

Student personality and academic achievement: mediating role of psychological capital (PsyCap)

Student
personality
and AA

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Received 2 December 2018
Revised 14 February 2019
11 August 2019
25 September 2019
Accepted 17 November 2019

Abstract

Purpose – The purpose of this paper is to investigate the role of a second-order state-like construct “psychological capital” (or PsyCap) as an underlying mechanism explaining the personality–academic achievement (AA) relationship in the educational context.

Design/methodology/approach – The conceptual model was statistically tested on a sample of 305 post-graduate students at a premier business school in central India using standard measures of personality and PsyCap. AA was measured through cumulative grade point average obtained from the administrative office. Data were collected through multiple sources to minimize common method variance. Analysis was done using macro PROCESS and validated using PLS–SEM.

Findings – Results indicated that PsyCap positively influenced AA. Furthermore, PsyCap mediated the relationship between openness to experience, extraversion, agreeableness dimensions of student personality and AA.

Research limitations/implications – Longitudinal research designs with interventions to enhance PsyCap of students may strengthen the findings of this study.

Practical implications – The findings suggest that the curriculum in higher education institutions should include interventions on building the PsyCap of the students as it positively correlates to the AA. Academic administrators may not have control on students’ dispositional traits, but they can design interventions to improve the psychological (state like) resources of the students. Follow-up interviews with academic administrators reinforced these implications.

Originality/value – This study provided initial evidence that positivity, in general, and PsyCap, in particular, have a positive impact on students’ AA. This is one of the first studies to examine the role of PsyCap in personality–AA relation in the higher educational context wherein high levels of stress and burnouts have been reported by students due to high competition in achieving goals.

Keywords Personality, Mediation, Psychological capital, PsyCap, Academic achievement, CGPA

Paper type Research paper

1. Introduction

A central objective of researchers, academic administrators and policy makers in educational management has been to study the predictors of academic achievement (AA). Significance of AA becomes more critical in the context of higher education because it predicts higher productivity level and higher living standards at society level (Massah *et al.*, 2017). At the institution level, AA signals human capital. Tertiary educational institutions like business schools (or B-schools) help organizations by affording graduates adequate knowledge, skills and attitude, usually measured through their AA (e.g. Petriglieri, 2015). Hence, AA is a primary indicator of individuals’ ability to acquire competencies and achieve upward mobility in their careers (Brand and Xie, 2010). AA is considered to be a strong predictor of job performance and provides opportunities for better, challenging and rewarding jobs (e.g. Uppal and Mishra, 2014). Grade point average (GPA) or cumulative



grade point average (CGPA) is the key criterion to gauge AA in graduate or post-graduate students and is predictive of occupational status (e.g. Garger *et al.*, 2010).

One of the most important concerns in educational psychology is discovering how student's AA can be improved (Quaye and Harper, 2014). Individual differences variables have a significant influence on college students' scholastic performance (Stupnisky *et al.*, 2007). Personality traits are stable individual difference characteristics explaining an individual's disposition to particular patterns of behavior, cognitions and emotions (Bidjerano and Dai, 2007).

Personality is a non-intellectual construct and a significant correlate of tertiary-level AA (Richardson *et al.*, 2012). However, personality (being a dispositional variable) is a stable construct, and academic administrators may not have control over the traits of incoming students. Hence, it seems necessary to identify factors affecting AA which are amenable to change and consequently, provide directions in designing interventions and support services for students (McKenzie and Schweitzer, 2001; Roberts and Wood, 2006). The positive nature and strengths imbibed through such interventions would prepare the students for challenging, dynamic, competitive and uncertain job markets.

Extant literature delineates a consistent relationship between conscientiousness and AA. However, findings concerning the relationship between the remaining four personality dimensions and AA are divergent (e.g. Duff *et al.*, 2004; O'Connor and Paunonen, 2007; Poropat, 2009). This indicates the need to identify the underlying mechanism(s) affecting the relationship between personality traits and AA. Personality traits do not impact performance directly, but through proximal state-like constructs that are more closely related to behavior (Roberts and Wood, 2006). Hence, there is a need to identify the underlying mechanism(s) affecting the relationship between personality traits and AA, thus enabling a better understanding of the association.

Based on the theoretical foundations of positive organizational behavior, this study employs students' Psychological Capital (PsyCap), a second-order core construct comprising four positive psychological resources of hope, efficacy, resilience and optimism (or hero), as a mediator in the personality-AA relationship. At the individual level, PsyCap is a positive psychological resource which stimulates growth and performance (Luthans *et al.*, 2005). Positive psychological capacities are state like and thus open to development and change, unlike stable dispositional traits. This study argues that along with imparting technical education, academic administrators should also include interventions aimed at building positive psychological resources of the students in the higher education curriculum.

The study aims at answering the following research questions:

RQ1. Do higher levels of PsyCap predict higher AA?

RQ2. Does PsyCap mediate the relationship between the Big Five personality traits and AA?

To understand the interaction between dispositional personality traits, PsyCap and AA, the paper explores the case of a premier educational institution in India. India has the third largest education system in the world, next to China and the USA and is one of the most diverse countries in the world (World Bank, 2012). Specifically, Indian higher education system has expanded rapidly by adding nearly 20,000 colleges and 8m students in a decade from 2000–2001 to 2010–2011 (Ministry of Human Resource Development, 2018). However, psychological concerns in students are on the rise (Doble and Supriya, 2011), especially behavioral issues and suicides. In all, 12 percent of Indian students suffer from psychiatric disorders. Every hour, a student commits suicide in India (*Economic Times*, 2018; *Times of India*, 2018) owing to low AA, performance stress and inability to face failures. This situation demands improvement in the positive psychological strengths of the student community.

The present study contributes to the research in educational psychology and educational management by identifying and emphasizing the mediating role of PsyCap in the relationship between personality and AA. These results have direct implications for academic administrators who are responsible for designing the curriculum and suggest to incorporate interventions aimed at enhancing the psychological strengths of the students.

2. Theoretical background and hypotheses development

2.1 *Personality and academic achievement*

Carver and Connor-Smith (2010, p. 680) define personality as “the dynamic organization within the person of the psychological and physical systems that underlie that person’s pattern of actions, thoughts, and feelings.” While such individual differences could be found on any imaginable dimension, the five-factor model (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) of personality has been widely adopted as a consensual framework (e.g. McCrae and Costa, 1999). Individuals scoring high on openness to experience are creative, flexible, curious and unconventional (McCrae, 1996). Conscientious individuals are achievement oriented, dependable, orderly and deliberate (e.g. Bidjerano and Dai, 2007). Extraverts are sociable, dominant and positive (Chamorro-Premuzic and Furnham, 2003). Agreeable individuals are kind, gentle, warm and trustworthy. Neuroticism is the tendency to show poor emotional adjustment in the form of stress, anxiety and depression (McCrae and Costa, 1999).

The Big Five personality traits are an important source of performance (Conard, 2006). These explain a moderate percentage of the variance in AA (e.g. Rindermann and Neubauer, 2001). Studies have identified consistent positive correlations between AA and conscientiousness and negative correlations between neuroticism and AA (e.g. Poropat, 2009). However, the relationship of openness to experience, extraversion and agreeableness with AA is inconclusive (e.g. Duff *et al.*, 2004; O’Connor and Paunonen, 2007).

Hence, the following hypotheses are proposed:

H1a. Openness to experience is positively correlated with AA.

H1b. Conscientiousness is positively correlated with AA.

H1c. Extraversion is positively correlated with AA.

H1d. Agreeableness is positively correlated with AA.

H1e. Neuroticism is negatively correlated with AA.

2.2 *Personality and PsyCap*

PsyCap is an “individual’s positive psychological state of development, characterized by the four psychological resources- self-efficacy, hope, optimism, and resilience” (Luthans, Youssef and Avolio, 2007; Luthans, Avolio, Avey and Norman, 2007, p. 3). Dispositional personality traits have been extensively studied regarding their linkages with the individual positive psychological constructs of self-efficacy, hope, optimism and resilience. Nonetheless, studies examining the relationship between personality traits and the higher-order core-construct of PsyCap are scant (Luthans and Youssef-Morgan, 2017).

2.2.1 Personality and self-efficacy. Self-efficacy is “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (Bandura, 1986, p. 391). Self-efficacy is related to central personality traits and these traits significantly affect individuals’ self-efficacy for performance motivation (Bandura, 1986) and work-related performance (Multon *et al.*, 1991).

2.2.2 Personality and hope. Hope is “a positive motivational state that is based on an interactively derived sense of successful: (1) agency (goal-directed energy) and (2) pathways

(planning to meet goals)” (Snyder *et al.*, 1991, p. 287). Research indicates a significant positive correlation between hope and personality dimensions of agreeableness, extraversion and conscientiousness (Snyder, 2002); and negative correlation with neuroticism (e.g. Masten and Reed, 2002).

2.2.3 Personality and optimism. Optimism is “a mood or attitude associated with an interpretation of the social or material – on which the evaluator regards as socially desirable to his [or her] advantage, or for his [or her] pleasure” (Tiger, 1979, p. 18; cf. Luthans *et al.*, 2005). Thus, optimism is an individual’s expectancy of positive outcomes. Research demonstrates that optimism is positively related to openness to experience, extraversion, agreeableness, conscientiousness and negatively related to neuroticism (Sharpe *et al.*, 2011).

2.2.4 Personality and resilience. Resilience refers to “a class of phenomena characterized by patterns of positive adaptation in the context of significant adversity or risk” (Masten and Reed, 2002, p. 75). It enables individuals to bounce back quickly and effectively from adverse, challenging or threatening circumstances (Howard and Johnson, 2000). Emotional stability (as opposed to neuroticism), extraversion, openness to experience, conscientiousness and agreeableness (e.g. Martin, 2002) are found to be positively associated with resilience.

2.3 PsyCap as a second-order core construct

Psychological resources interact synergistically to produce differential manifestations over time and space (Hobfoll, 2002). Prior research indicates that the four factors, i.e., hope, efficacy, resilience and optimism represent a core second-order positive resource called PsyCap (e.g. Luthans *et al.*, 2010). They opine that combined motivational effects of these constructs will be broader and more impactful than any of the constructs individually. PsyCap as a higher-order core construct may empirically predict performance better than any of the individual facets (e.g. Luthans, Youssef and Avolio, 2007; Luthans, Avolio, Avey and Norman, 2007).

From the above theoretical arguments, the following is hypothesized:

H2a. Openness to experience is positively correlated with PsyCap.

H2b. Conscientiousness is positively correlated with PsyCap.

H2c. Extraversion is positively correlated with PsyCap.

H2d. Agreeableness is positively correlated with PsyCap.

H2e. Neuroticism is negatively correlated with PsyCap.

2.4 PsyCap and academic achievement

Studies have demonstrated that PsyCap is positively related to a variety of job attitudes, behaviors and organizational outcomes (e.g. Luthans and Youssef-Morgan, 2017). Theory and research have identified positive outcomes of PsyCap at both the individual and organizational level (Luthans *et al.*, 2010). However, research on the relationship between PsyCap and AA is scant (Luthans *et al.*, 2014). Furthermore, Nielsen *et al.* (2017) identify educational contexts as a potential area to examine PsyCap as a second-order construct.

2.4.1 Self-efficacy and academic achievement. Self-beliefs about academic capabilities play an important role in students’ motivation to achieve their goals. A meta-analysis by Multon *et al.* (1991) indicates a positive and statistically significant relationship between self-efficacy and AA across various contexts. Students who believe that they possess the skills and abilities to succeed in academic tasks, perform better than those with lower efficacy expectancies (Bandura, 1997). In the academic context, efficacy is found to be related with mental efforts and motivation to employ learning strategies, persistence, tenacity and achievement (Bandura, 1986; Zimmerman, 1989). Furthermore, self-efficacy is a

significant predictor of university grades (McKenzie and Schweitzer, 2001; Elias and Loomis, 2002). Also, the meta-analytic review by Richardson *et al.* (2012) identifies self-efficacy as an important correlate of tertiary GPA.

2.4.2 Hope and academic achievement. Hope involves both situation-specific thought processes and traits like self-referential appraisals about one's ability to achieve goals (Snyder, 2002). Hope enables students to approach problems with a focus on success, thereby increasing the probability to attain their goals (Conti, 2000). Hope can significantly predict AA, perceived scholastic competence and academic satisfaction (e.g. Snyder, 2002). Snyder *et al.* (2002) noted that hope uniquely predicts objective AA above intelligence and past AA.

2.4.3 Optimism and academic achievement. Individuals with high optimism build positive expectancies which motivate them to pursue their goals and deal with difficult situations (Sharpe *et al.*, 2011). Optimism affects the situation-specific thoughts of individuals while pursuing a goal (Rand, 2009). Research indicates a positive association between optimism and AA of college students (Gibbons *et al.*, 2000). A longitudinal study of first-year university students by Chemers *et al.* (2001) found a strong relationship between optimism and AA.

2.4.4 Resilience and academic achievement. Academic resilience is defined as "students' ability to deal effectively with academic setbacks, stress and study pressure" and is linked to goal persistence and engagement (Martin, 2002, p. 35). It helps to sustain high levels of achievement motivation and performance, despite adverse events and conditions. In the academic context, resilience is positively related to task-oriented and problem-focused coping, which positively influence AA (Clifton *et al.*, 2004).

Hence, it is evident that the four individual components of PsyCap are positively correlated with students' AA. Additionally, the study by Luthans *et al.* (2012) suggested a predictive relationship between PsyCap and AA of undergraduate students.

Therefore, it is hypothesized that:

H3. PsyCap of students is positively correlated to their AA.

2.5 The mediation of PsyCap: theoretical foundation

Fredrickson's (2001) broaden and build theory predicts that positive emotions "broaden people's momentary thought-action repertoires, widening the array of the thoughts and actions that come to mind" (p. 220). She further notes that "the personal resources accrued during states of positive emotions are conceptualized as durable" (p. 220). Individuals experiencing a positive state of mind show patterns of thought that are flexible and creative, integrative, open to information and efficient (Carter and Yeo, 2016). Positive states are positively related to success and well-being and this facilitates optimal functioning by serving as a resource for coping with adversity (Fredrickson, 2001). PsyCap has a similar integrated and interactive impact on performance through hope, efficacy, resiliency and optimism (e.g. Luthans and Youssef-Morgan, 2017). PsyCap is directly related to positive emotions (Luthans *et al.*, 2010) and through its positive nature can trigger these emotions which are related to an individual's attitudes and behaviors. For instance, if individuals are optimistic and efficacious, they generally possess positive expectations for goal achievement and can successfully cope with difficulties, thus experiencing confidence. Positive emotions are likely to broaden or multiply the pathways that are generated in goal pursuit (Fredrickson, 2001). Hence, it is argued that students' PsyCap may be a potential source of positivity impacting attitudes and behaviors.

Thus, the following are hypothesized (Figure 1):

H4a. PsyCap mediates the relationship between openness to experience and AA.

- H4b.* PsyCap mediates the relationship between conscientiousness and AA.
H4c. PsyCap mediates the relationship between extraversion and AA.
H4d. PsyCap mediates the relationship between agreeableness and AA.
H4e. PsyCap mediates the relationship between neuroticism and AA.

3. Method

3.1 Sample

Respondents were drawn from the first-year cohort of a management program at a premier B-school located in central India. All students' secured admission through the state-administered entrance examination. The first-year coursework comprised the required curriculum and all students who participated in the study took the same set of courses and were evaluated using the same grading parameters. This facilitated measurement of AA in a comparable manner which in turn minimized the measurement error. An invitation for the study was sent to the entire batch of 570 students. In total, 307 students volunteered to participate in the study giving a response rate of 53.8 percent. Participants were briefed about the study in batches of 10–12 students at a time. In all, 305 completed forms were received. The participants had an average age of 24.6 years ($SD=4.74$), average work experience of six months ($SD=10.02$) with 60 percent students male and 40 percent female respondents.

3.2 Study procedures

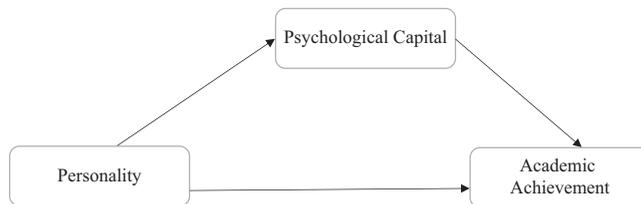
Data were obtained from two sources: a two-part questionnaire and participants' AA (CGPA). The two-part questionnaire elicited responses on personality and PsyCap through self-reporting instruments. To address the issue of variance arising out of self-report data from the same source, Podsakoff *et al.* (2003) suggest that data related to a dependent and independent variable should be collected from different sources. Hence, the CGPA of participants measuring the dependent variable, i.e., AA, was collected from the program office.

3.3 Measures

3.3.1 Personality. Personality was captured using the 50-item International Personality Item Pool instrument. It includes ten items for each of the Big Five personality dimensions on a five-point scale (1 – strongly disagree to 5 – strongly agree). Reliability coefficient for personality instrument was within an acceptable range (Extroversion = 0.83, Agreeableness = 0.66, Conscientiousness = 0.77, Neuroticism = 0.88, Openness to Experience = 0.70).

3.3.2 Psychological Capital (PsyCap). PsyCap was measured using the 24-item PsyCap questionnaire (PCQ) developed and validated by Luthans, Youssef and Avolio (2007), Luthans, Avolio, Avey and Norman (2007). Permission to use PCQ for academic research was obtained from Mind Garden (www.mindgarden.com). Scale items were adapted to suit the academic context (Luthans *et al.*, 2012). This instrument included six items each for self-efficacy, hope, optimism and resilience on a six-point scale (1 – strongly disagree to 6 – strongly agree). Each

Figure 1. Conceptual model: mediating role of psychological capital on the relationship between personality and academic achievement



subscale (Self-efficacy = 0.76, Hope = 0.78, Resilience = 0.64, Optimism = 0.68) and the overall PCQ (0.87) demonstrated adequate internal reliability.

3.3.3 *Academic achievement.* The outcome variable, i.e., AA, was collected from the program office in the form of student's CGPA which was used as a standard measure for AA in this context. CGPA was calculated as a single item on a 13-point scale ranging from 0 to 4.33 with GPA score being at an interval of 0.33.

4. Analysis and results

The model and the proposed hypotheses were tested using macro PROCESS (Model 4) for SPSS. The mediation model and related hypotheses were tested following Zhao *et al.* (2010) procedure which suggests establishing a significant indirect effect through a mediator without establishing the direct effect between the independent and dependent variable suggests indirect mediation. Accordingly, the results associated with H2–H4 are reported below. Bootstrap test developed by Preacher and Hayes (2008) was used to test the significance of the indirect effects.

The means, standard deviations and correlations among the research variables are presented in Table I.

Table II summarizes the model results (five models pertaining five dimensions of personality) for the relationship of personality dimension(s) and PsyCap. As hypothesized, we found that personality traits of openness to experience ($\beta = 0.4528, p < 0.01, H2a$), conscientiousness ($\beta = 0.4449, p < 0.01, H2b$), extraversion ($\beta = 0.4093, p < 0.01, H2c$) and agreeableness ($\beta = 0.3241, p < 0.01, H2d$) have a positive and significant relation with PsyCap. Additionally, neuroticism was also positively and significantly correlated with PsyCap ($\beta = 0.3646, p < 0.01$), which did not support our H2e. An alternative explanation for the same is presented in the “Discussion” section of the paper.

The results suggest that PsyCap is positively and significantly correlated with AA (H3), in the case of openness to experience ($\beta = 0.184, p < 0.01$), extraversion ($\beta = 0.179, p < 0.01$), agreeableness ($\beta = 0.1619, p < 0.05$), neuroticism ($\beta = 0.2131, p < 0.01$) (refer Table II). However, in the model for conscientiousness (Table II(b)), PsyCap has a positive but non-significant association ($\beta = 0.0669$).

For testing H4, AA was regressed on personality (openness to experience, extraversion and agreeableness) and PsyCap. As reported in Table II, PsyCap has a significant coefficient ($\beta = 0.1840, p < 0.01; \beta = 0.1790, p < 0.01; \beta = 0.1619, p < 0.01$; for openness to experience, extraversion and agreeableness, respectively). This supported the mediation hypotheses (H4a, H4c and H4d), i.e., there was a significant indirect effect between openness to experience (OPEN), extraversion (EXT), agreeableness (AGR), and AA through PsyCap. The mediator accounted for approximately 8, 7 and 5 percent of the total effect in the case of openness to experience, extraversion and agreeableness, respectively.

As mentioned earlier, with PsyCap as the dependent variable, the regression coefficient for conscientiousness (CONS) was significant ($\beta = 0.4449, p < 0.01, H2b$) indicating a reliably

Variable	Mean	SD	CR	AVE
1. Openness to experience	3.6	0.4	0.78	0.69
2. Conscientiousness	3.6	0.6	0.80	0.54
3. Extraversion	3.1	0.7	0.86	0.63
4. Agreeableness	3.9	0.4	0.75	0.53
5. Neuroticism	3.1	0.7	0.90	0.50
6. Psychological capital (PsyCap) ^a	4.2	0.5	1	1
7. Academic achievement	2.82	0.42	1	

Note: ^aPsyCap is measured on a six-point scale

Table I.
Means, standard
deviations and
correlations among
the variables

Predictor variable	Psychological capital (PSYCAP) 95% bias corrected bootstrap CI ^b			Academic achievement (AA) 95% bias corrected bootstrap CI ^b		
	β	SE		β	SE	
<i>A</i>						
Constant ^a	0	0.0511	(-0.1005, 0.1004)	0	0.0566	(-0.1113, 0.1113)
Openness to experience	0.4528**	0.0511	(0.3524, 0.5533)	-0.0612	0.0634	(-0.1861, 0.0636)
Psychological capital				0.184**	0.0634	(0.0592, 0.3089)
<i>R</i> ²	0.2051**			0.0274**		
<i>B</i>						
Constant ^a	0	0.0513	(-0.1009, 0.1009)	0	0.0557	(-0.1096, 0.1096)
Conscientiousness	0.4449**	0.0513	(0.3440, 0.5458)	0.2009**	0.0622	(0.0785, 0.3233)
Psychological capital				0.0669	0.0622	(-0.0555, 0.1893)
<i>R</i> ²	0.1979**			0.0568**		
<i>C</i>						
Constant ^a	0	0.0522	(-0.1028, 0.1028)	0	0.0566	(-0.1113, 0.1113)
Extraversion	0.4093**	0.0522	(0.3065, 0.5121)	-0.0555	0.062	(-0.1776, 0.0665)
Psychological capital				0.179**	0.062	(0.0570, 0.3011)
<i>R</i> ²	0.1676**			0.027**		
<i>D</i>						
Constant ^a	0	0.0542	(-0.1066, 0.1066)	0	0.0566	(-0.1115, 0.1114)
Agreeableness	0.3241**	0.0542	(0.2176, 0.4307)	-0.0173	0.0599	(-0.1352, 0.1005)
Psychological capital				0.1619*	0.0599	(0.0441, 0.2797)
<i>R</i> ²	0.1051**			0.0247*		
<i>E</i>						
Constant ^a	0	0.0533	(-0.1049, 0.1049)	0	0.056	(-0.1103, 0.1103)
Neuroticism	0.3646**	0.0533	(0.2596, 0.4695)	-0.16**	0.0602	(-0.2743, -0.0375)
Psychological capital				0.2131**	0.0602	(0.0947, 0.3316)
<i>R</i> ²	0.1329**			0.0455**		

Notes: *n* = 305. ^aCoefficients are unstandardized; ^btests were conducted using PROCESS version 3 for SPSS. **p* < 0.05; ***p* < 0.01

Table II. Results of the hypothesized relationships between personality traits and PsyCap (*H2a–H2e*), and PsyCap and academic achievement (*H3*)

significant effect. However, when AA was regressed on conscientiousness and PsyCap, only conscientiousness had a significant coefficient ($\beta = 0.2009, p < 0.01$). Following Zhao *et al.* (2010), this indicated no mediation effect and hence no support for *H4d*. An alternative explanation for the same is provided in the “Discussion” section.

In addition (refer to Table II(e)), the regression coefficient for neuroticism (NEU) with PsyCap as the dependent variable was significant ($\beta = 0.3646, p < 0.01$) indicating a reliably significant effect. Nonetheless, when AA was regressed on neuroticism and PsyCap, surprisingly both neuroticism ($\beta = -0.1559, p < 0.01$) and PsyCap ($\beta = 0.2131, p < 0.01$) showed significant coefficients. Both direct and mediated effects existed, but pointing in opposite directions. This significant direct effect of neuroticism on AA in the presence of PsyCap signals the existence of some other underlying mechanism (s) or boundary condition (s) which could be explored in future studies.

Table III summarizes the model results for the indirect effects with bootstrap and Sobel test values. The bootstrap CIs were based on 5,000 samplings. As a check for robustness, the data were also analyzed using PLS-SEM, and similar results were found.

Table IV summarizes the path wise results of *H2–H4*.

5. Discussion

The purpose of this study was to identify the variable(s) which influence the AA of students which are amenable for development, thereby helping academic administrators design

appropriate interventions. This was achieved by testing PsyCap as a mediator in the personality–AA relationship in an educational institution. Findings reiterated that PsyCap is positively related to AA (Luthans *et al.*, 2012). Also, personality was found to be associated with PsyCap as a second-order core-construct. This study’s major findings and contributions involve the role of PsyCap as an important mediator between personality traits and AA, hence contributing to the field of educational psychology. This study provided initial evidence that positivity in general and PsyCap in particular, may have the desired impact on students’ AA. Although extant literature has indicated that PsyCap is positively related to performance in different contexts (Rehman *et al.*, 2017), this is one of the initial studies to examine the role of PsyCap in personality–AA relationship in the educational context.

Results indicated PsyCap did not mediate the relationship between conscientiousness and AA (*H4b*, Table II(b)). Conscientiousness has been linked to motivation, effort expenditure and persistence (Chamorro-Premuzic and Furnham, 2003). Extant literature has confirmed that conscientiousness is one of the strongest predictors of AA (O’Connor and Paunonen, 2007). Conscientiousness is found to be positively associated with GPA (Conard, 2006) retaining most of its association with tertiary AA (Poropat, 2009). The conscientiousness facets of achievement striving and self-discipline, in particular, are the strongest and most consistent predictors of AA. Achievement striving involves being ambitious, diligent and persistent; self-discipline involves being motivated to finish tasks and resistant to distractions. It seems intuitive that students who are organized, hard-working and achievement oriented will perform better at typical academic tasks. This empirical and theoretical evidence rationalizes why PsyCap did not mediate the relationship between conscientiousness and AA.

The relationship between openness to experience (*H4a*, Table II(a)), extraversion (*H4c*, Table II(c)) and agreeableness (*H4d*, Table II(d)) dimensions of personality and AA were fully mediated by PsyCap. Previous investigations of openness to experience, extroversion

Table III.
Results of
psychological capital
as a mediator in
personality–academic
achievement
relationship (*H4*,
Indirect effect)

Path	Effect	Bootstrap			Sobel test	
		Boot SE	Boot LLCI	Boot ULCI	Z	p
OPEN → PSYCAP → AA	0.0833	0.0298	0.0303	0.1472	2.7415	0.0061
CONS → PSYCAP → AA	0.0298	0.0255	−0.0236	0.0788	1.0611	0.2887
EXT → PSYCAP → AA	0.0733	0.0269	0.0237	0.1300	2.6900	0.0071
AGR → PSYCAP → AA	0.0525	0.0230	0.0125	0.1032	2.4363	0.0148
NEU → PSYCAP → AA	0.0777	0.0260	0.0328	0.1336	3.1188	0.0018

Table IV.
Hypotheses testing
summary

Path	Findings	
<i>H2a</i>	Openness to experience → PsyCap	Supported
<i>H2b</i>	Conscientiousness → PsyCap	Supported
<i>H2c</i>	Extraversion → PsyCap	Supported
<i>H2d</i>	Agreeableness → PsyCap	Supported
<i>H2e</i>	Neuroticism → PsyCap	Not supported
<i>H3</i>	PsyCap → Academic achievement	Supported
<i>H4a</i>	Openness to experience → PsyCap → Academic achievement	Supported
<i>H4b</i>	Conscientiousness → PsyCap → Academic achievement	Not supported
<i>H4c</i>	Extraversion → PsyCap → Academic achievement	Supported
<i>H4d</i>	Agreeableness → PsyCap → Academic achievement	Supported
<i>H4e</i>	Neuroticism → PsyCap → Academic achievement	Not supported

and agreeableness as predictors of AA have produced mixed results (e.g. O'Connor and Paunonen, 2007; Poropat, 2009). For instance, extroversion has a negative association with AA, suggesting that introverts spend more time studying, whereas extraverts spend more time socializing (Chamorro-Premuzic and Furnham, 2003). O'Connor and Paunonen's (2007) review found that agreeableness was neither associated with post-secondary AA and nor was it an important determinant of AA. Openness to experience had the highest correlation with intelligence but did not strongly correlate with AA. Poropat's (2009) review indicated that correlations between AA and openness to experience declined from secondary to tertiary level. However, openness to experience was correlated with self-efficacy and self-confidence (McCrae, 1996). Hence, it is possible that some underlying mechanism(s) existed which determined whether these personality traits exerted a positive influence on AA. It was argued that PsyCap as a higher-order core-construct mediated the relationship between openness to experience, extroversion and agreeableness personality dimensions, and AA. Results of this study confirmed the proposed hypotheses.

In the case of neuroticism, both the direct and indirect paths were found to be statistically significant (*H4e*, Tables II(e) and III) indicating a competitive mediation. Neuroticism refers to the tendency of experiencing negative feelings about one's ability to perform and is found to have a negative relationship with performance. It has a negative impact on critical thinking skills, analytic ability and conceptual understanding, presumably because it tends to freeze higher-order cognitive functioning (Bidjerano and Dai, 2007). Research has shown a negative correlation between neuroticism and achievement, suggesting that elevated emotional instability places individuals at the risk of diminished AA (Duff *et al.*, 2004). Based on prior research, it can be argued that neuroticism is negatively correlated with PsyCap. However, findings in this study appear inconsistent with prior research, and surprisingly a positive and significant association between neuroticism and PsyCap was found.

Research investigating the relationship between neuroticism and positive emotions/states is scant (e.g. Ng, 2009). However, the lack of an association between neuroticism and positive emotions does not indicate that they are completely unrelated under all circumstances. Neuroticism is found to be positively correlated with competitiveness (Ross *et al.*, 2001). The respondents in this study were first-year management students. This cohort is usually more goal oriented with a high focus on GPA. There is a possibility that neuroticism interacting with other boundary conditions present in the context may be facilitating PsyCap in the respondents which in turn positively influenced the AA. In a nutshell, the association between neuroticism and PsyCap may not be direct, rather the relationship may be governed by other moderating or mediating variables. However, it is inadequate to reach any firm conclusion based on a single study; the present findings do illustrate the potential for further research which may investigate some underlying mechanism(s) or boundary conditions governing the relationship between neuroticism and AA, other than PsyCap.

6. Implications

Over the past 50 years, B-schools have witnessed the greatest growth in universities (Friga *et al.*, 2003). Business education has tremendous impact on the functioning of the markets as well as the society and hence efforts of academic administrators in ensuring the delivery of the best and up-to-date curriculum are necessary. It is essential that the curriculum is equipped with courses that not just enhance the functional knowledge of the students but also interventions which strengthen the psychological resources of students to navigate through the B-school education and their careers.

In this study, by establishing the mediating role of PsyCap (*H4*), a vital positive psychological mechanism linking personality to the AA of students is identified. Furthermore, by responding to the call for more investigation of PsyCap in the educational context,

particularly exploring the relationship between PsyCap and AA (e.g. Luthans *et al.*, 2014; Nielsen *et al.*, 2017), this study expands the emergent research on educational psychology and educational management which focuses on enhancing students' performance.

6.1 Implications for academic administrators

Results from this study provide evidence for the important role that PsyCap may play in positively impacting the AA of students. In other words, it may not be enough to evaluate personality traits and past AA while granting admission to courses in education institutions. Our findings suggest that it may be important to recognize that the level of a student's PsyCap capital may affect AA. Second, these results have significant implications for academic administrators since there now strong arguments to foster positive states like PsyCap among the students as these are likely to enhance AA. Previous research classifies PsyCap as a variable that is "state like" and amenable to development. Hence, it is possible for academic administrators to put in place measures and support systems that nurture positive psychological states that ultimately enhance AA. Academic institutions should focus on optimization of positive psychological states by planning interventions (Salanova *et al.*, 2010).

There is conceptual and empirical evidence that PsyCap can be nurtured (Luthans, Youssef and Avolio, 2007; Luthans, Avolio, Avey and Norman, 2007). Prior research has suggested the nurturing of optimism among students through feedback thereby enhancing and improving their AA (Nonis and Wright, 2003). Hence, to identify more such interventions, a follow-up study was conducted. The study results were shared with the academic administrators at the institute, seeking their inputs for enhancing PsyCap of students. Four academic administrators responded and commented on the findings, and semi-structured interviews were conducted with them. Psychological support through peer-mentoring; senior student mentoring; survivor mentoring (refers to mentor-mentee relationships among peers who have managed to survive setbacks); and personal counseling are few interventions suggested by the academic administrators. Additionally, all the academic administrators pointed toward the need for academic counseling and advising by experts and shared professionals. These suggestions corroborate with prior research wherein academic advising has been identified to have a significant and positive effect on students' cumulative GPA (Kot, 2014).

Students are often not well-equipped for the rigorous academic demands during the first year, which may help to explain the decline in first-year AA, lower academic involvement and feelings of dissatisfaction (Keup, 2006). Mentorship is a key ingredient for students' personal and professional development. Mentoring from teachers plays an important role in AA and the inculcation of positive life skills (Khan, 2013). Encouragement from instructors develops students' PsyCap (Nielsen *et al.*, 2017). Mentoring and encouragement contribute to developing positive strengths, which leads to subjective well-being for the overall development of the students.

7. Limitations and future directions

The findings of this study are based on data from a single B-school in India and may not be broadly generalizable. Though, several features of the context remain similar in most of the premier B-schools in India, further research in other academic settings (e.g. science, technology, engineering and mathematics or STEM) may enhance the validity of results. Additionally, the relationships among the constructs could be better understood using a longitudinal research design. This would help in establishing the causality among variables. Future researchers may examine the mediating role of PsyCap when certain interventions are offered to the students, and compare the mediating impact of PsyCap with and without these interventions.

8. Conclusion

The results suggest the seeming value of students' PsyCap and further indicate the benefits resulting from academic institutions which provide interventions such as mentorship programs to enhance the performance of students. B-schools create "employable talent" for the industry. The industry evaluates the employability through GPA, which is often a surrogate measure of knowledge and skills. Hence, B-schools should strengthen positive states among their students as a means of enhancing their employability. The study results are expected to provide some pointers to B-schools as they strive to create academic and non-academic support structures thereby enhancing program delivery and bridging the gap between the recruiter and a potential recruit.

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