

GOVERNANCE AND LEADERSHIP: STUDENTS' ACADEMIC PERFORMANCE THROUGH THE PRINCIPALS' LEADERSHIP STYLES AND COMMITMENT

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Abstract

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The present paper examines the influence of principals' leadership styles on students' academic performance (SAP) given Saudi Vision 2030. The quantitative study applied the questionnaire to get responses from the public secondary school students in Al Ahsa province of Saudi Arabia. The study followed researchers like Aarti and Kadian (2023), Oyugi and Gogo (2019), and Marbawi et al. (2024). The conclusion of the study is based on 317 valid samples. Employing the path analysis through analysis of moment structures (AMOS), the results of the study demonstrate a positive effect of democratic leadership (DL), autocratic leadership (AL), and transactional leadership (TRSL) on SAP and principals' commitment (PCT). The study also confirms the positive impact of transformational leadership (TRLP) on PCT but the negative on SAP. Moreover, PCT's effect on SAP is also positive. With mediating effects, the study confirmed a positive mediating effect of PCT in developing the connection between DL, AL, TRSL, and SAP but did not mediate between TRLP and SAP. The study would support policymakers and educationalists in enhancing SAP by boosting leadership styles and PCT among school principals. Besides, the study's findings would contribute to the domain literature of education and management by adding evidence from the Al Ahsa province of Saudi Arabia.

Keywords: Leadership Styles, Students' Academic Performance, Principals' Commitment, Public Secondary Schools, Saudi Vision 2030

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1. INTRODUCTION

In contemporary society, leadership is highly prominent, as numerous individuals are chosen or designated to undertake leadership roles. Leadership is crucial in several areas, i.e., educational institutions, armed forces, and civic organizations (Zhong, 2024). A leader must foster solidarity, resilience, concord, affluence, and blissfulness within the populace (Achimugu & Obaka, 2019). For organizations, the leadership is responsible for its success and prosperity (Imhangbe et al., 2019). Several organizations utilize leadership as a teaching tool to change employee behavior and make the individual in charge inspire others to work toward accomplishing particular organizational objectives. The leadership style is based on the dimensions such as democratic leadership (DL), autocratic leadership (AL), transformational leadership (TRLP), and transactional leadership (TRSL) (Podsakoff et al., 1990; Oyugi & Gogo, 2019; Imhangbe et al., 2019; Asabia, 2024; Mukhlisin et al., 2024). These styles are the significant predictors of students' academic performance (SAP). More clearly, leadership styles are the integration of constructs where individuals utilize their authority and techniques to unite numerous individuals toward a shared objective. The DL style significantly encourages group members to participate more actively in decision-making (Raupu et al., 2021). Likewise, AL supports setting the leaders' goals, establishes rules and regulations, and controls all actions without consulting their subordinates. The TRLP clarifies the techniques employed to achieve positive and planned modifications through the participation of leaders and followers in achieving ambitious goals and devising solutions (Sun & Henderson, 2017). Finally, the TRSL style includes the exchange procedure that leads to the conformity of supporters (Kalsoom et al., 2018). In this style, the leaders often emphasize achieving corporate objectives rather than trying to expand the motivation of their subordinates or the organization's human resources. Similarly, principals' commitment (PCT) positively enhances the SAP by developing the students' emotions to attach to their schools (Meyer & Allen, 1997).

In the literature, the SAP is predicted by several constructs such as achievement, motivation, DL, AL, TRLP, TRSL, job satisfaction, conflict resolution, staff management, PCT, knowledge management and organizational effectiveness, etc., in the development of SAP and students' success (Ramli et al., 2019; Marbawi et al., 2024; Patiar & Wang, 2016; Mukhlisin et al., 2024) in the diverse organizations and contexts. However, Saudi Arabia is going through a significant transition with the implementation of Vision 2030. This shift dramatically impacts the public education system. One of the most crucial instruments for realizing this vision is public education. Saudi Arabia aims to generate a dynamic, different, and sustainable economy. The country recognizes the need to develop a highly skilled population to meet 21st-century knowledge-based labor market demands. Education is at the core of this effort. As a result, the government in Saudi Arabia places a high priority on enhancing the education system. Such developments are characterized by changes such as the significant focus on students'

achievements and the role of the school's leaders in these achievements. Based on these gaps, we raised the questions:

RQ1: What is the role of leadership styles (democratic, autocratic, transformational, and transactional) and principals' commitment to developing academic performance for secondary school students (SAP)?

RQ2: How does principals' commitment mediate the connection between democratic, autocratic, transformational, and transactional leadership, and the academic performance of secondary school students (SAP)?

This study is different and provides novelty as it instantaneously assimilates the leadership styles (DL, AL, TRLP, and TRSL) with PCT and SAP. Besides, the study also examines the mediating contribution of PCT between leadership styles and SAP, further reinforcing the study's worth and novelty. Finally, the contextual touch of the survey to principals' DL, AL, TRLP, and TRSL towards SAP among the students of secondary schools in Saudi Arabia overcomes the significant gaps with a massive and integrated framework. The study's findings support the development of excellent academic achievement through the educational institution's leadership. In secondary schools, school leaders are crucial to attaining excellent performance. Due to the implementation of Saudi Vision 2030, education plays a central role in the context of Saudi Arabia. The findings of this study will be helpful to those in charge of supervising and monitoring the educational system, such as policymakers, the government through the Ministry of Education, secondary school leaders, and future researchers.

The structure of this paper is as follows. Section 2 underlines the literature review and the development of hypotheses. Section 3 explains the methods. Section 4 provides data analysis; Section 5 presents a discussion. Section 6 ends the paper with a conclusion.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Leadership styles

The leadership styles underline the leaders' methods and behaviors when guiding, motivating, and managing others. An individual's leadership style also regulates how they manage and contrivance plans while accounting for the prospects of stakeholders and the well-being of their team (Oyugi & Gogo, 2019). There are several leadership styles, including DL, AL, TRLP, TRSL, etc.

DL supports decision-making, communication, ownership, professional growth, and empowerment, which helps resolve conflict and manage the organization (Oyugi & Gogo, 2019). PCT is positively enhanced through DL. According to Obeng-Asare and Korang (2024), DL style positively predicts administrative staff performance. In the study of Uy et al. (2024), there is a direct effect of democratic school leadership on educational achievement and academic success (Zhong, 2024). Wahidin et al. (2020) claim the predictive power of DL toward teacher's performance. Besides, Naimah et al. (2024) suggest the massive impact of DL on both commitment and SAP.

The AL also supports staff management and conflict resolution (Oyugi & Gogo, 2019). AL positively develops the PCT among individuals, ultimately enhancing the SAP and creating a conducive learning environment (Imhangbe et al., 2019). The SAP is positively predicted through the AL, which is a massive predictor of SAP. According to Achimugu and Obaka (2019), AL is the best predictor of SAP. Similarly, AL is also a good analyst of PCT (Wachira et al., 2017). Abd El Qader and Benoliel (2024) and Esoy et al. (2024) claim the importance of AL in improving teachers' commitment, specifically in education. The investigation of Yalçınkaya et al. (2021) demonstrates the positive connection of AL styles with the motivation and performance of the teachers. In the same aspect, the AL styles of principals correlate with teachers' commitment in secondary schools (Ayele, 2022).

TRLP and TRSL are important factors in organizations that are favorable in increasing SAP and PCT and satisfaction among employees and students in the organizations. TRLP assists in seeking new opportunities for organizations and future plantings (Podsakoff et al., 1990). The study of Nguyen et al. (2017) suggests the substantial effect of TRLP styles on organizational effectiveness and managerial performance.

The PCT is predicted through TRSL (Wahyuni et al., 2019). However, Sengendo and Eduan (2024) specifically focus on TRLP's impact on academic performance and found it positive. Similarly, Puni et al. (2021) found that TRSL and TRLP positively affect PCT. Scholars like Ramli et al. (2019), Gavya and Subashini (2024), and Marbawi et al. (2024) advised the robust effect of TRSL in developing performance and students' achievements.

2.2. Principals' commitment

Principals' commitment underlines emotional attachment to their organization. It shows you believe they are devoted and highly loyal to their organization (Meyer & Allen, 1997). The PCT has the leading role in developing SAP. According to Kimengich et al. (2020), head teachers' commitment positively predicts students' learning performance in primary education. The PCT is a massive construct that enhances the performance of both teachers and students (Tawa et al., 2024). There is also a positive effect of school climate on teachers' commitment, representing that a positive atmosphere within schools can enhance teachers' dedication, eventually enhancing SAP. Apart from that, the mediating role of PCT supports instructional leadership and SAP (Khan et al., 2020). Teachers' commitment and leadership behavior exemplify their correlation with improved academic outcomes for students (Ligaya et al., 2024).

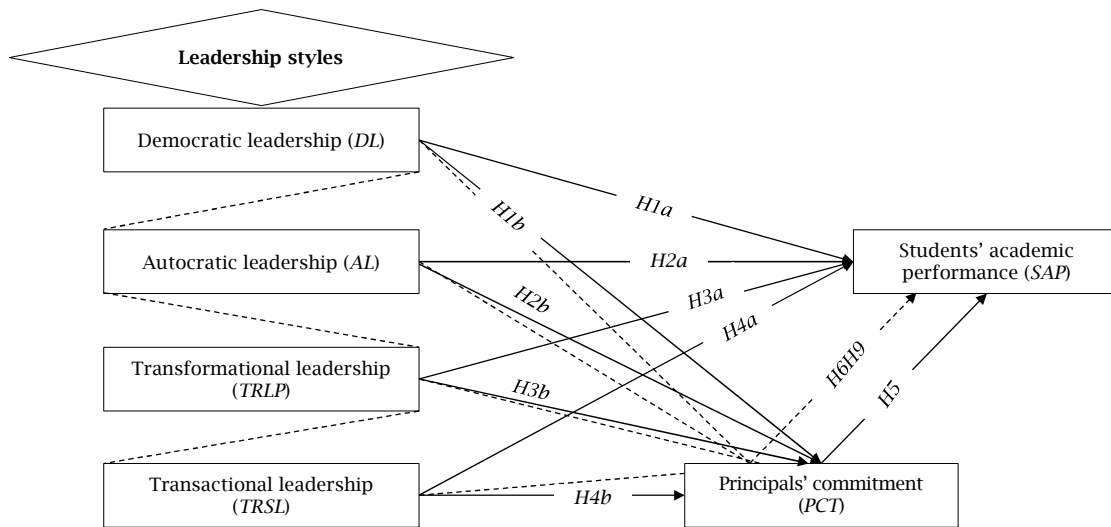
2.3. Students' academic performance

SAP shows the students' performance through their academic progress, love to attend classes, interest in practical aspects of classes, and deep involvement in school activities (Aarti & Kadian, 2023). In the literature, the notion of SAP is predicted through diverse constructs, including satisfaction, PCT, TRLP, leadership behavior, TRSL, class environment, etc. (Kars & Inandi, 2018; Abd El Qader & Benoliel, 2024; Esoy et al., 2024).

As a result, the domain literature suggests the meaningful role of leadership styles (DL, AL, TRLP, and TRSL) in developing students' success, PCT, achievement, motivation, SAP, departmental performance, knowledge management, organizational effectiveness, job satisfaction, staff management, conflict resolution, etc. (Oyugi & Gogo, 2019; Ramli et al., 2019; Marbawi et al., 2024; Gavya & Subashini, 2024; Mukhlisin et al., 2024; Patiar & Wang, 2016) in diverse organizations and contexts. However, the literature still lacks some gaps which need to be considered. There is a deficient literature that simultaneously integrates the leadership styles (DL, AL, TRLP, and TRSL) with PCT and SAP. Moreover, the role of PCT as a mediator between leadership styles and SAP further provides the lacking literature. Finally, principals' DL, AL, TRLP, and TRSL need serious consideration for the SAP of secondary school students in Saudi Arabia. Hence, based on these gaps and existing relations in the literature, the authors designed a framework (see Figure 1) to confirm among the secondary school students in Saudi Arabia. The framework is based on integrating DL, AL, TRLP, TRSL, PCT, and SAP in an integrated model.

The study's conceptual framework examines the effect of leadership styles (DL, AL, TRLP, and TRSL) on PCT and SAP. More specifically, DL assists the organization in enhancing the competency and skills of the teachers. Likewise, AL helps the teachers make relational decisions, develop effective communication, and manage the staff smoothly. Furthermore, TRLP underlines the principals' initiatives, opportunities, and plans that they set out for the better future of their students. The final leadership style (TRSL) supports developing positive feedback and exceptional negotiation, which further complements the student's understanding and knowledge. All these constructs of leadership style lead to the enhancement of the SAP among the students. Finally, the direct and indirect contribution of PCT further brings meaning and commitment to enhance performance within the schools.

Figure 1. Conceptual model



Source: Authors' elaboration.

2.4. Principals' democratic leadership, commitment, and students' academic performance

DL is the most critical construct that supports organizations in enhancing commitment among employees. In the study of Raupu et al. (2021), the DL positively enhances teacher's effectiveness and performance. Principal's leadership styles influence students' academic achievements, possibly enabled by heightened teacher motivation and conducive learning environments (Obama et al., 2015). The DL and other styles substantially affect school teachers' performance (Wahidin et al., 2020). In the same notion, Obeng-Asare and Korang (2024) confirm the positive link between DL style and administrative staff performance. There is a direct influence of democratic school leadership on students' academic success (Uy et al., 2024; Zhong, 2024).

With regard to the connection of DL with PCT, it is a positive in the literature. For instance, Amini et al. (2019) show a strong correlation between DL, employee motivation, and commitment. DL positively affects commitment and subsequent performance (Naimah et al., 2024).

The above literature demonstrates the effect of DL on SAP and PCT in diverse respondents and contexts. However, the integration of DL towards SAP and PCT needs further confirmation in the context of secondary school students. Thus:

H1a: Principals' democratic leadership positively enhances the academic performance of secondary school students (SAP).

H1b: Principals' democratic leadership positively enhances principals' commitment of secondary school students.

2.5. Principals' autocratic leadership, commitment, and students' academic performance

The AL is a massive predictor of SAP (Achimugu & Obaka, 2019). A leadership style such as TRLP develops the effectiveness of commitment and teachers' job performance through a conducive learning environment (Imhangbe et al., 2019). Besides, scholars like Yalcinkaya et al. (2021) and

Sarwar et al. (2022) confirmed leadership styles as positive predictors of motivation and teacher performance.

AL positively enhances the commitment (Wachira et al., 2017). The study of Yalcinkaya et al. (2021) and Ayele (2022) confirm the positive effect of AL style on teacher motivation, commitment, and performance. The teachers' trust in school leadership can be enhanced by AL (Kars & Inandi, 2018). Abd El Qader and Benoliel (2024) underline the prominence of AL in enhancing teachers' commitment in a minority educational context. In higher education institutions (HEIs), AL is the significant enabler of teachers' commitment (Esoy et al., 2024).

As a result, the literature confirms the positive link between AL, SAP, and PCT. However, the investigation needs more domain literature on other leadership styles, such as DL, TRLP, and TRSL. Henceforth:

H2a: Principals' autocratic leadership positively enhances the academic performance of secondary school students (SAP).

H2b: Principals' autocratic leadership positively enhances principals' commitment of secondary school students.

2.6. Principals' transformational leadership, commitment, and students' academic performance

The TRLP construct positively enhances SAP. Al Doghan et al. (2023) and Mukhlisin et al. (2024) suggest the positive contribution of TRLP and social entrepreneurship in achieving enterprise performance. The positive effect of TRLP on commitment, engagement, and departmental performance is noticed by Patiar and Wang (2016). Similarly, commitment is also predicted by TRLP. The study of Cahyono et al. (2020) demonstrates that TRLP directly affects job satisfaction and commitment among private university lecturers. A seminal work by Patiar and Wang (2016) suggests the positive effect of TRLP on commitment and hotel departmental performance. In the studies of Soomro et al. (2021) and Soomro and Shah (2022), paternalistic leadership, employee voice, TRSL,

TRLP, and creativity positively enhance corporate entrepreneurship and performance in small and medium enterprises (SMEs).

Consequently, the development of SAP and commitment is possible through TRLP, but it needs further confirmation in the students' context of Saudi Arabia. Hence:

H3a: Principals' transformational leadership positively enhances the academic performance of secondary school students (SAP).

H3b: Principals' transformational leadership positively enhances principals' commitment of secondary school students.

2.7. Principals' transactional leadership, commitment, and students' academic performance

The SAP is meaningfully enhancing TRSL. The study of Wakachala et al. (2021) confirms the potential effect of TRSL in the enhancement of SAP in boarding schools. The empirical investigation of Wahyuni et al. (2019) demonstrates the effect of motivational aspects of TRLP, which influence students' motivation and subsequent academic success. TRLP's impact on academic performance is positive and meaningful (Sengendo & Eduan, 2024).

Similarly, TRSL is a positive predictor of commitment (Puni et al., 2021). Gavya and Subashini (2024) stress the positive role of TRSL in increasing PCT through its clear expectations and rewards system. According to Ramli et al. (2019), TRSL positively affects PCT. In the study of Marbawi et al. (2024), SAP and commitment are predicted by TRSL and TRLP.

In the above literature, the TRSL is the best predictor of SAP and PCT, which needs further confirmation in the presence of other leadership styles like TRLP, AL, and DL towards SAP and commitment. Therefore:

H4a: Principals' transactional leadership positively enhances the academic performance of secondary school students (SAP).

H4b: Principals' transactional leadership positively enhances principals' commitment of secondary school students.

2.8. Principals' commitment and students' academic performance

The PCT is the protagonist analyst of SAP. The impact of school climate on teachers' commitment represents that a conducive environment within schools can enhance teachers' dedication, ultimately influencing SAP (Tsuyuguchi et al., 2024). Teachers' commitment and leadership behavior exemplify their correlation with improved academic outcomes for students (Ligaya et al., 2024). In the same dimension, Kimengich et al. (2020) extend this association to school leaders and demonstrate that the head teachers' commitment positively affects learners' performance in primary education. Specifically, in the context of children's education, visionary leadership and PCT enhance the teachers' and children's performance (Tawa et al., 2024). Therefore, based on the positive associations, we proposed:

H5: Principals' commitment positively enhances the academic performance of secondary school students (SAP).

2.9. Commitment as mediator

The domain literature recognizes the role of commitment between several constructs and contexts well. Khan et al. (2020) and Li et al. (2022) suggest the mediating contribution of commitment in developing the association between instructional leadership, TRSL, TRLP, and SAP. Empowering leadership and teachers' job performance is positively associated with each other via commitment (Limon, 2022). The constructs such as performance, job satisfaction, and leadership behavior are positively connected through the mediation of commitment (Yousef, 2000). Borde et al. (2024) analyze the different leadership styles that affect organizational performance through the mediator of commitment. In the views of Ribeiro et al. (2018), the employees' affective commitment mediator between AL and performance. The connection between TRLP and employee performance is reinforced by commitment (Sobaih et al., 2022). Recently, Fababier and Apostol (2024) claimed the mediating effect of PCT between the TRLP of school heads and the individual work performance of teachers.

Consequently, the above literature provides a consistent association between leadership styles (DL, AL, TRLP, and TRSL), PCT, and SAP directly. PCT is also a mediator between AL, DL, TRLP, TRSL, and SAP. Hence, based on these consistent relationships, we suggested:

H6: Principals' commitment mediates the connection between principals' democratic leadership and students' academic performance.

H7: Principals' commitment mediates the connection between principals' autocratic leadership and students' academic performance.

H8: Principals' commitment mediates the connection between principals' transactional leadership and students' academic performance.

H9: Principals' commitment mediates the connection between principals' transactional leadership and students' academic performance.

3. RESEARCH METHODOLOGY

3.1. Research approach and respondents

Diverse methods and approaches, such as mixed methods and qualitative approaches, can be applied to explore performance, leadership styles, and commitment from different perspectives. In this manner, every method has its pros and cons or chances of bias, i.e., common method bias and response bias. However, this study employed the quantitative methods due to its presentation of the facts with numbers and figures with great objectivity. This is the robust approach that the researchers mainly adopted. In domains of SAP, PCT and leadership styles, this method is applied by researchers like Kars and Inandi (2018), Abd El Qader and Benoliel (2024), Esoy et al. (2024), Oyugi and Gogo (2019), Ramli et al. (2019), Marbawi et al. (2024), Gavya and Subashini (2024) and Mukhlisin et al. (2024).

The study's respondents are students of public secondary schools in the Al Ahsa province of Saudi Arabia. We selected these respondents due to a few reasons. Firstly, students form a representative sample of the different populations within the region, contributing insights appropriate to an extensive range of individuals (Cingel &

Krcmar, 2013). The involvement of these respondents' strengths and weaknesses of the local educational system assists in targeted developments. Besides, these students not only empower the education system but also their responses would help in fostering a sense of ownership in their education, eventually improving the overall learning experience and consequences in Al Ahsa's public secondary schools.

3.2. Survey tools and validity

The endurance of validity and reliability of the survey tool is necessary to ensure the correct responses with great authenticity. In this regard, we ensured both assumptions were met by conducting a pilot study and getting feedback from the domain researchers. We collected 24 samples and confirmed the reliability by calculating

the items' Cronbach alpha and factor loadings. As a result, the reliability is greater than 0.70, with fair scores and the loading scores were also found to be greater than 0.70, which ensured excellent and acceptable loading scores (Hair et al., 2020) (see Table 1). Moreover, we ensured the validity of the survey by sending a few surveys to two university professors. One professor was the field expert or professor of management, who checked the questionnaire's content and format — and another professor of statistics was more updated from analysis, specifically structural equation modeling (SEM) analysis. As a result, the professors made minor changes regarding the format. Moreover, about the language of the questionnaire, we initially administered it in both languages, i.e., English and Arabic. Among them, the students preferred Arabic, and we launched the Arabic language survey to collect large-scale data.

Table 1. Reliability assessment through a pilot study

No.	Construct	No. of items	Alpha (α)	Loading ranges
1	Democratic leadership (<i>DL</i>)	5	0.763	0.717–0.873
2	Autocratic leadership (<i>AL</i>)	5	0.717	0.763–0.832
3	Transformational leadership (<i>TRLP</i>)	5	0.803	0.729–0.897
4	Transactional leadership (<i>TRSL</i>)	5	0.811	0.776–0.883
5	Principals' commitment (<i>PCT</i>)	5	0.832	0.753–0.854
6	Students' academic performance (<i>SAP</i>)	4	0.798	0.773–0.844

Note: $n = 24$.

Source: Authors' elaboration.

3.3. Data collection methods and sample size

The researchers collected the data through a survey questionnaire. We visited the public schools in the Al Ahsa provinces, where we got permission to get responses from the students. We adopted a convenience sampling technique to trace the respondents of the study. Before handing over the survey to the respondents, we informed them about the study's aim and objectives in Arabic because it was more convenient for them. Moreover, we get their teachers involved to provide more understanding about the survey's aim. Furthermore, we followed ethical protocols to ensure the fair use of their responses. Hence, we distributed 550 surveys among them. We suggest they complete the survey wherever they feel more relaxed and easy. We initially gave one week time and then a few reminders. Finally, we got back 322 raw samples with a response rate of 58.54%. After data cleaning, we excluded five invalid cases and finally used 317 valid cases for final data collection.

3.4. Measurement scales

The researchers borrowed all the items of the scale from the related literature. More specifically, the *DL* and *AL* measured for five items each and adopted from the study of Oyugi and Gogo (2019). The sample content of the item for *DL* is "Democratic leadership is best for decision making", and for *AL* is "Democratic leadership is best for staff management". Moreover, we measured *TRLP* and *TRLS* leadership styles with five items adopted from Podsakoff et al. (1990). The sample item for *TRLP* is

"My principal is always seeking new opportunities for the future", and *TRLS* is "My principal commends (praise formally) me when I do a better than average study". Likewise, the *PCT* is measured on five items. These items were adopted from Meyer and Allen (1997), with a sample item, "This organization is meaningful in my life". Finally, we borrowed four items from the study of Aarti and Kadian (2023) to measure *SAP*. The sample content for *SAP* is "Practical aspects of classes interest me". We gauged all these items based on a five-point Likert scale (strongly agree to strongly disagree).

4. RESEARCH RESULTS

4.1. Measurement model

To fulfill the measurement model, the researchers followed the instructions of Hair et al. (2020), where we assessed it based on construct and item level. With regard to measurement evaluation, the researchers observed the loading scores of almost all the items as greater than 0.70, except for the items, i.e., *DL4*, *TRLP3*, *TRSL4*, and *PCTT2*, which did not appear to be greater than values of 0.70 and hence, these were deleted. Moreover, the average extracted variance (AVE) scores are found to be acceptable (> 0.50) along with acceptable values of composite reliability (CR) (> 0.70) for all the constructs. (Hair et al., 2020). Furthermore, Cronbach alpha (α) for all the constructs appeared to be greater than 0.70, which ensured good consistency among all the scale items (Hair et al., 2020) (see Table 2).

Table 2. Measurement model

Factors	Code	Loading	α	CR	AVE
DL	DL1	0.856	0.818	0.901	0.695
	DL2	0.841			
	DL3	0.828			
	DL5	0.808			
AL	AL1	0.852	0.827	0.911	0.672
	AL2	0.828			
	AL3	0.818			
	AL4	0.802			
	AL5	0.797			
TRLP	TRLP1	0.867	0.786	0.906	0.707
	TRLP2	0.852			
	TRLP4	0.825			
	TRLP5	0.818			
TRSL	TRSL1	0.863	0.866	0.901	0.695
	TRSL2	0.851			
	TRSL3	0.822			
	TRSL5	0.798			
PCT	PCT1	0.862	0.835	0.899	0.689
	PCT3	0.833			
	PCT4	0.826			
	PCT5	0.798			
SAP	SAP1	0.817	0.820	0.868	0.623
	SAP2	0.799			
	SAP3	0.778			
	SAP4	0.762			

Note: Deleted items: DL4, TRLP3, TRSL4, PCT2.

Source: Authors' elaboration.

Besides, we conducted a discriminant validity (DV) evaluation to conclude the level of association between the factors (Hair et al., 2020). In this regard, the researchers employed Fornell and Larcker's (1981) criterion. This test requires that all construct

correlations be lower than the square root of the AVE estimations (Hair et al., 2020). According to Henseler et al. (2015), a correlation between exogenous variables is below 0.85. As a result, the DV for the entire model is satisfied (see Table 3).

Table 3. Discriminant validity

Construct	ASP	PCT	DL	AL	TRLP	TRSL
ASP						
PCT	0.785					
DL	0.155	0.643				
AL	0.285	0.332	0.472			
TRLP	0.329	0.191	0.382	0.462		
TRSL	0.205	0.412	0.278	0.351	0.713	

Source: Authors' elaboration.

4.2. Structural model

We assessed the structural model in two steps. In the first step, we ensured the model's fitness with the data, where the adjusted goodness of fit index (AGFI) appeared as 0.892, normed fit index (NFI) as

0.917, goodness of fit index (GFI) as 0.947, comparative fit index (CFI) as 0.933, the root mean square residual (RMR) as 0.047 and the root mean square error of approximation (RMSEA) is found as 0.030. These values fall within the suitable ranges (Hair et al., 2020) (Table 4 and Figure 2).

Table 4. Model fit indices

Model fit	AGFI	NFI	GFI	CFI	RMR	RMSEA
Current value	0.892	0.917	0.947	0.933	0.047	0.030
Suggested value	≥ 0.80	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08	≤ 0.08

Source: Authors' elaboration.

In the second step, as mentioned in Table 5 and Figure 2, we assessed the hypotheses, where the DL is found to have a positive effect on SAP and PCT, which accepted the $H1a-H1b$ ($H1a = \beta = 0.304$; $p < 0.01$; $H1b = \beta = 0.289$; $p < 0.01$). Likewise, AL positively affects SAP and PCT ($H2a = \beta = 0.247$; $p < 0.01$; $H2b = \beta = 0.435$; $p < 0.01$), which accepted the $H2a-H2b$. The study also accepted the positive effect of TRLP on PCT but negative on SAP ($H3a = \beta = -0.027$; $p > 0.01$; $H3b = \beta = 0.118$; $p < 0.01$). Therefore, $H3a$ is rejected, and $H3b$ is supported.

Moreover, there is a positive effect of TRSL on SAP and PCT, which supported the $H4a-H4b$ ($H4a = \beta = 0.271$; $p < 0.01$; $H4b = \beta = 0.307$; $p < 0.01$). The PCT also positively affects SAP ($H5 = \beta = 0.159$; $p < 0.01$). Thus, $H5$ is reinforced. With regard to indirect paths, the study found a mediating effect of PCT between DL and SAP ($H6 = \beta = 0.178$; $p < 0.01$) and AL and SAP ($H7 = \beta = 0.382$; $p < 0.01$). On the other hand, PCT did not mediate the connection between TRLP and SAP ($H8 = \beta = -0.105$; $p < 0.01$). Consequently, $H8$ is rejected.

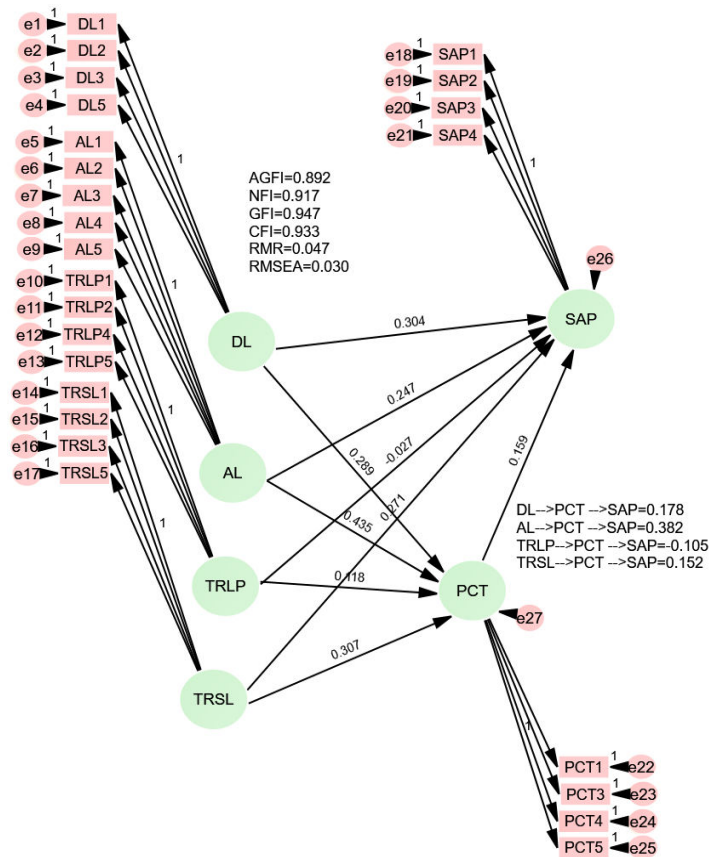
Table 5. Structural equation modeling estimations

Factor	Estimate	SE	CR	p-value	Conclusion
H1a: DL → SAP	0.304	0.055	5.526	0.000	Supported
H1b: DL → PCT	0.289	0.066	4.347	0.000	Supported
H2a: AL → SAP	0.247	0.058	4.277	0.000	Supported
H2b: AL → PCT	0.435	0.055	7.935	0.000	Supported
H3a: TRLP → SAP	-0.027	0.022	1.246	0.213	Not supported
H3b: TRLP → PCT	0.118	0.020	5.880	0.000	Supported
H4a: TRSL → SAP	0.271	0.049	5.505	0.000	Supported
H4b: TRSL → PCT	0.307	0.048	6.335	0.000	Supported
H5: PCT → SAP	0.159	0.052	3.052	0.002	Supported
H6: DL → PCT → SAP	0.178	0.050	3.574	0.000	Supported
H7: AL → PCT → SAP	0.382	0.039	9.83	0.000	Supported
H8: TRLP → PCT → SAP	-0.105	0.06	1.756	0.079	Not supported
H9: TRSL → PCT → SAP	0.152	0.059	2.594	0.01	Supported

Note: SE = standard error, CR = critical ratio. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' elaboration.

Figure 2. Structural model



Source: Authors' elaboration.

5. DISCUSSION

The present study proposes to explore SAP through the principal's leadership styles and PCT among secondary school students in the Al Ahsa province of Saudi Arabia. The study was conducted based on the quantitative approach. About hypotheses assessment, the study of the positive effect of DL on SAP and PCT. These results are supported by the domain literature like Obeng-Asare and Korang (2024), Uy et al. (2024), Zhong (2024), Amini et al. (2019), and Naimah et al. (2024), who confirmed the positive effect of DL and SAP and PCT in the diverse contexts. These results suggest that public secondary school students recognize that the DL is the best for their decision-making and communication regarding the enhancement of SAP

and PCT. They confirm that the principals' ownership helps enhance the schools' standards and worth, improving student performance and commitment. DL enhances empowerment and professional growth when making decisions regarding the school's betterment. Besides, the principals contribute to resolving conflict and managing the school's day-to-day matters.

Moreover, the results also confirmed the positive influence of AL on SAP and PCT. These outcomes are also accorded with the related literature (Imhangbe et al., 2019; Yalçinkaya et al., 2021; Sarwar et al., 2022; Wachira et al., 2017; Ayele, 2022; Kars & Inandi, 2018; Abd El Qader & Benoliel, 2024). These results reflect that in the view of students, AL is the robust factor in communicating with staff to manage the problems of the schools. The AL

assists in making the decisions relating to the school and is the one who manages the other clashes and engagement of the employees.

Likewise, further results suggest a positive effect of TRLP on SAP but not on PCT. These results are accorded with Mukhlisin et al. (2024), but not are in line with Patiar and Wang (2016), Soomro et al. (2021), and Soomro and Shah (2022). These results demonstrate that the principal is constantly looking for new opportunities for the students. They decorate stimulating pictures of the future for us. The principals have a strong thoughtfulness of where we are going and how to enhance the SAP among the students. The principals continuously inspire other students regarding plans for the future. The students reflected that principals are able to get others committed to their dreams of the future. On the other hand, TRLP does not support the development of PCT, which may lead to SAP in the public schools of Saudi Arabia's Al Ahsa province. Maybe they are not feeling emotionally attached to the organization. This organization may not play an important role in their lives. They may feel burdened as they decrease their intentions to enhance the academic performance of the students.

The findings of the study exerted a positive effect of TRSL on SAP and PCT, which is aligned with domain literature, i.e., the studies of Wahyuni et al. (2019), Sengendo and Eduan (2024), Ramli et al. (2019), Gavya and Subashini (2024) and Marbawi et al. (2024) who confirmed the positive effect of TRSL on SAP and PCT in the diverse contexts. These results demonstrate that principals always give them positive feedback when they perform well. The principals always give them special recognition when their work is very good. The principals of the public schools of Ahsa commend or praise them when they do a better-than-average study. Besides, they personally greet them when they do outstanding work. The principals frequently do not acknowledge their good academic performance.

The results of the study found a positive predictive power of PCT on SAP, which is supported by the domain literature (Khan et al., 2020; Ligaya et al., 2024; Kimengich et al., 2020; Tawa et al., 2024; Tsuyuguchi et al., 2024). This outcome of the study suggests that the principals of the public schools feel emotionally attached to the schools. They think that school duty is meaningful in their life. They do not feel any burden but feel happiness in designing the plans and academic strategies to enhance their SAP. They strongly believe that someone should be devoted and have high loyalty to the school. They feel that the moral responsibility to stay afloat is the great reason for making them committed towards the enhancement of school achievements.

With regard to mediating results, the study established a positive mediation role of PCT in developing a connection between DL, AL, TRSL, and SAP but did not confirm the mediating contribution of PCT between TRLP and SAP. These results are accorded with the previous findings (Li et al., 2022; Limon, 2022; Yousef, 2000), but a few studies did not support these results (Ribeiro et al., 2018; Sobaih et al., 2022; Fababier & Apostol, 2024; Borde et al., 2024).

6. CONCLUSION

The overall results of the study demonstrate a positive effect of DL, AL, and TRSL on SAP and PCT. The effect of TRLP was found to be positive. The TRSL construct has a positive effect on SAP and

PCT. The PCT is also a positive predictor of SAP. On the other hand, TRSL negatively affects SAP. The mediating effects show a positive mediating role of PCT in developing the connection between DL, AL, TRSL, and SAP, while PCT negatively mediates the connection between TRLP and SAP.

The study offers practical implications, as excellent academic achievement is mostly dependent on the leadership of the educational institution. In secondary schools, school leaders are crucial to attaining excellent performance. Currently, due to the implementation of Saudi Vision 2030, education plays a central role in the context of education. In this regard, the present study underlines school heads' leadership style and academic achievement. The outcomes of this study would be useful to those in charge of supervising and monitoring the educational system, such as policymakers, the government through the Ministry of Education, secondary school leaders, and future researchers. The policymakers would find the study helpful in providing them with information about the issues facing secondary schools so they can create educational policies that meet the needs of educational institutions, such as the issues pertaining to teacher compensation, classroom overcrowding, instructional strategies, and school infrastructure. For the Ministry of Education's side, it is imperative to ensure that school managers have completed management courses before assigning them. In the event that this is not the case, the government should ensure that all school managers who are currently employed but lack the necessary qualifications receive in-service management training. The study could assist school heads in becoming more knowledgeable of important aspects of leadership styles that could have an impact on their institutions' academic success. The study may also help to enhance the relationship between principals and teachers, as the teachers tend to be more pleased when their suggestions are included in management activities.

With regard to theoretical implications, the study would support the development of theories and concepts pursuing the findings of the study. The theoretical framework would support filling the gaps by offering a framework which integrates leadership styles and commitment towards SAP. Contextually, the study would offer valuable insights, particularly empirical evidence from an Arab developing country. Finally, the study will contribute to the domain literature specifically for education and management in the context of leadership and public secondary schools.

The study is restricted to the context of public secondary schools in the Al Ahsa province of Saudi Arabia and is restricted to quantitative and cross-sectional data. It used the survey questionnaire as a major tool to gather the data. The study did not underpin the conceptualization with a concerned theory of the domain. Finally, the survey findings are based on only 317 cases.

More studies with mixed methods, including longitudinal studies, may be conducted in the future. The concerned theories reinforce the conceptual framework of the studies. The researchers may add this work to the bank of knowledge and references on leadership and academic achievement. In other words, it could make it easier for researchers to comprehend how much leadership styles affect academic achievement in Saudi Arabia, particularly in public secondary schools in Al Ahsa and other parts of the world.

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