Academic burnout and student engagement: a moderated mediation model of internal locus of control and loneliness

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Abstract

Purpose – This paper aims to assess the relationship between academic burnout-student engagement relationships on management students of the Delhi-NCR region of Northern India. It further attempts to study the moderating impact of internal locus of control and mediating impact of loneliness on the academic burnout-student engagement relationship.

Design/methodology/approach – The data was collected using standardized instruments from 264 respondents. Descriptive statistics, correlation and moderated-mediated regression analysis were used to test the hypotheses.

Findings – The study found a negative association between student engagement and academic burnout and loneliness. A positive association between academic burnout and loneliness and a moderating impact of internal locus of control on academic burnout and student engagement relationship. Loneliness acted as a partial mediator for the moderated relationship between the academic burnout-student engagement relationship.

Research limitations/implications – Sample size and sampling units are the limitations of the study.

Practical implications – The conclusion of the presented study offers different inferences including validating the self-determination theory (Ryan and Deci, 2000) and possible courses of actions to be taken by academic institutions and students themselves. It ranges from careful investigation of student’s behaviors, design and implements collaborative projects along with student’s involvement in social networking based groups for collaborations and help.

Social implications – With the help of the study, the society including parents, family, friends, officials and academicians at educational institutions can offer useful insights to students through recreational and social activities for behavior modifications.

Originality/value – The major contribution of the study is to understand the psyche of the budding professionals perceiving increased stress and pressure. Limited studies are found in the Indian context and no studies in the past have used the study variables together. Internal locus of control as a

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personality variable has not been studied with respect to student’s burnout and engagement. Furthermore, none of the studies done in the past have deliberated upon loneliness with respect to the student community.

**Keywords** Loneliness, Burnout, Engagement and internal locus of control, Management students, India, Engagement, Locus of control

**Paper type** Research paper

### Introduction

Education, the core of every form of development and specifically higher education is fundamental in the building of the nation by preparing knowledge economy and contributing to societal development (Ugwu et al., 2013). The higher education industry experiences benefits from a genuine focus on the engagement of their staff and student, as it caters to the need for skills development initiatives (Byers et al., 2014). A considerable amount of work is found in the academic context (Schaufeli et al., 2002). Among previous studies, the role of an engaged, motivated and goal-oriented student in higher education is quite prominent.

On the one hand, postgraduate study can be rewarding while on the other, it is quite demanding too (McLaughlin and Sillence, 2018; Matheson et al., 2016; Ribeiro et al., 2018). The postgraduate (PG) students undergo entirely different academic experiences from graduate courses (McPherson et al., 2017; McLaughlin and Sillence, 2018). These students overstretch themselves to deal with workload (Ugwu et al., 2013), including assignments, exams, work, club activities, volunteering assignments, family issues and many more (Stoliker and Lafreniere, 2015). Apart from it, there are compulsory classes to attend, performing tasks (Noh et al., 2013) and balancing between the responsibilities and insufficient resources to meet the demands (Suárez-Colorado et al., 2019). Thus, it requires them to regulate their mental and emotional state during experiences from academic tasks (Durán et al., 2006). This subjective phenomenon may be understood as a situation of academic burnout, mainly due to disparity amid situation and expected outcomes (Maslach et al., 2001; Ugwu et al., 2013). Lin and Huang (2014) explained different reasons behind academic burnout such as academic pressure, work overload and other psychological factors including emotional exhaustion, negative attitude and a feeling of low accomplishment.

Academic burnout is established to be adversely related to student engagement (Kapoor et al., 2020; Ugwu et al., 2013). There have been studies claiming a strong link between burnout and engagement (Schaufeli et al., 2002). Burnout and engagement are antipodes to each other (Schaufeli et al., 2002). Burnout is explained as a negative feeling generated due to work-related stress, comprising of emotional exhaustion, depersonalization and a reduced sense of personal accomplishment (Freudenberger, 1974; Rogers et al., 2016). Zhang et al. (2007) also explained academic burnout among students with a sense of exhaustion owing to study loads along with a cynical and detached mindset toward study-related work and a sense of being an incompetent student. While engagement is considered as a motivational concept (Ariani, 2013), representing the active allocation of self-resources by individuals for any assignment, related to their professional role (Christian et al., 2011). Similarly, academic engagement can be referred to as a high level of energy and psychological flexibility and joyful involvement in self-studies.

During the transition to post-graduate studies, some students experience engagement while many students experience burnout and they are also found quite prone to the excessive level of loneliness (Tobbell et al., 2010). Other researchers mentioned that
loneliness and burnout are collective complications among students during their scholastic job (Arkar et al., 2004; Lin and Huang, 2014; Ponzetti, 1990; Wiseman et al., 1995). The term loneliness is understood as an emotional outcome of being unable to meet social and emotional expectations (Ernst and Cacioppo, 1999; Russell et al., 2012). It is a hostile emotive involvement due to poor social networks and relationships (Wright et al., 2014).

The students with an increased feeling of loneliness and academic burnout, experience reduced academic performance and poor engagement (Stoliker and Lafreniere, 2015). Previous studies related to loneliness concluded that emotionally stable individuals exhibit better engagement and lower levels of burnout not only in academics but also in the professional settings (Durán et al., 2004; Gerits et al., 2005). Benner (2011) mentioned in their work that students may experience loneliness and burnout, however, their engagement is important to achieve better outcomes during their academic career. To be indifferent to stress-causing loneliness and burnout, an individual with an internal locus of control (LOC) can manage. The people with internal LOC believe that they can regulate their destiny and accept their responsibility for success or failure in their life (Rotter, 1966). The individuals with internal LOC are realistic, logical and behave actively (Malekian et al., 2015).

Research gap
Both burnout and engagement, the individual phenomenon have been studied in combination (Shapiro, et al., 2015), however very little are known about academic burnout (Noh et al., 2013) and student engagement along with the effect of loneliness at work and internal locus of control. Previous research studies on burnout were focused primarily on students (Stoliker and Lafreniere, 2015) but later on, the studies on working professionals were also observed, however, these studies were limited to the relationship of burnout with the occupational outcome (Maslach et al., 2001). Very limited studies have been found in the Indian context. Thus, further research must be carried out to determine the generalizability of the findings from non-Indian studies in the Indian context. Apart from it, previous studies about loneliness, burnout, engagement and internal locus of control using PG students had incorporated only one or two constructs not all.

The purpose of the presented study is to examine the relationship between academic burnout and student engagement along with the mediating effect of loneliness at work and the moderating effect of internal LOC. The moderating variable influences the magnitude of the relationship between two variables. Internal locus of control is a personality dimension, and it contributes toward the positive outcome of human behavior (Dagal et al., 2017; Kang et al., 2015; Rotter, 1990). Based on it, an internal locus of control has been considered as a moderating variable for the current study. The role of the mediating variable is to explain the effect of the independent variable on the dependent variable. The presence of a mediating variable between the independent and dependent variables is said to be indirect. It is well-established that during higher studies the loneliness affects the engagement of studies directly or indirectly (Benner, 2011; Stoliker and Lafreniere, 2015). Thus, to confirm the indirect effect of loneliness between academic burnout and student engagement, loneliness has been considered as a mediating variable. The structure of the article includes a review of available literature on academic burnout, loneliness at work, student engagement and internal LOC, along with the theoretical framework explaining the relation between constructs, mediating and moderating effects of loneliness at work and internal locus of control, respectively. It also includes hypothesis testing and concludes with discussion, implication, limitations and future direction of research.
Review of literature

Burnout

The notion of burnout was presented by Freudenberger in 1974, who described it as a psychosomatic disorder categorized by steady emotive exhaustion, the harm of motivation and reduced enthusiasm. This term was later explained by Maslach et al. (1986) as a multidimensional construct with three constructs, namely, emotional exhaustion, depersonalization and reduced personal accomplishment. Different researchers consider it a consequence of excessive stress an individual may experience in their professional and social lives. It has been observed that previous studies on burnout were limited to professionals, doctors and teachers, etc. whereas recent studies of burnout are based on different populations, namely, informal caregivers, housewives and students (Boada-Grau et al., 2015; Navarro-Abal et al., 2018). The researchers believed that the burnout studies on university students equated students with professionals due to similarity in working conditions (Lin and Huang, 2014; Caballero Dominguez et al., 2010; Caballero et al., 2015). It can be validated from the scholastic work by Pines et al. (1980), who found the notch of burnout among students more than the professionals and termed the phenomenon as academic burnout.

Academic burnout is considered as psychological distress due to excessive stress and anxiety in academic settings (Xie et al., 2019). Different researchers explained academic burnout and Pines et al. (1980) mentioned it as an effect of energy consumption in extended academic stress and a slow drop in student’s enthusiasm toward academic activities. There are various stress-causing determinants of academic burnout such as mandatory academic activities, meeting deadlines for assignment submission, passing examination (Schaufeli and Taris, 2005) and many more. Apart from academic activities, there may be other determinants also such as changing the address, living away from home, developing interpersonal relations and maintaining them for academic purposes (Lin and Huang, 2014; Hicks and Heastie, 2008). Academic burnout has serious outcomes, as well. It is a noteworthy predictor of dissatisfaction and depression (Hakanen and Schaufeli, 2012) and suicidal ideation (Ang and Huan, 2006; Dyrbye et al., 2008) too.

Engagement

The term student engagement is a well-researched construct. It has gained considerable attention from researchers in previous decades (Finn and Zimmer, 2012; Ulmanen et al., 2014) and some of the conceptualizations include affective, academic, social and cognitive engagement (Jimerson et al., 2003; Reschly and Christenson, 2012). The term student engagement is a multifaceted construct, and different researchers worked on conceptualizing the same. It has been defined differently by scholars and researchers. Fredricks et al. (2019) explained student engagement as engagement consisting of three interrelated proportions including emotional, cognitive and behavioral engagement. Among them, the emotional component includes student’s positive or negative attitude toward class or school, relationships with peers and teachers and belongingness toward their academic institution. The cognitive component includes the perceived relevance of academic work, self-regulated learning, application of profound learning strategies and using the essential cognitive approaches for the conception of multifaceted concepts (Wang et al., 2012). Finally, the behavioral component of student engagement refers to school-related conduct, attendance, contribution in learning and participation in academic activities.

Apart from this, Newmann et al. (1992) considered student engagement as a psychosomatic venture with effort and Pekrun et al. (2012) explained student engagement as “active energetic and approach oriented involvement with academic tasks.” The term
student engagement has been found linked with psychological adjustments, academic accomplishment and extended-term achievements (Abbott-Chapman et al., 2014; Chase et al., 2015; Reyes et al., 2012). It is also found to be linked with important outcomes such as persistence; grade (Akey, 2006); course completion in college (Kuh et al., 2008; Robinson and Hullinger, 2008); educational ambitions and school accomplishment (Akey, 2006; Fredricks et al., 2004; Ladd and Dinella, 2009; Wang and Holcombe, 2010) and college presence (Fraysier et al., 2020).

Loneliness

Loneliness is a feeling of stressful, hurting and multifaceted sentiment, resulting from the shortage of rewarding friendly and social needs (Tassin, 1999), which any individual would like to avoid (Mai et al., 2016). It is one of the fastest-growing psychosocial health-related apprehensions in the contemporary phase (Cacioppo and Cacioppo, 2018; Rubin, 2017). Almost every individual would significantly experience loneliness, some time in their lives. Loneliness is conceptualized as a gloomy state of mind of an individual in which they may have an inner and unpleasant experience along with significant loss in the social networks (Bandari et al., 2019; Chana et al., 2016; Teguo et al., 2016). Various studies explored the sources of loneliness, and these sources are broadly mentioned as cultural or situational environments, including changes in social networks and loss of personal relationships. Apart from it socio-economic challenges including poverty, income inequality, reduced level of education, lack of transportation, unplanned urbanization, rapid industrialization and a weakening social capital are found to be equally responsible for overall well-being and increased level of loneliness among the Indians in the latest years (Tiwari, 2013).

It has been perceived that loneliness is a significant forecaster of depression and anxiety (Cacioppo et al., 2006; Richardson et al., 2017), reduced mental health and personality integration (Perlman and Peplau, 1984). Loneliness also adversely affects educational performance, social alteration (Wohn and Larose, 2014) and causes university dropout intention among the students new to the university environment (Ali et al., 2007; Rotenberg and Morrison, 1993). Nowadays it is being observed as a significant aspect of psychological distress among children and adolescents (Lu and Zhou, 2013) and they are quite susceptible to the damaging consequences of loneliness (Danneel et al., 2018). The spirit of loneliness is common among the students during adaptation to the university, and it depends upon the ability of an individual to preserve linkage with childhood networks as they may be significant in dipping such emotional state. To deal with loneliness, the scholars emphasize being involved in university life, as a member of a student club, joining a sports team or seeking social information through face-to-face interaction. It would help strengthen the relationships and further shrinkages the probability of loneliness (Pijpers, 2017).

Locus of control

LOC is the way any human being deals with a situation. The concept of LOC was introduced by Rotter (1966) within the frame of social learning theory and explained it with two perspectives, internal and external LOC. They explained internal LOC as an individual’s attitude, their accountability toward action taken by them and the outcome of self-behavior (Akca et al., 2018). While Dağal et al. (2017) explained about the individuals with high external LOC, as “they believe that external environmental factors are responsible for the consequence of any action.” The human being with high internal LOC is found to be extra sensitive and take accountability to regulate their environment (Kang et al., 2015). Such people are self-driven, thus they complete their tasks (Rotter, 1990; Dağal et al., 2017). This phenomenon is also supported by previous studies that individuals with internal LOC
possess a high level of motivation for achievements, thus achieve better results than human beings with external LOC (Cetinkalp, 2010; Rastegar et al., 2012; Zaidi and Mohsin, 2013). Apart from this, the concept of LOC is believed to be related to attribution theory also (Bothma and Schepers, 1997; Weiner, 1979). As per the theory, the behavior of an individual is understood as attributing the cause of success or failure (Kirmizi et al., 2018). Different attribution to outcomes may be based on faith, luck, actions of other strong people and behaviors of an individual (Solmuu, 2004). Simply it can be understood as a way in which an individual handles certain circumstances.

Conceptual framework and hypotheses development

Self-determination theory

Self-determination theory (SDT) is the prevalent development in the essence of Maslow’s self-actualization theory (Ryan and Deci, 2000). Empirically it is a derivative theory of human motivation and behavior in social contexts (Deci and Ryan, 2012). SDT postulates that an individual’s motivation to act can be external or internal to themselves. The internal motivation indicates the individual’s genuine willingness to perform the task. However, in the case of external motivation, an individual experiences coerced while doing something that they do not fully embrace. Both these motivations are in the continuum (Deci and Ryan, 2012) explaining external motivation as introjected motivation and the motives more congruent with personal needs and goals as integrated motivation.

Deci and Ryan (2012) further assert that an individual’s attitude, motivation and belief are influenced by three different psychological needs, namely, competence, autonomy and relatedness. The need for competence refers to the inherent inclination to experience a sense of efficacy and confidence to handle challenging circumstances in their surroundings, leading to developing self-capacities for the future. An individual’s need for autonomy is to experience self-behavior as an outcome of their own decisions; whereas the need for the relatedness of an individual is all about the feeling of connectedness and belonging to other human beings. This theory also emphasizes that through the satisfaction of these needs, an individual can attain a state of well-being. It is interesting to note that there lies a similarity between intrinsic motivation and self-determination (Ryan and Deci, 2000).

Conceptual model

The paper develops a model where the outcome of academic burnout over student engagement has been well discussed. The role of loneliness as a mediating variable and the internal locus of control as a moderating variable has also been discussed. The current study constitutes one independent variable, namely, academic burnout, one dependent variable, namely, student engagement, moderating variable-Internal locus of control and mediating variables, namely, loneliness. As per SDT, in the presented study, academic burnout and loneliness may be considered as an external motive, which a student may not absorb fully and feel compelled. While the internal locus of control may act as integration motivation and help the students to develop and use their competence, autonomy and relatedness, which may further encourage them in dealing with academic burnout and loneliness and be better engaged in their educational setting.

The investigation model of this study is demonstrated in Figure 1 below.

Academic burnout and student engagement. The phenomenon of engagement emerges from the concept of burnout construct (Maslach et al., 1986). It is attributed to working with the feeling of energy, commitment and accomplishment. Researchers observed that when engagement weakens, the energy converts into exhaustion, involvement in cynicism and efficacy changes into ineffectiveness resulting in an overall situation of burnout
This phenomenon is based on the burnout-engagement continuum (Maslach et al., 1986), but it has limitations, too (Fredricks et al., 2004). If engagement decreases it may turn to burnout, however, if burnout decreases, it may not necessarily convert into engagement or energy at work. Schaufeli et al. (2002) also mentioned that burnout and engagement are adversely correlated but not conceptually opposite to each other, whereas Taris et al. (2017) explained engagement and burnout as an overlapping concept.

Academic burnout is reflected to be corrosion of engagement (Schaufeli et al., 2002) and May et al. (2015) found that academic burnout is adversely related to academic engagement. They also mentioned that an academically engaged student is said to be highly energetic and involved in academic work, thus produces better performance. The previous studies also validated the negative association between burnout and academic performance (Nowack and Hanson, 1983; Stewart et al., 1999) at university resulting in terms of grade average points (McCarthy et al., 1990). Thus, based on the above literature, it can be hypothesized that:

**H1.** Academic burnout and student engagement are negatively associated with each other.

**Loneliness as a mediator.** Different researchers across the globe observed that students experience loneliness and burnout during their academic careers (Lin and Huang, 2014; Shapiro et al., 2015; Stoliker and Lafreniere, 2015). Generally, the loneliness affects social adjustment among the students who are new to the academic institutions (Wohn and Larose, 2014) and it is a strong predictor of mental health such as depressions and anxiety (Cacioppo et al., 2006; Perlman and Peplau, 1984; Richardson et al., 2017; Stoliker and Lafreniere, 2015). The reason behind such a mental state may be an emotional weakness among lonely people; consequently, they lack social support.

Feeling of loneliness is also found associated with physical and psychosomatic health (Arkar et al., 2004; Wright et al., 2014), and its extreme levels affect the academic performance (Benner, 2011) and educational engagement of any student (Stoliker and Lafreniere, 2015). Researchers believed that expressively intellectual people display miserable symptoms of burnout in both educational and workplace settings (Durán et al., 2004; Gerits et al., 2005). Furthermore, Melamed et al. (2001) concluded that friends, colleagues and social support reduce the work burnout by vindicating loneliness and in the absence of such social support, loneliness increases, which further increases burnout (Rogers et al., 2016). In a nutshell, it is observed that loneliness and burnout are commonly found together and burnout symptoms are negatively related to engagement, loneliness may also affect the same. Based on the above literature, the following hypotheses are proposed to be tested:

**H2.** There is a positive association between burnout and loneliness.

**H3.** Loneliness is negatively associated with student engagement.

![Figure 1. Research model](image-url)
The construct loneliness has been studied as a mediating variable in different studies causing a mediating effect in the relationship between any two behavioral constructs such as between family functioning and adolescent internet addiction (Shi et al., 2017); Facebook addiction and subjective well-being of Turkish university students (Satici, 2019); discrimination and sleep quality of adolescents (Majeno et al., 2018); and gratitude on self-reported physical health symptoms on adults (O’Connell et al., 2016). Thus, based on the same, it is hypothesized that:

**H4.** The association between academic burnout and student engagement will be mediated by loneliness.

**Internal locus of control as a moderator.** Two constructs loneliness and burnout are not only linked but adversely affect the positive academic involvement and achievement of students (Stoliker and Lafreniere, 2015). It is also evident that lonely individuals believe in an external locus of control (Malekian et al., 2015); thus, they experience stress and burnout. Such students with external LOC assume that they lack acceptance by others and perceive a lack of justice in the world and undergo negative experiences. While students with internal LOC, possess enhanced confidence and social esteem in social competitions (Takakura and Sakihara, 2001). Thus, the individuals with internal LOC are less disposed to burnout, take charge of situations, ascertain their progression of the deed and perform, consequently engage themselves in their work (Sharma and Sharma, 2015).

Furthermore, the people with internal LOC possess positive self-evaluations, improved handling skills in traumatic circumstances (Spector, 1982) tend not to burnout (Glogow, 1986), perform well (Spector, 1982) with a high level of engagement and attain job satisfaction at work (Judge et al., 1998). Similarly, it is also believed that students with internal LOC, engage themselves well in academic institutions and experience academic achievement (Majzub et al., 2011). It is a personality attribute, which affects the actions and behavior of an individual. Due to internal locus of control, an individual feels the strength to modify their behavior to control the achievement of the desired outcome. Thus, it has been studied as a moderating variable in different behavioral studies in the past (Chen et al., 2016; Fresson et al., 2017; Li et al., 2019; Xiao et al., 2018) causing an interaction effect between various behavioral constructs. Based on the above literature, the following hypotheses are proposed to study:

**H5a.** Internal LOC will moderate the association between loneliness and student engagement such that the relationships are weaker for employees with high-as opposed to low levels of internal locus of control.

**H5b.** The indirect effect of academic burnout on student engagement via loneliness is conditional on internal LOC.

**Method**

**Sample and study procedure**

The present study was conducted in the Management schools of North India comprising of Management students of the private institutions. The data was collected through a survey using standardized instruments. A total of 290 questionnaires were distributed, out of which 264 were considered for the present study. In total, 26 questionnaires were discarded due to incomplete information. The sampling method used was convenience sampling. The reason for collecting data through convenience sampling was that it was easy to connect with the respondents due to familiarity with the institution. Second, the researchers found the data
collected through this technique as extremely speedy, easy and cost-effective. The study used a cross-sectional survey. The items of the study variables were jumbled and Harman’s method was used to cater to the issue of common method bias which takes place during the cross-sectional study. As the factor loading of the first factor during EFA was found to be 22.3%, the issue of CMV was taken care of. Talking about the demographic profile of the respondents, 57.6% were men and the remaining 42.4% were women. In total, 12% of the respondents had work experience of 1–5 years. In total, 42% had an engineering degree, 47% were graduates in the areas of commerce, science and humanities. The remaining 11% of respondents had post-graduate degrees.

**Measures**

*Student engagement scale*

Schaufeli and Bakker’s (2003) “The Utrecht Work Engagement Scale student version” of the UWES has been developed and adopted; the UWES-S has items like “when I’m doing my work as a student, I feel bursting with energy” is a part of scale item.

*Burnout scale*

The Maslach Burnout Inventory–Student Survey (Schaufeli et al., 2002) was adopted and the questionnaire includes three subscales: Exhaustion was measured with five items (e.g. “I feel emotionally drained by my studies”), Cynicism was measured with four items (e.g. “I have become more cynical about the potential usefulness of my studies”) and Academic Efficacy was measured with six items (e.g. “In my opinion, I am a good student”).

*Locus of control scale*

The scale used was developed by Pareek (1992). The LOCO inventory has 10 items each for internal, external (others) and external (luck). The present study has taken into consideration 10 items of internal locus of control. An item like, “successful completion of assignments is mainly due to my detailed planning and hard work” is a part of the locus of control scale.

*Loneliness at work scale*

16 item scale by Wright et al. (2006) was used in the present study for loneliness at work. An example of a scale item, is “I often feel isolated when I am with my class-mates.”

**Reliability and validity**

The data was analyzed using SPSS, Macro PROCESS and AMOS. The internal consistency of the items was calculated through Cronbach’s alpha coefficient. For testing the hypotheses, SEM and Moderation mediation techniques were used. To examine the model fit, confirmatory factor analysis was conducted to examine the uniqueness of each variable. The results derived from the four-factor model reflected a good model fit ($\chi^2 = 786$, df = 264, $\chi^2$/df = 2.96, $p = 0.000$, GFI = 0.92, AGFI = 0.93, NFI = 0.91, CFI = 0.94, RMSEA = 0.04). The $\chi^2$ value of 2.73 is lower than the threshold of 3 as per the recommendation by Hair et al. (2010). It can further be noticed that all the values of GFI, AGFI, NFI, CFI, are greater than the prescribed value of 0.9, while the value of RMSEA is lower than the threshold of 0.08 (Hair et al., 2010).

Table 1, depicts the scales’ validity through convergent and discriminant validity. AVE value of each construct is higher than 0.5 and, the CR values of all variables are higher than
the threshold of 0.7 (Fornell and Larcker, 1981), thus, confirming convergent validity. As the recommended value of AVE of more than 0.5, convergent validity was confirmed. Discriminant validity was also established when the results of the value of discriminant validity were found to be greater than the values of the correlations of the study variables (Fornell and Larcker, 1981).

**Descriptive results**
Table 2 depicts the descriptive statistics, bivariate correlations and discriminant Validity among the study variables. It can be observed from the table, that correlation among the hypothesized variables is found to be significant, hence, the results are proved at the initial stage of data analysis. Moreover, the values of discriminant validity for the study variables were much higher than the correlation values, thereby, establishing the discriminant validity (Fornell and Larcker, 1981).

**Results analysis**
The study adopted the Macro PROCESS Hayes (2017), Model 4 to run the mediational analysis to see whether the indirect effect (a*b) was significantly different from zero. The indirect effect was tested using a percentile bootstrap estimation approach with 10,000 samples (Hair et al., 2010), implemented with the PROCESS macro Version 3 (Hayes, 2017). The results in Table 3 depicts the results for the hypotheses. The first hypothesis of the study was proven when the results found a negative association between academic burnout and student engagement ($\beta = -0.251 \text{**}, t = 3.412, p = 0.000$). The second and third hypotheses of the study were also proven when a positive association was found between academic burnout and loneliness at work ($\beta = 0.648 \text{**}, t = 3.486, p = 0.000$) and the negative association was found between loneliness at work and student engagement ($\beta = -0.607 \text{**}, t = 3.26, p = 0.000$) was observed, respectively.

<table>
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<tr>
<th>Variable</th>
<th>CR</th>
<th>AVE</th>
<th>Cronbach’s alpha</th>
<th>Discriminant validity</th>
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<tr>
<td>Academic burnout</td>
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<td>0.64</td>
<td>0.75</td>
<td>0.80</td>
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<tr>
<td>Loneliness</td>
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<td>0.76</td>
<td>0.80</td>
<td>0.87</td>
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<td>Student engagement</td>
<td>0.77</td>
<td>0.62</td>
<td>0.74</td>
<td>0.78</td>
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<tr>
<td>Locus of control</td>
<td>0.84</td>
<td>0.79</td>
<td>0.81</td>
<td>0.88</td>
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<table>
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<th>4</th>
<th>5</th>
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<td>1. Age</td>
<td>1.46</td>
<td>0.78</td>
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<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>2. Gender</td>
<td>1.42</td>
<td>0.50</td>
<td>0.09</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>3. Tenure</td>
<td>1.41</td>
<td>0.77</td>
<td>0.12</td>
<td>0.05</td>
<td>–</td>
<td>–</td>
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<td>4. Student engagement</td>
<td>34.23</td>
<td>6.76</td>
<td>0.04</td>
<td>0.13</td>
<td>0.10</td>
<td>(0.78)</td>
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<tr>
<td>5. Loneliness</td>
<td>15.31</td>
<td>3.57</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>(0.87)</td>
<td></td>
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<tr>
<td>6. Locus of control</td>
<td>14.33</td>
<td>8.99</td>
<td>0.04</td>
<td>0.01</td>
<td>0.06</td>
<td>0.43</td>
<td>(0.88)</td>
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<td>7. Burnout</td>
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<td>0.23</td>
<td>0.05</td>
<td>0.16</td>
<td>0.54</td>
<td>(0.88)</td>
<td>(0.89)</td>
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</tbody>
</table>

**Notes:** $n = 264$; **Correlation significant at 0.01 level; discriminant validity is depicted diagonally and in italic
It can be derived from the results in Table 4, that the fourth hypothesis of the study about the association between academic burnout and student engagement will be mediated by loneliness was also proven when the results found the partial mediating effect of loneliness on academic burnout and student engagement ($\beta$ value increasing from $-0.167$ to $-0.251$). The reason for partial mediation was that a direct and significant association was found between the independent variable and the dependent variable. We also calculated variance accounted factor (VAF) which also validated the partial mediating effect of burnout on resistance to change and turnover intention relationship. The value of VAF was found to be 0.414% which was less than the VAF value of 100% for full mediation as per the suggestion given by Hair et al. (2010).

**Test of moderation**
Hierarchical regression (Aiken and West, 1991) was used to examine the moderating effects of internal locus of control on the loneliness at work-student engagement relationship. The results in Table 5 exhibit that the interaction between loneliness at work and internal locus of control were significant in predicting Student engagement ($-0.45, p < 0.01$). The $R^2$ change value of 0.21 signifies that 21% of the change in the relationship between burnout and engagement is due to the moderating effect of internal locus of control. Similarly, Figure 2 of the study demonstrates the moderating effect of internal locus of control on Loneliness at Work-Student engagement relationship. It suggests that with a high internal locus of control, the effect of loneliness decreases and the engagement level increases.

**Test of moderated mediation**
Model 14 of Hayes (2017) PROCESS Macro was used to study the moderated mediation effect proposed in the research model. The condition of moderated mediation is achieved when the conditional indirect effect of Academic burnout on Student engagement through loneliness at work differs in levels of internal locus of control. As observed in Table 6, the indirect effect of academic burnout on student engagement via loneliness at work was weakest at the highest level (+1 SD; indirect
effect = −0.21) of Internal locus of control and strongest at the lowest level (−1 SD; indirect effect = −0.51) of internal locus of control. This proves the hypothesis (5b) which states that the indirect effect of academic burnout on Student engagement via loneliness at work is conditional on internal locus of control. The indirect effect will be greater for those students who have scored low on internal locus of control as compared with students who are high on internal locus of control.

### Table 5. Moderating role of internal locus of control in loneliness at work-student engagement relationship

<table>
<thead>
<tr>
<th>Variables and steps</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: controls</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.01</td>
</tr>
<tr>
<td>Gender</td>
<td>0.05</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.10</td>
</tr>
<tr>
<td>Step 2: main effects of predictor variables</td>
<td></td>
</tr>
<tr>
<td>Loneliness at work</td>
<td>−0.61**</td>
</tr>
<tr>
<td>Internal locus of control</td>
<td>0.14**</td>
</tr>
<tr>
<td>Step 3: Interaction</td>
<td></td>
</tr>
<tr>
<td>Loneliness at work</td>
<td>−0.45**</td>
</tr>
<tr>
<td>*internal locus of control</td>
<td>0.21</td>
</tr>
<tr>
<td>$R^2$ change</td>
<td>0.21</td>
</tr>
<tr>
<td>$F$</td>
<td>69.28**</td>
</tr>
</tbody>
</table>

**Notes:** $n = 264$, *$p < 0.05$; **$p < 0.01$
Discussion and conclusion

It was observed that students with internal LOC, express better professional decision making than students with external LOC (Hartman et al., 1988). The drive of the study was to examine the mediating effect of loneliness and the moderating effect of internal LOC on the association between academic burnout and student engagement. During the analysis, we first observed that there is an adverse association between academic burnout and student engagement. It means any variation in academic burnout would impact student engagement positively or negatively. The mentioned outcome of the presented study is consistent with prior study findings (Assunção et al., 2020; Schaufeli et al., 2002; Stewart et al., 1999). The findings of the study assert the validation of the theory of self-determination (Ryan and Deci, 2000; Deci and Ryan, 2012) by the fact that whenever external motives try to motivate a person, the individual may not absorb it to its extent and feel forced to behave in a particular way. Which is not liked by them, thus there may be serious or damaging repercussions. Similarly in the situation of imposed academic pressure on the students during the course, they may revert to poor engagement and vice versa.

Second, we found the association between academic burnout and loneliness among the students, which means any positive change in academic burnout positively affects loneliness at work. The particular findings of the study are found to be constant with the results of the previous scholars (Cacioppo et al., 2006; Perlman and Peplau, 1984; Richardson et al., 2017; Stoliker and Lafreniere, 2015). As per SDT (Ryan and Deci, 2000), an individual’s attitude, motivation and belief are subjective to psychosomatic needs i.e. competence, autonomy and relatedness. When any student joins academic institutions for higher education purposes, they need lots of information and emotional support to get related to others and adjusted to a new environment along with focusing on education. If the person does not take initiative for developing and using their competence for accessing information, they may experience difficulty in dealing with the emotional state of mind and may feel exhausted and burnout.

Third, as expected we observe a negative association between student engagement and loneliness. This substantiates previous findings in the literature (Stoliker and Lafreniere, 2015). As per SDT (Ryan and Deci, 2000), it seems obvious too, that if the student experiences loneliness, emotionally drained due to introjection or external motivation, their enthusiasm toward academic activities will be limited as they find involvement in academics activities, coercive. Fourth during analysis among sampled respondents, the results estimated that loneliness partially mediates the association between academic burnout and student engagement. As per SDT, the controlling behavior requires self-regulation in developing competence, autonomy and relatedness (Ryan and Deci, 2000). It is believed that lonely students may experience poor relatedness with others and, in turn, feel helpless and give up quickly while facing challenges, thus affecting their competence and autonomy in academic engagement. These results of the study are unique in nature as the effect of loneliness on individual constructs such as academic burnout and student engagement was studied by previous researchers also, however, this study explains the association.

Next, our research findings illuminate the moderating effects as well. It has been found that a negative relationship between loneliness and student engagement would be affected by internal LOC. The students with high internal LOC would experience a negative and weak relationship between loneliness and student engagement. The other moderated mediated relationship effect was further studied while analysis. It confirms that the indirect effect of internal LOC on the relationship between academic burnout and student engagement via loneliness. This finding reveals that the students experiencing loneliness at work would have lower levels of student engagement conditioned to internal LOC. So the student possessing high internal LOC would experience student engagement and the weak...
relationship between loneliness and academic burnout would exist. As per the self-determination theory (Ryan and Deci, 2000), it is believed that human beings are internally driven to internalize the directive of events. The outcomes of the study strengthen the self-determination theory. It also establishes that if students with internal LOC are determined to achieve success through developing and using their competence, autonomy to do their work and get related to others during their course in an academic institution, they would further develop self-engagement in academic activities and they may not experience loneliness and burnout. Thus, it means that the student with external LOC is more susceptible to experience academic burnout and loneliness than the students with internal LOC.

Managerial implications
The conclusions of the presented study offer three different inferences. First, the work strengthens the self-determination theory (Ryan and Deci, 2000). Second, the outcomes of the study are useful for higher educational institutions, where the academicians can better understand their audience i.e. student community and explore the underline mechanism of particular student’s behavior or their engagement level during academics. The educational institutions can conduct a careful investigation for observing signs of loneliness and academic burnout through personal observation or by implementing instruments. They may also design and develop an alternate form of assistance for students to deal with loneliness. The possible interventions may include society oriented projects, collaborative assignments to ensure engagement of the students with fun. Third, the study would be useful for the student community in creating awareness among them, that internal locus of control is an inner motivational mechanism, useful in dealing with loneliness and burnout. Self-introspection and self-encouragement for internal LOC is the solution to the problems related to loneliness and academic burnout. Thus, they may take initiative and opt for an online mode of collaborations through social media groups to seek help, support or guidance to avoid loneliness.

Social implications
With the help of the study, the society including parents, family, friends, officials and academicians at educational institutions can be better aware of the role of internal LOC. It would be helpful for the above-mentioned stakeholders to understand the cause of particular behavior related to constructs such as loneliness, academic burnout, student engagement and internal locus of control. It also offers insights through which behavior modification can be done accordingly. For the said purpose the educational institutions may organize recreational or social activities and involve the students to mitigate likely ill-effects of academic burnout and loneliness. These activities involve fun, avoid stressful environment and encouragement to explore better from a learning perspective.

Limitation and future direction of research
The purpose of the study was to examine the mediating effect of loneliness and the moderating effect of internal LOC on the relationship between academic burnout and student engagement. We conclude that there exists a partial mediating effect of loneliness at work on academic burnout and student engagement. Apart from it, the study also concludes that the indirect effect of academic burnout on student engagement via loneliness is conditional to an internal locus of control. The study is not free from limitations and among them, the sampling unit is one of the limitations as the study is limited to Delhi -NCR region and a large sample including diverse parts of the country can offer superior insights. This study is based in the Indian context, wherein society, people have collectivism in their
attitude, whereas in an individualistic society, the outcomes may be different. Thus, future researchers may consider the extension of this work in different cultural societies. Apart from it, there is scope for a longitudinal and experimental, intervention-based study to generalize the conclusions of the study. Future research studies may include different dimensions for understanding the internal locus of control and its role in dealing with burnout, loneliness and student engagement. Apart from it, a similar study in different occupational context can also be considered.

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Further reading


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