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## Self-handicapping, perfectionism, locus of control and self-efficacy: A path model



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### ABSTRACT

Self-handicapping is a performance-debilitating characteristic, which in student populations has been consistently associated with negative outcomes such as academic underachievement and poor psychological adjustment. Perfectionism, locus of control, and self-efficacy have been linked with self-handicapping but have not been previously examined within one cohesive framework. This study, therefore, examined a model linking maladaptive perfectionism and external locus of control to self-handicapping, both directly and indirectly through their mediated effect on self-efficacy. Participants were 79 university students who completed an online survey comprising measures of perfectionism, locus of control, general self-efficacy, and self-handicapping. It was found that perfectionism and locus of control predicted self-handicapping; and perfectionism, but not external locus of control, predicted low self-efficacy. The mediation analyses found no support for self-efficacy as a mediator of the relationship between perfectionism, locus of control, and self-handicapping. These findings suggest that the interaction of maladaptive social cognitive constructs associated with self-handicapping requires further investigation.

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### 1. Introduction

Self-handicapping has been defined as the creation of impediments or disadvantages that jeopardise optimal performance at a task (Zuckermann & Tsai, 2005). Self-handicapping includes a broad range of behaviours, such as procrastination, substance use, overcommitting, lack of effort, and not taking the opportunity to practice (Baumeister, Hamilton, & Tice, 1985; Warner & Moore, 2004). In nonclinical populations, self-handicapping has been linked to a wide range of negative outcomes such as higher levels of anxiety and depression, and poor academic achievement (Kearns, Forbes, Gardiner, & Marshall, 2008; Zuckermann, Kieffer, & Knee, 1998).

Concerns about other's perceptions of one's competence, as well as self-doubt, often result in self-handicapping (Arkin & Oleson, 1998). Self-handicapping enables the individual to externalise failure and protect self-worth by obscuring the relationship between competence and performance (Brown & Kimble, 2009). In the event of failure, ability attributions can be discounted as self-handicapping provides an external explanation for an individual's poor performance; conversely, success despite self-handicapping supports

personal perceptions of competence, potentially augmenting one's perceived self-worth (Martin & Brawley, 2002). Thus, self-handicapping behaviours have been described as effective self-protecting strategies that allow an individual to both preserve and project a positive self-image (Feick & Rhodewalt, 1997). Although handicapping may support self-esteem in the short-term by providing a plausible excuse for poor performance (Covington, 2000), chronic self-handicapping is fundamentally a maladaptive strategy characterised by task-avoidance, failure expectations, excuses, and external attributions that over time has significant negative effects on self-concept (Maata, Stattin, & Nurmi, 2002).

The social cognitive factors of perfectionism, locus of control, and self-efficacy have been identified, both conceptually and empirically, as important factors in self-handicapping. Limited attention, however, has been given in research to examining these constructs within one cohesive framework. The goal of this investigation was, therefore, to propose and test an integrated model linking of perfectionism, locus of control, self-efficacy, and self-handicapping.

#### 1.1. Relationships among perfectionism, locus of control, self-efficacy, and self-handicapping

Perfectionism is the tendency to set excessively high standards of performance, combined with "selective attention to and

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overgeneralisation of failure, stringent self-evaluations, and all or none thinking, where only total success or total failure exist as outcomes” (Hewitt & Flett, 1991, p. 456). Adaptive perfectionism is associated with a realistic striving for high standards without psychological maladjustment or distress, whereas maladaptive or negative perfectionism is predominantly linked to unhealthy evaluative concerns, frequent doubts about actions, and preoccupation with avoiding mistakes (Suddarth & Slaney, 2001). Preoccupation with avoiding mistakes and uncertainty about one’s own ability are likely to lead maladaptive perfectionists to intentionally compromise performance as a strategy to cope with fear of failure and associated negative interpersonal and intrapersonal evaluations (Pulford, Johnson, & Awaida, 2005); and not surprisingly, individuals who display high levels of maladaptive perfectionism have been found to be more likely to engage in self-handicapping behaviours (Sherry, Flett, & Hewitt, 2001).

Locus of control has also been found to be associated with self-handicapping. Locus of control refers to the extent to which individuals perceive they have control over events—individuals who have an internal locus of control are more likely to attribute outcomes to personal ability and self-initiated change, whereas those with an external locus are more likely to believe that outcomes are determined by outside sources and are beyond their control (Rotter, 1966). High self-handicappers have been found to attribute daily life events to external rather than internal factors, and to unstable rather than stable factors, and are much less likely to attribute achievement outcomes to their ability (Feick & Rhodewalt, 1997; Rhodewalt, 1990). Caution should be exercised, however, when drawing inferences from the locus of control and self-handicapping literature as empirical studies are relatively scarce and there has been some confusion between locus of control, a relatively stable disposition that affects the evaluation of an outcome before it has occurred, and casual attributions made after the event.

Bandura (1986, 1997) argues that self-efficacy plays a key role in motivation, expectations of future outcomes, affective states and, consequently, ability to perform a set task or activity—self-efficacy is defined as:

People’s judgment of their capabilities to organize and execute courses of action required to attain designated types of performance. It is not concerned with the skills that one has, but with the judgments of what one can do with whatever skills one possesses (Bandura, 1986, p. 391).

Bandura suggested that in the presence of adequate levels of skills and motivation, self-efficacy would exert a positive influence on task initiation and persistence, whereas low self-efficacy could lead to task avoidance, disengagement, and other self-handicapping behaviours. This is supported by research findings showing an inverse correlation between self-efficacy and self-handicapping (Coudeville, Martin Ginis, & Famose, 2008; Martin & Brawley, 2002), and that college students with higher levels of self-efficacy for social or everyday tasks report less frequent self-handicapping behaviours such as procrastination (Haycock, McCarthy, & Skay, 1998; Wolters, 2003).

The potential of self-efficacy to mediate the effects of perfectionism and locus of control on self-handicapping has been suggested theoretically and empirically. A conceptual link between maladaptive perfectionism and self-efficacy was first proposed by Burns (1980) who posited that “the higher the standard of success, the less likely it is that a successful result will be perceived as a probable outcome” (Burns, 1980, p. 38), or in other words, perfectionists compromise their level of self-efficacy by setting unrealistic goals and expectations. Subsequently, a number of studies have reported a significant negative correlation between perfectionism

and self-efficacy (Martin, Flett, Hewitt, Krames, & Szanto, 1996; Mills & Blankstein, 2000). Other studies have indicated that self-efficacy plays a mediating role between perfectionism and self-handicapping (procrastination) in college students (Martin et al., 1996; Seo, 2008). Evidence also shows a correlation between external locus of control and lower self-efficacy (Roddenberry & Renk, 2010; Spector & O’Connell, 1994).

Very little research has been conducted exploring the relationship between locus of control and perfectionism. In an early study, Hewitt and Flett (1991) found a positive relationship between external locus of control and socially prescribed perfectionism. More recently, Periasamy and Ashby (2002) demonstrated that maladaptive perfectionists were characterised by a significantly higher external locus of control than both adaptive perfectionists and non-perfectionists.

## 1.2. The present study

Maladaptive perfectionism, external locus of control, and low self-efficacy have been identified, theoretically, and to some extent, empirically, as contributing to self-handicapping. Yet, no study to date has proposed and tested a model integrating these social cognitive constructs into one cohesive framework that conceptualises self-handicapping as the product of these underlying maladaptive cognitions. The aim of this study was, therefore, to examine a path model linking external locus of control and maladaptive perfectionism to self-handicapping, both directly and indirectly through the mediating influence of self-efficacy (Fig. 1).

We hypothesised that maladaptive perfectionism would be positively correlated with external locus of control; both maladaptive perfectionism and external locus of control would be positively correlated to self-handicapping and negatively correlated with self-efficacy; and self-efficacy would be negatively correlated with self-handicapping. Further, we hypothesised that the criteria for mediation would be met using Baron and Kenny’s (1986) approach; specifically that maladaptive perfectionism and external locus of control would account for a significant proportion of variance in self-efficacy; maladaptive perfectionism and external locus of control would account for a significant proportion of variance in self-handicapping; self-efficacy would account for a significant proportion of variance in self-handicapping when controlling for perfectionism and locus of control; and the effect of perfectionism and external locus of control on self-handicapping would be reduced when controlling for self-efficacy, which would indicate the existence of an indirect path linking perfectionism and external locus of control to self-handicapping via self-efficacy.

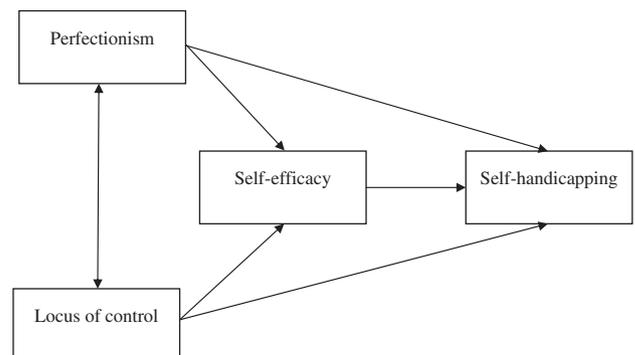


Fig. 1. Proposed path model of the relationships among perfectionism, locus of control, self-efficacy, and self-handicapping.

## 2. Method

### 2.1. Participants and procedure

Participants comprised 49 part-time and 30 full-time undergraduate and postgraduate students ( $n = 79$ ) from an Australian university. Prior power analysis based upon multiple regression with three predictors, assuming a medium effect size ( $f^2 = .15$ ), indicated a minimum sample size of 76 for a desired statistical power of .80 (Cohen, 1992). The sample included 14 men (17.7%) and 65 women (82.3%), with an age range of 19–62 years ( $M = 35.42$ ,  $SD = 10.79$ ). The majority of participants (83.5%) were enrolled as external students. The study was approved by the authors' university human research ethics committee prior to recruitment. Participants were asked to complete an online questionnaire of approximately 15–20 min duration. The questionnaire comprised basic demographic questions and scales measuring perfectionism, locus of control, self-efficacy, and self-handicapping. Informed consent was obtained from each participant prior to the completion of the questionnaire, and no remuneration was offered for participation.

### 2.2. Materials

#### 2.2.1. Almost Perfect Scale-Revised

Perfectionism was measured with the Almost Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). The APS-R is a 23-item self-report instrument developed to measure both negative (maladaptive) and positive (adaptive) dimensions of perfectionism. The revised version of the Almost Perfect Scale (APS-R) comprises three subscales: High Standards, Order, and Discrepancy. High Standards refers to having high standards for one's performance; Order relates to organisation or neatness; Discrepancy refers to the degree of perceived inconsistency between standards of behaviour and actual performance. The High Standards and Order subscales have been linked to adaptive features of perfectionism, whereas Discrepancy is thought to be related to the maladaptive aspects of perfectionism (Slaney et al., 2001). For the purpose of this study, only the Discrepancy subscale was utilised as a measure of maladaptive perfectionism, even though all APS-R items were administered.

Ratings on the APS-R are based on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Higher scores are associated with greater perfectionism. The APS-R has been reported to have good internal reliability with Cronbach's alphas ranging from .82 to .92 for the total scale score, and .85 to .92 for the three subscale scores. Test-retest reliability has also been found to be adequate with correlations of .72 to .83 and .76 to .87 at intervals of three weeks and eight to ten weeks (Rice & Ashby, 2007).

#### 2.2.2. Rotter's Internal-External (I-E) Scale

Locus of control was measured with the Rotter's Internal-External (I-E) Scale developed by Julian B. Rotter (1966). This measure consists of 29 forced-choice items, including six filler items. Scores range from 0 to 23; higher scores indicate an external locus of control and lower scores indicate an internal locus of control. The I-E Scale has been found to have acceptable reliability and validity (May & Warren, 2002), with strong test-retest correlations ranging from .49 to .78 and low correlations with measures of social desirability ranging from  $-.16$  to  $-.41$  (Rotter, 1966, 1975).

#### 2.2.3. General Self-Efficacy Scale

Self-efficacy was measured with the General Self-Efficacy Scale (GSE; Schwarzer & Jerusalem, 1995) which consists of 10 items

capturing the belief that the person can perform new or difficult tasks or cope with adversity. Participants were required to rate each statement on a 4-point scale. A total score, which can range from 10 to 40, was computed by adding the scores from all 10 items. Higher scores are associated with higher levels of perceived self-efficacy. The GSE is reported to have strong reliability with Cronbach's alpha coefficients ranging from .75 to .91 (Scholz, Gutiérrez-Doña, Sud, & Schwarzer, 2002).

#### 2.2.4. Self-Handicapping Scale

Self-handicapping was measured with the abbreviated version of the Self-Handicapping Scale (SHS; Rhodewalt, 1990) derived from the 25-item measure developed by Jones and Rhodewalt (1982). This short scale of 14 items measures a person's tendencies to implement self-handicapping strategies such as procrastination, claimed illness, and lack of effort. Items are rated on a 6-point scale from disagree very much (0) to agree very much (5). Scores can range from 0 to 70 with higher scores indicating stronger self-handicapping tendencies. Internal consistency of the reduced 14-item scale has been reported to be satisfactory with Cronbach's alphas of .76 and .74 obtained by Zuckerman et al. (1998) and .70 obtained by Warner and Moore (2004) with an Australian sample.

## 3. Results

### 3.1. Preliminary analyses

Linear regressions, independent  $t$ -tests, and univariate analyses of variance were utilised to investigate the impact of demographic variables on the endogenous variables of self-efficacy and self-handicapping. Age explained a significant proportion of variance in general self-efficacy,  $R^2 = .17$ ,  $F(1, 77) = 16.21$ ,  $p < .001$ ,  $\beta = .42$ , 95% CI [.02, .32]; and reported self-handicapping,  $R^2 = .23$ ,  $F(1, 77) = 22.68$ ,  $p < .001$ ,  $\beta = -.48$ , 95% CI [.07, .39]. Specifically, older students reported higher levels of self-efficacy and lower self-handicapping tendencies. Results from independent  $t$ -tests revealed no significant effects of gender on any of the variables of interest. Three-way factorial ANOVAs (academic level  $\times$  study mode  $\times$  study load) revealed that academic-related demographic factors did not have any significant influence on general self-efficacy. There was, however, a moderate significant effect of mode of study on self-handicapping,  $F(1, 66) = 5.16$ ,  $p = .03$  partial  $\eta^2 = .07$ , with internal students reporting higher self-handicapping scores ( $M = 38.10$ ,  $SE = 3.30$ ) than external students ( $M = 27.73$ ,  $SE = 1.91$ ). In light of these findings, demographic factors of age and mode of study were included as control variables in the study.

### 3.2. Hypotheses testing

#### 3.2.1. Correlations

Before mediation analysis, correlational analyses examined the relationships between the variables in the model (Table 1). As hypothesised, all variables were significantly correlated in the expected direction. Maladaptive perfectionism, external locus of control, and self-handicapping were all positively correlated, whereas low to moderate negative correlations were found between self-efficacy and all the other constructs.

#### 3.2.2. Path analysis

In accordance with Baron and Kenny (1986), the mediation model was tested using a series of regression analyses. First, a regression analysis was conducted in order to test whether the independent variables of maladaptive perfectionism and locus of

**Table 1**

Correlations among the variables of perfectionism, locus of control, self-efficacy, and self-handicapping (one-tailed).

	Perfectionism	Locus of control	Self-efficacy	Self-handicapping
Perfectionism	1	.19*	-.37**	.59**
Locus of control	.19*	1	-.29**	.42**
Self-efficacy	-.37**	-.29**	1	-.51**
Self-handicapping	.59**	.42**	-.51**	1

\*\*  $p < .01$ .\*  $p < .05$ .

control predicted the mediator variable of self-efficacy. As preliminary analyses had revealed that age accounted for a significant portion of variance in self-efficacy, a hierarchical regression method was selected to control for its effect. Age was found to explain 17.4% ( $p < .001$ , 95% CI [.03, .31]) of the variance in self-efficacy. After perfectionism and locus of control were entered at Step 2, the total variance explained increased to 29.4%, 95% CI [.13, .45]. Perfectionism and locus of control added 12% to the model's explanatory power,  $R^2$  change = .12,  $p = .003$ , 95% CI [-.007, .24]. Whilst perfectionism had a significant beta value of  $-.26$ , ( $p = .011$ ), the beta coefficient associated with locus of control fell just outside significance levels ( $\beta = -.20$ ,  $p = .053$ ). A second hierarchical regression was conducted to test the model linking the independent variables of maladaptive perfectionism and locus of control to self-handicapping. Demographic factors of age and mode of study were entered in Block 1 to control for their unique contribution to self-handicapping variance. The model, overall, explained 57.9% of the variance in self-handicapping,  $p < .001$ , 95% CI [.44, .71]. The first step in the analysis, which included the demographic variables, accounted for 26.7% of variance in self-handicapping ( $p < .001$ , 95% CI [.11, .42]), with both age ( $\beta = -.41$ ,  $p < .001$ ) and mode of study ( $\beta = -.21$ ,  $p = .048$ ) yielding significant beta coefficients. The inclusion of perfectionism and locus of control in the second step contributed an additional 31.2% of variance ( $R^2$  change = .31,  $p < .001$ , 95% CI [.15, .47]), with perfectionism as the strongest significant predictor ( $\beta = .46$ ,  $p < .001$ ) and locus of control yielding a beta value of  $.27$  ( $p = .001$ ). Age still accounted for a significant portion of variance on self-handicapping ( $\beta = -.31$ ,  $p < .001$ ), whilst the effect of mode of study decreased to a non-significant level.

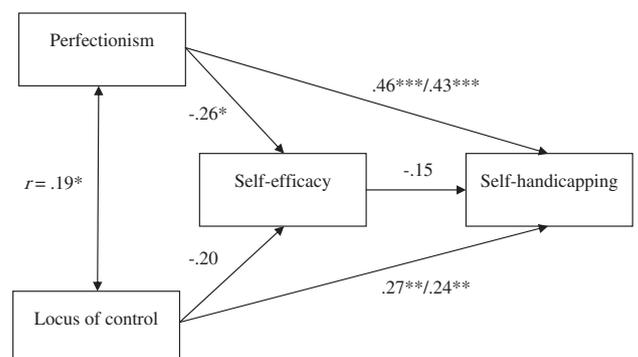
In order to meet the third criterion for mediation, self-efficacy had to account for a significant portion of variance in self-handicapping after controlling for perfectionism and locus of control. The existence of a significant correlation between self-efficacy and self-handicapping was not a sufficient indicator, as both mediator and outcome variable may have been caused by the initial variables of perfectionism and locus of control. A third hierarchical regression analysis was therefore computed, entering demographic variables in Block 1, perfectionism and locus of control in Block 2, and self-efficacy in Block 3. The overall model accounted for 59.4% ( $p < .001$ , 95% CI [.47, .72]) of the variance in self-handicapping. The inclusion of self-efficacy did not significantly add to the model's explanatory power,  $R^2$  change = .02,  $p = .105$ , 95% CI [-.04, .08]. A review of beta coefficients showed that, after controlling for perfectionism and locus of control, self-efficacy did not significantly affect self-handicapping ( $\beta = -.15$ ,  $p = .105$ ). This finding violates the third condition for mediation, and as such, the final criterion for mediation, which required a reduction of the effect of the independent variables on the dependent variable following the inclusion of the mediator, was no longer applicable. Standardised beta coefficients for each individual path between the variables of interests are reported in Fig. 2.

#### 4. Discussion

The purpose of this study was to examine a path model linking perfectionism and external locus of control to self-handicapping via the mediating effect of self-efficacy. Results indicated that the proposed mediated model did not provide the best fit for the observed data. Results from correlational analyses, however, found significant relationships among all key variables in the directions hypothesised. This is in line with cumulative evidence indicating that self-handicapping occurs in the context of a complex interplay of social cognitive factors. The finding of a positive correlation between external locus of control and maladaptive perfectionism was of particular interest as the relationship between the two constructs has been the focus of few investigations to date (Hewitt & Flett, 1991; Periasamy & Ashby, 2002). Evidence of the relationship between external locus control and self-handicapping has also been limited to date—these factors were found to be positively correlated in the present investigation.

After controlling for age and mode of study, maladaptive perfectionism was found to significantly predict low self-efficacy, corroborating Burns' (1980) suggestion that perfectionists compromise their level of self-efficacy by setting unrealistic goals and expectations. The role of locus of control, however, is of more dubious interpretation as its contribution to self-efficacy fell just outside significance levels. Comparisons with previous research are also difficult to make as the majority of studies investigating locus of control and self-efficacy have been correlational in nature (Roddenberry & Renk, 2010; Spector & O'Connell, 1994).

A major finding in this study was that both maladaptive perfectionism and locus of control significantly contributed to self-handicapping. This indicates that self-handicapping behaviours may indeed be triggered by a combination of maladaptive core beliefs, including, but possibly not limited to perfectionism and external locus of control. Whilst both maladaptive perfectionism and external locus of control successfully predicted self-handicapping tendencies, results did not support the mediating role of self-efficacy. After controlling for the demographic variables and for the effects of perfectionism and locus of control, self-efficacy did not share any significant variance with self-handicapping. Results from correlation analyses, however, indicate that self-handicapping, external locus of control, and perfectionism all reflected a diminished sense of self-efficacy, in line with theorisations by Flett, Hewitt, Blankstein, and Mosher (1995) and Martin et al. (1996). Hence, it is possible that an investigation of self-efficacy's indirect rather than direct effects on self-handicapping could lead to the development of alternative path models with stronger explanatory power.



**Fig. 2.** Final path model predicting self-handicapping. Note: Beta coefficients for individual components are reported, with the exception of the bidirectional path linking perfectionism to locus of control, where the correlation coefficient (one-tailed) is provided. \*\*\* $p < .001$ . \*\* $p < .01$ . \* $p < .05$ .

Results from this study should be interpreted in the context of a number of conceptual and methodological strengths and limitations. A conceptual strength is that the proposed path model was developed on the basis of a comprehensive review of the available self-handicapping literature, and combined, for the first time within an integrated framework a range of factors previously identified as playing a significant role in self-handicapping behaviours. From a methodological perspective, the use of regression analyses was critical in expanding on correlational data from previous research, and enabled investigation of specific hypotheses about the nature of the effects between the variables.

Even though this research project provided valuable empirical data on self-handicapping in a student population, a number of factors may limit the interpretation of the outcomes of this study. The small sample size resulted in wide confidence intervals that introduced uncertainty with regards to the interpretation of the effects. It is therefore recommended that this study be replicated with a larger sample. Furthermore, despite the anonymous nature of the data collection process, the possibility of a social desirability bias associated with self-report surveys needs to be taken into account. Additionally, the study utilised a convenience sample which may not have adequately captured some segments of the population; and overrepresentation of women in the study also poses limitations to the generalisability of the results. Finally, environmental and situational-specific factors were not explored in this study. The inclusion of environmental factors in future research, consistent with Bandura's (1986, 1997) reciprocal determinism model, would be beneficial in clarifying potential interactions between social cognitive variables and situational contexts, with a view to clearly identifying antecedents of self-handicapping and establishing causal inferences.

Despite these limitations, the study findings align with the extant literature indicating that self-handicapping involves a complex interaction of maladaptive social cognitive constructs (Kearns et al., 2008; Warner & Moore, 2004). A better understanding of the maladaptive cognitions underlying self-handicapping is crucial to development of targeted interventions to reduce the incidence of dysfunctional behaviours and improve outcomes for nonclinical populations in evaluative settings. Interventions to address self-handicapping, therefore, may be more effective when including a cognitive restructuring component in addition to the development of behavioural skills such as self-monitoring and self-reward. Cognitive behavioural-based approaches such as cognitive behavioural coaching have been shown to be effective in curbing both perfectionism and self-handicapping levels (Kearns, Forbes, & Gardner, 2007) and deserve further conceptualisation and investigation.

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