

Title: Factors Related to Taiwanese University Students' Engagement and Burnout: The Moderating Role of Perceived Competence

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Abstract

The period of university study is normally marked with many challenges. Academic burnout appears to have become more prevalent among university students. There is a shortage of studies on university students' academic burnout in the non-Western setting. To address this shortage, the present study attempts to explore the moderating effects of Taiwanese university students' perceived competence on the relationships of each component of self-compassion (i.e., self-kindness, common humanity, and mindfulness) with work engagement and academic burnout. Also, this study examines the interrelationships between the three components of students' self-compassion, perceived competence, perfectionistic tendencies (i.e., perfectionistic strivings versus perfectionistic concerns), work engagement, and academic burnout. Five hundred and four Taiwanese undergraduate students completed a self-reported survey assessing the variables described above. The results of this study contribute to the literature in several ways. First, moderation analyses indicate that perceived competence play the moderating role in the relationships of the components of self-compassion with work engagement and academic burnout. Second, hierarchical regression analyses suggest that there exist differences in the relationships of each component of self-compassion with students' work engagement and academic burnout. Finally, the findings from this study lend support to the two-factor model of perfectionism. Perfectionistic strivings

positively predict work engagement, whereas perfectionistic concerns are positively associated with academic burnout. Implications for practices and future research are discussed.

Keywords: self-compassion, perceived competence, perfectionism, academic burnout, work engagement

Introduction

The period of university study is normally marked with many changes and challenges. During this transitional period, university students experience changes in responsibilities, identity, life styles, social systems, and sometimes living arrangements. On top of all these changes, they need to accomplish coursework to get a degree for a brighter future (Gunnell et al., 2017; Stolker & Lafrenere, 2015). Accordingly, students may feel immense pressures and stress at university level. In terms of academic stress, the most common stressors reported by university students include exams, overload of academic tasks and the limited time for doing them, as well as lack of competence for their training (Garcia-Izquierdo et al., 2018). If students have difficulty coping with these pressures and sources of stress, they may experience academic burnout.

Student burnout often results from a high imbalance between perceived demands and personal resources (Salmela-Aro & Upadyaya, 2014). It is noteworthy that even high-achieving and motivated students have been found to be vulnerable to burnout (Tuominen-Soini & Salmela-Aro, 2014). Academic burnout appears to have become more prevalent among university students (Lin & Huang, 2012; Stolker & Lafreniere, 2015). Most of the research in this regard has thus far been conducted in a Western context (Barnett & Flores, 2016). There is a shortage of studies on university students' academic burnout in the non-Western setting. To address this shortage, the present study attempted to examine how factors including self-compassion, perceived competence, and perfectionism may be related to Taiwanese university students' academic burnout.

Academic Burnout and Engagement

Previous research on burnout focused primarily on the person's response to chronic job stress (Maslach et al., 2001). In recent years, this line of research has extended to student samples (e.g., Barnett & Flores, 2016; Schaufeli et al., 2002; Stolker & Lafrenere, 2015). Researchers have hence reconceptualized the notion of

burnout in order for relating this construct to the educational field (Stolker & Lafrenere, 2015). Academic burnout refers to one's response to his or her inability to cope with academic pressures and course loads. This construct consists of three dimensions: emotional exhaustion due to school-related demands, cynicism and detached attitude toward schooling, and feelings of inadequacy as a student (Parker & Salmela-Aro, 2011). Emotional exhaustion includes chronic fatigue, rumination, and strain, namely, symptoms of stress and anxiety. School-related cynicism can be defined as lower interest and a distant attitude toward coursework. Feelings of inadequacy refer to the feelings of not accomplishing the task properly and a lack of efficacy in a school context (Barnett & Flores, 2016). Academic burnout has been found to increase over time and to be associated with a range of negative outcomes. Students who experienced academic burnout also reported decreased academic engagement and achievement, somatic complications, anxiety, depression symptoms, and even school dropout (Bask & Salmela-Aro, 2013; Murberg & Bru, 2007; Vasalampi et al., 2009). To prevent these problems from arising, it is critical to identify the factors that may ease university students' academic burnout, and even further, foster their work engagement.

Work engagement is key to academic success. Students need to engage in their coursework in order to do well at the university level (Stolker & Lafreniere, 2015). Work engagement is defined as the individual's motivation and mental engagement in academic tasks. It is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002). Vigor refers to high levels of energy, resilience, willingness, and ability to invest in work and persistence when facing difficulties. Dedication refers to one's strong involvement in work, accompanied by a sense of significance, enthusiasm, pride, and inspiration. Finally, absorption refers to an individual's pleasant state of total immersion in work. In such a state, the student may be unable to detach from the work of study. Higher work engagement was found to be associated with lower levels of university student burnout (Schaufeli et al., 2002). That is, burnout and engagement can be viewed as two opposite constructs.

Conceptual Framework

The conceptual framework of this paper is driven by two propositions. First, self-compassion and perceived competence may function as personal psychological resources that encourage university students' work engagement and lower their

burnout (Neff et al., 2005; Korhonen et al., 2016). Second, the two-factor model of perfectionism (i.e., perfectionistic strivings versus perfectionistic concerns) also provides a framework for understanding how students' personality traits may be associated with their academic-related experiences (Stoeber, 2018). These two propositions are expanded on below.

Self-Compassion and Perceived Competence

Self-compassion has been documented as a positive quality to facilitate mental well-being (Zhang et al., 2016). Prior findings (Neff, 2003a, 2009) indicated that this inner quality enabled one to see a stressful and demanding situation in a more positive light. Being self-compassionate is likely to buffer against the harmful influence of academic stress (Allen & Leary, 2010; Zhang, et al., 2016). Therefore, self-compassion may be a prospective way to reduce burnout and heighten engagement in the academic context. As an important human strength, self-compassion refers to a kind, caring, empathic, and receptive orientation toward oneself that the person conveys toward loved ones during times of hardship and failure (Gilbert, 2009; Neff, 2003a). Theoretically, self-compassion is a multi-dimensional construct with three bipolar qualities: self-kindness vs. self-judgment, common humanity vs. isolation, and mindfulness vs. over-identification (Allen & Leary, 2010; Neff, 2003a, 2009; Trompeter et al., 2017).

Contrary to self-judgment, self-kindness refers to being gentle and understanding toward the self when faced with difficult life situations. In times of stress and suffering, self-kindness encourages the individual to embrace the distressed self warmly and calmly. In contrast with regarding oneself as isolated because of struggles and suffering, common humanity refers to viewing one's pain and inadequacies as a part of the shared human experience. This component of self-compassion leads the individual not to take failure personally and get discouraged. As opposed to over-identification, mindfulness refers to the ability to accept difficult feelings and circumstances at the present moment without exaggerating or avoiding them. People high in mindfulness tend to be well aware of their thoughts and emotions and able to maintain perspective in the face of stress. By contrast, in the process of over-identification, one tends to suffer as a result of being carried away with thoughts and emotions (Manavipour & Saeedian, 2016; Trompeter et al., 2017). Neff (2003a,

2003b, 2009) suggested that these components are intercorrelated and can be subsumed by a higher order factor of self-compassion.

Self-compassion has been found to be positively related to desired outcomes and negatively associated with undesired outcomes. For instance, self-compassion was associated with factors related to positive mental health such as life satisfaction, social connectedness, wisdom, optimism, happiness, and personal growth (Barnard & Curry, 2011; Neff, 2009, 2011; Neff et al., 2007). Also, self-compassion was negatively related to depression, anxiety, negative affect, and stress (Neff et al., 2005; Ehret et al., 2018; Muris & Petrocchi, 2017). In the educational setting, students with higher levels of self-compassion showed greater intrinsic motivation and perceived competence, as well as less fear of failure, academic worry, and procrastination tendency (Neff et al., 2005; Williams et al., 2008). Further, the previous literature suggested that self-compassion buffered against the negative effects of academic stress on academic performance and emotional well-being among undergraduates (Neff et al., 2005; Kyeong, 2013; Hope, 2014). It was thus speculated that self-compassion would motivate university students to adequately cope with academic stress, so that academic burnout might be alleviated.

There is an increasing focus on resilience in higher education. Resilience can be regarded as a dynamic process in which individuals capitalize on personal and contextual resources to deal with difficult challenges and to work toward adaptive functioning (McArthur et al., 2017). Self-compassion has been identified as one of the personal protective resources associated with the ability to “bounce back” from setbacks and adversity (Neff et al., 2005). The vast majority of the research on self-comparison tended to explore the very construct as a whole. The three components of self-compassion (i.e., self-kindness, common humanity, and mindfulness) are, however, conceptually distinct and are experienced differently (Wong & Mak, 2013). The present research was intended to examine the relationships between each component of self-compassion and university students’ engagement and burnout. In doing so, it was hoped that the differential effects of each component could be precisely detected.

In addition to self-compassion, the individual’s perceived competence can also be considered as a psychological resource that may promote resilience and engagement (Korhonen et al., 2016). Perceived academic competence refers to

students' perceptions of their abilities to succeed with academic tasks (Deci & Ryan, 2002). It has been identified as a fundamental motivational resource that is significantly linked to positive educational outcomes such as academic engagement and achievement over time (Guay et al., 2003; Wong et al., 2002). Moreover, previous findings suggested a reciprocal developmental relationship between achievement, perceived competence, and interest, with a growing tendency during the school years (Möller et al., 2011). When students perceive a lack of ability to master the coursework and to accomplish positive and desired outcomes, they are likely to lose interest in their study and experience burnout. Perceptions of academic competence may not only reduce academic stress, the well-documented triggers of burnout, but also lead to higher persistence and expectation for attaining academic goals (Manavipour & Saeenian, 2016; Martin & Kennett, 2018).

To obtain a comprehensive understanding of the factors related to university students' work engagement and academic burnout, the direct effects of perceived competence together with self-compassion would be explored. Moreover, it has been suggested that perceived competence could exert moderation effects on the relationships between motivational beliefs and educational outcomes (Eccles, 2009). On the basis of the very findings, the present research also aimed to examine the moderating role of perceived competence in the relationships of each component of self-compassion with work engagement and academic burnout. The results in this respect were expected to enlighten us the most potent ways to ameliorate student burnout and foster engagement. On top of these psychological resources, the effects of perfectionism as a personality trait were also examined in the current study.

Perfectionism

Perfectionists tend to have exceptionally high expectations for themselves. Also, they are usually self-critical of their behaviors and performance. Perfectionism is a multidimensional construct that pervades a variety of life, work and educational activities (e.g., university) in particular (Stoeber, 2018). Frost et al. (1990) conceptualized perfectionism as consisting of six dimensions. Personal standards enable perfectionists to set high standards of performance. The very dimension has been described as the central feature of perfectionism. Concern over mistakes, another major dimension, leads perfectionists to fear about making mistakes and interpret failure as an indication of lack of ability. The third dimension, doubts about actions,

reflects perfectionists' tendency to be unsure whether they do the right things in their everyday activities. The fourth dimension, organization, refers to the inclination to be organized and have a high need for orderliness. The fifth and sixth dimensions concern individuals' perceptions of their parents. Parental expectations assess the extent to which perfectionists perceive that parents expect them to perform well. Parental criticism refers to perfectionists' perceptions that parents are critical of their failure to live up to parental expectations (Frost et al., 1990; Stoeber, 2018).

Among these dimensions of perfectionism, researchers (Frost et al., 1993; Stoeber & Otto, 2006) found two higher order latent factors representing perfectionistic strivings and concerns. Perfectionistic strivings refer to the endeavors to be perfect and attempts to set high standards for the self. Perfectionistic concerns reflect people's anxiety over making mistakes and doubts about the quality of work. The two-factor model of perfectionism constitutes a framework revealing the contrasting features of different perfectionistic tendencies (Stoeber, 2018). Perfectionistic strivings are associated with such adaptive characteristics and outcomes as problem-focused coping, the sense of responsibility, and higher academic performance. Moreover, this superordinate dimension of perfectionism appears to be negatively related to depression when controlling for the effects of perfectionistic concerns. Perfectionistic concerns tend to be related to undesirable characteristics and outcomes including the motivation to avoid failure, academic procrastination, test anxiety, and constant self-criticism (Burnam et al., 2014; Ferrari et al., 2018; Stoeber, 2019).

According to the two-factor model of perfectionism, perfectionistic strivings are characterized by approach-oriented aspects of achievement motivation, which may lead students to actively engage in coursework. Conversely, perfectionistic concerns that involve self-criticism and fear of negative evaluation may intensify academic stress and create a vulnerability to burnout. The current research attempted to investigate the relationships between university students' perfectionistic tendencies and work engagement versus burnout to determine whether the two-factor model of perfectionism would explain unique variance in these outcome variables.

The Present Study

Based upon the above rationale, the present study aimed to (a) explore the moderating effects of university students' perceived competence on the relationships

of each component of self-compassion (i.e., self-kindness, common humanity, and mindfulness) with work engagement and academic burnout, when the other two self-compassion components were controlled for; and (b) examine the interrelationships between the three components of university students' self-compassion, perceived competence, perfectionistic tendencies, work engagement, and academic burnout. The following hypotheses were proposed:

- (1) Students' perceived competence would moderate the relationships of each component of self-compassion with work engagement and academic burnout, when the other two self-compassion components were controlled for.
- (2) The three components of students' self-compassion, perceived competence, and perfectionistic tendencies would be associated with their work engagement as well as academic burnout.

To date, there has been little research examining different effects of each component of self-compassion on academic-related outcomes among university students in a non-Western context such as Taiwan. The findings from the present study could provide insights into how to help students more effectively manage academic burnout, which would in turn better their educational experiences.

Method

Participants

The participants were 504 Taiwanese undergraduate students (215 male and 289 female students) enrolled in four Tier 1 National Universities in the northern part of Taiwan. All students were recruited from colleges of liberal arts (20%), engineering (18.5%), commerce (50.8%), and social sciences (10.7%) and offered an NT\$ 100 gift card for completing the survey. The vast majority of participating students were in their third or fourth year of study. The participants had a mean age of 21.67 years ($SD = 1.47$ years), with ranges from 19.5 to 30.5 years. Participants were all full-time students. Guidelines for the proper treatment of human subjects were followed (American Psychological Association, 2017).

Procedure

The data were collected at the beginning of the fall semester of the academic year. Permission for students' participation was obtained from the instructors of relevant classes. All participants took part in the study voluntarily. Students were invited to fill out a survey (described below) at the end of class meetings. It took participants about

15 minutes to complete the questionnaire. There were two research assistants in each class for the data collection. Prior to the administration of the survey, the participants were briefed about the purpose of the study. Completion of the questionnaire was anonymous. There was also a guarantee of confidentiality.

Measures

Participants were instructed to respond to all items using a six-point Likert scales, ranging from 1 (strongly disagree) to 6 (strongly agree). A Chinese language version of this self-report survey was used. All measures utilized in the present study were translated into Chinese and then back-translated into English. To ensure adequate translation, guidelines of the International Test Commission (Hambleton, 1994) were followed. Information on each scale used in the present study is detailed below.

Academic burnout. Students' academic burnout was assessed by the scale adapted from the Maslach Burnout Inventory-Student Survey (MBI-SS; Schaufeli et al., 2002). The adapted survey consists of three subscales: exhaustion (e.g., "I feel emotionally drained by my studies"; 5 items; $\alpha = .84$), cynicism (e.g., "I doubt the significance of my studies"; 4 items; $\alpha = .83$), and lack of efficacy (e.g., "I can effectively solve the problems that arise in my studies"; 4 items; $\alpha = .73$). The items measuring efficacy were reverse scored. The composite mean was calculated for all items from each subscale. Higher scores indicate higher levels of academic burnout. The internal consistency (Cronbach's α) of the whole scale was .80.

Work engagement. Students' engagement in their coursework was assessed by the questionnaire adapted from the Utrecht Work Engagement Scale-Student (UWES-S; Schaufeli et al., 2002). This scale was constructed to measure the three underlying dimensions of work engagement: vigor (e.g., When studying I feel strong and vigorous, 4 items, $\alpha = .78$), dedication (e.g., I am enthusiastic about my studies, 5 items, $\alpha = .84$), and absorption (e.g., I can get carried away by my studies, 4 items, $\alpha = .81$). The composite mean was calculated for all items from each subscale. Higher scores indicate higher levels of work engagement. The whole scale demonstrated good reliability with a Cronbach's α of .92.

Self-compassion. The Self-Compassion Scale (SCS, Neff, 2003b) was developed to explicitly represent the thoughts, emotions, and behaviors associated with the various components of self-compassion. The 26-item scale assesses the three main components of self-compassion, self-kindness (vs. self-judgment), common

humanity (vs. isolation), and mindfulness (vs. over-identification), using both positive and negative scored items for each component subscale. The six subscales include self-kindness (e.g., “I’m kind to myself when I’m experiencing suffering”; 5 items; $\alpha = .77$), self-judgment (e.g., “When I see aspects of myself that I don’t like, I get down on myself”; 5 items; $\alpha = .70$), common humanity (e.g., “I try to see my failings as part of the human condition”; 4 items; $\alpha = .77$), isolation (e.g., “When I fail at something that’s important to me, I tend to feel alone in my failure”; 4 items; $\alpha = .76$), mindfulness (e.g., “When something painful happens, I try to take a balanced view of the situation”; 4 items; $\alpha = .73$), and over-identification (e.g., “When something upsets me, I get carried away with my feelings”; 4 items; $\alpha = .82$).

The SCS has been used among Taiwanese students (Neff et al., 2008) and has been found to show good internal consistency, construct-related validity, and factor structure. Given that the present study was intended to examine the protective factors against academic burnout, the subscales of positive self-compassion components (i.e., self-kindness, common humanity, and mindfulness) were employed. Higher scores represent higher levels of self-compassion.

Perceived competence. Students’ perceptions of their competence in learning were assessed by Perceived Competence Scale (PCS, Williams & Deci, 1996). This scale consists of 4 items that measure students’ feelings of competence about mastering the materials in college courses or undertaking the challenges of learning (e.g., “I am able to achieve my goals in the courses I take,” $\alpha = .83$). Higher scores indicate that students perceive higher levels of their competence in learning.

Perfectionism. Students’ perfectionistic tendencies were assessed by the scale adapted from the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990). This scale measures perfectionism across six dimensions including personal standards (e.g., “I set higher goals than most people”; 4 items; $\alpha = .81$), organization (e.g., “I try to be an organized person”; 5 items; $\alpha = .85$), concern over mistakes (e.g., “People will probably think less of me if I make a mistake”; 4 items; $\alpha = .82$), doubts about actions (e.g., “I usually have doubts about the simple everyday things I do”; 4 items; $\alpha = .65$), parental expectations (e.g., “My parents set very high standards for me”; 5 items; $\alpha = .86$), and parental criticism (e.g., “My parents never tried to understand my mistakes”; 4 items; $\alpha = .73$). Because the current study was intended to examine students’ perfectionistic tendencies, the subscales assessing personal standards,

organization, concern over mistakes, and doubts about actions were used. Next, according to Frost et al.'s study (1993), subscales assessing personal standards and organization were combined to create the measure of perfectionistic strivings ($r = .55$, $p < .001$; $\alpha = .87$). Also, scores for concern over mistakes and doubts about actions were averaged to form a composite of perfectionistic concerns ($r = .62$, $p < .001$; $\alpha = .84$). Higher scores represent higher levels of perfectionistic strivings or perfectionistic concerns.

Results

Statistical Analyses

Descriptive information and correlations for study variables are shown in Table 1. One of the primary purposes of the present study was to determine whether the interactions between perceived competence and the three components of self-compassion predicted students' work engagement and academic burnout. The results from moderation analyses are thus presented first using perceived competence as the moderator. In addition to moderation analyses, the data were analyzed in hierarchical multiple regressions in which students' work engagement and academic burnout were used as outcome variables. To examine the predictors of work engagement, the three components of self-compassion were included in the first regression model. In Step 2, perceived competence and perfectionistic tendencies were entered. As for the predictors of academic burnout, the three components of self-compassion were entered in the first step. Perceived competence and perfectionistic tendencies were added in the second step. Students' work engagement was included in the final regression model. In the preliminary analysis, gender was entered in regression models. It turned out that gender failed to predict any outcome variable of interest. Therefore, gender was not included as a predicting variable in the current research.

Table 1

Descriptive Statistics and Correlations for Study Variables (N = 504)

Variable	1	2	3	4	5	6	7	8
1. Self-kindness	—							
2. Common humanity	.59**	—						
3. Mindfulness	.60**	.45**	—					
4. Perceived competence	.36**	.25**	.37**	—				
5. Perfectionistic strivings	.10*	.14**	.24**	.34**	—			
6. Perfectionistic concerns	-.38**	-.21**	-.27**	-.28**	.26**	—		
7. Academic burnout	-.25**	-.13**	-.25**	-.58**	-.28**	.36**	—	
8. Work engagement	.23**	.19**	.29**	.47**	.35**	-.08	-.64**	—
<i>M</i>	3.95	4.03	4.11	4.58	4.45	3.44	2.97	3.75
<i>SD</i>	.74	.86	.73	.77	.71	.83	.78	.78

Note. * $p < .05$. ** $p < .01$.

Moderation Analyses

To explore whether the relationships of the three components of self-compassion with students' work engagement and academic burnout changed as a function of perceived competence (the moderator), moderation analyses were conducted. The predictor and moderator variables were centered before computing the interaction terms to reduce multicollinearity (Howell, 2013). Six parallel hierarchical regression analyses were performed. Each examined the interaction effects between perceived competence and one component of self-compassion on the outcome variables (i.e., work engagement and academic burnout). In the first step, the covariates (the other two self-compassion components that were not examined in the interaction term) were entered. The independent variable and moderator were then entered in the second step. Finally, the interaction term was entered in the regression model. The results are presented in Table 2.

Table 2

Hierarchical Regression Analyses Predicting Work Engagement and Academic Burnout From Perceived Competence, Self-Compassion Components, and Perceived Competence × Self-Compassion Components Interactions (N= 504)

Variable	Work engagement				Academic burnout			
	<i>B</i>	95% <i>CI</i>	β	ΔR^2	<i>B</i>	95% <i>CI</i>	β	ΔR^2
Step 1				.09				.06
Common humanity	.07	-.02, .15	.07		-.02	-.10, .07	-.02	
Mindfulness	.27**	.17, .37	.26**		-.26**	-.36, -.16	-.24**	
Step 2				.15				.27
Perceived competence	.42**	.34, .51	.42**		-.56**	-.64, -.48	-.56**	
Self-kindness	-.01	-.13, .11	-.01		-.08	-.18, .03	-.07	
Step 3				.02				.01
Perceived competence × Self-kindness	.15**	.06, .24	.13**		-.10*	-.18, -.02	-.09*	
Step 1				.09				.08
Self-kindness	.10	-.01, .21	.09		-.16**	-.27, -.05	-.15**	
Mindfulness	.25**	.13, .36	.23**		-.17**	-.28, -.06	-.16**	
Step 2				.15				.26

Perceived competence	.42**	.34, .51	.42**		-.56**	-.64, -.48	-.56**
Common humanity	.03	-.06, .12	.04		.06	-.02, .14	.07
Step 3				.01			.01
Perceived competence × Common humanity	.11**	.04, .19	.12**		-.09*	-.16, -.02	-.09*
Step 1				.06			.06
Self-kindness	.20**	.09, .31	.19**		-.28**	-.39, -.17	-.27**
Common humanity	.07	-.03, .17	.08		.03	-.07, .12	.03
Step 2				.18			.28
Perceived competence	.42**	.34, .51	.42**		-.56**	-.64, -.48	-.56**
Mindfulness	.13*	.03, .24	.12*		-.04	-.13, .06	-.03
Step 3				.02			.01
Perceived competence × Mindfulness	.14**	.06, .23	.13**		-.11*	-.19, -.03	-.10*

Note. * $p < .05$. ** $p < .01$

In line with our hypotheses, significant interaction effects on work engagement were found between perceived competence and self-kindness, $\beta = .13$, $p = .001$, between perceived competence and common humanity, $\beta = .12$, $p < .01$, and between perceived competence and mindfulness, $\beta = .13$, $p = .001$. To probe the significant interactions, simple slope tests were then conducted as recommended by Aiken and West (1991). A series of simple regression analyses were run to compare the effects of self-kindness, common humanity, and mindfulness on work engagement between students with high (1 *SD* above the mean) and low (1 *SD* below the mean) scores on perceived competence. As shown in Figure 1, the positive relationship between self-kindness and work engagement was stronger for students with high perceived competence ($\beta = .19$, $p < .001$) than the relationship for students with low perceived competence ($\beta = -.02$, $p > .05$). There was a stronger positive relationship between common humanity and work engagement for individuals with high perceived competence ($\beta = .16$, $p < .01$) than the relationship for those with low perceived competence ($\beta = -.02$, $p > .05$). Also, for students with high perceived competence, the positive relationship between mindfulness and work engagement was stronger ($\beta = .23$, $p < .001$) than the relationship for those with low perceived competence ($\beta = .03$, $p > .05$).

As for the interaction effects between perceived competence and the three components of self-compassion on academic burnout, significant effects were found between perceived competence and self-kindness, $\beta = -.09$, $p = .01$, and between perceived competence and mindfulness, $\beta = -.10$, $p < .01$. Simple slope tests were also performed to compare the effects of self-kindness and mindfulness on academic burnout between students with high (1 *SD* above the mean) and low (1 *SD* below the mean) perceived competence. Figure 2 shows that for the group with high perceived competence, the negative relationship between self-kindness and academic burnout was stronger ($\beta = -.14$, $p < .01$) than the relationship for those with low perceived competence ($\beta = .02$, $p > .05$). Similarly, the negative relationship between mindfulness and academic burnout was stronger ($\beta = -.12$, $p = .01$) for students with high perceived competence than the relationship for students with low perceived competence ($\beta = .04$, $p > .05$).

Figure 1. The moderating role of perceived competence in the relationship between self-kindness and work engagement.

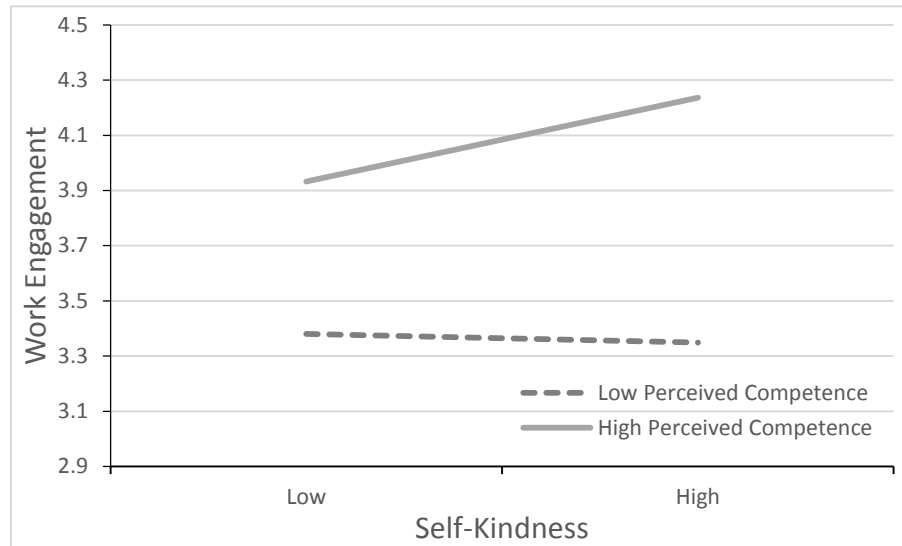
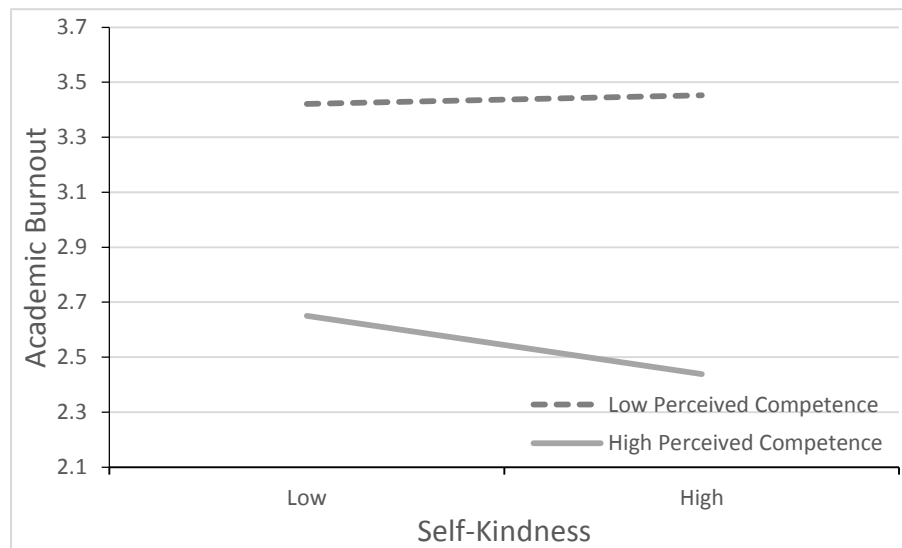


Figure 2. The moderating role of perceived competence in the relationship between self-kindness and academic burnout.



Hierarchical Regressions Predicting Students' Work Engagement and Academic Burnout

Work engagement. Table 3 presents the results of hierarchical regressions predicting students' work engagement and academic burnout. The amount of the variance (9%) explained by the three components of self-compassion in the first step of the analysis was significant for students' work engagement, $F(3, 500) = 16.37, p < .001$. Mindfulness was positively related to university students' work engagement, $\beta = .23, p < .001$. Adding perceived competence, perfectionistic strivings, and perfectionistic concerns in the second step increased the amount of the variance explained for work engagement by 18%, $F(6, 497) = 30.72, p < .001$. When the variables entered in Step 1 were taken into account, both perceived competence and perfectionistic strivings positively predicted work engagement, $\beta = .35, p < .001$ and $\beta = .21, p < .001$, respectively. The effects of mindfulness were, however, no longer significant, $\beta = .08, p > .05$.

Academic burnout. Self-kindness, common humanity, and mindfulness were entered in the first regression model and accounted for a significant amount of the variance (8%) in students' academic burnout, $F(3, 500) = 14.56, p < .001$. Both self-kindness and mindfulness negatively predicted academic burnout, $\beta = -.18, p < .001$ and $\beta = -.17, p < .001$, respectively. In Step 2, perceived competence along with perfectionistic tendencies were included in the model. Adding these variables increased the amount of the variance explained for academic burnout by 33%, $F(6, 497) = 58.05.10, p < .001$. When other predictors entered in the first step were controlled for, perceived competence and perfectionistic strivings were negatively associated with academic burnout, $\beta = -.43, p < .001$ and $\beta = -.23, p < .001$, respectively. Conversely, perfectionistic concerns emerged as a positive predictor, $\beta = .31, p < .001$. In Step 3, students' work engagement was entered. Adding this variable increased the amount of the variance explained for academic burnout by 17%, $F(7, 496) = 97.62, p < .001$. When the variables entered in Step 1 and 2 were accounted for, work engagement was negatively related to academic burnout, $\beta = -.48, p < .001$. Perceived competence ($\beta = -.27, p < .001$), perfectionistic strivings ($\beta = -.13, p < .001$), and perfectionistic concerns ($\beta = .31, p < .001$) remained to be significant predictors.

Table 3

Hierarchical Regression Analyses Predicting Work Engagement and Academic Burnout (N= 504)

Variable	Work engagement				Academic burnout			
	<i>B</i>	<i>95% CI</i>	β	ΔR^2	<i>B</i>	<i>95% CI</i>	β	ΔR^2
Step 1				.09				.08
Self-kindness	.08	-.05, .20	.07		-.19**	-.32, -.07	-.18**	
Common humanity	.04	-.06, .14	.05		.05	-.05, .15	.05	
Mindfulness	.24***	.13, .35	.23***		-.18**	-.29, -.06	-.17**	
Step 2				.18				.33
Perceived competence	.36***	.27, .45	.35***		-.44***	-.52, -.36	-.43***	
Perfectionistic strivings	.23***	.13, .33	.21***		-.25***	-.34, -.16	-.23***	
Perfectionistic concerns	.01	-.08, .09	.01		.29***	.22, .37	.31***	
Step 3								.17
Work engagement					-.48***	-.54, -.41	-.48***	

Note. ** $p < .01$. *** $p < .001$.

Discussion

The findings of the present study further the understanding of factors related to Taiwanese university students' work engagement and burnout. This line of research has primarily been confined to college students samples in a Western context. Moreover, this study adds to the existing literature in several ways. First, researchers have yet to examine whether students' perceived competence plays the moderating role in the relationships between self-compassion and work engagement versus academic burnout. The present findings indicate that the relationships of the components of self-compassion with Taiwanese university students' work engagement versus academic burnout vary as a function of perceived competence. Second, the current research sheds light on the relationships of each component of self-compassion with students' work engagement and academic burnout. Hierarchical regression analyses suggest that there exist differences in the effects of each component of self-compassion on these outcomes of interest. Third, the findings of this study also lend support to the two-factor model of perfectionism. Perfectionistic strivings positively predict work engagement, whereas perfectionistic concerns are positively associated with academic burnout. Below, several important findings are discussed in more detail.

Moderating Effects of Perceived Competence

An important finding of the present study is that students' perceived competence plays the moderating role in the relationships between each component of self-compassion and work engagement. The facilitative effects of different components of self-compassion on students' motivation and mental engagement in coursework are even more powerful when students perceive that they have the capacity to master the academic challenges. Moreover, the negative effects of self-kindness and mindfulness on academic burnout are stronger for the same group of students. When students perceive that they can handle academic tasks well, being understanding toward oneself and maintaining perspective in the face of difficulties (i.e., self-kindness and mindfulness) have greater potential to reduce academic burnout.

Previous studies (Ferrai et al., 2018; Kueong, 2013; Martin & Kennett, 2018; Trompeter et al., 2016; Wong & Mak, 2013) have consistently focused on exploring the effects of self-compassion as a moderator on mental health outcomes. To our

knowledge, this study is the first one to investigate the moderating role of perceived competence in the relationships of the components of self-compassion with work engagement and academic burnout. The effects of the components of self-compassion on engagement and burnout are strengthened in particular when the students feel competent to succeed with coursework. These findings suggest that in addition to self-compassion, perceived competence may be another crucial resilience factor for university students' educational aspirations. The interacting effects of perceived competence and self-compassion need to be taken into account when it comes to promoting students' work engagement and decreasing burnout.

Predictors of Work Engagement and Academic Burnout

Of all the components of self-compassion, mindfulness is the only one that is significantly related to students' work engagement. Having a balanced awareness, clarity, and acceptance of thoughts and feelings enables students to fully engage in schoolwork without being disrupted by painful emotions in the face of academic adversities. Mindfulness, however, no longer shows significant effects when adding perceived competence and perfectionistic tendencies to the regression models. Perceived competence and perfectionistic strivings are likely to mediate the relationship of mindfulness with work engagement. Previous research (Martin & Kennett, 2018) indicated that students are disinclined to engage in academic tasks when they attribute academic disappointment to a lack of ability or when they do not believe in their academic competence. In consistence with these findings, the results of the current study show the positive association between perceived competence and engagement in academic activities. Also, perfectionistic strivings appear to be one of the personality features that inspire students' approach-oriented achievement motivation to take active part in learning processes.

In terms of the predictors of academic burnout, self-kindness and mindfulness are found to be negatively related to student burnout. Little research has yet been conducted to precisely determine the role of each component of self-compassion in reducing burnout. The results of the presents study suggest that the combination of being understanding of oneself and having a balanced perspective when encountering setbacks may, to a large extent, explain why self-compassion can ease one's academic burnout. Perceived competence is also a vital factor that may lessen burnout. Students with greater levels of confidence in their academic abilities are less likely to be

vulnerable to burnout. In accordance with previous findings (Guay et al., 2003; Wong et al., 2002), the results of the current research indicate that perceived competence acts as a resource of resilience when university students are faced with academic challenges. Perceived competence is thought to energize students to constructively cope with stress and adversities. Consequently, burnout may be relieved. It is no surprise that perfectionistic concerns emerge as a positive predictor of academic burnout. Students who show evaluative concerns are found to be at risk of experiencing academic burnout. By contrast, perfectionistic strivings are negatively related to burnout. These findings confirm the two-factor model of perfectionism. Clearly, when examining the relationship between perfectionism and academic burnout, there is a need to differentiate between perfectionistic strivings and perfectionistic concerns.

It is likely that work engagement partially mediates the effects of perceived competence and perfectionistic strivings on burnout, given that the magnitudes of the effects of these two particular factors are smaller when student engagement is taken into account. Work engagement emerges as the strongest negative predictor of student burnout. The inverse relationship between work engagement and academic burnout found in the current research parallels the findings of Schaufeli et al.'s study (2002). It implicates that motivating students to enthusiastically engage in coursework may be a remedy for academic burnout. The results of the present study indicate that self-compassion, perceived competence, perfectionistic tendencies, and work engagement altogether account for a substantial amount of the variance (58%) in academic burnout. These factors should thus be considered if interventions for student burnout are to be devised.

Implications for Practice

The results of the present research indicate the moderating role of perceived competence in the effects of self-compassion on Taiwanese university students' work engagement and academic burnout. A great number of studies (see Muris & Petrocchi, 2017) have consistently reported that self-compassion may be conducive to building up individuals' positive mental health as well as relieving psychopathological symptoms. The present findings further show how one's perceived competence may interact with self-compassion and then determine the levels of work engagement and burnout. In addition to cultivating self-compassion, college educators also need to pay

attention to perceived competence when aiming at heightening students' resilience in higher education. As a source of resilience, perceived competence may not only directly alleviate student burnout and boost engagement in its own right, but also intensify the favorable effects of self-compassion on these two outcome variables.

Self-kindness and mindfulness are also antecedent factors that may reduce student burnout. Additionally, mindfulness is positively associated with work engagement. Interventions designed to foster university students' self-kindness and mindfulness are encouraged. Moreover, students' perfectionistic tendencies play a role in their work engagement and academic burnout. Given that perfectionistic strivings are positively linked to students' engagement in learning activities and negatively related to burnout, it may be advantageous to nurture students' perfectionistic strivings without perfectionistic concerns. When students are free from the concerns about negative evaluations as a result of failing to meet the standards, the beneficial effects of perfectionistic strivings are supposed to be maximized.

Limitations and Future Research

Several limitations need to be addressed in the future research. First, as a component of self-compassion, common humanity fails to significantly predict any outcome variable of interest in the present study. Future research should explore the relationships between the components of self-compassion and other academic-related variables such as achievement goals, academic coping, or academic emotions and compare the effects of each component on these outcome variables. The sort of examination can help find out whether common humanity is related to particular variables only or has no effect on one's academic functioning. Second, a key strength of the current study is investigating the moderating effects of perceived competence on the relationships between self-compassion and student engagement versus burnout. As the findings of the present research suggest that high-achieving university students' perceived competence can moderate the effects of self-compassion on work engagement and burnout, future research needs to replicate the present study in other student groups of different academic achievement levels. Such research is required to confirm the generalizability of the findings to an expanded range of students (e.g., students with lower levels of academic achievement). Finally, the present study attempts to examine the potential antecedents of university students' work engagement and academic burnout. Nonetheless, this study is cross-sectional and

correlational in nature such that the directions of the relationships among the variables cannot be determined for sure. A cross-lagged panel model that is able to more precisely identify the antecedent variables is needed in future research. Such research should provide insights into interventions that may facilitate adaptive academic functioning.

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