universal predictor of academic success, reinforcing its importance in educational interventions.

Conclusion

The findings of this study reinforce the critical role of academic motivation in determining academic performance across various demographic categories, including gender, locality, academic stream, and economic background. Consistent with existing literature, the study confirms that motivated students exhibit higher engagement, persistence, and effective learning strategies, ultimately leading to better academic outcomes. While demographic factors may shape students' educational experiences, motivation serves as a powerful and universal predictor of success. Future educational interventions should prioritize fostering academic motivation to enhance performance across diverse student populations.

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