



## Determinants of Academic Performance among Public and Private Middle-Level School Students in Yabelo Town, Ethiopia: Examining the Influence of School, Teacher, and Leadership Factors

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### Abstract

*The main purpose of this study was to examine the determinants of students' academic performance in public and private middle-level schools in Yabelo Town. This research adopted a cross-sectional quantitative research design to address the research questions. The study's target population consisted of a total of 2,661 individuals, comprising students, teachers, and principals. From this total population, 437 sample participants were selected using stratified sampling. Various survey instruments, including the School Facility Inventory (SFI), Approaches to Teaching Inventory (ATI), Teaching Practices Inventory (TPI), and Instructional Leadership Inventory (ILI), were utilized, and students' semester average scores, encompassing all 12 subjects, were used to assess academic performance. The results from descriptive (Mean and Standard Deviation) and inferential (Multiple Regression and Independent t-test) statistical analyses indicated that in public schools, the availability of learning resources and facilities was the most crucial factor affecting academic performance, followed by teachers' professional practices, instructional methods, and leadership styles. While similar factors were observed in private institutions, they generally showed more favorable conditions. The t-test results revealed significant differences between the two types of schools regarding the factors influencing students' academic performance and variations in students' academic outcomes. Multiple regression analysis illustrated that the identified factors strongly influenced students' academic performance. These results emphasize the need to enhance learning resources, instructional methods, teachers' professional practices, and school leadership to improve academic performance and educational standards.*

**Keywords:** academic performance, public and private schools, school factors, teacher factors, leadership factors

## **INTRODUCTION**

Academic achievement is an important measure of the effectiveness of education in schools. High levels of accomplishment indicate successful teaching practices, sufficient resources, and a nurturing learning atmosphere, whereas low achievement often highlights systemic problems such as insufficient funding and a lack of qualified educators (Suleiman et al., 2024). Such academic outcomes affect various facets of a person's life, including their level of education, career possibilities, and financial stability. Students who perform well academically are more inclined to seek higher education, which can lead to advanced degrees and better job opportunities (Peng & Kievit, 2020). Furthermore, strong academic results are linked to improved health outcomes and enhanced social mobility, helping individuals from less advantaged backgrounds escape the cycle of poverty (Gamage et al., 2021). Scholars have extensively investigated both individual and systemic factors influencing students' academic achievements. On a personal level, high school students' academic performance is typically measured by their grades and cumulative grade point average (GPA), which are connected to various predictors. These predictors encompass cognitive abilities and intellectual capacity (Roth et al., 2015), motivation (Kriegbaum et al., 2018), achievement goals (Daniels et al., 2009), goal-setting (Burns et al., 2018), and self-efficacy (Diseth et al., 2012). In addition, a significant range of factors affecting academic success includes cognitive skills, such as working memory (Peng et al., 2018), reasoning (the capability to tackle new and complex challenges; Kaufman et al., 2008), and executive function, which involves cognitive and social-emotional processes that facilitate goal-directed behavior, including flexible thinking, self-control, and self-regulation (Best & Miller, 2010).

Research has increasingly focused on academic achievement due to its immediate and long-term effects on individuals (Kelly & Donaldson, 2016). The growing trend of supplemental instruction and private tutoring reflects the emphasis placed on enhancing academic performance (Zhang & Bray, 2017; OECD, 2022). Key determinants of success include teachers' professional practices, resource availability, and parental involvement (Agbofa, 2023). In Ethiopia, factors such as parental socioeconomic status, school facilities, and maternal education significantly influence academic performance at both primary and secondary levels (Eshetu, 2015; Abitew, 2019). Public and private school performance disparities highlight the importance of understanding these determinants to enhance educational outcomes. Despite increased enrollment rates, challenges remain in providing quality basic education, with many children lacking essential skills (UNICEF, 2019). In developing countries, like Ethiopia, students in private schools generally demonstrate higher academic achievement compared to those in public schools. This disparity may be influenced by parental pressure, as private institutions often excel in specialized subjects. Research shows that private primary schools in Ethiopia outperform public schools, primarily due to differences in available resources and the educational backgrounds of parents (Sebro & Goshu, 2017). Moreover, private schools tend to provide better academic outcomes for students from privileged backgrounds, indicating a connection between inherited advantages and academic performance (Mohammed & Abera, 2022). Overall, there is a notable variation in educational quality between public and private primary schools in Ethiopia, with private elementary schools frequently exceeding government quality standards. This difference is largely attributed to the higher levels of parental education and the enhanced resources and support available to students in private schools (Begna, 2017).

## **Statement of the Problem**

The quality of education in Ethiopian primary schools is hindered by poor teaching practices, low standards, ineffective leadership, and resource shortages, despite improved access (Abay, 2013). Factors such as low teacher motivation, overcrowded classrooms, and inadequate facilities particularly affect students, whose academic performance is influenced by parental education, school resources, and societal attitudes (Abitew, 2019). In the Borena Zone, cultural perceptions that prioritize livestock herding over schooling further complicate educational access (Boru, 2020). Most research in cited above in above has focused on public or private schools in isolation, lacking comparative analyses and quantitative data linking these factors to student performance. This study aims to fill these gaps by examining the determinants of academic performance in both public and private middle-level schools in Ethiopia. Therefore, the main objective of this study was to examine the determinants of students' academic performance in public and private middle-level schools in Yabelo Town, Ethiopia.

## **Basic Research Questions**

The research was directed by the following questions:-

1. What are the key determinants of students' academic performance?
2. Are there significant differences in the determinants of students' academic performance between public and private middle-level schools?
3. Is there a significant relationship between determinants and students' academic performance in public and private middle-level schools?
4. Is there a significant difference in academic performance between students in public and private middle-level schools?

## **LITERATURE REVIEW**

### **Public and Private Schools**

Barrett et al. (2018) highlighted that education is crucial to the rise and decline of nations, particularly in the 21st century. This significance arises from the increasing global competition in education and technology, which is essential for any country's advancement. Paul and Jefferson (2019) contend that while all countries, including Ethiopia, have distinct educational systems, they can generally be categorized into two types: private and public schools. Public and private schools have distinct organizational environments. Private schools often exhibit characteristics linked to greater effectiveness, influenced by the differing dynamics of politics and market forces that shape their operations (Chubb & Moe, 1988). Research indicates that students in private primary schools tend to outperform their peers in public primary schools (Adeyemi, 2014). In Madagascar, private primary institutions demonstrate greater efficiency in promoting student learning outcomes compared to their public counterparts (Lassibille & Tan, 2003). This body of work concludes that privately operated schools significantly enhance the quality of education relative to government-run schools, highlighting the urgent need for reforms in public education systems to improve student performance (Rabidas, 2022). Private elementary schools typically offer superior facilities and maintain smaller class sizes, which facilitate more personalized attention for students. Conversely, public elementary schools often benefit from more experienced teaching staff. Notably, research has shown that graduates from private schools achieve higher academic results

than those from public schools (Bernal et al., 2020). Furthermore, private primary institutions provide more qualified teachers, enhanced facilities, and enriched curricula, contributing to elevated academic success. In contrast, public schools frequently face challenges related to quality standards, larger class sizes, and lower levels of parental education among students (Begna, 2017).

Studies indicated that private schools in Ethiopia generally achieved higher academic performance than public schools (Begna, 2017; Eigbiremolen, 2019). Private institutions offered better facilities, more qualified teachers, and enriched curricula, while public schools often struggled to meet basic quality standards. A notable advantage in mathematics achievement was observed in private schools, likely due to increased learning time and greater teacher attention. Additionally, undernutrition was more prevalent among public school children than their private school counterparts (Ali et al., 2021). Perceptions of school quality, affordability, teacher effectiveness, and household factors such as income and family size influenced parents' decisions to enroll their children in private schools. These findings underscored the disparities between public and private primary education in Ethiopia and the various factors that influenced school choice.

### **Learning Resources and Facilities**

The effectiveness of academic achievement is heavily influenced by educational facilities. Key components include structures, classrooms, athletic fields, worship spaces, skill centers, and educational laboratory supplies and equipment. Establishing these facilities involves several steps, such as planning, acquisition, maintenance, and inventory management (Manuputty et al., 2023). In many nations, inadequate physical infrastructure contributes to low educational attainment, highlighting the necessity of providing students with suitable learning environments. Modern facilities are essential for enhancing learning and academic performance, making continuous upgrades crucial for maximizing both student success and teacher effectiveness (Yangambi, 2023).

Extensive research indicates that learning resources significantly impact primary students' academic performance. Teaching materials are essential for fostering student engagement, understanding, retention, and motivation. Classroom resources—such as furniture, playgrounds, and libraries—not only support student learning but also contribute to the professional development of teachers. Specifically, tools like textbooks and laboratory equipment have been shown to correlate positively with improved academic outcomes. Additionally, the classroom environment and ongoing assessment practices are vital for student success. Various resources, including e-learning tools, classrooms, libraries, and hostels, are identified as critical factors influencing academic performance (Zurainan et al., 2021). The availability and utilization of learning resources, such as textbooks and laboratory equipment, are positively associated with student performance in subjects like Biology (Etim, 2021). Furthermore, studies indicate a direct correlation between the use of educational resources and achievement levels in science education, underscoring the importance of learning facilities in enhancing academic performance (Huda, 2022). Ultimately, school infrastructure significantly impacts student learning and achievement, with contemporary physical amenities playing a crucial role in improving educational outcomes (Yangambi, 2023).

### **Teaching Methods**

A teaching method encompasses the ways in which an educator organizes and implements diverse instructional strategies and activities to meet specific learning objectives. Teaching strategies act as vital instruments that illustrate the success of both the learning experience and the teacher's proficiency. To effectively engage students, instructors must continually explore innovative

methods of delivering knowledge. Quality learning is intrinsically connected to effective teaching practices. As technological advancements occur at an extraordinary pace, conventional teaching approaches are increasingly becoming insufficient. Implementing online education and problem-solving techniques can greatly improve instructional effectiveness. Educators must adjust to the evolving needs of learners (Al Khadhim, 2023). The research indicates that the demonstration teaching method provides greater benefits for students' academic success and participation compared to other strategies such as lectures, discussions, and inquiries (Hafeez, 2021). The instructional approaches adopted by teachers in organized classrooms are closely tied to their practical considerations and philosophical beliefs. There is a clear link between these teaching styles and students' academic performance in fundamental subjects (Aguilar et al., 2017). Furthermore, research by Tshiunza et al. (2017) conducted in the Democratic Republic of Congo examined the direct impact of diverse teaching techniques on students' reading abilities. The findings highlighted the connection between instructional methods and reading proficiency.

The choice of teaching approaches is crucial to the success of the educational process. Educators should select the most appropriate methods to ensure that information is communicated clearly and effectively. The main goal of teaching within the educational context is to facilitate significant transformation in students through various teaching and learning strategies (Oigara, 2011). Additionally, ongoing research in this area continues to explore how different techniques can foster student development. Isa et al. (2020) note that students' poor academic performances are often linked to the ineffective use of teaching methods that hinder knowledge acquisition. While English is considered essential, numerous students face challenges in mastering it for various reasons, complicating the task for educators in choosing and implementing engaging and creative educational methods. The impact of teaching strategies on enhancing student learning has attracted considerable attention in educational research (Hightower et al., 2011).

### **Teacher Professional Practices**

Teacher qualifications are crucial for enhancing students' academic success. Various teacher-related factors, such as qualifications, motivation, experience, teaching methods, training, and knowledge in their subject area, are positively linked to improved academic performance (Ahmad Mirza, 2020). Additionally, the level of student interest correlates positively with teacher competence, which encompasses pedagogical content knowledge, self-efficacy, and enthusiasm for teaching. Research has shown a strong connection between student achievement and teacher self-efficacy (Fauth et al., 2019). Interestingly, novice teachers sometimes outperform their more experienced peers (Graham et al., 2020). While novice teachers may have less experience, they typically show lower teaching skills compared to their seasoned colleagues. To enhance their abilities, they often engage in classroom observations as part of their professional development. However, they frequently struggle to maintain focus during these observation sessions (Ooi & Goto, 2022). This study aimed to compare the observation practices of novice and experienced teachers from two angles: personal perspectives and text analysis. The findings indicated that experienced teachers concentrated their observations on individual students, paying close attention to their interactions and engagement levels. In contrast, novice teachers tended to adopt a broader view, focusing on the overall classroom environment. Furthermore, the study revealed that experienced teachers emphasized the subtleties of teacher-student interactions, whereas novice teachers often found themselves fixated on the blackboard.

Having well-trained and qualified teachers in primary schools greatly enhances the quality of

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education. Factors such as teacher qualifications, experience, teaching methods, motivation, training, and subject knowledge are all positively associated with effective education. Conversely, teacher absenteeism detrimentally affects educational quality and hampers student learning. Challenges such as inadequate school oversight, political influences, and low teacher motivation contribute to absenteeism, negatively impacting academic performance. Addressing these issues and prioritizing improvements in teacher-related factors is essential to uphold high educational standards in government primary schools (Ahmad, 2023). While attributes like gender, experience, subject expertise, and overall educational qualifications do not significantly influence learning outcomes between public and private schools, other factors play a critical role in determining student performance. These elements include a teacher's professional background, their attitude toward schools and students, teaching strategies such as routine book checks, and the proximity of the teacher to the school (Singh & Sarkar, 2015). Notably, there are significant differences in teacher qualifications and experience between government and private primary schools. Public schools generally hire more experienced and highly qualified teachers, while private institutions often engage younger and less experienced staff, with many lacking formal training (Pujana, 2023).

Conventional supervision techniques in Ethiopian primary schools negatively impact the quality of education by limiting professional development opportunities for teachers and ignoring pedagogical concerns. To improve educational quality, supervisors must effectively assist the teaching-learning process and foster positive perceptions of supervisory practices (Mandefro, 2019). Furthermore, the existing salary structure and incentives for primary school educators are inadequate, failing to fulfill their basic needs. This shortfall leads to a lack of dedication to teaching and student support, resulting in a high turnover rate. As a result, capable and experienced teachers are often compelled to seek other job opportunities due to these circumstances (Yadessa & Shemelis, 2022). In Ethiopia's primary schools, teachers' professional learning practices tend to be prescriptive, prioritizing school requirements over the individual needs of educators (Taddese & Rao, 2021). There exists a disconnect between the continuous professional development of teachers, performance evaluations, and career advancement, which negatively affects student learning outcomes (Moti et al., 2022). The research conducted by Badara et al. (2024) showed that professional development for teachers through lesson study significantly enhanced elementary school students' learning outcomes. This demonstrated that effective collaboration among teachers and ongoing professional development positively impacted students' academic success, which may be applicable to similar contexts like Ethiopia. There were no notable differences in student achievement associated with teacher quality factors such as training and professional development (Martin, 2023). Another investigation by Legede et al. (2024) revealed that teacher-related aspects, including training and professional development, have a significant effect on the quality of pre-primary education in Ethiopia, which is vital for children's academic success. Improved teacher qualifications and effective communication can enhance students' overall learning outcomes and development. Educators in private schools generally have higher qualifications and better access to resources, resulting in enhanced student performance. In contrast, public school teachers encounter difficulties in effectively delivering the national curriculum, often dealing with overcrowded classrooms and insufficient support (Begna, 2017). Similarly, private primary school teachers in Ethiopia usually possess better qualifications and resources, which improves the quality of education. Conversely, public primary schools struggle with overcrowded classrooms, poorly qualified teachers, and a lack of resources, leading to a significant disparity in educational quality (Desta, 2012).

## **School Leadership**

The role of school leadership is crucial for enhancing school performance, as it affects multiple dimensions of the educational setting. Research has linked effective school leadership to favorable results in student achievement, teacher contentment, and overall school effectiveness (Yeigh et al., 2019). The study underscored the significance of factors related to school readiness, including leadership vision, collaboration, and instructional support, in facilitating school improvement initiatives. The results point out that school leaders should focus on establishing a nurturing and supportive atmosphere for both students and educators, promoting a culture of ongoing development. Furthermore, the study indicates that investing in the training of capable school leaders and equipping them with essential resources and backing can lead to notable enhancements in students' academic success.

The research underscores the important influence of teachers' leadership styles—transformational and transactional—on students' academic achievements. Transformational leadership, which emphasizes motivating self-development and encouraging critical thinking, is more effective than transactional leadership, which prioritizes compliance and performance standards. While both styles have a positive effect on students, transformational leadership is associated with higher academic success. In conclusion, effective leadership is a vital element in boosting student performance, making the promotion of transformational leadership among educators essential for enhancing educational results (Ratna et al., 2022). The democratic leadership style significantly enhances students' academic performance in secondary schools. This approach fosters collaboration and encourages student participation, leading to improved educational outcomes. By involving students in decision-making processes, democratic leadership creates an environment that supports engagement and motivation, which are crucial for academic success (Ferdinandi & Kiwonde, 2023). Research indicates that intentionally relocating effective principals among schools can considerably diminish achievement gaps. By assigning highly competent principals to lower-performing schools, there is an opportunity to bridge the gap and enhance overall student results (Dhuey & Smith, 2014).

Leadership in schools plays a crucial role in shaping both student learning and teacher satisfaction, as it is a dynamic process that continually evolves. Passionate teachers are more likely to feel a strong commitment to their schools, which, in turn, provides significant benefits to students. The foundation of a positive school culture often lies in leaders who prioritize the well-being of their students and embrace a people-first approach to leadership (Smith & Squires, 2016). Furthermore, research shows that the democratic leadership style adopted by school head teachers is positively linked to enhanced school performance, especially in terms of academic success among primary school students. This democratic approach is, in fact, the most widely used leadership style in primary education settings (Lin & Chuang, 2014).

Several studies have examined the impact of leadership on student achievement in Ethiopian primary schools, revealing that instructional and transformational leadership often result in significant positive outcomes for students (Gao et al., 2023). Interestingly, while leadership was found to influence student outcomes more strongly than the overall learning environment (Ambaw & Meher, 2019), it was noted that task-oriented and change-oriented leadership behaviors led to better student success. In contrast, leadership styles that focused primarily on building relationships, without strong academic engagement, tended to negatively affect learner outcomes (Botha & Aleme, 2023). Principals who actively participate in teaching and learning activities tend

to drive student achievement more effectively than those who take a more passive role. These findings highlight the complex interplay between leadership and academic performance in Ethiopian schools, indicating a pressing need for further research to explore these dynamics in greater detail.

## **METHODS**

The primary objective of this study was to examine the determinants of students' academic performance among students in both public and private middle-level schools located in Yabelo Town, Ethiopia. A cross-sectional quantitative research design was employed to effectively address the research questions.

### **Population of the Study**

The target population of the study comprised a total of 2,661 individuals, including students, teachers, and principals. Among the target population, there were 2,570 students in grades 7 and 8, distributed across public and private schools. Public schools had 1,605 students (755 males and 850 females). The teaching staff in public schools consisted of 44 teachers (19 male teachers and 25 female teachers). Additionally, there were eight male principals in public schools. Private schools had a total of 965 students in grades 7 and 8 (494 males and 471 females). The teaching staff in private schools comprised 31 teachers (24 male teachers and 7 female teachers). Moreover, there were eight principals in private schools, consisting of seven males and one female.

### **Participants**

The study employed a combined sampling approach to ensure a representative and comprehensive understanding of the target population, which consisted of students in grades 7 and 8, teachers, and principals. This study utilized random sampling to select a representative and proportionate sample of middle-level schools in Yabelo Town, including both public (n=6) and private (n=8) schools. Four schools were randomly chosen from each category, ensuring efficient data collection and data saturation within public and private school types. For the student population, a stratified random sampling technique was used. The student population was first divided into two strata based on school type: public schools and private schools. Within each school type stratum, random sampling was then applied to select participants, ensuring that both public and private school students were adequately represented in the sample. The two main strata were identified based on school type: public schools and private schools. Within each stratum, various schools (labeled A, B, C, D for public schools and M, N, O, P for private schools) were designated for sampling. The sample sizes for both genders were proportionally drawn from these totals, ensuring that both males and females were adequately represented in the final sample. For instance, in the public schools' sample, males and females were included in proportions that reflected their actual distribution in the population (102 male students and 114 female students in public schools; 67 male students and 63 female students in private schools). The determination of the sample size for students was guided by the widely used Yamane formula (1967).

For the teacher and principal populations, a census approach was employed due to their relatively small total numbers. Each school has two principals. All 44 public school teachers, 31 private school teachers, 8 public school principals, and 8 private school principals were included in the study. This census approach ensured a comprehensive representation of the perspectives and experiences of teachers and school leaders across the public and private school systems. The total



sample size for the study was 437 (male 177 and female 169 total of 346 students, male 43 and female 32 total of 75 teachers, and male 15 and female 1 total of 16 principals).

## Instruments

To ensure a comprehensive assessment, survey items were adapted from various sources: items related to learning resources and facilities were used by Yangambi (2023) from the School Facility Inventory (SFI), teaching methods were based on the Approaches to Teaching Inventory (ATI) used by Schroeder et al. (2007), teachers' professional practices were adapted from the Teaching Practices Inventory (TPI) used by Obeka (2024), and school leadership items were taken from the Instructional Leadership Inventory (ILI) used by Heck et al. (1991). For the study, survey questionnaires were contextualized to suit the conditions of both students and teachers. The questionnaire was adapted to measure various variables, including learning resources and facilities, teaching methods, teachers' professional practices, and school leadership approaches. Likert scale questions were utilized, allowing participants to express their agreement or disagreement on a 5-point scale, with response options ranging from 1 for *"strongly disagree,"* 2 for *"disagree,"* 3 for *"neutral,"* 4 for *"agree,"* and 5 for *"strongly agree."*

## Translation of Data Collection Instruments

We rigorously assessed the content and construct validity of the questionnaire through an extensive translation process. The instruments—School Facility Inventory (SFI), Approaches to Teaching Inventory (ATI), Teaching Practices Inventory (TPI), and Instructional Leadership Inventory (ILI)—were translated into Afan Oromo, the official language spoken in the town, to ensure they were easily understandable for middle-level students and teachers.

The translation process employed a standard forward-backward approach, engaging two forward translators and one backward translator. Each translator holds at least a Master's degree and has over ten years of teaching experience in relevant fields. Initially, two native Afan Oromo speakers translated the original English versions of the SFI, ATI, TPI, and ILI, along with the demographic questionnaires, into Afan Oromo, considering both students' and teachers' contexts. After completing the translations, the translators carefully evaluated all items for any translation difficulties, ensuring familiarity and relevance to the Ethiopian middle-level school context. Any discrepancies between their translations were resolved by consensus, resulting in a single, cohesive forward translation of the Afan Oromo versions of the SFI, ATI, TPI, and ILI, as well as the demographic questionnaires.

The initial version of these instruments was subsequently translated back into English by an experienced speaker of Afan Oromo. The Afan Oromo version of the instruments was ultimately pilot-tested with 12 middle-level teachers who were excluded from the main study. These teachers evaluated each item for its content validity and clarity. Furthermore, two faculty members with expertise in educational psychology and measurement and evaluation analyzed the items to verify their content validity. Following their review, the investigator, along with the translators, selected 10 items for the SFIQI, 11 for the ATI, and 10 for the TPI, while rephrasing items that were considered too complex without changing their intended meaning. This methodical process improves the reliability and validity of the research instruments used (Beaton et al., 2000; Hahn et al., 2018; Wild et al., 2005).

## **Reliability of Data Collection Instruments**

For the pilot study, participants were chosen through stratified sampling. This method involved categorizing the population (students and teachers) into relevant groups based on particular characteristics, such as the type of school (public or private). A sample was then selected from each group to take part in the pilot study. This strategy ensured that the participants accurately represented the various groups within the population, enabling a more thorough assessment of the data collection tools. In this pilot study, a sample representing more than 10% of the study population was selected, focusing on four variables: learning resources and facilities, teaching methods, teachers' professional practices, and school leadership approaches. The reliability statistics for the survey questionnaires indicated high internal consistency for the data collection tools used for both students and teachers. The student sample comprised 35 participants, including 22 from public schools and 13 from private schools, with a Cronbach's Alpha value of .898, suggesting strong internal consistency among the 41 items measuring constructs related to the determinants of academic performance. The teacher sample included 24 participants, with 16 from public schools and 8 from private schools, yielding a Cronbach's Alpha of .847, reflecting strong reliability across the same 41 items. These results demonstrate that both sets of items effectively measure their intended constructs, providing confidence in the reliability of the data collected from both groups.

## **Procedures**

Quantitative data were collected via a survey questionnaire administered in person to both teachers and students. The data collection process included scheduling convenient times for participants, obtaining informed consent, and providing clear instructions for completing the questionnaire. This structured approach ensured that the data accurately reflected participants' perspectives on the four determinants of academic performance. For academic performance, students' semester average data were collected for the sample schools.

## **Data Analysis**

In this research, both descriptive and inferential techniques were employed for data analysis. Descriptive methods were used to analyze quantitative data from the survey questionnaire, calculating means, standard deviations, and frequencies for each school-based factor to provide insights into the primary determinants of academic success. An independent t-test was applied to evaluate significant differences in the determinants and academic performance between students in public and private middle schools, focusing on both main effects and interaction effects. Multiple regression analysis was carried out to investigate the connection between identified factors and academic achievement, treating academic performance as the dependent variable and assessing significance through regression coefficients, p-values, and effect sizes, while utilizing SPSS software version 26 for data analysis.

## **RESULTS**

In Table 1, a descriptive analysis is presented to examine the determinants of students' academic performance in public and private middle-level schools. The key factors investigated include learning resources and facilities, teaching methods, teacher professional practices, and school leadership approaches. This analysis summarizes responses from both students and teachers, utilizing a 5-point Likert scale for measurement.

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**Table 1**

*Summary of Students' and Teachers' Questionnaire Responses on Determinants of students' Academic Performance*

Factors	School	Students			Teachers		
		<i>n</i> *	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Learning Resources and Facilities	Public	207	2.25	.45	44	2.14	.32
	Private	124	2.89	.73	31	3.50	.59
Teaching Methods	Public	207	2.65	.43	44	2.6	.44
	Private	124	3.02	.68	31	4.52	.25
Teachers Profesional Practices	Public	207	2.41	.47	44	2.72	.59
	Private	124	3.39	.87	31	3.66	1.00
School Leadership Approach	Public	207	3.25	.85	44	3.07	1.15
	Private	124	3.46	.83	31	4.32	.79

Table 2 presented the results of an independent sample t-test comparing determinants of students' academic performance between public and private middle-level schools. The table includes means (M) and standard deviations (SD) for each determinant across both school types. Significant differences were found in all areas.

**Table 2**

*Independent Sample t-test for Determinants of Students' Academic Performance Between Public and Private Middle-Level Schools*

<i>Determinants</i>	Public		Private		<i>t</i> (329)	<i>p</i>	<i>Cohen's d</i>	<i>95% CI</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Learning Resources and Facilities	2.25	.45	2.89	.73	-9.73	.000	-1.11	[-.76, -.50]
Teaching Methods	2.65	.43	3.02	.68	-6.08	.000	-0.69	[-.49, -.25]
Teachers Professional Practices	2.41	.47	3.39	.87	-13.24	.027	-1.52	[-1.12, -.83]
School Leadership Approach	3.25	.84	3.46	.83	-2.23	.026	-0.25	[-.40, -.02]

*Note:* N = 331, *n*<sub>1</sub> = 207, *n*<sub>2</sub> = 124, *p* < 0.001

Table 3 presented the results of a multiple regression analysis examining the relationship between various determinants and students' academic performance in public and private middle-level schools. The study included four predictor variables: learning resources and facilities, teaching methods, teachers' professional practices, and school leadership approach.

An independent sample t-test was conducted to assess whether there was a significant difference in academic performance between public and private middle school students. The results of this analysis are presented in Table 4. This statistical test helps to determine if the mean scores of the two groups differ significantly, providing valuable insights into the academic outcomes associated with each type of school.

**Table 3**

*Multiple Regression Results for Determinants of Students' Academic Performance in Private and Public Middle-Level Schools*

Variable	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>p</i>	95% <i>CI</i>
(Constant)	14.59	2.42	-	6.02	.000	[8.31, 20.86]
Learning Resources and Facilities	9.29	.98	.45	9.47	.000	[6.75, 11.83]
Teaching Methods	1.97	.89	.08	2.20	.028	[-.35, 4.29]
Teachers Professional Practices	2.47	.89	.15	2.77	.031	[-.15, 4.79]
School Leadership Approach	5.00	.0.57	.57	7.35	.000	[3.50, 6.50]

**Note.**  $R = .815$ ,  $R^2 = .664$ ,  $F(4, 326) = 161.074$ ,  $p < .001$

**Table 4**

*Independent Sample t-test for Differences in Academic Achievement Between Students in Public and Private Middle –Level Schools*

<i>AP</i>	Public		Private		<i>t</i> (329)	<i>P</i>	<i>Cohen's d</i>	95% <i>CI</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
SAS	65.07	13.01	68.11	13.56	-2.02	.000	-0.229	[-6.50, -41]

**Note:**  $N = 331$ ,  $n_1 = 207$ ,  $n_2 = 124$ ,  $p < 0.001$ , *AP* is student academic performance measured at the end of the semester, which is called semester average scores (SAS).

## DISCUSSION

This study elucidates the influence of four factors on students' academic performance and reveals significant differences between public and private middle schools, as well as among the factors themselves. The findings indicate that in public schools, the most significant influences on academic performance are the availability and quality of learning resources and facilities, which are often scarce. Following this, teachers' professional practices are found to be ineffective, and the teaching methods employed do not adequately support students' academic performance and overall educational quality. School leadership styles, while slightly better in private schools, still face challenges compared to the other factors.

In private schools, the same factors apply, but they are generally more favorable across all areas. This suggests that private institutions benefit from better resources, more effective teaching practices, and stronger leadership, contributing to improved academic outcomes for their students. Access to high-quality learning materials and technology is fundamental, as robust evidence shows that students with these resources achieve better academic outcomes. Schools that invest in updated resources often experience enhanced student engagement and achievement (Barrett et al.,

2019; Zurainan et al., 2021). A systematic review of school effectiveness underscores that adequate resources significantly contribute to student engagement and achievement, particularly in under-resourced public schools (Brew et al., 2021). Furthermore, well-maintained school facilities cultivate a positive learning environment that enhances student focus and reduces absenteeism (Baker & LeTendre, 2005). Differentiated instruction, tailored to meet diverse student needs, has also been shown to improve engagement and academic success (Caingcoy, 2023). Recent literature continuously supports these findings, reinforcing the critical role of learning resources and facilities in promoting academic performance.

Ongoing professional development for teachers is directly linked to improved instructional practices and favorable student outcomes. Research demonstrates that sustained professional learning enhances teacher effectiveness, which in turn positively impacts student performance (Darling-Hammond & McLaughlin, 2011). Effective classroom management is another vital component; research indicates that well-implemented management strategies lead to increased student engagement and academic success (Guskey, 2000). However, public schools often struggle with inadequate learning resources, a primary barrier to academic achievement, a concern echoed by Ajayi (2024) and Ambaye (2024), who assert that sufficient facilities are essential for enhancing the teaching-learning process. Moreover, strong school leadership is crucial in shaping school culture and driving improved student outcomes. Effective leaders foster a collaborative environment among teachers and prioritize student needs, which can significantly elevate academic performance. While leadership in private schools tends to be slightly more effective, it is important to note that public schools can also benefit from strong leadership practices. Effective leaders in both types of institutions are instrumental in strategically allocating resources to address the specific needs of students and teachers, thus further enhancing academic results (Robinson, 2011). The importance of effective leadership is affirmed by Whitaker et al. (2014), and who emphasize that robust leadership and effective teaching are cornerstones of successful educational outcomes across both public and private institutions. Collectively, these findings highlight the necessity of a supportive educational environment that prioritizes resources, effective teaching methods, professional development, and strong leadership to foster student achievement

The independent t-test results reveal significant disparities between public and private institutions, particularly regarding learning resources, teaching methods, and teachers' professional practices. Public schools face notable challenges in these critical areas, adversely affecting student academic achievement. In contrast, private schools tend to offer more favorable conditions, enhancing their students' educational experiences. These results corroborate research by Agbofa (2023) and Begna (2017), which identified similar trends in the varying quality of educational resources and practices between public and private schools. Notably, the study found only slight differences in school leadership styles between the two types of institutions. This finding diverges from previous research that typically highlights more pronounced variations in leadership practices. This similarity raises important questions about the role of leadership in shaping educational outcomes, suggesting that while leadership is a factor, other elements may play a more significant role in determining academic success.

The findings of multiple regression analysis indicate that various predictor variables significantly influence students' academic performance in middle schools. The overall model was statistically significant, highlighting that learning resources and facilities, teaching methods, teachers' professional practices, and school leadership approaches collectively impact academic outcomes. Specifically, learning resources and facilities were identified as strong predictors of academic



performance, aligning with previous research that underscores the importance of adequate learning environments. Studies have shown that schools equipped with sufficient resources, such as libraries and technology, positively affect student engagement and achievement (Javornik & Mirazchiyski, 2023). Moreover, the effectiveness of teaching methods emerged as another critical predictor, supporting research advocating for diverse instructional strategies tailored to students' needs, which enhance learning outcomes (Azhar et al., 2024). Teachers' professional practices also significantly predicted academic performance, corroborating literature that highlights the impact of teacher effectiveness on student success, as those who engage in continuous professional development and adopt evidence-based practices are more likely to improve academic Performance (Tomaszewski et al., 2022). Finally, the school leadership approach was identified as a strong predictor of students' academic performance, as effective leadership is essential for cultivating a positive school culture and implementing supportive policies for student learning. Research indicates that strong leadership is associated with improved teacher morale and elevated student achievement (Jumbe & Amos, 2024). Overall, these findings emphasize the interconnectedness of these predictor variables in shaping students' academic performance, suggesting that by enhancing learning resources, employing effective teaching methods, promoting professional practices among teachers, and fostering strong leadership, schools can create an environment conducive to academic success.

The independent samples t-test results revealed a statistically significant difference in academic performance between private and public middle school students, with private school students demonstrating significantly higher academic performance compared to their public school counterparts. This finding aligns with previous research, which identified several determinants of academic performance, including teacher professional practice, school resource availability, instructional supervision, effective use of school time, teacher motivation, and parental support. These factors are typically more favorable in private schools, contributing to enhanced student outcomes (Agbofa, 2023). Supporting this, the National Assessment of Educational Progress (NAEP) data indicate that private school students score better in almost all subjects compared to their public school peers, with eighth-grade private school students averaging about 20 points higher in reading assessments (NAEP Reading: Reading Highlights 2022, n.d.).

## **CONCLUSION**

The findings indicate that learning resources, teaching methods, teachers' professional practices, and school leadership significantly impact middle school students' academic performance, particularly in public schools. Private middle schools outperform public ones due to superior resources, teaching practices, and leadership. This disparity highlights that enhancing these determinants can positively affect student achievement across both school types. Overall, private school students achieve higher academic results, attributed to better quality resources and effective educational strategies.

## **LIMITATIONA AND FUTURE DIRECTIONS**

This study has limitations that should be addressed by future researchers. First, its focus on a limited geographic area may affect the generalizability of the findings to other regions or educational contexts, as different cultural, socioeconomic, and policy environments could yield varying results regarding factors influencing academic performance. Additionally, the study's unequal sample sizes, with 207 students from public schools compared to only 124 from private

schools, raise concerns about the comparability of the mean values and standard deviations. The larger sample from public schools may influence these statistics, potentially skewing the results.

Future researchers should also consider external influences, such as family involvement and community support, which may significantly impact student performance. Understanding these elements could lead to a more comprehensive view of the educational landscape and inform the development of targeted interventions. By addressing these limitations and exploring these new directions, future studies can enhance the robustness of findings and their applicability across diverse educational settings, ultimately contributing to improved academic outcomes for students.

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