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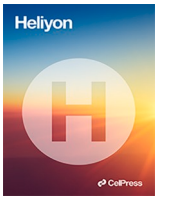

Research article

Structural modeling of the relationship between teachers' power sources and educational gain with the mediating role of the psychosocial climate of Kabul University

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ABSTRACT

The aim of this study was to investigate the structural relationship between teachers' power sources, educational gain, and the mediating role of the psychosocial climate in high school classrooms. Participants included 362 students (223 females and 125 males) who were randomly selected through cluster sampling. All participants voluntarily completed questionnaires about teacher power sources, psychosocial classroom climate, and educational gain. Structural equation modeling and Smart PLS 3.3.2 software were used to analyze the data.

The findings indicated a significant positive relationship between teachers' power sources and educational gain. There was also a positive and significant relationship between teachers' power sources and the psychosocial classroom climate. Conversely, a negative relationship was found between the psychosocial classroom climate and educational gain. Moreover, the results showed a positive and significant relationship between teachers' power sources and educational gain, with the psychosocial classroom climate mediating this relationship. These findings emphasize the importance of teachers' optimal use of various power sources to create a favorable psychosocial classroom climate, which can significantly contribute to students' educational gain.

1. Introduction

The university, as a thoughtful, knowledgeable, and innovative institution, has three basic missions: teaching, research, and the provision of scientific and social services. Universities are expected to play a role in realizing a society's ideals and creating a positive image of the society by fulfilling their duties and missions. Therefore, universities strive to provide high-quality teaching and learning for students in today's complex environments [1]. Achieving this mission in a situation where the number of students in universities has grown exponentially has created challenges, including the missions, students, teaching, investment in higher education, and academic professions. Of these, the most important challenge is the role of students and their educational gains in society, which is crucial for higher education and universities.

Students' educational gains refer to their individual growth and personal development, as a result of the performance of the educational system [2]. Students' educational gains encompass all the skills, knowledge, and attitudes they acquire at the end of a course [3]. Analyzing students' educational gains identifies the correct planning path to solve problems in different areas of the

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learning-teaching process and provides logical solutions to overcome these problems. Measuring students' educational gains can be the basis for guiding students and an indicator for improving performance, which shows the level of success of a university [4]. Among the various stakeholders, students are the main and direct beneficiaries of services and one of the most important assets of higher education [5]. Therefore, it is crucial to study the output of the education system, including student benefits, which are a determining factor in evaluating universities and indicate student in the community [6]. Studies in this regard have shown that several factors, such as previous education, motivational factors, teaching approaches, classroom climate, psychological environment, and educational atmosphere, affect students' educational gains [7].

The psychosocial classroom climate of universities is one of the most effective factors that have an initial impact on the quality of teaching and students' learning at the university [8,9]. The classroom climate has been described as the social or socio-psychological environment [10]. The favorable psychological classroom climate of the classroom depends on the positive and purposeful relationships that exist between the teacher and students in the classroom environment. The psychological climate of the classroom can lead to unity, solidarity, and a cohesive atmosphere. On the other hand, a psychosocial classroom climate (PCC) can lead to dropping out of school, lack of interest in learning, and depression [11]. It is therefore clear that the teacher, as the leader in the class, plays a major role in shaping the nature of the classroom climate. The desirability of the educational climate, teachers' teaching skills in teaching, and interpersonal relationships are the factors that can play an important role in shaping a sense of satisfaction with educational gain at universities. The effectiveness of teachers and, consequently, the effectiveness of the classroom climate will facilitate the process of teaching and training of professional and effective staff [12]. In order to achieve this, it is necessary to create an appropriate learning environment in the classroom. The quality of the educational environment and the creation of a positive atmosphere in the classroom are influenced by the teacher's personal principles and standards [13]. Teachers often use their individual abilities and characteristics to exert power and influence over their students in order to enhance the learning process. Power can be defined as the ability to display behaviors that are applied formally, informally, legally, and illegally [14]. Specifically teachers' power, specifically, refers to their ability to influence their students [15]. The way in which power is used varies between teachers based on their unique characteristics.

The type of power exerted by teachers can have a significant impact on the quality of the educational process, affecting the psychological climate in the classroom and resulting in either student satisfaction or dissatisfaction with the learning experience [16,17]. The existing literature has extensively investigated various aspects of teachers' power, educational gain, and the psychosocial classroom climate. However, despite these individual investigations, previous studies have not adequately explored how teachers' power influences educational gain, how the psychosocial classroom climate shapes the exercise of power, and the combined impact of these factors on the quality of higher education institutions such as Kabul University.

This research aims to fill this gap by investigating the complex interplay between teachers' power, educational gain, and the psychosocial classroom climate. By understanding how these variables interact, we can gain insights into the dynamics of effective teaching and learning in higher education. Addressing this research gap is critical to improving the quality of education at Kabul University and similar institutions. This study aims to shed light on these relationships and make a meaningful contribution to the existing body of knowledge in this area, with the ultimate aim of improving the quality of education.

2. Literature review

Undoubtedly, the students' educational gains are one of the determinants of the superiority and success of an educational system [6]. Educational gain is generally defined as the self-reported assessment of progress, benefits, or outcomes achieved through educational goals resulting from academic experiences [18]. Further categorizes achievements into two types: knowledge (specialized expertise in the field of science and technical courses) and attitudes (growth and development of students in individual and social, moral, and critical areas) [19]. [20] Present a conceptual framework for educational gain that consists of three key elements: input (individual characteristics of students when they enter the campus), campus environment (various academic programs, educational policies, educational resources, teachers, friends and classmates, interactions, and experiences gained during the study process), and output (the rate of overall student growth and development of the student after graduation). In addition [21], suggest that educational gains include professional achievements (acquisition of knowledge and job-related skills in various fields) [22], personal growth (changes in personal growth including increased self-confidence and independence), academic achievements (ability to work effectively in a team, ability to develop a global perspective, ability to write clearly and effectively, ability to adapt to change), and cognitive achievements (students' perceived changes in their cognitive skills, such as analytical and logical thinking, and integration of ideas and information) [6,22–24].

In order to realize these gains, it is essential to consider two critical factors: the personal characteristics of student and their academic experiences [2]. Several studies have identified numerous factors that influence impact academic achievement, including learning strategies, previous academic performance, motivational factors, personal factors, teaching methods and classroom environment, curriculum-related factors, educational environment issues, faculty expertise in their subjects, instructor competence, assignments and exams, and learner active involvement during the course and their interactions with instructors [22,25–28].

Therefore, one of the factors that can influence students' educational gains is the classroom climate, which refers to the overall atmosphere and environment in which the learning process takes place [29].

The classroom learning climate refers to the environment in which there is a reciprocal relationship between teacher and learner, and in which different resources and instructional strategies are used to achieve learning objectives and facilitate teaching and learning activities [30]. Thus, the nature of the classroom learning climate and the psychosocial interactions that shape it not only differentiate between classes, but also affect the quality of learning, academic achievement, classroom success, and the overall development of the

educational climate [31].

[32] Conducted a study to explore the various types of psychosocial classroom climates that exist due to the diversity of classroom settings. They identified four distinct structures: A classroom may have a prevailing psychosocial climate that is characterized by unity or solidarity, one that is disciplined and task-oriented, one that is marked by conflict and friction, or one that is full of competition. These different psychosocial climates in the classroom have been shown to have a significant impact on educational gain and the optimal emotional and cognitive functioning of learners, as numerous studies have shown [33]. In addition [31], described four dimensions of psychosocial classroom climate: non-friction (the measure of students' inconsistent or unfriendly behavior of students towards each other), cohesiveness (students' dependence on each other and the class), organization (the extent to which students do their homework completely and on time) and satisfaction (indicating degree to which students are satisfied with the class) for Psychosocial Classroom Climate [32]. Identified five dimensions for the psychosocial classroom climate: attitudes toward students, power sharing, student-student communication, class organization, and student motivation, which are important factors in understanding the dynamics of the classroom environment.

According to Kurt Lewin's theory, the atmosphere or psychosocial climate of the classroom can be related to the understanding of human behavior; Lewin proposed that in order to understand human behavior, one must look at the whole situation in which the behavior occurs, which includes both the individual and his/her environment [34]. This environment is not only composed of objective and tangible environmental factors and elements, but the individual's perception of the situation is also a critical factor that should be considered [33,34]. Students' positive perception of the classroom climate can boost their morale, leading to increased enthusiasm and educational engagement [33] and encourage them to participate more actively and with greater interest in the educational environment and its activities [35]. Students' perceptions of the classroom climate reflect the conditions created by teachers and students in their pursuit of knowledge and personal growth. Psychological classroom climate, together with contextual and social factors and teacher support, has a significant impact on learners' behavior, self-beliefs, strategy use, academic motivation, emotional performance, homework engagement, academic values, and educational achievement [35–37]. Effective teaching and classroom practices are essential to facilitate learning and the development of competent and successful individuals who contribute to the overall success of the University in achieving its goals. Communication and performance from teachers are necessary to achieve these objectives. This communication and effective practice primarily require teachers' ability to manage learners' behavior in the teaching-learning process. This, in turn, also requires their influence on learners, which is exerted through the use and exercise of power by teachers [38].

Leadership style and power are two of the most important tools available to teachers and administrators to influence students and staff [27]. Power can be defined as the ability to manage people. An important point to note about the concept of power is that it does not depend on the amount of power that leaders have, but rather on the perception of power by individuals. Thus, students' perceptions of their teachers' power give them the ability to influence and affect their level of influence [16]. Students become aware of their teachers' power and respond to their use of these sources of power to control behaviors and create hierarchical relationships. A particular expansive view of power is offered by several authors [39]. According to these scholars, power is commonly understood as an individual's ability to influence the behavior of another individual or a group of individuals. To elaborate, this broader interpretation characterizes power as the ability to persuade another person to take actions that they might not otherwise have taken. In essence, it means that an individual undergoes some form of change in his/her conduct, attitudes, beliefs, etc. as a result of the influence exerted by another party [40]. From this perspective of the nature of power, five potential bases of power have been identified, including coercive power, reward power, legitimate power, referent and expert power [14,15,23,39,40].

"Coercive power", which is the subordinates' perception of the leader's ability to punish them, is mostly seen as a negative aspect of power. Reward power, on the other hand, is the subordinates' perception of the leader's ability to reward them. "Legitimate power" is derived from the leader's legal role and position in the organization. "Referent Power" is based on followers' positive perceptions of the leader's personal attributes. Expert Power is the perception that the leader has knowledge, experience, and the ability to analyze a situation that group members lack. Expertise is one of the most important sources of power for university teachers, as today's society places a high value on specialization to achieve goals. Power enables teachers to communicate, guide, and direct students' attitudes, thoughts, behaviors, and actions in accordance with the internal and external needs of higher education. Effective teachers build relationships with students and develop a flexible and dynamic structure of power relations in the classroom. The way in which teachers communicate with students is crucial, as effective teachers share characteristics such as availability, genuine interest in students and their work, passion for teaching, desire for feedback, and humor [41]. They develop a climate of trust, facilitate and ensure the quality of learning, and increase learners' satisfaction [38]. Power is the potential for influence, the optimal control of others [26,42], and the ability and capacity to influence and change the behavior of others.

On this basis, it can be argued that teachers, by using their power and the resources available to them can effectively influence and control the learning process and students' behaviors. Although teachers influence some of the students' choices in the classroom, most of their decisions and motivations are derived from the classroom climate. According to Ref. [43], significant differences in motivation are created for learners during their studies which depend on the role of the teacher, the quality of experiences [44], the existence of an educational system [45], and the relationships between learners and the factors of the educational environment [46], all of which affect students' educational gains [47]. A study by Ref. [48], concluded that the school climate can affect quality of education and educational gain. Furthermore, research has shown that the teacher's feedback and interaction with students can increase internal motivation and educational gain [47,48]. [18] Stated that the classroom climate is influenced by social-psychological dimensions and that effective classroom management increases student participation, reduces disruptive behaviors, optimizes time utilization, and fosters classroom enthusiasm [49]. Found that the quality of students' efforts and their perception of the university environment significantly impact their achievement of goals. Similarly [50], research indicated that the quality of students' effort during teaching

and the feedback given to them by faculty members affect their personal growth and educational gains [51]. Reported a positive correlation between teachers' competencies and the improvements of classroom instructional management and educational gains. These findings show that educational gains are an essential measure of the success of and the subsequent achievements of the educational system. Teacher's power and the psychosocial classroom climate are two crucial factors in the educational process that influence educational gains.

3. Research methodology

The target population of this study consisted of students enrolled at Kabul University. Participants were selected through random quota sampling from the faculties of Kabul University. Initially, the size of the student population in each faculty was determined by the Vice-Chancellor of University Students. Subsequently, the sample size for each faculty was determined based on the population size of each faculty. A total of 450 questionnaires were distributed, out of which 400 were returned. Responses with missing data were excluded, and ultimately, 362 responses were deemed fit for further analyses. To select the number of students from each faculty, the Cochran's formula was employed. The inclusion criteria for the study was student satisfaction, and the exclusion criteria included incomplete and distorted responses. The demographic characteristics of the participants are presented in Table 1. In total, 362 students answered the questionnaires individually. To ensure ethical consideration, informed consent was also obtained and participants were informed that their participations were completely voluntary and were free withdraw or refuse to answer to any question at any point of time. In addition, in order to observe the participants' anonymity no personal information like their name was gathered.

Ethical Approval: The research committee of the Faculty of Psychology and Educational Science, Kabul University provided the approval for this study (approval number: PSYEDU-R.P.06-2022). All participants participated in this study with informed consent. And all data is collected anonymously from the participants.

3.1. Analytical methods

In this study, hypotheses were tested using structural equation modeling with the Partial Least Squares (PLS) method. The analysis was carried out using Smart PLS Version 3.2.8 software [52]. To determine the significance levels of the loadings, weights, and path coefficients, the bootstrapping technique was applied. As recommended by Ref. [53], the validity and goodness of fit for the measurement model were evaluated prior to testing the structural relationships outlined in the structural model.

3.2. Research instrument and measurement method

In the present study, three tools were used to collect data. Each instrument consisted of questions with five response options ranging from 1 (strongly disagree) to 5 (strongly agree). Psychosocial classroom climate was evaluated using 20 items adapted from [[31,51]], which included six subscales: friction (3 items, $\alpha = 0.721$), competition (4 items, $\alpha = 0.733$), student-student relationships (3 items, $\alpha = 0.601$), attitude toward students (3 items, $\alpha = 0.701$), student interest motivation (3 items, $\alpha = 0.680$), and class organization (4 items, $\alpha = 0.695$). The composite reliability of the entire psychosocial classroom climate instrument was (20 items, $\alpha = 0.911$). Educational gain was assessed using 21 items adapted from [[21,52,53]], which included five subscales: General Education (4 items, $\alpha = 0.591$), Job gain (4 items, $\alpha = 0.867$), Mental skill (5 items, $\alpha = 0.881$), Personal gain (5 items, $\alpha = 0.859$), and Scientific gain (3 items, $\alpha = 0.891$). The composite reliability of the entire educational gain instrument was (21 items, $\alpha = 0.951$). Additionally, teacher power was measured using 15 items adapted from Refs. [39,54]. The teacher power construct was measured using a multi-item scale consisting of fifteen items with five subscales: Coercive Power (3 items, $\alpha = 0.786$), Expert Power (3 items, $\alpha = 0.784$), Legitimate Power (2 items, $\alpha = 0.595$), Referent Power (4 items, $\alpha = 0.734$), and Reward Power (3 items, $\alpha = 0.814$).

Additionally, the composite reliability of the entire teacher power instrument was high, with a value of $\alpha = 0.823$. The questionnaires were sent to five reviewers to ensure face and content validity. Based on their feedback, some grammatical and structural modifications were made to some of the statements. An inter-item analysis was conducted to verify the internal consistency or reliability of the multi-item scales used to measure each construct. All scales were found to be reliable, with composite reliability values surpassing the minimum of 0.70 [55], as shown in Table 2. The measurement model was also tested for convergent validity using factor loadings, composite reliability (CR), and variance extracted (AVE) [55]. Results in Table 2 indicate that all item loadings exceeded the recommended value of 0.6 [56]. CR values, which depict the degree to which the construct indicators indicate the latent construct,

Table 1
Demographic characteristics of research participants.

Variable	Group	Frequency	Percent
Sex	Boy	196	54.1
	Girl	166	45.9
	Total	362	100.0
class	One	92	25.4
	Two	91	25.1
	Tree	90	24.9
	Four	89	24.6
	Total	362	100.0

Table 2
Validity and reliability for constructs.

constructs	subscales	No. of items	M	SD	Loadings	CR	AVE
Psychosocial classroom climate	1. friction	3	2.83	0.84	0.750–0.850	0.842	0.640
	2.competition	4	2.86	0.91	0.691–0.774	0.833	0.556
	3. student-student relationships	3	2.75	0.90	0.620–0.816	0.775	0.538
	4. attitude toward student	3	2.51	0.88	0.696–0.849	0.826	0.614
	5. student interest motivation	3	2.68	0.91	0.760–0.809	0.831	0.622
	6. class organization	4	2.84	0.89	0.708–0.791	0.840	0.567
Educational gain	1.General Education	4	3.61	0.46	0.724–0.731	0.852	0.591
	2.Job gain	4	3.66	0.41	0.749–0.819	0.867	0.619
	3. Mental skill	5	3.53	0.49	0.741–0.790	0.881	0.597
	4. Personal gain	5	3.64	0.43	o.701–0.798	0.856	0.544
	5. Scientific gain	3	3.63	0.54	0.819–0.877	0.891	0.733
Teacher's power	1.Coercive Power	3	3.77	1.24	0.876–0.922	0.786	0.800
	2. Expert power	6	3.63	0.41	0.780–0.877	0.784	0.678
	3. Legitimate power	3	3.58	0.50	0.678–0.839	0.601	0.598
	4. Referent Power	3	3.63	0.44	0.762–0.830	0.836	0.618
	5. Reward power	4	3.58	0.46	0.728–0.877	0.815	0.619

exceeded the recommended value of 0.7 [55]. While AVE, which reflects the overall amount of variance in the indicators accounted for by latent construct, exceeded the recommended value of 0.5 [55].

Table 2 presents descriptive statistics for the dimensions of psychosocial classroom climate, educational gain, and teacher's power. The mean ratings for "friction" (M = 2.83; SD = 0.84), "competition" (M = 2.86; SD = 0.91), "student-student relationships" (M = 2.75; SD = 0.90), "attitude toward student" (M = 2.51; SD = 0.88), "student interest motivation" (M = 2.68; SD = 0.91), and "class organization" (M = 2.84; SD = 0.89) were reported for psychosocial classroom climate. The mean ratings for "General Education" (M = 3.61; SD = 0.46), "Job gain" (M = 3.66; SD = 0.41), "Mental skill" (M = 3.53; SD = 0.49), "Personal gain" (M = 3.64; SD = 0.43), and "Scientific gain" (M = 3.63; SD = 0.54) were reported for educational gain. The mean ratings for "Coercive Power" (M = 3.77; SD = 1.24), "Expert power" (M = 3.63; SD = 0.41), "Legitimate power" (M = 3.58; SD = 0.50), "Referent Power" (M = 3.63; SD = 0.44), and "Reward power" (M = 3.58; SD = 0.46) were reported for teacher's power. The mean scores of educational gain and teacher's power were above 3 on the five-point Likert scale, indicating a positive response toward all items related to these two concepts. However, the mean scores of psychosocial classroom climate were low, with a mean of 3 on the five-point Likert scale, indicating a low response toward all items related to psychosocial classroom climate. This suggests that the students in the research sample reported the desirability of the psychosocial classroom climate as lower than the average level.

Additionally, discriminant validity was considered by comparing the square root of AVE with the correlation between the variables. If the correlation between the different variables is lower than the square root of the AVE, the variables can be considered as distinct theoretical entities [57]. Table 3 shows that this is the case for all the relevant variables. The square root of AVE (diagonal values) for each variable is larger than its corresponding correlation coefficient, which confirms acceptable discriminant validity [58].

Table 3
Discriminant validity of psychosocial classroom climate, educational Gain and teacher power.

No	fraction (1)	competition (2)	Student-student relationship (3)	Attitude toward student (4)	Student interest motivation (5)	**Class organization (6)**
1	0.800					
2	0.548	0.746				
3	0.463	0.633	0.733			
4	0.435	0.499	0.650	0.783		
5	0.438	0.628	0.592	0.593	0.789	
6	0.534	0.657	0.665	0.614	0.660	0.753

	General Education (1)	Job gain (2)	Mental skill (3)	Personal gain (4)	Scientific gain (5)
1	0.773				
2	0.591	0.749			
3	0.676	0.538	0.768		
4	0.839	0.505	0.654	0.784	
5	0.626	0.669	0.603	0.582	0.792

	Coercive Power (1)	Expert power (2)	Legitimate power (3)	Referent Power (4)	Reward power (5)
1	0.894				
2	0.485	0.823			
3	0.234	0.598	0.773		
4	0.327	0.448	0.280	0.786	
5	0.395	0.705	0.586	0.418	0.786

3.3. Common method variance

Common method variance refers to "variance that is attributable to the measurement method rather than to the construct of interest" [59]. It may be present due to the use of a single survey method to collect responses [60]. To control for common method variance, the [61] one-factor test was applied during the data analysis stage, and all factors accounted for 10.660. As no single factor accounted for the commonality of the variables, it was determined that common method variance did not pose a major threat to the data. Additionally, before running the structural model, cases with missing data, outliers, and the normality of the data were checked.

a) **Missing data:** No missing data was found in the data file.
b) **Outliers:** The explorer command in SPSS was used to investigate outliers in the research variables. The results indicated no outliers were present in any of the variables, and thus, structural equation modeling analysis is not affected by this issue.
c) **Normality**: Skewness and kurtosis were used to check the normality of variable distributions in the research. The absolute value of skewness and kurtosis for all variables were less than 3 and less than 10, respectively, indicating normal distribution [62]. In summary, the basic assumptions of structural equation modeling analysis were satisfied. Table 4 displays the normality indices of variables, while Table 2 presents the mean and standard deviation of the research variables along with their intercorrelations.

4. Finding

A bootstrapping procedure with 3000 iterations was used to examine the statistical significance of the weights of sub-constructs and path coefficients [4]. PLS does not generate overall goodness of fit indices. A diagnostic tool presented by Ref. [63], known as the Goodness-of-Fit (GOF) index, was used to assess the model fit. The GOF is measured using the geometric mean of the average communality and the average R2 (for endogenous constructs). Hoffmann and [64] reported the following cutoff values for assessing the results of the GOF analysis: GOF small = 0.1, GOF medium = 0.25, and GOF large = 0.36. The model used in this study achieved a GOF value of 0.461, indicating a very good model fit, as shown in Table 5.

Next, the hypothesized relationships in the structural model were tested. Fig. 1 shows the results of the structural model. The values in the figure show the standardized coefficients and their respective t-values. The corrected R^2 value in the figure refers to the explanatory power of the predictor variable(s) on the respective construct. Teacher power explains 74.2 percent of educational gain ($r^2 = 0.742$) and ($r^2 = 0.041$) percent of psychosocial classroom climate. With regard to model validity [4], classified the endogenous latent variables as substantial, moderate, or weak based on the R^2 values of 0.67, 0.33, or 0.19, respectively. Accordingly, educational gain ($R^2 = 0.755$) can be described as substantial. Nevertheless, psychosocial classroom climate ($R^2 = 0.041$) can be described as weak.

4.1. Calculating predictive relevance (Q2) and effect size (f2)

In addition to the value of R2, the predictive sample reuse technique (Q2) can be effectively used as a criterion for predictive relevance [57,58]. Based on the blindfolding procedure, Q2 evaluates the predictive validity of a complex model by omitting data for a given block of indicators and then predicts the omitted part based on the calculated parameters. Thus, Q2 shows how well the collected empirical data can be reconstructed with the help of the model and PLS parameters [65]. For this study, Q2 was obtained using cross-validated redundancy procedures as suggested by Ref. [66]. Based on the study by Refs. [67,68], a Q2 value greater than 0 indicates that the model has predictive relevance, whereas a Q2 value lower than 0 indicates otherwise. As shown in Table 6, the Q2 values for educational gain and psychosocial classroom climate, which are 0.528 and 0.023, respectively, are both above 0 and thus indicate acceptable predictive relevance. According to Ref. [69], an f2 value of 0.02 indicates a small effect, an f2 value of 0.15

Table 4
Normality indicators.

Variables	skewness		kurtosis	
	statistic	Std. Error	statistic	Std. Error
Professional Achievement	−1.418	0.133	1.519	0.265
Individual Achievement	−1.427	0.133	1.406	0.265
General Achievement	−1.165	0.133	1.007	0.265
Intellectual Achievement	−1.587	0.133	2.335	0.265
Educational Achievement	−1.732	0.133	2.321	0.265
fraction	0.677	0.133	0.392	0.265
competition	0.107	0.133	−0.057	0.265
Student-student relationship	−0.067	0.133	−0.040	0.265
Attitude toward student	0.126	0.133	−0.139	0.265
Student interest motivation	−0.197	0.133	−0.088	0.265
Class organization	−0.636	0.133	0.766	0.265
Coercive power	−0.570	0.133	−0.114	0.265
Reward power	0.617	0.133	−0.461	0.265
Referent power	−0.063	0.133	−0.063	0.265
Legitimate power	−0.179	0.133	0.117	0.265
Expert power	0.802	0.128	−0.380	0.256

Table 5
Goodness of fit index.

Constructs	AVE	R^2
Teacher power	0.401	-
Psychosocial classroom climate	0.625	0.043
Educational gain	0.786	0.743
Average scores	0.543	0.393
AVE*R^2	0.213	
(GOF = $\sqrt{AVE \times R^2}$	0.461	

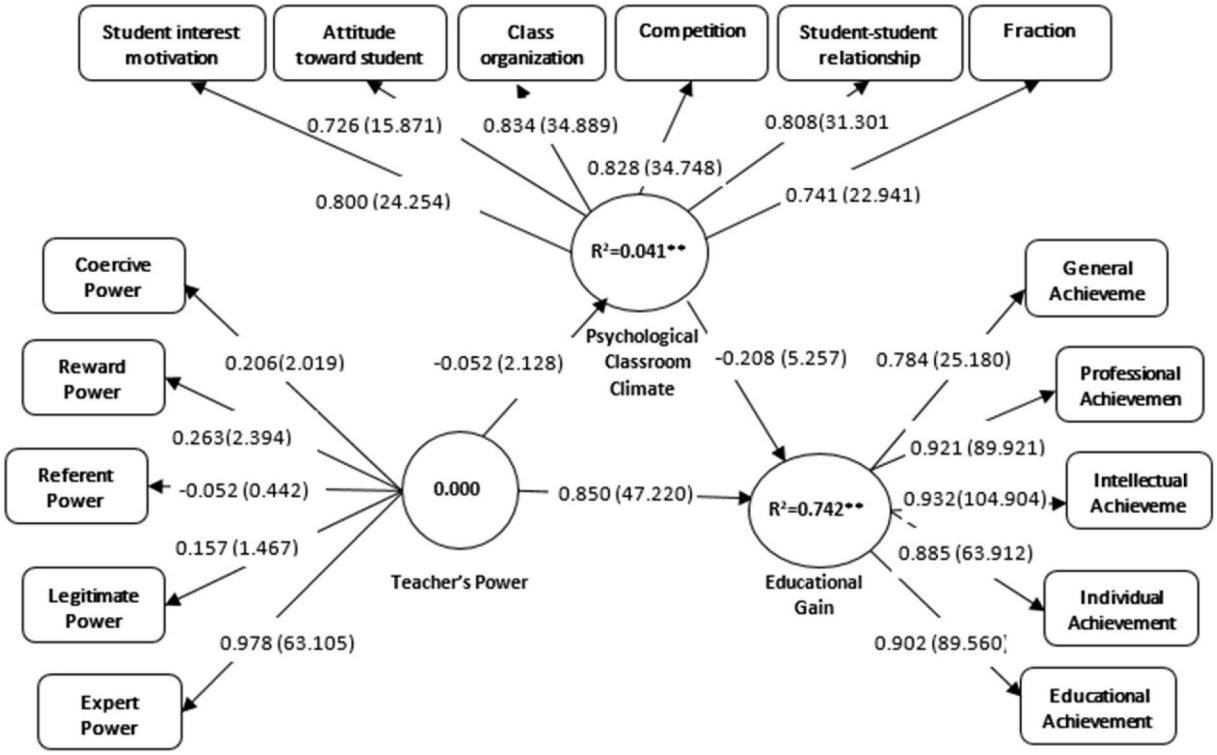

Fig. 1. Structural model path coefficients (t-value).

Table 6
Predictive **relevance (Q^2) and effect size (f^2)**.

Constructs	Q^2 (=1-SSE/SSO)	F^2 (educational gain)
Teacher power	–	2.691
Educational gain	0.528	–
Psychosocial classroom climate	0.023	0.045

Table 7
Structural estimates (hypotheses testing).

Hypothesis	Direct effect	Indirect effect	T statistics	Total effect	Decision
Educational Gain→Psychosocial classroom climate	−0.052*	–	2.128	−0.052	Supported
Teacher Power→Psychosocial classroom climate	0.210**	–	5.257	0.210	Supported
Teacher Power→Educational Gain	0.850**	–	47.220	0.850	Supported
Teacher power→psychosocial classroom climate →educational gain	–	0.011	–	0.011	Supported

indicates a medium effect, and an f2 value of 0.35 indicates a large effect. In this study, educational gain was predicted by teacher power and psychosocial classroom climate; therefore, the relative effect sizes (f2) of the predicting (exogenous) constructs were calculated and are shown in Table 6. With regard to predicting educational gain, teacher power had a large effect, while psychosocial classroom climate had a small effect size [61,62].

4.2. Structural estimates and hypotheses testing

Based on the results presented in Table 7, all the hypotheses of the study were supported. Hypothesis 1, which suggested that educational gain would have a significant influence on psychosocial classroom climate, was supported by the results (H1: b = −0.052; t = 2.128; sig 0, 0001). Similarly, hypothesis 2, which posited that teacher power would have a negative relationship with psychosocial classroom climate, was also supported by the results. Hypothesis 3, which stated that teacher power would have a positive influence on educational gain, was also supported by the results (H3: b = −0.850, t = 0.47.220, sig >0, 0001). Furthermore, the main research question of the study, which examined the effect of teachers' power on the mediating role of the psychosocial classroom climate on educational gain, was also supported by the results (b = 0.04, sig = 0,001). The path coefficient of 0.011 indicates that the psychosocial classroom climate variable mediates the relationship between teachers' power and educational gain. Based on these results, it can be concluded that the psychosocial classroom climate variable has a mediating effect on the relationship between teachers' power and educational gain.

5. Discussion

The educational gain of students is an indicator of an efficient and successful education system, and is influenced by various factors and variables. Understanding the psychosocial classroom climate can provide valuable feedback to teachers, helping them to identify the strengths and weaknesses of their students' performance. Teachers are one of the most important elements of the higher education system and universities, playing a crucial and undeniable role in achieving the goals and missions of higher education in terms of quality and quantity. Therefore, examining the performance and exercise of their power in different dimensions, particularly in the classroom, through the psychological and social environment, can play a fundamental and significant role in the quality of students' learning and their educational gains. The purpose of this research was to model the relationship between teachers' sources of power and students' educational gains, with the mediating role of the psychosocial climate of classrooms. The research findings emphasize the importance of classroom management theory [70], which involves a more sophisticated approach to understanding how teachers can create a positive learning environment for their students, taking into account various factors and conditions. For example, the findings of this study show a strong relationship between teachers' sources of power and students' educational gains (see Fig. 1). The results of this study support the findings of [49,50]. It is worth noting that the students reported that the majority of the types of power sources used by the teachers averaged over 50 %, with the highest allocation being to coercive power. One possible reason for this finding is the traditional culture at Kabul University, which may influence the teaching and learning process, whether intentionally or not. The fact that the average of all power dimensions is higher than 50 %, suggests that teachers have attempted to use a combination of power sources in the classroom, in addition to coercive power. In order to help the process of improving the quality of teaching professors, use the optimal use of multiple power sources can affect the quality of communication between teachers and students, educational activities that lead to learning, expand the physical boundaries of the classroom, and generating motivation and enthusiasm among teachers and students to increase knowledge. Based on this, it can be concluded that the combined use of teachers' power resources has a positive and significant effect on the students' educational gains.

Another finding of the research was a negative and significant relationship between teachers' sources of power and the psychosocial climate of the classroom (see Table 7). Based on Herzberg's Two-Factor Theory, misuse of teacher power sources, including coercive, reward, referent, legitimate, and expert power, can lead to student dissatisfaction among students and decrease their motivation to Ref. [71]. These results also suggest that one key mechanism linking teachers and students and which can affect good psychosocial climate is the use of all types of teacher's power sources in the classroom. This result is consistent with previous research by Ref. [72]. Additionally, the students reported the highest average use of teachers' power as coercive power. This result can be attributed to the centralized and traditional structure of the university, which can inhibit flexibility [73]. The psychosocial classroom climate is crucial for the learning and memorization process, and it is essential to create a favorable atmosphere in the classroom [74,75]. The acceptability or unacceptability of the psychosocial climate of the classroom can be influenced by the teacher's exercise of power in the classroom and the policies in place. However, the optimal use of a combination of different sources of power can lay the foundations for a favorable classroom climate.

In Table 7, the data also shows a relationship between educational gains and the psychosocial climate of the class. It should be noted that the students reported an unfavorable acceptance of the psychosocial climate of the classroom. The results of this research do not confirm the findings of previous studies [16,22,63,67]. One of the main reasons for this discrepancy may be the unfavorable state of the psychosocial climate of the classroom. An inconsistent and aimless classroom does not provide a conducive environment for improving classroom order and offering better opportunities for students to learn and succeed, develop self-reliance, values, and moral standards. It can therefore, be concluded that the research findings do not confirm the positive impact of the psychosocial climate of the classroom on students' educational gains. To explain these findings, it can be stated that the prevailing psycho-social climate prevailing in the classrooms, characterized by domineering and dictatorial traditional teaching methods and the exercise of power through coercion, has hindered the development of independence, practical and specialized knowledge and skills, and the acquisition of comprehensive general information that is effective in various scientific fields. Additionally, creating a desirable social class climate can also

contribute to students' educational gain. This idea is supported by Vygotsky's Social Development Theory, which suggests that social interactions and course content can lead to personal and academic growth. Creating an appropriate psychosocial classroom climate and positively impacting students' educational gain can be achieved by utilizing the teacher's power resources optimally and understanding the factors that influence interaction between the teacher and students in the classroom.

Finally, the final finding of the research indicated that teachers' sources of power have an indirect and significant effect on students' educational gain through the mediation of the psychosocial climate of the classroom. This finding confirms previous research by Refs. [17,39,40,68,69]. According to the research, it is crucial to consider classroom management theory as a more advanced approach to creating a favorable learning environment for students. This involves taking into account different factors and conditions. The study also found that Vygotsky's Social Development Theory and Herzberg's Two-Factor Theory can serve as comprehensive theories for managing the classroom and improving educational gain through psychosocial climate. As a result, the research adds to the existing literature by proposing a new theoretical perspective on exploring classroom management. In addition, the type of power resources used in the classroom by the teachers shapes the style of interaction between teacher and student, which can form a unique psychosocial climate and have a positive or negative effect on the process of teaching and learning. Optimal use of power resources by teachers during education can imply the creation of a supportive psychosocial climate that fits the students' spirit. The psychosocial climate of the classroom has unique characteristics, including understanding the feelings and needs of students, the importance of learning and teaching them correctly, maintaining the dignity of the students, among others, that can lead to a sense of self-satisfaction and academic progress. This, in turn, can lead to students' growth and academic achievements and can help them in their future endeavors.

6. Conclusion

According to the research gap the most important finding of this research, is to find the complex interplay between teacher's sources of power and educational gain with the mediating role of the psychosocial climate. Based on the results, understanding the common type of power exercised by teachers in the classrooms and identifying the factors and indicators that contribute to the psychological climate in classroom are essential for creating an environment conductive to learning. In particular, the contribution of this study is to develop a theory in which academic achievement is predicted by teacher power and the mediating role of psychosocial classroom climate. The research conducted at Kabul University provides valuable insights for instructors on how to use their power effectively to manage classrooms and use the elements of psychosocial climate to foster motivation, creativity, and a positive learning environment. The study's findings offer practical guidance for educators to lay the foundation for academic success among university students. To increase students' educational gains, it is recommended that teachers focus on raising students' academic motivation by creating necessary conditions in the classroom. This can be achieved by adopting flexible class schedules and avoiding over-strict and unchangeable routines. Based on the findings of this research, which indicate a classroom psychosocial climate below the average, it is also suggested that teachers strive to build a supportive atmosphere and improve their communication skills when interacting with students, while exercising optimal power over them. By doing so, a positive psychological and social atmosphere can be developed, leading to better educational gains for students. In addition, the university can support the development of teachers' skills by providing training courses. The university should also consider the changing and dynamic educational environment, and pay special attention to improving the quality of educational programs designed to enhance students' educational gains.

7. Limitations

In light of the research findings, several limitations have been identified. Firstly, the relationship between teachers' power resources and classroom psychosocial climate, and their mediation on students' educational gain, is contemporaneous in nature rather than causal. Secondly, the questionnaire measurement tools used in this study have inherent limitations such as measurement error, lack of introspection, socially-accepted answers, and inadequate attention to the necessary accuracy of some students when answering questions. Therefore, in future research, it is recommended that other methods such as interviews be considered to supplement questionnaire data in Eindhoven's research.

Data availability statement

Data will be made available on request from corresponding author.

CRediT authorship contribution statement

Mustafa Rezaei: Writing – original draft, Visualization, Supervision, Software, Project administration, Methodology, Funding acquisition, Data curation. **Masoumah Jafari:** Writing – review & editing, Writing – original draft, Visualization, Resources, Project administration, Investigation, Conceptualization. **Mujeeb Rahman Rahmani:** Writing – review & editing, Resources, Investigation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to

influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e29280.

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