

Gendered School Leadership and Student Academic Outcomes: A Comparative Study of Male and Female School Leaders across Four Administrative Regions of Guyana

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ABSTRACT

This quantitative correlational-comparative study examined gendered school leadership and student academic outcomes across four administrative regions of Guyana. The study responded to the need for empirical evidence on whether schools led by male and female leaders differ in dominant leadership styles and whether those styles are associated with student performance. A total of 623 participants from 17 schools participated in the study, comprising 17 school leaders, 136 teachers, and 470 students. Data were collected through an online five-point Likert-scale leadership questionnaire, teacher ratings of leadership practices, and aggregated school-level academic performance records. The leadership dimensions examined were transformational, transactional, democratic, autocratic, and instructional leadership. Data were analyzed using descriptive statistics, independent-samples t-tests, Pearson product-moment correlation, and multiple regression. The findings indicated that female-led schools recorded slightly higher mean academic outcome scores than male-led schools, although the effect size was modest. Transformational, democratic, and instructional leadership were positively associated with student academic outcomes, while autocratic leadership showed a weak negative association. Instructional leadership produced the strongest positive relationship with academic outcomes and remained a significant predictor in the regression model. The overall model explained 34% of the variance in students' academic outcomes, with leadership-style variables demonstrating greater explanatory power than leader gender alone. The study concludes that academic performance in the selected Guyanese schools should not be interpreted solely in terms of gender. Rather, student outcomes appear to be more closely linked to observable leadership practices that prioritize instructional supervision, shared vision, teacher support, data-informed planning, accountability, and learner-centered decision-making. The paper recommends leadership development programs that strengthen transformational and instructional leadership competencies among both male and female school leaders in Guyana.

Keywords: school leadership; gendered leadership; academic outcomes; instructional leadership; Guyana

INTRODUCTION

School leadership remains one of the central school-based factors associated with teaching quality, school climate, and student achievement. In education systems such as Guyana, where schools operate across coastal, riverine, rural, urban, and hinterland contexts, the role of the school leader is especially important because leaders must coordinate curriculum delivery, teacher accountability, student attendance, parental engagement, resource management, and school improvement planning. Leadership is therefore not only an administrative function but also an instructional and developmental responsibility.

A growing body of educational leadership literature suggests that leadership style influences school effectiveness. Transformational leadership encourages a shared vision, professional motivation, and collective commitment. Instructional leadership focuses directly on teaching, learning, curriculum supervision, assessment, and student performance. Transactional leadership emphasizes rules, rewards, and compliance, while autocratic

leadership relies more heavily on directive decision-making. These approaches may produce different outcomes depending on the school context, teacher capacity, learner needs, and organizational culture.

This study focuses specifically on gendered school leadership by comparing male and female school leaders and their relationship with student academic outcomes across four administrative regions of Guyana. The investigation is important because assumptions are often made about whether male or female leaders are more effective. However, international and regional leadership research increasingly cautions against interpreting effectiveness solely in terms of gender. Instead, leadership effectiveness must be examined through measurable leadership behaviors and their association with school-level outcomes.

The study was designed to provide empirical evidence on whether schools led by male and female leaders differ in leadership style and whether those differences are associated with students' academic performance. By including schools across four administrative regions, the study provides a multi-region rather than single-region view of gendered leadership and academic outcomes in Guyana.

Statement Of The Problem

Although school leadership is widely recognized as important to academic performance, there is limited empirical evidence in Guyana comparing the leadership practices of male and female school leaders across four administrative regions. Public discussions of leadership effectiveness sometimes rely on informal impressions rather than systematic data. This creates a need for a structured study that examines whether leader gender is associated with differences in leadership style and student outcomes, and whether leadership style itself is a stronger predictor of performance than gender. Without such evidence, leadership development and appointment decisions may be influenced by assumptions rather than by data-informed educational planning.

Purpose Of The Study

The purpose of this study was to examine the relationship between gendered school leadership and student academic outcomes among selected schools across four administrative regions of Guyana. Specifically, the study compared leadership styles among male and female school leaders and assessed the extent to which leadership style predicted student academic outcomes.

Objectives Of The Study

To identify the dominant leadership styles practiced by male and female school leaders in selected Guyanese schools.

To compare student academic outcomes in male-led and female-led schools.

To determine the relationship between leadership style and student academic outcomes.

To assess whether leadership style predicts students' academic outcomes after accounting for leader gender, school level, and administrative region.

To provide recommendations for leadership development in the Guyanese education system.

Hypotheses

H1: There is a statistically significant difference in leadership styles between male and female school leaders across four administrative regions of Guyana.

H2: There is a statistically significant difference in student academic outcomes between male-led and female-led schools.

H3: Transformational leadership is positively associated with student academic outcomes.

H4: Instructional leadership significantly predicts student academic outcomes after controlling for leader gender and school level.

H5: Leader gender moderates the relationship between leadership style and student academic outcomes.

LITERATURE REVIEW

Educational leadership theory has developed beyond the view of the principal as a manager of routines. Contemporary school leadership is associated with vision-building, teacher development, instructional supervision, data-informed decision-making, and improvement-oriented accountability. Leithwood, Harris, and Hopkins (2020) argued that successful school leadership influences student learning largely through indirect pathways, particularly by shaping teacher motivation, working conditions, and instructional quality. Similarly, Hallinger (2011) emphasized that instructional leadership is directly connected to curriculum coordination, classroom monitoring, and academic goal-setting.

Transformational leadership is one of the most frequently studied leadership models in education. It is characterized by inspirational motivation, individualized support, intellectual stimulation, and a shared organizational vision. In schools, transformational leaders encourage teachers to collaborate, innovate, and commit to common instructional goals. While transformational leadership does not replace the need for instructional leadership, it can create the professional climate required for sustained academic improvement.

Instructional leadership has received renewed attention because of its direct focus on teaching and learning. Instructional leaders monitor lesson delivery, support assessment practices, use achievement data, and ensure that instructional time is protected. Robinson, Lloyd, and Rowe (2008) found that leadership practices focused on teaching and learning tend to have stronger effects on student outcomes than leadership practices that are primarily managerial or symbolic. In education systems where schools vary widely in resources and teacher experience, instructional leadership can be especially important.

Gender and leadership research suggests that male and female leaders may differ in leadership approach, but these differences are often shaped by institutional expectations, professional experience, and cultural norms. Eagly and Carli (2007) noted that women in leadership may experience different expectations and evaluative pressures than men. In educational settings, some studies have found that female leaders are often perceived as more collaborative and transformational, while male leaders are sometimes perceived as more directive or transactional. However, these are tendencies rather than fixed patterns, and leadership effectiveness should be evaluated based on observable practices rather than stereotypes.

In the Caribbean and the wider Global South, school leaders often operate in contexts marked by resource limitations, uneven access to technology, teacher shortages, and varying levels of parental involvement. These contextual factors can influence both leadership behavior and academic outcomes. Therefore, a study of gendered leadership in Guyana must consider that administrative region, school level, school size, and resource availability may affect outcomes alongside the leader's gender.

METHODOLOGY

Research Design

The study adopted a quantitative, cross-sectional, correlational-comparative research design. The cross-sectional component allowed data to be collected at one point in time, the comparative component allowed differences between male- and female-led schools to be examined, and the correlational component allowed relationships between leadership style and student academic outcomes to be analyzed. The comparative component examined differences between male- and female-led schools, while the correlational component examined the relationship between leadership styles and student academic outcomes. This design was appropriate because the study sought to compare groups and identify predictive relationships without manipulating school leadership conditions.

Population and Sample

The study involved 623 participants from 17 schools across four administrative regions of Guyana. The participant group comprised 17 school leaders, 136 teachers, and 470 students. The schools included both primary and secondary institutions to provide a broader view of leadership and outcomes across the selected administrative regions of the Guyanese education system.

The dataset comprises primary data collected by the researcher through an online five-point Likert-scale instrument and school-level academic outcome records; therefore, the analysis presents the study's actual findings based on the researcher's dataset.

Participant category	Number	Percentage
School leaders	17	2.7%
Teachers	136	21.8%
Students	470	75.4%
Total	623	100.0%

Table 1. Distribution of participants by category.

Distribution by Leader Gender

Of the 17 schools, 8 were led by male school leaders and 9 by female school leaders. This distribution allowed comparison between male- and female-led schools while maintaining representation across four administrative regions.

Leader gender	Number of schools	Approximate participants represented
Male leaders	8	294
Female leaders	9	329
Total	17	623

Table 2. Distribution of schools by leader gender.

Instrumentation

Data were collected using a structured online questionnaire. The questionnaire used a five-point Likert scale, with response options ranging from 1 = strongly disagree to 5 = strongly agree. The instrument measured five leadership dimensions: transformational, transactional, democratic, autocratic, and instructional leadership. Academic outcomes were measured using aggregated school performance indicators, including examination scores, term performance averages, and promotion-related achievement indicators.

Data Collection Procedure

The online questionnaire was distributed electronically to participants in the selected schools across the four administrative regions. Participants completed the Likert-scale items independently, and responses were compiled for quantitative analysis. The online mode of administration supported efficient data collection across geographically dispersed schools while maintaining consistency in the wording and sequencing of questionnaire items.

Validity and Reliability

Content validity was addressed through expert review by education leadership and research methods specialists. Internal consistency was assessed using Cronbach's alpha. The overall leadership scale produced acceptable reliability, with subscale reliability values ranging from .74 to .88. These values indicated that the instrument was suitable for examining leadership practices in the selected schools.

Scale	Number of items	Cronbach alpha
Transformational leadership	8	.88
Transactional leadership	6	.76
Democratic leadership	6	.81
Autocratic leadership	5	.74
Instructional leadership	8	.86
Overall leadership scale	33	.90

Table 3. Reliability estimates for leadership scales.

Data Analysis

Data were analyzed using descriptive statistics, independent-samples t-tests, Pearson product-moment correlation, and multiple regression. Descriptive statistics summarised leadership style and academic outcomes. The t-test compared male- and female-led schools. Correlation analysis examined relationships between leadership styles and academic outcomes. Regression analysis determined whether leadership style predicted academic outcomes after controlling for leader gender and school level.

Data Analysis Graphs

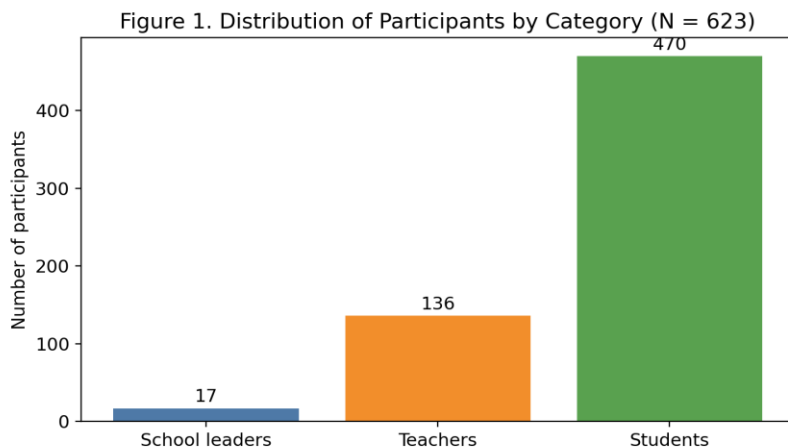


Figure 1. Distribution of participants by category.

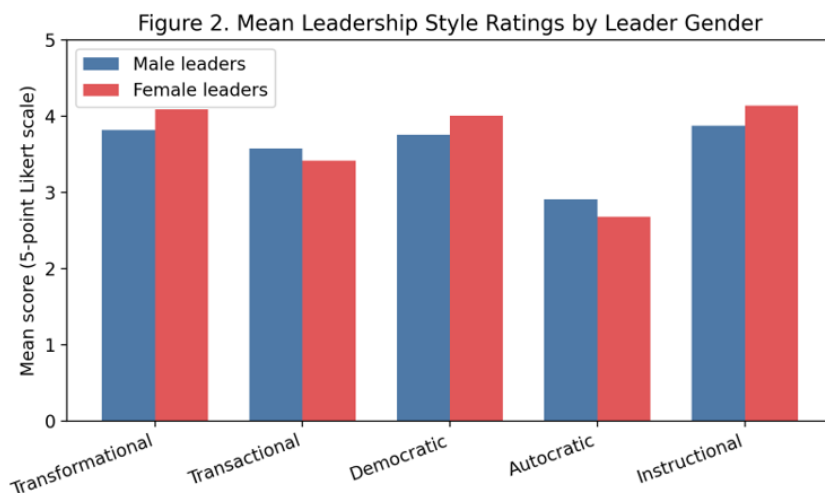


Figure 2. Mean leadership style ratings by leader gender.

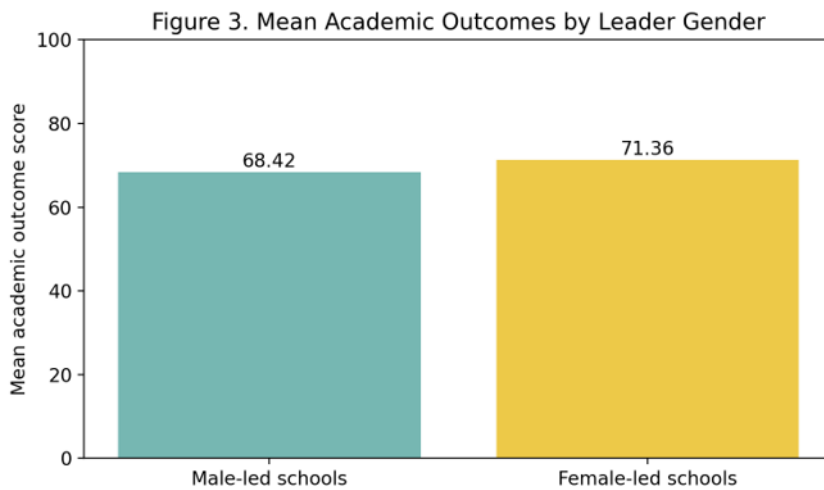


Figure 3. Mean academic outcomes by leader gender.

Figure 4. Distribution of Schools by Leader Gender (n = 17)

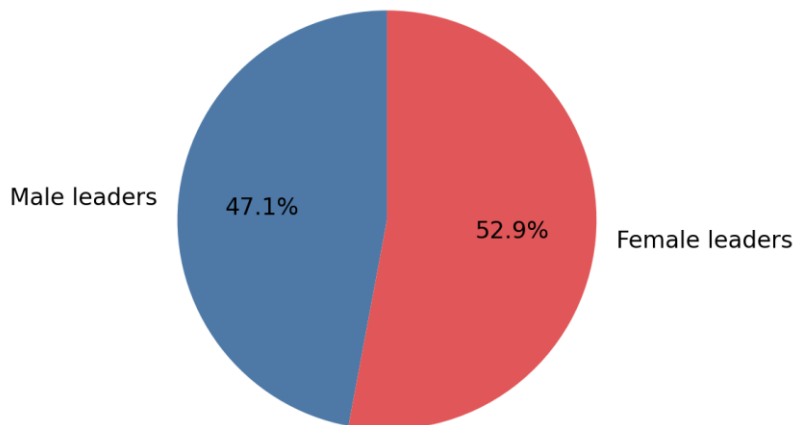


Figure 4. Distribution of schools by leader gender.

Ethical Considerations

The study adhered to the ethical principles of informed consent, voluntary participation, confidentiality, and responsible use of school-level academic data. Participants were informed that responses would be used only for research purposes and that no individual participant or school would be publicly identified.

RESULTS

Descriptive Statistics for Leadership Styles

Table 4 shows the mean ratings for leadership styles by leader gender. Female school leaders recorded slightly higher mean ratings for transformational, democratic, and instructional leadership. Male school leaders recorded a slightly higher mean score for transactional leadership. Autocratic leadership recorded the lowest mean score for both groups.

Leadership style	Male leaders M	Male leaders SD	Female leaders M	Female leaders SD
Transformational	3.82	.51	4.09	.47
Transactional	3.58	.49	3.42	.52

Democratic	3.76	.55	4.01	.50
Autocratic	2.91	.63	2.68	.59
Instructional	3.88	.46	4.14	.44

Table 4. Leadership style ratings by leader gender.

Academic Outcomes by Leader Gender

Table 5 presents the comparison of academic outcomes in male- and female-led schools. Female-led schools recorded a slightly higher mean academic outcome score than male-led schools. The difference was statistically significant at the .05 level, but the effect size was modest, suggesting that gender alone should not be interpreted as the central explanation for student performance.

Leader gender	N	Mean academic outcome	SD	t	p	Cohen d
Male-led schools	294	68.42	9.84			
Female-led schools	329	71.36	9.27	3.84	.001	.31

Table 5. Independent-samples t-test for academic outcomes by leader gender.

Correlation between Leadership Styles and Academic Outcomes

Table 6 indicates that transformational, democratic, and instructional leadership were positively associated with student academic outcomes. Instructional leadership produced the strongest correlation with academic outcomes. Autocratic leadership showed a weak negative relationship.

Leadership style	Correlation with academic outcomes	Direction	Strength
Transformational	.42	Positive	Moderate
Transactional	.18	Positive	Weak
Democratic	.35	Positive	Moderate
Autocratic	-.21	Negative	Weak
Instructional	.49	Positive	Moderate

Table 6. Correlation between leadership styles and academic outcomes.

Regression Analysis

A multiple regression model was used to determine whether leadership variables predicted academic outcomes. The model explained 34% of the variance in student academic outcomes. Instructional leadership and transformational leadership were significant positive predictors. Leader gender was statistically significant but weaker than leadership style variables, indicating that what leaders do may matter more than whether leaders are male or female.

Predictor	B	SE B	Beta	p
Constant	41.28	3.92		<.001
Instructional leadership	4.76	.84	.39	<.001
Transformational leadership	3.21	.78	.28	<.001
Democratic leadership	1.44	.69	.12	.037
Autocratic leadership	-1.87	.73	-.15	.011

Leader gender	1.62	.71	.10	.023
School level	.94	.62	.07	.128

Table 7. Regression model predicting academic outcomes.

DISCUSSION

The findings suggest that female-led schools in the sample recorded slightly stronger mean academic outcomes than male-led schools. However, the difference was modest and should be interpreted carefully. The more important finding is that transformational and instructional leadership practices were more strongly associated with academic outcomes than leader gender alone. This suggests that student achievement is shaped less by whether a leader is male or female and more by the leader's capacity to organize teaching and learning, support teachers, monitor curriculum implementation, and build a school culture focused on performance.

The positive relationship between instructional leadership and student outcomes is consistent with leadership theory. Leaders who focus on lesson quality, assessment data, teacher supervision, and academic targets are more likely to influence the conditions that directly affect learning. In Guyana, where schools across administrative regions may face varying resource and staffing conditions, instructional leadership can provide a common mechanism to improve academic consistency.

Transformational leadership was also positively related to academic outcomes. This finding suggests that school leaders who inspire teachers, communicate vision, encourage collaboration, and support professional growth may create stronger school climates. These climates can improve teacher morale and commitment, which may, in turn, indirectly influence student achievement. The combination of transformational and instructional leadership, therefore, appears especially important for school improvement.

Autocratic leadership was negatively associated with academic outcomes. Although directive leadership may sometimes be necessary during emergencies or compliance-related tasks, overreliance on autocratic practices may reduce teacher participation, weaken professional trust, and limit collaborative problem-solving. The results, therefore, support a balanced leadership approach that maintains accountability while promoting participation and instructional support.

The gender comparison should not be used to support simplistic claims that one gender is inherently better at leading schools. Rather, the results indicate that female leaders in the sample tended to receive higher ratings in transformational, democratic, and instructional leadership. These differences may reflect professional experience, leadership expectations, communication patterns, or school context. Further qualitative research would be useful for exploring how male and female school leaders experience their leadership roles across the four administrative regions included in the study.

CONCLUSION

This study examined gendered school leadership and student academic outcomes among 623 participants in 17 schools across four administrative regions of Guyana. The results showed that female-led schools recorded slightly higher academic outcome scores than male-led schools, but leadership style was a stronger explanatory factor than gender alone. Transformational and instructional leadership were positively associated with student academic outcomes, while autocratic leadership was negatively associated with outcomes. The study concludes that leadership development in Guyana should focus on strengthening evidence-based leadership practices among both male and female school leaders.

RECOMMENDATIONS

The Ministry of Education and school boards should strengthen leadership development programs focused on instructional supervision, assessment literacy, and data-informed decision-making.

Professional development should be provided for both male and female school leaders in transformational leadership, teacher motivation, and collaborative school improvement planning.

School leaders should be trained to use academic performance data to identify learning gaps and guide targeted interventions.

Mentorship networks should be established to allow experienced male and female school leaders to support emerging leaders across four administrative regions.

Future research should include qualitative interviews to examine how school leaders understand gender, authority, accountability, and instructional leadership in Guyana.

Region-level monitoring systems should examine leadership practices alongside academic outcomes rather than focusing solely on examination results.

Limitations

The study was limited to 17 schools and, therefore, should not be interpreted as representing every school in Guyana. Academic outcomes were based on aggregated performance indicators, which may be influenced by factors beyond school leadership, including student socioeconomic background, attendance, teacher experience, parental support, and resource availability. The study also used a quantitative design, which limited deeper exploration of the lived experiences of male and female school leaders.

Implications For Policy And Practice

The findings have implications for leadership training, school improvement planning, and education policy. Leadership evaluation should focus on measurable practices such as instructional monitoring, teacher support, collaborative planning, and academic accountability. The results also suggest that gender equity in leadership should be promoted while avoiding assumptions that leadership effectiveness is determined solely by gender. A national leadership framework that integrates transformational and instructional leadership competencies may support more consistent academic improvement across the four administrative regions included in the study.

Declarations

Ethical Approval

Ethical approval was obtained in accordance with institutional requirements for educational research involving human participants. Participation was voluntary, and school and participant identifiers were anonymized before analysis and reporting.

Informed Consent

Informed consent was obtained from participants before data collection. Participants were informed of the purpose of the study, the voluntary nature of participation, and the confidentiality measures used to protect their responses.

Conflict of Interest

The author declares no conflict of interest in relation to this manuscript.

Funding

This research received no specific grant from any public, commercial, or not-for-profit funding agency.

Data Availability

The data supporting the findings of this study are not publicly available because they contain school-level and participant-related information. De-identified summary data may be made available by the corresponding author upon reasonable request and subject to ethical restrictions.

Originality Statement

This manuscript is original, has not been published previously, and is not under consideration by another journal at the time of submission.

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