

The Influence of Psychological Strengths, Coping Strategies, And Overall Well-Being in Predicting Academic Engagement and Burnout Among Undergraduate Private University Students Lahore Punjab

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Abstract

Positive psychological attributes, such as mindfulness, grit, and adaptability, have been increasingly recognized for their role in promoting mental health and academic success among students. However, the extent to which these traits influence emotional stability and protect against academic burnout remains understudied, particularly in undergraduate populations. This cross-sectional study aimed to address a gap in literature by examining the impact of positive psychological attributes on emotional stability, and academic burnout among undergraduate students. A sample of 275 undergraduate students from various disciplines across two public and two private universities in Lahore, Pakistan, completed validated self-report questionnaire. Data were analyzed employing descriptive statistics and structural equation modeling (PLS-SEM). Study findings showed that positive psychological attributes has significant associations with higher emotional stability and lower levels of academic burnout. Specifically, mindfulness and grit emerged as the strongest predictors of reduced academic burnout. Additionally, emotional stability partially mediated the relationship between positive psychological traits and academic burnout, highlighting its critical role in student well-being. These findings not only enrich the theoretical understanding of psychological resilience in academic contexts but also offer practical implications. Specifically, they suggest that enhancing emotional stability could be an effective strategy to reduce academic burnout and improve students' sense of personal accomplishment. These insights hold implications for educational policies and mental health promotion programs in higher education settings.

Keywords: Mindfulness, Grit, Adaptability, Emotional stability, Academic burnout, Higher education

Introduction

Undergraduate education introduces heightened academic rigor and social obligation during the shift from higher secondary schooling, frequently culminating in stress and mental exhaustion for

students [1]. Academic demands include completing assignments for each course, preparing for exams and engaging in rigorous assessments. Expectations for academic performance are typically higher from undergraduates, requiring students to develop strong time-management skills, critical thinking abilities, and self-discipline to keep up with readings, research projects, and complex coursework [2]. However, this transition can be overwhelming for many undergraduate students, especially those who are not accustomed to the level of autonomy and responsibility required [3]. In addition to coursework, students are also expected to possess strong social skills to interact with their peers. They often work on group assignments that require collaboration, teamwork, and effective communication — skills to mirror real-world professional environments, where individuals must work together to achieve common goals. Building relationships with peers, professors, and mentors though crucial but becomes challenging for those who are not adapted to collaborate and lack of experience working in teams or managing interpersonal dynamics [4].

Nevertheless, this modern education systems frequently prioritize grades, rankings, and test scores over the development of critical life skills such as problem-solving, emotional regulation, and perseverance. This focus on outcomes creates a fear of failure, discouraging students from taking risks or learning from mistakes, which are essential components of building resilience among students and avoiding being procrastinate [5, 6]. Constant pressure to meet unrealistic standards can erode self-confidence and make students more vulnerable to stress and academic burnout [7]. Literature has shown the construct of academic burnout — a state of emotional

exhaustion, depersonalization, and a lack of efficacy in

students' abilities— as increasingly prevalent among undergraduate students and highly correlated with academic challenges [8]. Studies indicate that a significant proportion of undergraduates' struggle with mental health challenges and ultimately leading to disengagement from studies. This is often due the absence of resilience in academic environment—leading to decreased academic performance, reduced life satisfaction, and in severe cases, dropout [9]. Therefore, this study highlights the increasing prevalence of academic burnout, highly relevant to emotional challenges among undergraduate students—a pressing issue in higher education systems globally, including Pakistan.

In Pakistan, many of the higher education institutions often lack sufficient counseling services, mentorship programs, or initiatives to promote emotional well-being, leaving students ill-equipped to manage academic and social difficulties decreasing their motivation in learning [10]. Additionally, the absence of structured programs to cultivate positive psychological attributes leaves students unprepared to handle the dynamic and unpredictable nature of academic environments [11, 12]. As a result, students may adopt superficial strategies to survive rather than developing deeper resilience and sustainable habits for lifelong learning. Consequently, students feel emotionally drained, develop cynical thoughts and often reported as disengagement performing academic activities, which not only affects students' mental health and academic performance but also limits their ability to thrive in future professional and personal contexts [13]. Despite growing awareness of these issues globally, traditional interventions often fall short in addressing the root causes or equipping students with the internal resources referred as “sustainable strategies”, needed to thrive under pressure [11]. This gap underscores the need to explore positive psychological attributes—such as mindfulness, grit, and adaptability—that can foster resilience and well-being among students. Without a comprehensive framework that integrates these psychological resources, efforts to promote student well-being remain fragmented and less effective. This gap in research hinders the development of comprehensive strategies to support and enhance student well-being in terms of enhancing emotional stability and mitigating academic burnout. Therefore, this exploration aimed to shed light on how positive skills—such as mindfulness, grit, and adaptability—can serve as a buffer against the detrimental effects of academic burnout linking through emotional stability. Moreover, the sig-

nificance of the study lies in understanding the factors that contribute to emotional stability and the prevention of academic burnout becomes imperative for developing an environment conducive to holistic student growth and achievement. This study not only offers a novel framework for improving the immediate well-being of students but also emphasizing to equip students with the skills and mindset needed to navigate future challenges with confidence and perseverance. By addressing the mental health crisis, challenging outdated educational paradigms, emphasizing institutional responsibility, and advocating for resilience-building strategies, the study has the potential to create transformative change. Ultimately, it focuses on the Pakistani context, combined with broader implications for global education systems, ensures that the study is both locally impactful and universally relevant. This distinctive contribution serves as a call to action for educators, policymakers, and institutions to prioritize holistic development and foster environments where students can thrive academically, emotionally, and professionally.

Mindfulness

An expert in the study of mindfulness [14], describes mindfulness as “a state or quality of mind that arises through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment” (p. 145). Some view it as a mental state, while others consider it a set of skills and techniques. In psychology, the definition of mindfulness varies depending on who is studying it and from what method or perspective. The common feature of all definitions is that they emphasize two elements: direct attention to the present moment and curiosity, openness, and acceptance [15]. Rather than reacting impulsively or habitually, mindful individuals process events more realistically. Because they perceive internal and external realities without distortion, they experience and process events as less distressing than they might otherwise be. They also possess a strong ability to cope with a wide range of thoughts, emotions, and experiences [16]. Some studies indicate that the academic achievement of students with high levels of mindfulness is significantly greater compared to students with low levels of mindfulness [17]. As a unique and complicated construct, mindfulness may be thought of personal and professional components that enable students to relate to many aspects of life experiences.

According to [18], students’ mindfulness promotes the creation of beneficial connections with academic environment, has an effect on their emotional regularities, promoting their academic engagement and enthusiasm, all of which may result in mitigating their emotional exhaustion. As mentioned by [19], mindfulness training makes university students more resilient and upbeat in difficult situations, which benefits students’ academic engagement and keep them motivated throughout their academic endeavor. Additionally, based on the study by [20], mindfulness training improves students’ effectiveness on their performing activities by keeping them aware. It appears that mindfulness helps students recognize their abilities and learn to cope with emotions and negative thoughts, as well as experience mental events positively, which impacts their way of learning. In a study [21], demonstrated that individuals with a positive mindful thoughts and positive self-concept are capable of establishing healthy and positive relationships with others and their environment, which leads to better social adjustment in academic environment. Moreover, mindfulness skills have shown effectiveness in stress reduction and depression prevention. It has been found to improve cognitive flexibility, which helps individuals adapt to changing environments and cope with stress more effectively, key components for reducing burnout and promoting overall mental health [22].

Grit: Grit is defined as perseverance and passion for long-term goals. According to Duckworth, grit reflects a student’s capacity to maintain effort and interest despite difficulties and setbacks [23]. The theoretical underpinnings of grit align with the concept of perseverance and resilience, both of which are vital to achieving success, particularly in challenging academic environments. Grit is essential for maintaining motivation over long periods, as it helps individuals overcome obstacles

and continue to pursue their goals [24] [25]. state that self-control and self-discipline are psychological resources that shape persistence. Self-discipline is the ability to direct self-desire and strength to achieve goals. The individual understands an action plan that must be taken and regulates thoughts and emotions. Meanwhile, self-control is the ability to control, hold impulses and regulate attention when faced with distractions while pursuing goals [26]. Strategies and tactics for coping with challenges are psychological resources that make students more persistent. Individuals will survive when they have strategies and tactics [27]. In the context of academia, grit contributes to resilience, an important aspect of coping with academic stressors and preventing burnout by developing positive feelings and perceptions related to academic environment [28]. Duckworth and colleagues revisit their concept of grit and proposed that grit can mitigate the negative effects of academic pressures by fostering a mindset that emphasizes perseverance rather than immediate success, thus enhancing emotional stability and preventing academic exhaustion [29]. According to [30], gritty people are dedicated to their academic activities as their persistent enthusiasm for their learning rarely exhausted them, despite feeling tired. Gritty undergraduates are more likely to be good students because they learn the things as inherent passion [31]. Additionally, based on the study by [32], students who exhibit greater levels of grit have a growth mindset that aids them in overcoming obstacles in academic environment.

Adaptability

Adaptability is another important and influential aspect of academic resilience. It involves adjusting behaviors to meet environmental demands, often requiring modifications in impulses, emotions, or attitudes [33]. In an academic and university environment, adaptability can be viewed as an indicator of a transitional process that, over time, reveals how well a student has learned to cope with the demands of the university environment [34]. According to [35], individuals with adaptability skills learn to adjust effectively to new, changing, or unexpected circumstances by building enduring resources into an individual's thought-action repertoire.

In the context of positive psychological framework, adaptability enables students to manage the stress and uncertainties inherent in academic life. The theoretical base for adaptability draws from research in organizational behavior and individual differences, emphasizing the role of flexibility in cognition, understanding and regulation of emotions, and problem-solving skills in responding to dynamic situations in academic life [36] [37]. reported, when a student enters university after passing the national entrance exam, they encounter new conditions to which they must adapt. The educational and social environment that a student enters is complex, diverse, and expansive. Adapting to this environment requires leaving behind some previous ways of life before entering university and adopting new methods in new circumstances. Failure to navigate this process can result in dropping out, a desire to change majors, a lack of academic progress, and psychological issues [38]. Regarding this, findings from some previous studies indicate that adaptability is significantly associated with students' academic persistence and resilience in universities [39]. Studies indicated that adaptability significantly and positively contributes to learning by allowing students to adjust their behaviors and strategies in response to challenges, thereby reducing stress and preventing burnout [40].

In academic settings [34], reported that students with high adaptability are better equipped to cope with changes in coursework, academic requirements, and social expectations. They further discussed that the ability to adapt to changing circumstances supports mental well-being and resilience, making it a crucial factor in preventing academic burnout and improving academic success among students.

Emotional Stability

Emotional stability can also be defined as the tendency an individual has to stay calm in different situations [41]. It has also been described in the literature that emotional stability can be an extent where people try and remain calm and steady even when in pressure and they also feel less likely to

be depressed, have anxiety or lose of track [42] [43]. found that people having high emotional stability factor are considered to be relaxed, unenvious, unemotional and unexcitable which means that the problems that they might face go through a smooth phase while dealing them [10]. reported that emotional stability not only correlated strongly with positive emotional regulation but also emerged as its strong predictor of behavioral stability in face of setbacks. They further recommended that, as component of mindfulness emotional stability creates a sense of acceptance and resilience of one's experience which facilitates less involvement of individuals in using strategies to elude aspects of an experience. Additionally, adopting an attitude of acceptance facilitates individuals experiencing painful situations to be less threatening and unpleasant. In their study [44], found that emotional stability is likely to enhance adaptability, delay immediate gratification, withstand frustration [45], and be ready to revise expectations in response to changing life conditions, also predicts success in the form of persistence of effort and consistency of interest [46]. Additionally, individuals with high emotional stability pursue goals for self-concordant reasons leading to gaining higher happiness levels. They use positive emotions as understanding of their emotional experiences and use appropriate strategies to deal with anxiety and distress, leading to higher academic enthusiasm and lower academic stress [47].

Academic Burnout

Academic burnout refers to the fatigue, cynicism, and feeling of incompetence experienced by students, which leads to a lack of class participation, reluctance to contribute to group assignments, difficulty learning new material, and a sense of meaninglessness [48]. According to [49], the first symptom of academic burnout is emotional exhaustion, which affects personal well-being and leads to feeling overwhelmed. The second symptom is cynicism, where students develop a distant attitude towards academic activities and peers. At last, low self-efficacy results in a decline in academic achievement. Numerous studies have shown that academic burnout is prevalent among university students. For instance [50], research on university students found that most respondents experienced academic burnout, with 45.8% reporting emotional exhaustion, 34.9% experiencing depersonalization, and 62.7% having a decrease in academic achievement efficacy [51]. emphasized that students are more susceptible to academic burnout when they fail to effectively cope with academic performance pressure. A meta-analysis by [52] estimated the prevalence of each dimension of academic burnout increases absenteeism, higher dropout rates, and reduced performance. These are serious mental challenges for students, and the risk of experiencing burnout is particularly high during university education [53]. stated that Korean youth experience significant stress in their first year due to the education system's focus on college entrance exams, the pressure to achieve high academic performance, and the competitive atmosphere in college. This problem also exists in Indonesia, where these demands lead to academic burnout among students [54]. added that students face multiple stressors, and college stress negatively impacts their lives, contributing to academic burnout syndrome. This syndrome is frequently observed in higher education settings and can result in stress, loneliness, and negative emotions that hinder learning.

Theoretical underpinnings and conceptual framework of present study.

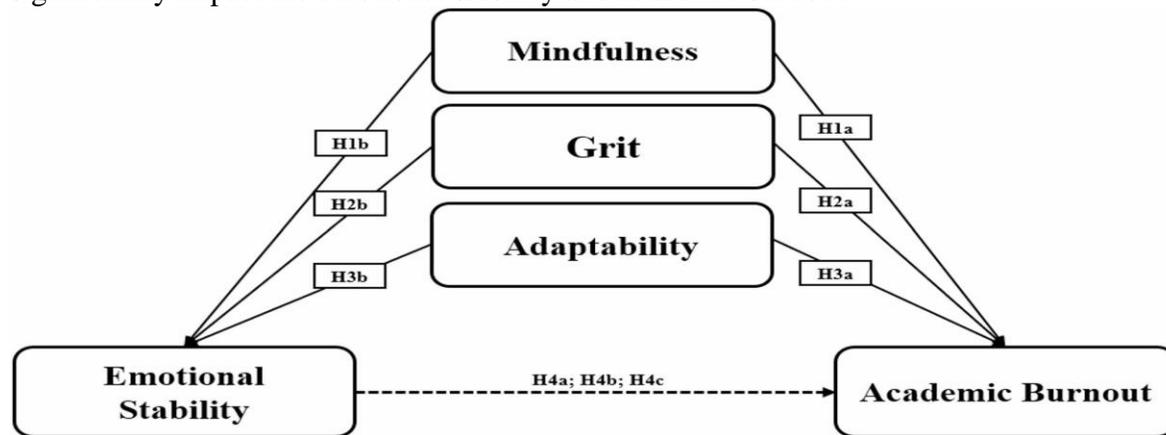
To provide a robust foundation for this study, two complementary theoretical frameworks are employed. These theories collectively address the study's focus on academic burnout and emotional stability among undergraduate students, through positive psychological attributes. Firstly, in the quest to comprehend the determinants of students' emotional well-being, the positive psychology framework has emerged as a subject of considerable interest and scrutiny. The positive psychology framework, pioneered [55], shifts the focus from addressing deficits and disorders to developing strengths, virtues, and positive emotions that contribute to human flourishing.

This framework is grounded in positive psychology and represents an individual's positive psychological state that can be developed and enhanced over time. This multifaceted framework

encapsulates several psychological attributes, prominently comprising mindfulness, grit and adaptability, contributing significantly to emotional well-being, academic performance, and personal growth of individuals. Each component contributes distinctively to an individual’s psychological health and resilience when confronting adversity within their academic and personal spheres [56]. These constructs based on the positive psychology theory and research, valid and reliable impacting the outcomes in the academic environment through promoting the positive strengths of the students. Secondly, conservation of resource theory (COR) by [57], posits that individuals strive to obtain, retain, and protect resources they value, such as personal skills, social support, and emotional well-being. Stress and burnout occur when these resources are threatened, depleted, or insufficient to meet demands. In the context of this study, COR theory provides a lens to understand the mechanisms underlying academic burnout among undergraduate students. The intense academic and social demands of higher education can deplete students’ internal and external resources, leading to emotional exhaustion, reduced efficacy, and detachment from academic responsibilities. Mindfulness, grit, and adaptability enhance students’ personal resources, helping them to avoid burnout and maintain emotional stability within academic environment. Together, these elements form a theoretical lens buffering students against stress and burnout, developing emotional stability, and improving overall well-being and academic performance of the students [58].

After examining the scientific literature, we have concluded that there is a lack of research on our study variables in combination. We rarely have been able to find some research on theoretically similar variables. We realize that in a relatively traditional society like Pakistan where academic burnout has become a growing concern for educators, students’ personal resources (positive attributes) can enhance emotional stability and mitigate academic burnout among undergraduate students. With that in mind, and by following the theoretical framework of positive psychology and COR a conceptual framework was established (Fig. 1).

We hypothesized that positive psychological attributes—mindfulness, grit and adaptability—significantly impact the emotional stability and academic burnout



stability acts as a mediator in the relationship between positive psychological attributes and academic burnout. In this way, the study can provide new insights and cross-validation. As there is an absence of direct and indirect relationships between the study variables, this study may also offer theoretical understandings of these variables. To this end, after a careful establishing of literature and theoretical background, we proposed following nine hypotheses for present examination:

- Hypothesis 1a Mindfulness is negatively and directly associated with academic burnout.
- Hypothesis 1b Mindfulness is positively and directly associated with emotional stability.
- Hypothesis 2a Grit is negatively and directly associated with academic burnout.
- Hypothesis 2b Grit is positively and directly associated with emotional stability.

Hypothesis 3a Adaptability is negatively and directly associated with academic burnout.

Hypothesis 3b Adaptability is positively and directly associated with emotional stability.

Hypothesis 4a Emotional stability mediates the relationship between mindfulness and academic burnout.

Hypothesis 4b Emotional stability mediates the relationship between grit and academic burnout.

Hypothesis 4c Emotional stability mediates the relationship between adaptability and academic burnout.

Methodology

This paper investigates the impact of mindfulness, grit and adaptability on emotional stability and academic burnout among undergraduate students, with a focus on examining the mediating role of emotional stability between independent variables (positive psychological attributes) and dependent variable (academic burnout). For this purpose, a quantitative, cross-sectional study was adopted to scrutinize the proposed model and hypotheses. To assess potential Common Method Bias (CMB), we employed Harman's single-factor test using SPSS. The analysis showed that the first factor accounted for less than 50% of the variance, indicating that CMB was unlikely to be a major issue [59]. Additionally, full collinearity variance inflation factor (VIF) values were computed in SmartPLS 4, all of which were below 3.3, further confirming that CMB was not a threat to the validity of the results [60].

Target population and sampling technique

The target population comprised undergraduate students across various programs offered by two public and two private universities in Lahore, Pakistan, based on multidisciplinary education. To ensure generalizability and representativeness of the sample in relation to the target population, a stratified random sampling technique was employed. This method was chosen because it allows for proportional representation of distinct subgroups within the population, such as academic disciplines (natural sciences and social sciences) and gender (male and female). Stratified random sampling helps reduce sampling bias and ensures that all key subgroups are adequately represented in the sample.

Using this technique, the population was divided into strata, from each stratum, participants were randomly selected using a computer-generated random number list to avoid selection bias. This approach ensured the relevance and representativeness of the sample of the target population in terms of both academic background and gender. Moreover, specific inclusion and exclusion criteria were applied to ensure. Only second-year undergraduate students during the academic session of 2023–2024 were included in the study because they had recently completed their first year of study, providing them with sufficient exposure to academic challenges. Students who did not meet these criteria (e.g., first-year or third-year students, or those not enrolled in the specified academic programs) were excluded from the study. The final sample was drawn which consisted of 275 undergraduate students, which was deemed sufficient for data collection and also for structural equation modeling [61].

Data collection and ethical considerations

Data collection took place over a period of four weeks, immediately following the completion of the first year of study in June 2023. Paper-based questionnaires were distributed to students attending face-to-face sessions at the universities. To identify potential participants, the researchers collaborated with university administrators and faculty members, who helped disseminate information about the study to eligible students. Researchers visited the selected universities during regular class hours, where they briefly introduced the study to students and distributed informational flyers explaining its purpose, benefits, and confidentiality measures. Confidentiality was strictly maintained throughout the study, and no identifying information was recorded. The researchers

ensured that participation was voluntary and informed consent was obtained from all participants prior to data collection. Participants were assured that their involvement would not impact their academic progression, and they were free to withdraw from the study at any time without penalty. Of the total respondents, the majority (61%) were male, while 39% were female; 43% were enrolled in science programs, and 57% were from social sciences programs. The respondent characteristics are given in (Table 1).

Measures

Data were gathered through a questionnaire comprising two sections: one addressing respondents' demographic information and the other concerning the study variables. In this study, we adopted the mature scales to measure the variables and after the permission was granted from authors, scales were modified according to study requirements (see Appendix- A). For ensuring the consistency and applicability of the scales in the Pakistani context, the author conducted a translation-back-translation procedure. For this, two bilingual experts were independently translated the English-version into Urdu and after careful consideration Urdu-version was back translated and consolidated into English. The back-translated version was compared with the original English version to ensure semantic equivalence and accuracy. Any discrepancies were resolved through discussion among the experts and the translators to ensure the cultural and linguistically appropriateness of the scale. Before the formal investigation, a preliminary test (pilot testing) was conducted on 15 undergraduate students who were not part of the final sample. This was done to assess the internal consistency of the scales. The Cronbach's alpha values obtained during the pilot test confirmed the reliability of the scales, as shown in the final results. These steps ensured that the questionnaire was appropriate and valid for use in the main study. The following scales were used; Mindfulness process questionnaire (MPQ) The MPQ was originally developed by [62] using expert consensus, in which several mindfulness practitioners discussed and

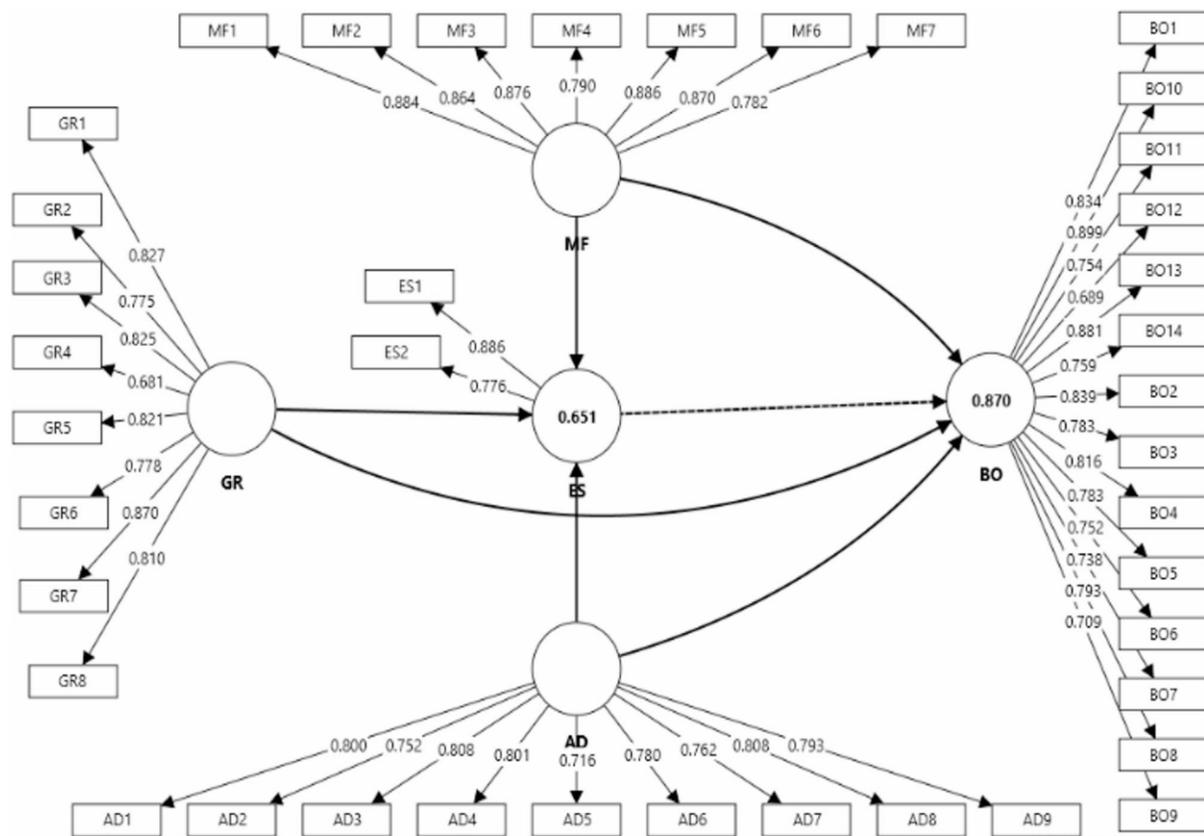


Fig. 2 Measurement model. (where the Fig. 2 indicated the factor loading values and inside circle R2 values)

vetted items for content validity. The MPQ is 7-item questionnaire in which respondents indicate on a 5-point Likert type scale (1 = Strongly Disagree to 5 = Strongly Agree) their level of habitual or trait awareness and attention to present events and experiences such as; “I intentionally try to be accepting of my thoughts and feelings as they occur”. Higher averaged total scores purportedly reflect higher mindfulness. The MPQ has demonstrated good internal consistency across a range of samples with Cronbach’s alpha was 0.838.

Grit Grit was measured with a 8-items scale developed by [63]. Responses were on a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree), which includes two dimensions: consistency of interest (e.g., “I often set a goal but later choose to pursue a different one”) and perseverance of effort (e.g., “I finish whatever I begin”). Drawing on previous studies (e.g., Wibowo et al., 2021), we did not distinguish the two dimensions of grit in our study, and took them as a whole indicator. Cronbach’s alpha was 0.879.

Adaptability To measure adaptability, the Adaptability Scale developed by [64] comprises 9-items, was used. Each item reflecting the following criteria: appropriate cognitive, behavioral, or affective adjustment in response to academic outcomes. Adapted items are rated on a 1 (Strongly Disagree) to 5 (Strongly Agree) continuum. Sample items include: “I am able to adjust my thinking or expectations to assist me in a new situation” (cognitive), “To assist me in a new situation, I am able to change the way I do things” (behavioral), and “When uncertainty arises, I am able to minimize frustration or irritation so I can deal with it best” (emotional) [33]. showed that adaptability can be operationalized as a single factor and for parsimony it is this operationalization that is used here. Prior studies supported the psychometric properties of adaptability scale. For this study, the Cronbach alpha value (0.820) was considered as acceptable.

Emotional stability Emotional stability was assessed with Ten-Item Personality Inventory (TIPI) developed by [65]. The TIPI is comprised of 10 items with five dimensions. Such as (Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Openness). Each dimension is represented by two items. For this study only two items of emotional stability were used from TIPI to measure emotional stability. Participants provided Likert ratings of how they see themselves (1 = disagree strongly, 5 = agree strongly). The items used to measure emotional stability are, “I see myself as... anxious, easily upset” and “I see myself as... calm, emotionally stable. The TIPI is widely used and has shown strong reliability and validity. In this study, the internal consistency of the emotional stability items was acceptable with Cronbach alpha value (0.765).

Academic Burnout Academic burnout was measured using a modified version of the Maslach Burnout Inventory-General Survey (MBI-GS) developed by [66], adapted for student populations. The modification involved changing the wording of work-related items to refer to study-related experiences. For example, the item “I feel emotionally drained from my work” was rephrased as “I feel emotionally drained from my study.” The MBI-GS consists of 16 items divided into three scales: Exhaustion (EX), Cynicism (CY), and Efficacy (EF). Exhaustion and cynicism each include five items, and Efficacy has six items. All items were rated on a five-point Likert scale ranging from (1 = Strongly Disagree to 5 = Strongly Agree). High scores on exhaustion and cynicism, and low scores on efficacy are indicative of academic burnout. One item from the cynicism scale, “When I’m in class or I’m studying, I don’t want to be bothered,” was removed due to its ambiguous nature. For this study, the internal consistency of academic burnout was CA = 0.853.

Data analysis and results

The present study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS-4 software to analyze the data [67]. PLS-SEM was chosen due to its suitability for complex

models and its robustness to non-normality in data. However, to ensure transparency, the normality characteristics of the data were assessed using Mardia's coefficient of normality, calculated through skewness and kurtosis. The results indicated that the data exhibited slight deviations from normality, further justifying the use of PLS-SEM over Covariance-Based SEM (CB-SEM). Unlike Covariance-Based SEM (CB-SEM), PLS-SEM does not impose strict assumptions about data distribution, making it robust for analyzing complex models even when normality cannot be assured. The analysis was conducted in two parts: the measurement model to assess reliability and validity, and the structural model to evaluate path coefficients and test hypotheses.

Measurement model

The first stage of our PLS analysis involved evaluating the measurement model, which is essential for ensuring the quality criteria all of the reflective-constructs. To assess the validity and reliability of the measurement variables a precise analysis of the reflective-constructs was performed, and carries forward only the constructs having good indicator loading, convergent validity, Cronbach's alpha, composite reliability and discriminant validity.

Table 1 Respondent characteristics		
Characteristics	Category	Percentage
Gender	Male	61%
	Female	39%
Programs	Sciences	43%
	Social Sciences	57%
Sector	Public	66%
	Private	44%
Source: Author's self-source, 2024		

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Construct reliability and validity The results of the measurement model, as shown in Table 2 indicate strong construct reliability and validity across five key areas: mindfulness (MF), grit (GR), adaptability (AD), emotional stability (ES) and academic burnout (BO). First, the factor loadings for each construct were computed. Factor loadings typically should exceed 0.7, as this indicates that the construct explains more than 50% of the variance in the item [67]. However, items with loadings slightly below 0.7 may still be retained if their removal does not significantly improve the internal consistency of the construct. Items with loadings below 0.4 are generally recommended for removal, as they contribute minimally to the construct's explanatory power [68]. In this study, most items exhibited loadings above 0.7, with two items showing loadings slightly below 0.7 but above 0.5. These items were retained because their inclusion did not adversely affect the overall internal

consistency or reliability of the construct.

Table 2 Factor loading and variance inflation factor			
Constructs	Item Coding	Factor loadings	VIF
Mindfulness	MF1	0.884	2.195
	MF2	0.864	2.905
	MF3	0.876	2.364
	MF4	0.790	2.238
	MF5	0.886	2.413
	MF6	0.870	2.126
	MF7	0.782	2.568
Grit	GR1	0.827	2.800
	GR2	0.775	2.430
	GR3	0.825	2.174
	GR4	0.681	1.955
	GR5	0.821	2.473
	GR6	0.778	2.267
	GR7	0.870	3.691
	GR8	0.810	2.855
Adaptability	AD1	0.800	2.359
	AD2	0.752	2.238
	AD3	0.808	2.566
	AD4	0.801	2.302
	AD5	0.716	1.998
	AD6	0.780	2.256
	AD7	0.762	1.990
	AD8	0.808	2.462
	AD9	0.793	2.282
Emotional Stability	ES1	0.886	2.322
	ES2	0.776	1.184
Academic Burnout	BO1	0.834	2.034
	BO2	0.839	2.999
	BO3	0.783	2.637
	BO4	0.816	2.843
	BO5	0.783	2.027
	BO6	0.752	1.921
	BO7	0.738	2.693
	BO8	0.793	2.726
	BO9	0.709	1.382
	BO10	0.899	2.306
	BO11	0.754	2.367
	BO12	0.689	2.584
	BO13	0.881	2.658
	BO14	0.759	2.667

Additionally, to assess multicollinearity among the indicators of each construct, variance inflation factor (VIF) values were calculated. VIF values below 5 are generally considered acceptable, indicating that multicollinearity is not a concern. In this study, all VIF values were well below the threshold of 5 (ranging from 1.184 to 3.691), confirming that multicollinearity did not significantly affect the reliability or interpretability of the measurement model (Table 2).

To evaluate the further, convergent validity of the constructs, the average variance extracted (AVE) is also required. AVE should exceed the recommended threshold of 0.5 which indicates that the constructs explain more than 50% of the variance in their respective items, confirming strong convergent validity. In this study, all constructs demonstrated AVE values ranging from 0.609 to 0.725 well above the threshold of 0.5, thus supporting the adequacy of the measurement model. To assess the reliability of the scales, both Cronbach's alpha (CA) and composite reliability (CR) were calculated. The Cronbach's alpha values ranged from 0.805 to 0.953, indicating strong internal consistency within each construct. Furthermore, composite reliability (ρ_a) ranged from 0.823 to 0.971 while (ρ_c) values exceeded from 0.823 to 0.959 for all constructs, providing robust evidence of the reliability and consistency of the measuring scales. The results of AVE, Cronbach's alpha (CA) and composite reliability (ρ_c) are indicated into Table 3.

Moreover, the discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT) and further cross-checked through Fornell-Larcker criteria. It is essential to establish discriminant validity to ensure that items on a construct are measuring only that particular construct where it belongs. Therefore, for this study, the results of HTMT are satisfactory because all the loadings are less than the recommended threshold value of 0.85. Similarly, the Fornell Larcker discriminant validity cross-check is also indicating strong values. Hence, discriminant validity is attained (see Tables 4 and 5).

Structural equation model (SEM)

Direct analysis The structural model displays the relationships (paths) between the constructs on the proposed study model. The model was assessed through six direct paths and three indirect (mediation) paths. Where, H1a evaluates whether mindfulness (MF) significantly and negatively correlated with academic burnout (BO) with a total effect of ($\beta = -0.371$, $t = 2.769$, $p < 0.001$). Whereas, H1b evaluates whether mindfulness (MF) has a significant positive impact on emotional stability (ES) with a total effect of ($\beta = 0.249$, $t = 3.138$, $p < 0.002$). Hence, H1a and H1b both were supported. Similarly, H2a evaluates whether grit (GR) is significantly and negatively correlated with academic burnout (BO) with a total effect of ($\beta = -0.247$, $t = 3.129$, $p < 0.002$). Whereas, H2b evaluates whether grit (GR) has a significant positive impact on emotional stability (ES) with a total effect of ($\beta = 0.108$, $t = 4.731$, $p < 0.001$). Consequently, H2a and H2b both were supported. Lastly, H3a evaluates whether adaptability (AD) significantly and negatively correlated with academic burnout (BO) with a total effect of ($\beta = -0.298$, $t = 2.195$, $p < 0.004$) and H3b evaluates whether adaptability (AD) has a significant positive impact on emotional stability (ES) with a total effect of ($\beta = 0.128$, $t = 5.193$, $p < 0.001$) values. Consequently, H3a and H3b both were accepted in this model. The results are presented in (Table 6; Fig. 3.)

Mediation analysis In the proposed model three mediation paths were assessed. Where, H4a evaluates whether ES mediates the relationship between MF and BO. H4b investigated that ES can mediate between GR and BO. And H4c investigated that ES can mediate between AD and BO. Bootstrap analysis revealed that positive psychological attributes such as (mindfulness, grit, adaptability) were negatively associated with academic burnout through emotional stability. Such as; MF \rightarrow ES \rightarrow BO: ($\beta = 0.063$, $t = 2.985$, $p < 0.002$); GR \rightarrow ES \rightarrow BO: ($\beta = 0.065$,

Table 4 Discriminant validity using HTMT ratio

	AD	BO	ES	GR	MF
AD	-	-	-	-	-
BO	0.692	-	-	-	-
ES	0.167	0.439	-	-	-
GR	0.291	0.190	0.588	-	-
MF	0.137	0.135	0.194	0.385	-

Note: HTMT (Heterotrait-Monotrait Ratio)

	AD	BO	ES	GR	MF
AD	0.781	-	-	-	-
BO	0.031	0.790	-	-	-
ES	0.073	0.045	0.832	-	-
GR	0.045	0.047	0.805	0.800	-
MF	0.137	0.141	0.052	0.012	0.852

$t = 2.036, p < 0.004$); AD-> ES-> BO: ($\beta = 0.060, t = 2.544, p < 0.001$), respectively. In other words, greater the students' mindfulness, grit, and adaptability skills will directly enhance the students' emotional stability that indirectly helps to decrease the students' academic burnout. Hence, the results revealed a complete mediation. Consequently, H4a, H4b and H4c were accepted (see Table 7).

Discussion

The study is set out to explore the relationship between three independent variables (mindfulness, grit, and adaptability) and two dependent variables (emotional stability and academic burnout) where emotional stability served as mediator. The acceptance of proposed relationships confirms the personal psychological skills provide a strength for emotion-based knowledge and burnout. Consistent with prior research, current study found a significant impact of positive psychological skills (mindfulness, grit, and adaptability) on students' emotional stability and academic burnout. The outcomes affirm this recommendation and are steady with the discoveries of the past examinations where the positive relationship between these three variables (mindfulness, grit, and adaptability) and performance-based outcomes was found [69–71]. This shows that a higher the psychological skills development towards risk, challenge, and passion will have a higher propensity for a stability by emotion.

Table 6 Direct effect analysis

Hypothesis	Path Coefficient	Standard deviation	T statistics	P values	Decision
H1a MF -> BO	-0.371	0.032	2.769	0.001	Accepted
H1b MF -> ES	0.127	0.015	3.138	0.002	Accepted
H2a GR -> BO	-0.247	0.014	3.129	0.002	Accepted
H2b GR -> ES	0.108	0.024	4.731	0.001	Accepted
H3a AD -> BO	-0.298	0.021	2.195	0.004	Accepted
H3b AD -> ES	0.114	0.039	5.193	0.001	Accepted

Note: Adaptability (AD); Academic Burnout (BO); Emotional Stability (ES); Grit (GR); Mindfulness (MF)

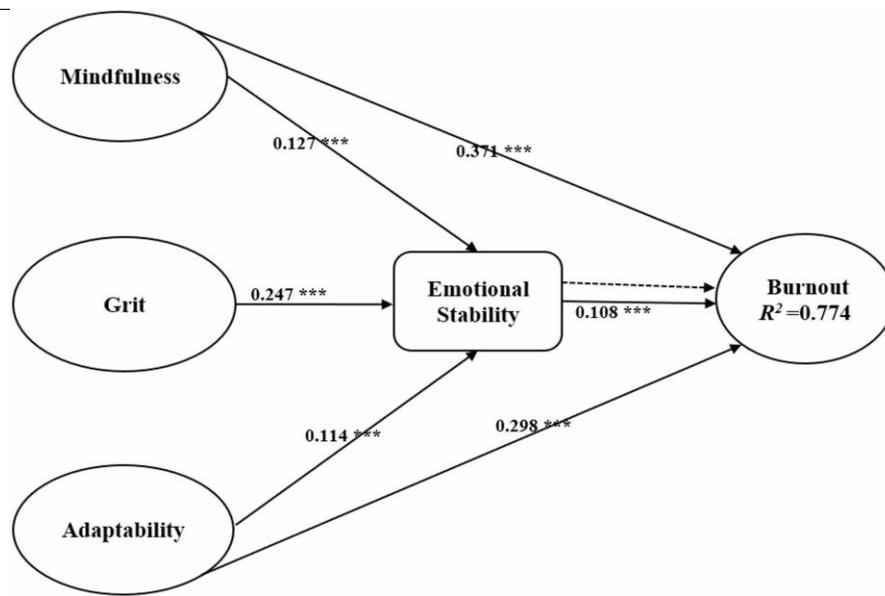


Fig. 3 Structural equation model

Table 7 Indirect effect analysis						
Hypothesis		Path Coefficient	Standard deviation	T statistics	P values	Decision
H4a	MF -> ES -> BO	0.063	0.005	2.985	0.002	Accepted
H4b	GR -> ES -> BO	0.065	0.032	2.036	0.004	Accepted
H4c	AD -> ES -> BO	0.060	0.004	2.544	0.001	Accepted

Note: Adaptability (AD); Academic Burnout (BO); Emotional Stability (ES); Grit (GR); Mindfulness (MF)

and same in line lower the rate of burnout among the students.

The key finding of the study is the indirect effect of mindfulness, grit, and adaptability on academic burnout through emotional stability proved significant. The results suggest that individuals with high mindfulness, grit and adaptability levels are likely to be more emotionally stable which contributes to lower burnout academically. Importantly, this study is among the first to empirically confirm the mediating role of emotional stability in the relationship between psychological capital (mindfulness, grit, and adaptability) and academic burnout. Emotionally stable individuals tend to be calm, composed, and less prone to anxiety, which enhances their ability to cope with stressors effectively [72]. These findings underscore the critical role of emotional stability as both a mediator and a predictor of academic burnout.

Theoretical implication

This study contributes to the theoretical understanding of mindfulness, grit, adaptability, emotional stability, and academic burnout by providing empirical support for their interrelationships. First, the findings extend existing theoretical frameworks, such as the positive psychology framework, by

demonstrating how specific components of personal attributes (mindfulness, grit, and adaptability) influence academic burnout through emotional stability. This study enriches the literature by identifying emotional stability as a key mechanism through which psychological attributes exert their effects on burnout. Second, the results align with the conservation of resources (COR) theory, which posits that individuals with greater psychological resources (e.g., mindfulness, grit, adaptability) are better equipped to manage stress and prevent burnout. By linking these psychological resources to emotional stability and academic burnout, this study provides a deeper understanding of the pathways through which resource accumulation mitigates stress-related outcomes.

Third, the findings challenge traditional perspectives that focus solely on direct relationships between psychological attributes and burnout. Instead, this study highlights the importance of considering mediating mechanisms, such as emotional stability, in explaining these relationships. This theoretical advancement underscores the need for future research to incorporate mediators like emotional stability when examining the effects of psychological attributes on burnout. Overall, this study advances theoretical knowledge by integrating emotional stability into the broader framework of psychological capital and academic burnout, offering new insights into the dynamic interplay between these constructs.

Practical implications

The findings of this study have important practical implications for educators, counselors, and policymakers seeking to reduce academic burnout and enhance emotional stability among students. First, the results suggest that developing psychological skills such as mindfulness, grit, and adaptability can significantly improve emotional stability and reduce burnout. Educators can design interventions that promote these skills through workshops, mindfulness training programs, and resilience-building activities. Second, psychotherapists and counselors can use these findings to help students develop emotional regulation strategies. For example, teaching students to reframe negative thoughts, practice self-awareness, and cultivate perseverance can enhance their emotional stability and reduce susceptibility to burnout.

Additionally, creating supportive environments where students feel valued and celebrated for small achievements can further boost emotional stability and engagement. Third, institutions can implement policies that encourage positive interactions, peer mentoring, and stress management programs. Strategies such as promoting a growth mindset, encouraging goal-setting, and fostering adaptability in response to challenges can empower students to navigate academic pressures more effectively. By addressing the psychological and emotional needs of students, these interventions can contribute to improved academic performance, motivation, and overall well-being.

Limitations and future research recommendations

Despite its contributions, this study has several limitations that should be addressed in future research. First, the cross-sectional design limits the ability to establish causal relationships among the variables. Future studies should adopt longitudinal or experimental designs to examine the temporal dynamics and causal pathways between mindfulness, grit, adaptability, emotional stability, and academic burnout. Second, the reliance on self-reported data introduces the potential for response bias. To mitigate this limitation, future research could incorporate multiple data sources, such as peer evaluations, teacher assessments, or observational measures, to provide a more comprehensive understanding of the constructs.

Third, the sample was drawn from undergraduate students in Lahore, Pakistan, which may limit the generalizability of the findings to other populations or cultural contexts. Replicating this study across diverse cultural and geographic settings would enhance the external validity of the results. Fourth, this study did not include control variables such as age, gender, and academic discipline, which could potentially act as confounding factors. While the focus was on exploring the direct and mediating relationships between mindfulness, grit, adaptability, emotional stability, and academic

burnout, future research should consider incorporating these control variables to account for potential confounding effects and provide a more nuanced understanding of the relationships under investigation. Fifth, the measurement of emotional stability using only two items from the Ten-Item Personality Inventory (TIPI) may not fully capture the construct's complexity. Future research should consider using more robust tools "Emotional Regulation Questionnaire (ERQ)" designed to measure emotional regulation or stability.

Finally, while this study focused on emotional stability as a mediator, other potential mediators (e.g., self-efficacy, coping strategies) could also play a role in the relationship between psychological attributes and academic burnout. Exploring these additional mediators could provide a more nuanced understanding of the underlying mechanisms.

Conclusion

In conclusion, this study provides valuable insights into the relationships between mindfulness, grit, adaptability, emotional stability, and academic burnout. The findings demonstrate that emotional stability serves as a critical mediator in the relationship between psychological attributes and academic burnout. By highlighting the importance of emotional stability, this study contributes to both theoretical knowledge and practical applications aimed at enhancing students' well-being and reducing burnout. However, these findings also raise significant concerns about the growing prevalence of academic burnout among students, particularly in high-pressure educational environments. The increasing demands of academic life, coupled with limited access to emotional regulation tools and psychological support, place students at heightened risk of stress, anxiety, and disengagement. Academic burnout not only jeopardizes students' academic performance but also has far-reaching consequences for their mental health, social relationships, and long-term career prospects. This underscores the urgent need for institutions, educators, and policymakers to prioritize initiatives that foster emotional stability and equip students with the psychological resources necessary to navigate challenges effectively.

Despite its limitations, this research lays the groundwork for future investigations into the complex interplay between psychological resources, emotional regulation, and academic outcomes. Moving forward, it is imperative to adopt a proactive approach to addressing academic burnout by integrating mindfulness, grit, and adaptability training into curricula and support systems. Failure to do so may exacerbate the mental health crisis among students, leading to broader societal implications, such as reduced workforce readiness and declining overall well-being. By emphasizing the role of emotional stability as a protective factor against burnout, this study calls attention to the critical need for evidence-based interventions that empower students to thrive academically and emotionally.

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