

Psychological Capital as Mediator between Adaptive Perfectionism and Academic Procrastination

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Received 03 May 2015 Accepted 17 May 2015

Abstract— Research on perfectionism and separately on procrastination is extensive and both are related in general to negative consequences. However, there has been little research on different forms of perfectionism (maladaptive vs adaptive) and the relationships with procrastination. One study (Seo, 2008) has suggested that self-efficacy mediates between adaptive perfectionism and procrastination in academic settings and leads to more productive outcomes. Identifying further such positive productive factors may prove useful in helping individuals deal with their perfectionism and-or their procrastination tendencies. Positive psychological capital (PsyCap) may be one such other mediator, as PsyCap involves not only self-efficacy but also resilience, hope and optimism—attributes that have been associated separately each in their own right with positive behaviour and not with normal academic procrastination. Most studies of PsyCap have occurred in organisational settings and may also be considered to be important attributes in the academic setting. Psychological capital as a positive mediator between adaptive perfectionism and procrastination in an academic setting was therefore examined in the current study, with results supporting the mediation effect. The implication is that those students with perfectionistic attributes can be helped to control some of the negative outcomes (such as procrastination) by developing skills in psychological capital. How this might work is discussed. Further detailed studies are needed including replication and identification of other mediators.

Keywords- *Psychological capital; perfectionism; adaptive perfectionism; procrastination*

I. INTRODUCTION

University students and professionals are trained to give attention to detail, to follow academic and professional rules, and to produce accurate error-free assignments and reports. Perfection is an unachievable goal most of the time but some students demonstrate higher levels of perfectionistic strivings than do others, as described further below. The outcomes of overly high perfectionistic strivings have been largely negative, including in many students the production of tendencies to procrastinate and leave assignment preparation and submissions to the last minute. University students with high procrastination achieved lower grades, showed higher stress, and rated themselves lower in health than those not procrastinating [1]. Students and employees may procrastinate in order to avoid stringent academic or organisational

expectations [2] though procrastination is a complex process and may involve other affective, behavioural and cognitive components [3]. However, little is known about specific factors that may explain or modify procrastination though several studies have identified perfectionism as one related factor. A recent author, Seo [4] identified a link between self-oriented or adaptive perfectionism and procrastination with the cognitive factor of self-efficacy mediating the relationship. The current study of a sample of Australian university students examined whether psychological capital (including self-efficacy, optimism, hope and resilience combined) would mediate between adaptive perfectionism and procrastination in an academic setting.

A. Perfectionism

Initially described as an irrational and dysfunctional view of the self in failing to meet unrealistic objectives, perfectionism has since been redefined as a combination of thoughts and behaviour involving striving for flawlessness and excessively high standards of action, along with a tendency to be overly critical of one-self for imperfect outcomes [5].

Reviews have emphasised the multidimensional nature of perfectionism with a distinction between adaptive and maladaptive perfectionism, with the striving for perfection portrayed as a fundamental drive necessary for success (adaptive perfectionism). However, when perfectionism takes precedence above the interest for success, the pathological properties of maladaptive perfectionism emerge, characterised by inflexibly high standards regardless of circumstances [6]. This distinction is also clarified by the motivation to perform, juxtaposing a fear of failing against a desire for achievement and improvement. It is thus worthwhile to separate the healthy pursuit of excellence from the compulsive and self-defeating drive to attain expectations (distinguishing between adaptive and maladaptive perfectionism).

Adaptive perfectionism has been described as self-oriented perfectionism [7] or as perfectionism related to setting of personal standards and to organization [8]. While maladaptive perfectionism is well studied and the consequences are seen to be negative, there are few studies that have emphasised the impacts of adaptive perfectionism. This current study further explores adaptive perfectionism, following Frost et al.'s (1990) approach [8] and the study by

DOI: 10.5176/2345-7872_2.1_27

Seo (2008) [4] on the impact of self-efficacy as a mediator between adaptive perfectionism and procrastination.

The Multidimensional Personality Scale of Frost, Marten, Lahart, and Rosenblate [8] consistently identified six dimensions of perfectionism: personal standards and organisation (adaptive dimensions), and concern over mistakes, doubt about performance, parental expectations and parental criticism (maladaptive perfectionism). Significant conceptual overlaps are present between the Frost et al. and the Hewitt and Flett models of perfectionism (as indicated in a study by Frost, Heimberg, Holt, Mattia, & Neubauer: [9]).

Perfectionist thinking may be partly adaptive and partly maladaptive, but what matters may be the interaction that individuals have with perfectionist thoughts, which in turn govern attitudes and behaviours [10]. Hence, being higher in positive perfectionist strivings, adaptive perfectionists may possess additional qualities that explain or affect behavioural outcomes such as procrastination. Our study determined to examine whether psychological capital (described later) affects the relationships between adaptive perfectionism and academic procrastination

B. Procrastination

Procrastination refers to the voluntary delay of planned actions despite awareness that the delay may negatively affect the outcomes ([11, 12, 13]). In a study of academic procrastination [14] the researcher suggested students plan to act on time but immediate gratification takes priority; in another study [15] Klassen, Krawchuck, and Rajani noted that students procrastinate and are more stressed towards the end of semesters when assignments and examinations are due. University students face many opportunities to procrastinate (as we all do), given the frequent deadlines that are faced [16, 17]. Indeed studies have suggested that students see their procrastination as at a 'significant' level. For example, 70% of students indicated they were procrastinators and 50% reported the behavior as consistent and problematic in two studies [18, 19], and more recently in another study, it was estimated that on average three hours daily were associated with procrastinatory behaviours among students [20]. While research among students has indicated the extent of the problem, there have been steps taken towards understanding what can be done to assist students desiring help.

One of these steps has to do with the link between perfectionism and procrastination. Procrastination may be an outcome of high personal standards and attention to organisation (adaptive perfectionism), as assessed using the questionnaire of Frost and his associates [8], and this relationship may be affected by a variety of mediators - of which self-efficacy has been the main focus of attention to date. The links between adaptive perfectionism and procrastination are now discussed before psychological capital is presented.

C. Adaptive Perfectionism and Academic Procrastination

The association between academic procrastination and socially-prescribed (adaptive) perfectionism has not been fully clarified. This is despite some research suggesting a direct relationship [4], and other research indicating no or negative relationships [21]. Most studies on academic procrastination and perfectionism have highlighted the maladaptive

perfectionism relationships identifying links with stress, depression and anxiety [22, 23]. However, these studies have largely neglected the positive aspects of perfectionism, or recognize adaptive approaches and coping skills which could mitigate the tendency to procrastinate. Thus, in order to address this gap, we examined how psychological capital, involving qualities that can be developed in individuals, was related to adaptive perfectionism and procrastination among university students. What is psychological capital?

D. Psychological Capital

Positive psychological capital (PsyCap) can be assessed using the questionnaire developed by Luthans and associates [24] and involves four characteristics - confidence in meeting challenges (self-efficacy), optimism regarding likely outcomes, the ability to persevere on paths towards goals (hope) and the ability to recover when encountering adversity (resilience). These four domains together form PsyCap: six items are involved in each and these items were drawn from existing, well validated, reliable and standardized scales of the four attributes. Studies have shown that the combined PsyCap in organisational studies predict performance better than any one of the individual facets [24]. Good psychometric properties exist for the PsyCap scale. (For more information on each of the four scales, see [24, 25, and 26]). Our current study reports the results for the combined PsyCap variable alone as a composite factor, in the study of academic procrastination and the relationships with adaptive perfectionism.

Hope. The theory of hope postulates that emotions from hope-related cognition stem from the perception of goal achievement, thus facilitating the approach to focus on goal attainment. Adaptive perfectionists approach goals and high standards with significantly less distress [27] than do maladaptive perfectionists [28, 29]. PsyCap involves Hope as one of its facets and this strengthens the probability that PsyCap would be associated with adaptive perfectionism, a required part of the model aimed at examining whether PsyCap mediates between adaptive perfectionism and procrastination.

Self-Efficacy. Self-efficacy involves self-beliefs concerning abilities to successfully perform a task [4, 24] and has been found to be inversely associated with procrastination, and mediated adaptive perfectionism and procrastination [4, 30]. It was again anticipated that PsyCap, incorporating self-efficacy, would also mediate between these two aspects.

Resilience. Resilience is characterized by positive coping and rising to challenges [24, 31, 32] though most studies on resilience have focused on coping in the workplace [33]. In relation to perfectionism, resilience has explained associations between maladaptive perfectionism and suicide risk. It was found that resilience may reduce academic procrastination. The expectation in the current study was that the composite PsyCap including resilience would mediate between adaptive perfectionism and procrastination. .

Optimism. Optimism is associated with positive outlooks on the outcomes of events and is associated with adaptive perfectionism [34] and with use of active coping methods over avoidance strategies such as procrastination [35]. Again, it was expected that the combined PsyCap total including

Optimism would prove to be a mediator between adaptive perfectionism and academic procrastination.

E. *The Current Study and Hypotheses*

Adaptive perfectionism was operationalised as a combination score on the personal standards and organisation dimensions of the FMPS [8]; academic procrastination was operationalised as common passive procrastination, utilizing the relevant subscale of the Active Procrastination Scale [16, 17]. Psychological capital was operationalised using a student-related, adapted Psychological Capital Questionnaire [24]. ‘Student-related, adapted’ involved rewriting several items with a more student-focus than the organisational focus of the main questionnaire. Approvals were sought and obtained from the distributors for this purpose.

The hypotheses were that:

1. Adaptive perfectionism would significantly and negatively correlate with academic procrastination
2. Adaptive perfectionism would be significantly and positively correlated with Psychological Capital
3. Psychological Capital would be significantly and negatively correlated with academic procrastination
4. Psychological Capital would be a significant mediator between adaptive perfectionism and academic procrastination.

II. METHOD

A. *Participants*

One hundred and fifty four students were recruited from several Australian universities including a private university ($n = 101$) and other universities ($n = 53$). The majority were undergraduates ($n = 118$, 80.3%), female ($n = 109$), between 18 and 54 years, with a mean age of 23.38 years ($SD = 7.01$). Twenty four (16.3%) reported postgraduate qualifications. The majority of participants ($n = 101$, 68.7%) were local or interstate students, and twenty four (16.3%) were international. A majority ($n = 101$, 67.3%) attended the private university. Comparison of the private and public university groups of students showed no significant differences in the results and the student groups were combined into the total sample and the hypotheses analysed using the total sample.

B. *Measures*

1) *Perfectionism*

The 35-item Frost Multidimensional Perfectionism Scale (FMPS, [24]) assessed six dimensions of perfectionism, incorporating adaptive and maladaptive perfectionism, such that the domains of personal standards (P; 7 items) and organisation (O; 6 items) assessed adaptive perfectionism, and the other four dimensions of parental criticism, parental expectations, doubts about action, and concern over mistakes measured maladaptive perfectionism (not examined further in the current study). Participants self-reported on a 5-point Likert scale, from 1 = strongly disagree, to 5 = strongly agree with higher scores indicating higher perfectionism tendencies, with items such as “I strive to be neat”. The possible score range for the combined adaptive perfectionism subscale was

from 13 to 65.

The FMPS has demonstrated strong psychometric properties over many studies [8, 9, 36, 37, 38, 39].

2) *Procrastination*

The 6-item passive procrastination subscale (PPS) of the total 18-item Active Procrastination Scale [17] assessed the degree of procrastination, where high scores shown indecision and failure to complete tasks on time. The items ($\alpha = .82$) were adopted from two existing measures of procrastination and showed strong internal consistencies [17, 40].

The PPS required participants to self-report on a 7-point Likert-type scale response format, from 1 representing “Not at all true”, to 7 representing “Very true”. Items such as “I prepare to study at some point of time but don’t get any further” and “I often find myself performing tasks I intended to do days earlier” asked participants about their indecisiveness relating to academic situations that required decision making [40]. The first item was reverse scored to maximise the validity of responses. Thus, a maximum score of 42 was possible for the set of 6-items. A Cronbach’s alpha of $\alpha = .67$ was found in the current sample, indicating adequate internal consistency.

3) *Psychological Capital*

The constructs (6 items for each subscale of hope, resilience, optimism, and efficacy) was measured by the 24-item Psychological Capital Questionnaire [24]). Responses were recorded on a six-point Likert-type scale from 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree (with higher scores consistent with a higher psychological capital measure). Scores could range from 24 to 144. To reflect the state of psychological capital, items requested participants to reflect on how they felt in the moment. Items were adapted from a workplace specific context to suit the current student population, such that sample items included “at the present time, I am energetically pursuing my study goals” (hope); “I can get through difficult times in my studies because I’ve experienced difficulty before” (resilience); “I feel confident contacting people outside the classroom (e.g., lecturers, tutors) to discuss problems” (self-efficacy); and “when things are uncertain for me in my studies I usually expect the best” (optimism). A composite PsyCap score was obtained by summing the responses. The PCQ has reliability range of $\alpha = .89$ to $.91$ from structural validation studies demonstrating construct validity [41]. Internal consistency reliability for the Total PsyCap score was good ($\alpha = .84$).

C. *Procedure*

Prior to the commencement of this research, ethics approval was obtained via formal application to the University’s Human Research Ethics Committee. One credit point for participation in the study for the private university students was awarded. There were no other incentives.

III. RESULTS

A. *Analytical procedures*

Following data diagnostics and assumption checking for mediation analysis, correlation analyses and the mediated

multiple regression procedures were applied to investigate whether adaptive perfectionism and procrastination were mediated by the Psychological Capital (PsyCap) total score. Prior to the analyses, the predictor and mediator were grand mean-centred to improve the interpretability of the regression coefficients and to reduce multi-collinearity between the predictor and the mediation terms [42]. A total of 7 cases were identified as multivariate outliers. Data from 147 participants were retained. An alpha level of $\alpha = .05$ was utilised for all analyses and the Sobel test was conducted to confirm the mediation following the procedure suggested by Baron and Kenny (1986) [43]. All analyses were conducted utilising SPSS 20.0 statistical analysis software.

B. The Hypotheses

Hypothesis 1, that adaptive perfectionism and academic procrastination would be significantly and negatively correlated, was supported ($r = -.437, p < .001$), indicating that higher scores on the adaptive perfectionism subscale were associated with lower scores on academic (normal, passive) procrastination.

Hypothesis 2, that Adaptive perfectionism and PsyCap would correlate significantly and positively, was supported ($r = .171, p = .038$) suggesting that higher scores on adaptive perfectionism were moderately though significantly associated with higher scores on psychological capital.

Hypothesis 3, that PsyCap and Procrastination would correlate significantly and negatively, was supported (with $r = -.464, p < .001$), suggesting that higher scores on psychological capital were associated with lower scores of academic procrastination.

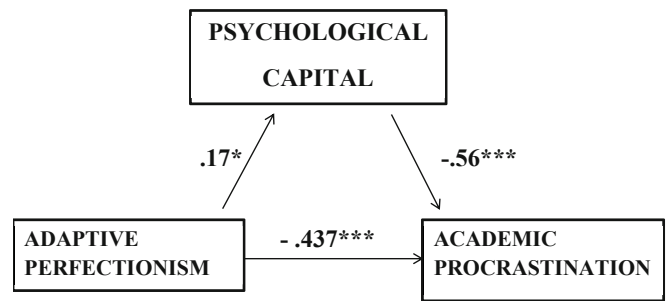
These results were consistent with expectations from the literature, though this study was the first known to the authors in a student population where the full Psychological Capital Questionnaire was used to measure PsyCap in relation to procrastination. At least one recent study had examined psychological capital as a buffer for student stress [44] but limited or no studies existed on perfectionism, psychological capital and procrastination prior to the current study.

The set of results correlating adaptive perfectionism, PsyCap, and procrastination were consistent with requirements to proceed with mediation analysis [43]. This meant that requirements for hypothesis 4 on mediation to be examined had been met.

Hypothesis 4, that psychological capital would be a significant mediator between adaptive perfectionism and procrastination in the academic setting, was supported.

Figure 1 and Table 1 indicate the analyses and outcomes for the mediated multiple regression analysis and Sobel test used. The processes for the regression analysis are outlined in the next section.

Figure 1 The mediation model with standardised regression coefficients for the initial relationships between adaptive perfectionism, academic procrastination and PsyCap



C. The Mediation Hypothesis- detailed

Mediated multiple regression analysis was conducted to determine whether adaptive perfectionism (the predictor) and academic procrastination (the criterion) would be mediated by psychological capital (the mediator).

The mediation model illustrated in Figure 1 consists of the three variables: adaptive perfectionism, PsyCap and academic procrastination.

To test the hypothesis that total psychological capital would mediate adaptive perfectionism and academic procrastination, a series of linear regressions was conducted [44] - see Table 1.

As demonstrated in Table 1, in Step 1 of the mediation model, the regression of Procrastination total scores on Adaptive Perfectionism subscale scores (AP), ignoring the mediator, was significant ($\beta = -.44, p < .001$). Step 2 demonstrated that the regression of the Procrastination scores on the mediator, centered PsyCap scores, was also significant ($\beta = -.46, p < .001$).

Step 3 of the mediation process revealed that the mediator (PsyCap), controlling for the adaptive perfectionism scores, was significant ($\beta = .17, p = .038$).

Step 4 of the analyses established that, controlling for the mediator (PsyCap), Adaptive perfectionism scores remained significant predictors of procrastination scores ($\beta = -.37, p < .001$).

Table 1: Mediated Multiple Regressions Analysis Predicting Procrastination (AP = Adaptive Perfectionism)

Predictor	R	Adj R ²	ΔR ²	β	SE B
Model 1 – Direct	.44	.19#			
Adaptive Perfm AP				-.44#	0.75
Model 2 – Mediation Path					
PsyCap on AP	.17	.02	.03	.17*	0.08
PsyCap on Procrastn	.46	.21	.22	-.46#	0.79
Model 3 – Mediation					
<i>Step 1</i>	.46	.21	.22		
PsyCap				-.46#	0.79
<i>Step 2</i>	.59	.34	.13		
PsyCap				-.40#	0.73
AP				-.37#	0.68

* $p < .05$ ** $p < .01$ # $p < .001$

Following the confirmation of Baron and Kenny's (1986: [41]) mediation conditions, the effect of psychological capital on adaptive perfectionism and academic procrastination was assessed for significance using Sobel's test for mediation (Sobel, 1982: [45]). Total PsyCap supported mediation for adaptive perfectionism and academic procrastination $\{z_{(153)} = -1.99, p = .045\}$. Effect size by Cohen's (1988) conventions, the combined PsyCap effect is considered large ($f^2 = .53$). Thus, psychological capital mediated the relationship between adaptive perfectionism and procrastination, as hypothesized. Psychological capital did not fully explain the relationship, indicating that some aspects of adaptive perfectionism continued to contribute to procrastination along with a mediating effect from PsyCap.

IV. DISCUSSION

Consistent with the hypotheses, firstly: adaptive perfectionism was significantly negatively associated with academic procrastination, indicating that those higher in adaptive perfectionism tended not to procrastinate or procrastinated less than those low in adaptive perfectionism. Adaptive perfectionism involves setting of high personal standards and organized approaches (compared with maladaptive perfectionism where the emphasis is more on concern over mistakes and self-doubts about one's actions). These elements clearly from our results are related to less procrastination occurring. Secondly, adaptive perfectionism (involving personal standards and organization) was associated with higher PsyCap, consistent with the composite sub-facets of PsyCap (self-efficacy, resilience, hope-emphasizing goal setting, and optimism). Thirdly, individuals with higher psychological capital also tended to procrastinate less than those with lower levels of PsyCap. From path analyses, PsyCap fulfilled Baron and Kenny's (1986: [41]) criteria for mediation and was found to mediate between adaptive perfectionism and academic procrastination- as hypothesized.

The finding that PsyCap is predictive of academic procrastination thus extended the self-efficacy model [4], by indicating another variable (PsyCap) beyond self-efficacy that also mediated the relationship between adaptive perfectionist approaches and procrastinatory tendencies- that is, suggesting that the composite PsyCap scores (self-efficacy, hope, optimism and resilience together) mediated the relationship.

A. Implications

This result is significant in practical terms as, as indicated by Luthans and associates [24], it is possible to strengthen the psychological capital of participants through personal training and development programs. The applications are extensive in business, counselling and clinical work, emphasizing the importance of resilience, hope, optimism and self-efficacy.

The result is significant in theoretical terms in that, as indicated, PsyCap incorporates more than self-efficacy - as in the Seo model [4]. Further, as previous studies also showed [e.g., in 24], the total composite PsyCap scores are normally a better predictor than any of the facets taken separately alone. The combination of the four facets incorporates a new strong

composite variable. Our results supported these earlier findings, though further study of the four facets is needed; our attention in this current paper was on the composite PsyCap concept.

Our study was about adaptive perfectionism, seen in many individuals at work and in their personal lives. Maladaptive perfectionism is not the mirror image opposite of adaptive perfectionism but has elements in common (perfectionistic strivings)- with attention more on worry and concern about one's actions and an overly strong self-critical approach. Previous research has shown that maladaptive perfectionism is directly related to procrastination; further study examining how PsyCap relates to maladaptive procrastination and procrastination would fill out the picture painted by the study of the adaptive aspects of perfectionism, PsyCap and procrastination.

The current study highlighted that psychological capital is a mediator but alone may not be sufficient to protect from procrastination; that is that along with developing PsyCap qualities, further development also of effective aspects of adaptive perfectionism is needed. This conclusion comes from the significant mediating effect of PsyCap but the remaining significant correlation between the adaptive perfectionism score and procrastination (after controlling for PsyCap).

Further implications in regards to research and theory relate to recent advances in procrastination studies. These studies are suggesting that procrastination, as with perfectionism, may be divided into two aspects, one more active and positive than the other more traditional form of procrastination- called 'passive procrastination' (hence the development of the Active Procrastination Scale [9, 25]). These two kinds of procrastination may yield different results in relation to psychological capital and perfectionism, and further examination is needed.

B. Limitations of the current study

Future research should examine the four subscales of psychological capital separately and also add factors not observed in the current study. We used cross-sectional study- maybe longitudinal studies would be useful- assessing the changing role of mediators through a semester or other life period (two studies at least [4, 44]) have highlighted that the effect of perfectionism may vary over time, such as when negative life experiences occur or when demands vary as in most student life). The majority of the data for the current study was collected as the beginning of the semester and it may be worthwhile to investigate at the beginning, middle and end of semester.

It is important for future research also to control for baseline stress, external events prior to the study, and existing coping strategies at different stages for a more thorough evaluation of the role of PsyCap at different times.

The self-report nature of the data collection was also a limitation. This method of operation inevitably opened the study to multiple biases [46]. It was possible that socially desirable responses may have obscured the true nature of the relationship between the variables. Students who received credit points may have been more inclined to participate. It

may be possible that true procrastinators never did return the questionnaires. An assessment method which allows also for differentiations in gender and education levels may be needed in further studies. Despite the limitations there are positive implications for practice and further research, as indicated above.

V. CONCLUSION

Results suggest there are multiple mediators required to understand academic procrastination. Implications of such research may be far-reaching in counseling and motivational therapy for procrastinators, and for adaptive perfectionists whose confidence is affected by failures. In the meantime this study has indicated that one further mediator is psychological capital, measured as a composite of self-efficacy, hope, optimism and resilience. It seems that the psychological capital measure may also be useful in student examples as it is, in its occupational form in the organisational setting. We train students to become perfectionists (at least up to a point) in our professional courses of study. Adaptive perfectionism has more positive consequences than maladaptive perfectionism and special study of adaptive perfectionism in relation to psychological capital and procrastination was the emphasis of the current project. Adaptive perfectionists follow strong personal standards and are good at self-organisation, as indicated in the Frost et al. questionnaire. These characteristics are important contributors to performance and to avoiding negative aspects from undue delay (that is, procrastination) in handling academic assignments. The current study has indicated that personal qualities of the individuals in terms of their psychological capital strengths (self-efficacy, hope, optimism and resilience) also contribute significantly to positive performance and the avoidance of passive or normal procrastination. Other recent studies have suggested we identify positive kinds of procrastination and examine relationships that may be different for 'active procrastinators' vis-à-vis '(passive) procrastinators'. The current study's findings that psychological capital contributes positively to academic performance is significant as it gives a guide also as to where students might be encouraged to develop their competencies-- in the improvement of their psychological capital skills along with strengthening the positive side of their adaptive perfectionist attributes of high personal standards and effective organisation.

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