Why do some perfectionists procrastinate? The role of using effective time management strategies and perceived busyness in perfectionism outcomes

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WHY DO SOME PERFECTIONISTS PROCRASTINATE? THE ROLE OF USING EFFECTIVE TIME MANAGEMENT STRATEGIES AND PERCEIVED BUSYNESS IN PERFECTIONISM OUTCOMES

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Management Strategies and Perceived Busyness in Perfectionism Outcomes

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I hereby declare that this thesis is my original work,
and it has been written by me in its entirety.
I have duly acknowledged all the sources of information
which have been used in this thesis.

This Master's thesis has also not been submitted for any degrees
in any university previously.

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Abstract

In many achievement-driven societies, maintaining productivity amidst an increasingly busy and stressful schedule has become a challenge for many people, particularly those with perfectionistic tendencies. Across two studies, the present research examined why some perfectionists are more prone to procrastination and tested the effectiveness of time management intervention in reducing their procrastination tendencies. Specifically, the current studies adopted a multidimensional approach to measure perfectionism as manifested in perfectionistic strivings and perfectionistic concerns. Study 1 showed that perfectionistic strivings negatively predicted procrastination, while perfectionistic concerns positively predicted procrastination, through the mediating effects of using effective time management strategies. Study 2 further found that time management intervention was effective in reducing procrastination regardless of people's perfectionism tendencies. More importantly, time management intervention was deemed more beneficial when individuals with high perfectionistic concerns experienced high levels of busyness. The findings show the promise of using effective time management strategies in helping individuals with perfectionistic concerns alleviate procrastination and promote productivity.

Keywords: perfectionistic strivings, perfectionistic concerns, time management, perceived busyness, procrastination

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Dedication

This work is dedicated to myself, my loved ones, those who care deeply about me, as well as everyone who is interested in learning more about perfectionism and procrastination.

1   Introduction

Do you set extremely high goals? Do you go to great lengths to ensure that your work is flawless? Do you find it hard to accept that you are the "second-best"? Are you often worried about making mistakes over simple things? If your answers to these questions are mostly yes, then chances are, you might be a perfectionist. In highly competitive societies where people define success and self-worth with high achievements, perfectionistic tendencies have become more prevalent (Curran & Hill, 2019). Given their achievement-driven motives (Vansteenkiste et al., 2010), it is unsurprising to see some perfectionists achieving success in both studies and work. However, research has shown that some perfectionists ironically engage in self-sabotaging behaviors such as procrastination (Xie et al., 2018). These procrastination behaviors have resulted in negative outcomes such as anxiety, depression (Wolters, 2003), low esteem (Tice & Baumeister, 1997) and poor academic performance (Kim & Seo, 2015). This raises the question of why perfectionists, who are achievement-oriented, engage in seemingly paradoxical acts of procrastination that can hamper their goal striving. The present study set out to investigate the reasons why some perfectionists procrastinate, and what can be done to attenuate the dysfunctional effects of perfectionism on productivity (i.e., reduce their procrastination tendencies).

2   Literature Review

2.1   Procrastination and Its Relation to Perfectionism

Procrastination, which is the tendency to delay tasks despite knowing the negative consequences of such actions (Steel, 2007), has been identified as a prevalent issue (Uzun Ozer et al., 2014) among both students (Klassen et al., 2008; Steel, 2007) and working adults (Hammer & Ferrari, 2002). Moreover, procrastination is a voluntary delay (Klingsieck, 2013) because individuals do have a choice to procrastinate or not. It is a self-sabotaging behaviour that can negatively impact people's life outcomes and well-being. For instance, students who procrastinated in completing their assignments and studying had lower academic performance than those who did not (Kim & Seo, 2015). Adults who procrastinated in seeking medical treatment had worse health and those who procrastinated in filing tax declarations had to bear the penalty payment (Holland, 2001). Furthermore, procrastination is also associated with low self-esteem (Tice & Baumeister, 1997), higher levels of guilt (Pychyl et al., 2000), depression, anxiety, and frustration (Wolters, 2003).

Extant research has examined the various factors contributing to people's procrastination tendencies. Personality traits have been identified as key contributors to procrastination, with conscientiousness showing a negative association (Steel, 2007) and impulsivity showing a positive association with procrastination (Gustavson et al., 2014). Research also showed that perfectionism is another key personality trait that is related to procrastination (Sirois et al., 2017; Stoeber & Joormann, 2001; Xie et al., 2018).

Notably, existing studies have yielded mixed findings regarding the perfectionism-procrastination relationship, with some showing a negative

association (Bong et al. 2014), some a positive association (Brownlow &
Reasinger, 2000; Burns et al., 1999; Flett et al., 1992) and others no association
(Steel, 2007). Previous meta-analysis results have also shown inconsistency for
the perfectionism-procrastination relationship. For example, the meta-analytical
review by Van Eerde (2003) suggested a significant positive association
between perfectionism and procrastination, but Steel (2007) suggested a null
relationship. These inconsistent findings may be a result of not differentiating
the multiple dimensions of perfectionism (Xie et al., 2018). Van Eerde (2003)
adopted the unidimensional view of perfectionism when examining the
perfectionism-procrastination relationship, whereas Steel (2007) collapsed self-
perfectionism and other-perfectionism dimensions into a single perfectionism
variable. More recent studies that adopted the multidimensional view of
perfectionism have found that different types of perfectionism differentially
predict procrastination (Sirois et al., 2017; Xie et al., 2018). Specifically, two
types of perfectionism were theorized – (a) *perfectionistic strivings* is
characterized by setting high personal standards and striving for success and (b)
perfectionistic concerns is characterized by critical self-evaluations, doubts
about one's own action, and concern over mistakes and external evaluations
(Sirois et al., 2017; Stoeber & Otto, 2006; Xie et al., 2018).

In a meta-analysis, Sirois and colleagues (2017) found a small to
medium, negative average effect size ($r = -.22$) for the relationship between trait
procrastination and perfectionistic strivings, and a small to medium, positive
average effect size ($r = .23$) for the relationship between trait procrastination
and perfectionistic concerns. Importantly, these associations remained robust
after statistically controlling for the joint variance between the two

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perfectionism dimensions. Similarly, Xie et al. (2018) in their meta-analysis reached the same conclusion that perfectionistic strivings and perfectionistic concerns were negatively, and positively associated with procrastination, respectively. Given that perfectionistic strivings and perfectionistic concerns had divergent effects on procrastination, the present study employed a more nuanced approach to examine the multidimensional view of perfectionism.

2.2 Perfectionism and Its Dimensionality

Perfectionism is commonly defined as a personality disposition characterized by the tendencies to set exceedingly high standards of performance, to strive for flawlessness, to be overly self-critical and concern over external evaluations (Flett & Hewitt, 2002; Frost et al., 1990; Hewitt & Flett, 1991). While some psychologists have regarded perfectionism as a unidimensional construct that exclusively captures negative and highly neurotic personality trait (Burns, 1980; Garner et al., 1983; Horney, 1950), more recent literature has reached considerable agreement that perfectionism can be both negative and positive. Thus, this theorizing led to the development of a multidimensional view of perfectionism (Frost et al., 1990; Hewitt & Flett, 1990, 1991; Stoeber, 2018) pertaining to the dimensions of *perfectionistic strivings* and *perfectionistic concerns* (Sirois et al., 2017; Stoeber & Otto, 2006; Xie et al., 2018)[1].

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[1] Scholars have used different labels such as functional and dysfunctional perfectionism (Luszczynska et al., 2015; Rhéaume et al., 2000), healthy and unhealthy perfectionism (Parker, 2000; Stoeber et al., 2007), adaptive and maladaptive perfectionism (Shih, 2017; Sironic & Reeve, 2015), personal standards perfectionism and evaluative concern perfectionism (Cohen, 2020; Dunkley et al, 2000) or perfectionistic strivings and perfectionistic concerns (Sirois et al., 2017, Stoeber & Otto, 2006; Xie et al., 2018). In this paper, I follow Stober and Otto (2006)'s definition and use the label of "perfectionistic strivings" to represent the more positive form of perfectionism and "perfectionistic concerns" to represent the more negative form of perfectionism since these labels have been adopted by two recent meta-analyses (Sirois et al, 2017; Xie et al., 2018).

Perfectionistic strivings is characterized by setting excessively high standards for self and striving for nothing less than perfection (Sirois & Molnar, 2016; Sirois et al., 2017). It also seemingly captures the more adaptive aspect of perfectionism. Studies have found that perfectionistic strivings are predominately associated with positive outcomes such as having higher levels of positive affect, satisfaction with life, and achievement, and lower levels of external control and suicidal ideation, as well as managing stress with active coping styles (Sirois et al., 2017; Stoeber & Otto, 2006). In contrast, *perfectionistic concerns* is characterized by critical self-evaluations, doubts about one's own action, concern over mistakes and others' evaluation (Sirois et al., 2017; Stoeber & Otto, 2006; Xie et al., 2018). It is predominantly associated with negative outcomes such as depression, avoidant coping, negative affect (Frost et al., 1993; Sirois et al., 2017) and stress (Beck et al, 2020).

In addition, while both perfectionistic strivings and perfectionistic concerns encompassing the desire for high levels of performance, these two types of perfectionism have been respectively, associated with two different types of achievement motives. In particular, perfectionistic strivings is more strongly associated with (1) *hope of success;* and perfectionistic concerns is more strongly associated with (2) *fear of failure* (Stoeber et al., 2018). It is evident that perfectionistic strivings is associated with stronger beliefs for success and goal attainment, but perfectionistic concerns is associated with weaker beliefs (Eddington, 2013; Stoeber et al., 2008). Further, perfectionistic concerns has a stronger and more consistent link with fear of failure than perfectionistic strivings (Stoeber et al, 2018). Studies also showed that after statistically controlling the overlapping variance between the two dimensions,

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perfectionistic strivings is negatively associated and perfectionistic concerns is positively associated with fear of failure (Sagar & Stoeber, 2009; Stoeber & Becker, 2008). These findings suggest the importance of controlling the overlapping variance between the two perfectionistic dimensions in investigating their unique effects.

Importantly, perfectionistic strivings' association with hope of success may encourage a stronger approach motivation towards goal attainment (i.e., advancing towards the desirable outcome of attaining success) (Elliot and Covington, 2001). In contrast, perfectionistic concerns' association with fear of failure may drive a stronger avoidance motivation towards goal pursuit (i.e., avoiding the undesirable outcome of failing to achieve the goal) (Elliot and Covington, 2001). Relatedly, perfectionistic strivings' tendency to strive for success may reflect a promotion focus regulatory strategy aiming at gains and growth (Higgins, 1997). On the other hand, perfectionistic concerns' tendency to be concerned about mistakes may reflect a prevention focus regulatory strategy concerning with prevention of loss and failures (Higgins, 1997). As such, the current research also sought to explore the relationship between perfectionistic strivings, approach motivation and promotion regulatory focus, as well as the relationship between perfectionistic concerns, avoidance motivation and prevention focus. It was expected that these relationships would only be moderately positive because perfectionism, approach-avoidance motivation and prevention-promotion regulatory foci are conceptually distinct constructs.

2.3 Perfectionistic Strivings Versus Perfectionistic Concerns on Goal Pursuit

The different achievement motives between perfectionistic strivings and perfectionistic concerns may explain why individuals have distinct behavioral tendencies towards goal-relevant activities (Shih, 2017; Sirois et al., 2017; Xie et al., 2018). With higher hope of success, people with higher perfectionistic strivings are more driven to approach success. As such, they tend to set high personal standards and engage in productive behaviors to pursue their goals (Burnam et al., 2014). On the contrary, with greater fear of failure, people with higher perfectionistic concerns tend to see mistakes and setbacks as failures, thus engaging in avoidance behaviors to prevent themselves from falling below their perfection bar (Slade & Owen, 1998; Solomon & Rothblum, 1984). Together, perfectionistic strivings may encourage adaptive behaviors to facilitate goal pursuit, whereas perfectionistic concerns may induce maladaptive behaviors that hamper goal pursuit (Sirois et al., 2017; Xie et al., 2018). Essentially, the different motivational approach can explain the differential relationships of perfectionistic strivings and perfectionistic concerns with procrastination.

It is important to note that perfectionistic strivings and perfectionistic concerns are not merely opposites on a single continuum. This is corroborated with past research demonstrating common variances between the two constructs (Sirois et al., 2017). For most individuals, perfectionistic strivings and perfectionistic concerns coexist to varying degrees (Gaudreau & Thompson, 2010; Rice & Ashby, 2007; Stoeber, 2012). While high perfectionistic strivings tendency and high perfectionistic concerns tendency can coexist within the

same individual, but likely across different domains. Within a specific domain, perfectionistic strivings or perfectionistic concerns can emerge to be a more predominant tendency as individuals may yearn to achieve perfection in some important domains of their life but not every domain (Levine & Milyavskaya, 2018) and they can have high self-efficacy in some areas but not all areas. Therefore, the current paper considered these two constructs as separate independent variables of interest while accounting for their common variances.

2.4   Use of Effective Time Management Strategies as a Mediator between Perfectionism and Procrastination

Although existing works have examined the relationship between multidimensional perfectionism and procrastination, few studies investigated the underlying mechanisms responsible for such a relationship. Amongst the few attempts to elucidate the perfectionism-procrastination relationship, the focus is primarily on self-efficacy and gender (Seo, 2008; Xie et al., 2018)[2]. As procrastination signals self-regulation failure (Sirois et al., 2017), the current research sought to examine the use of effective time management (ETM) strategies as one adaptive self-regulation method (Oettingen et al., 2015) that may account for the negative association between perfectionistic strivings and procrastination, and the positive association between perfectionistic concerns and procrastination.

Time management pertains to strategies, techniques, or behaviors that aim at effective use of time to achieve intended goals (Claessens et al., 2007). Moreover, it is evident that perfectionistic strivings and perfectionistic concerns

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[2] Studies revealed that men who are higher in perfectionistic concerns were more likely than women to procrastinate (Xie et al., 2018) and self-efficacy mediated the negative association between perfectionistic strivings and procrastination (Seo, 2008; Xie et al., 2018).

differentially predicted time management behaviors. For instance, Shih (2007) found that perfectionistic strivings (i.e., also known as adaptive perfectionism) significantly predicted pre-college students' engagement in effective time management behaviors in pursuing their academic goals. With high motivation to succeed, high perfectionistic strivings individuals tend to adopt proactive coping strategies (de la Fuente et al., 2020), such as planning their time ahead, to ensure their success. On the other hand, people's perfectionistic concerns can lead to less use of ETM strategies due to their higher likelihood of engaging in avoidant behaviors to fend off failures (Burns et al., 1999; Solomon & Rothblum, 1984). Particularly, even the act of time planning may elicit self-criticism and anxiety as high perfectionistic concerns individuals doubt the quality of their plans and ruminate about potential failures (Powers et al., 2005). To reduce their apprehension in planning, high perfectionistic concerns individuals may avoid managing their time in totality. In contrast, high perfectionistic strivings individual would fare better in the use of ETM strategies due to their engagement in more proactive coping strategies (de la Fuente et al., 2020; Shih, 2017).

Furthermore, research has offered support for the negative association between use of ETM strategies and procrastination. The lack of effective time management behaviors is linked to academic procrastination among students (Shih, 2017; Solomon & Rothblum, 1984). Together, I argue that (a) perfectionistic striving tendencies is associated with more frequent use of ETM strategies, which in turn lowers procrastination; perfectionistic concerns is associated with less frequent use of ETM strategies, which in turn heightens procrastination.

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2.5   Perceived Busyness as a Moderator between Perfectionism and Use of Effective Time Management Strategies

In the present research, apart from testing the mediating role of using ETM strategies, it also sought to examine perceived busyness as a first-stage moderator, where perceived busyness is predicted to moderate the link between perfectionism (perfectionistic strivings and perfectionistic concerns) and use of ETM strategies. Perceived busyness is the subjective feeling of having a long and effortful work schedule (Koh, 2019) and it has become increasingly prevalent in postmodern societies (Dickinson, 2016). As individuals have limited time and resources, a busier schedule would mean less available time and attention devoted to attaining perfection in each and every task. Therefore, busyness poses as a challenge for people who aim to pursue high standards of performance. Hence, the use of ETM strategies can become even more critical when one gets busier. In light of this, the current research also aims to examine how the relationship between perfectionism and procrastination may change as a function of use of ETM strategies under different levels of perceived busyness.

In response to the stress under high busyness, high perfectionistic strivings individuals and high perfectionistic concerns individuals are likely to react differently. Under high busyness, high perfectionistic strivings individuals are more likely to adopt problem-focused coping style (de la Fuente et al., 2020). They are more motivated to effectively plan the usage of their time for enhancing performance success. Thus, I would expect high perceived busyness to strengthen the positive relationship between perfectionistic strivings and the use of ETM strategies. In contrast, high perfectionistic concerns individuals may engage less in the use of ETM strategies due to their avoidance coping style

(Slade & Owen, 1998; Stoeber et al., 2018), and this problem may be exacerbated by higher perceived busyness. Specifically, individuals high in perfectionistic concerns may view perceived busyness as a great obstacle that further decreases their chances of achieving their goal, thus leading to greater fear of failure and more avoidant behaviors to fend off potential failures. Thus, I hypothesized that high perceived busyness would strengthen the negative relationship between perfectionistic concerns and use of ETM strategies.

3   Research Overview

The current research systematically examined the mediating role of using ETM strategies and the moderating role of perceived busyness in the relationship between perfectionism and procrastination across two studies (see Figure 1 in Appendix B for the hypothesized model). It also took a more nuanced approach to acknowledge the multidimensionality of perfectionism by studying the two constructs of perfectionistic strivings and perfectionistic concerns.

Study 1 administered a correlational survey measuring the aforementioned variables and tested the hypothesized moderated mediation relationships among college students in Singapore. Study 2 provided experimental evidence for the proposed moderated mediation model through experimentally manipulating the mediating variable, the use of ETM strategies. More specifically, a moderation-of-process design (Spencer at al., 2005; see also Pirlott & MacKinnon, 2016) was employed in Study 2 to further unpack how perfectionistic strivings and perfectionistic concerns are related to procrastination as a function of use of ETM strategies. This approach examined the mediator of use of ETM strategies as a moderator to investigate how the relationships between perfectionism (perfectionistic strivings and concerns) and procrastination change as a result of the manipulation of time management. Based on the hypothesized model, I predict that the positive relationship between perfectionistic concerns and procrastination would become weaker when the use of ETM strategies was experimentally induced (vs. not), but the negative relationship between perfectionistic strivings and procrastination would remain the same regardless of whether the use of ETM strategies was

experimentally induced or not. This is because high perfectionistic strivings individuals already have a higher baseline of time management tendencies (Shih, 2017), hence, a one-time manipulation of time management may not further increase their time management effectiveness. If there is anything, the time management manipulation might make the negative relationship between perfectionistic strivings and procrastination stronger.

In Study 2, the participants were asked to complete a task within 10 days' time and were randomly assigned to either an experimental condition or control condition. The experimental condition involved devising an action plan that helps them complete the task after watching a video on the importance of time planning. In contrast, the control condition involved a non-planning related activity, which was drawing a diagram representing the life cycle of butterflies after watching a related video. This design also extended Study 1's self-reported measure of procrastination by examining actual procrastination behaviors through tracking participants' submission date of the assigned task. Further, with random assignment of participants into either the use of ETM strategies condition or the neutral control condition, Study 2 could further establish that use of ETM strategies can pose a causal factor for reducing actual procrastination.

Taken together, the following hypotheses were tested in Study 1:
Hypothesis 1: There is an indirect relationship between perfectionism and procrastination via the use of ETM strategies, such that (a) perfectionistic strivings is negatively associated with procrastination via more use of ETM strategies and (b) perfectionistic concerns is positively associated with procrastination via less use of ETM strategies.

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Hypothesis 2: Perceived busyness will moderate the relationship between perfectionism and the use of ETM strategies, with higher perceived busyness strengthening (a) the positive relationship between perfectionistic strivings and use of ETM strategies and (b) the negative relationship between perfectionistic concerns and use of ETM strategies.

Combining Hypotheses 1 and 2, I predict that:

Hypothesis 3: There is a moderated indirect relationship between perfectionism and procrastination via the use of ETM strategies, with the positive relationship between perfectionistic strivings and use of ETM strategies, and the negative relationship between perfectionistic concerns and use of ETM strategies, being stronger at higher (vs. lower) perceived busyness.

Study 2 tested the following hypothesis:

Hypothesis 4: Time management manipulation will moderate (weaken) the positive relationship between perfectionistic concerns and procrastination, and this weakening effect will be stronger at higher (vs. lower) perceived busyness. However, because individuals with higher perfectionistic strivings were already adept at managing time, it was hypothesized that the one-time management manipulation will not moderate the negative relationship between perfectionistic strivings and procrastination.

Furthermore, given perfectionistic strivings' association with approach-oriented goal pursuit, the current research would explore the relationship between perfectionistic strivings, approach motivation and promotion regulatory focus. Similarly, considering perfectionistic concerns' tendency to engage in avoidance behaviors to prevent failures, the relationship between perfectionistic concerns, avoidance motivation, and prevention focus was

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examined accordingly. The relationships are expected to be moderately positive as perfectionism, approach-avoidance motivation, prevention-promotion regulatory foci are conceptually distinct constructs.

4   Study 1

In Study 1, two moderated mediation models were examined with perfectionistic strivings and perfectionistic concerns as the respective independent variables, use of ETM strategies as the mediating variable, procrastination as the dependent variable and perceived busyness as the first stage moderating variable (see Figure 1 in Appendix B).

4.1   Method

4.1.1   Participants

The minimum sample size required based on a priori power analysis is 310, with about 95% power, $f^2 = 0.05$, and $\alpha = .05$. In anticipation of data quality issues (e.g., manipulation check failure, incomplete data), I recruited 325 participants from a Singapore university's subject pool. Participants were compensated with S$5 cash for completing the study within a stipulated time. Thirteen participants failed attention checks, reducing the sample size to 312. With the sample of 312 participants, it was discovered that the distribution of survey completion time in minutes was highly skewed ($M_{original} = 28.41$; $SD_{original} = 72.97$; $Range_{original} = 3.38 - 736.73$; $Skewness_{original} = 7.01$; $Kurtosis_{original} = 54.15$), indicating the presence of outliers. Therefore, the *Median Absolute Deviation* (MAD)[3] method (Huber, 1981; Rousseeuw & Croux, 1993; Leys et al., 2013) was used to detect and remove outliers. One

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[3] The steps to remove outliers using median absolute deviation is outlined as follows. Step 1: Identify the median value of survey completion time. Step 2: Calculate the absolute deviation from the median for each observation by taking the absolute difference between each observation and the median value. Step 3: Identify the median value of the deviation from median value of survey completion time. Step 4: Multiply the median value of the deviation by 1.4826, which is a constant value linked to the assumption of normality, disregarding the abnormality caused by outliers (Rousseeuw & Crux, 1993). The product of the multiplication is known as the MAD. Step 5: Remove outliers that lie outside the range of "plus or minus three MADs from the median value of survey completion time".

additional participant's data was removed due to missing responses for the dependent variable. The final sample consisted of 268 undergraduate students (197 females; M_{age} = 21.88; SD_{age} = 1.69; Range = 18 – 28). The ethnic compositions of the sample consisted of 85.4% Chinese; 4.1% Malay; 5.6% Indian and 4.9% others. The mean survey completion time of the final sample was 13.23 minutes (SD_{final} = 5.18; $Range_{final}$ = 3.38 – 27.97; $Skewness_{final}$ = 0.94; $Kurtosis_{final}$ = 0.53).

4.1.2 Procedure

The study was conducted online using self-report measures. Participants were given 72 hours to complete the survey at a place and time of their convenience. In the online survey, participants first completed a perfectionism scale, followed by two individual difference measures that were expected to be related to perfectionism (i.e., the regulatory focus measure and behavioral inhibition system/behavioral activation system scale). Next, they were asked how busy they have been and how many tasks they must accomplish in the next two weeks as measures of perceived busyness. Following which, they completed the use of ETM strategies, academic procrastination, and social desirability measures before the demographic questions (see Appendix A for full set of materials).

4.1.3 Measures

Perfectionism. Perfectionism was measured by the *Frost Multidimensional Perfectionism Scale* (FMPS; Frost et al.,1990; Stoeber, 1998). The scale consists of four subscales: (1) a 7-item *Personal Standard* (PS) subscale which measures the tendency to set exceedingly high personal standard for performance (e.g., "I set higher goals than most people"), (2) a 13-item

Concern over Mistakes and Doubts (CMD) subscale [4] that measures the tendency to be concerned about making mistakes and question one's own work and actions (e.g., "People will probably think less of me if I make a mistake", "I usually have doubts about the simple everyday things I do"), (3) a 9-item *Parental Expectations and Criticism* (PEC) subscale that measures the perceptions of whether their parents expected them to be perfect and were critical if they failed to meet these expectations (e.g., "As a child, I was punished for doing things less than perfectly"), and (4) a 6-item *Organization* subscale that measures the tendency to be highly organized (e.g., "I try to be an organized person"). Each item is rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*), with higher scores indicating higher levels of perfectionism. There was no reverse item. All four subscales showed good reliability with Cronbach's alpha ranging from .87 to .93 (α_{PS} = .87; α_{CMD} = .91; α_{PEC} = .93; $\alpha_{organization}$ = .89). Based on prior research (Frost et al., 1993), the responses on *Personal Standards* subscale and *Organization* subscale were averaged to form the measure for perfectionistic strivings (α = .88) and the responses on *Concern over Mistakes and Doubt* and *Parental Expectations and Criticism* subscales were averaged to form the measure for perfectionistic concerns (α = .92).

General Regulatory Focus Measure (GRFM). The scale consists of two subscales - *Promotion Focus* and *Prevention Focus* (Lockwood et al., 2002). The promotion focus subscale measures an individual's general tendencies to hope for and pursue desirable outcomes (e.g., "I typically focus on the success I hope to achieve in the future"); the prevention focus subscale measures an

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[4] The original "Concern over Mistakes and Doubts" subscale comprises 13 items, however, due to administrative error, only 12 items were used in the Study 1. The full subscale of 13 items was used in Study 2.

individual's general tendencies to avoid undesirable outcomes (e.g., "I frequently think about how I can prevent failures in my life"). Each subscale includes nine items that are rated on a 9-point Likert scale (1= *not at all true of me* and 9 = *very true of me*). The scores of all items from each subscale were averaged to obtain an overall promotion focus or prevention focus score ($\alpha_{Promotion}$ = .87; $\alpha_{Prevention}$ = .88), with higher scores indicating higher promotion or prevention focus tendencies. There was no reverse item.

Avoidance/Approach Motivation. Approach and avoidance motivations were assessed using the *Behavioral Inhibition System/Behavioral Activation System* scale (Carver & White, 1994). The entire scale is composed of four different subscales, namely *Behavioral Inhibition System* (BIS), *Behavioral Activation System Reward Responsiveness* (BAS-RR), *Behavioral Activation System Drive* (BAS-D) and *Behavioral Activation System Fun Seeking* (BAS-FS), with the first subscale measuring avoidance motivation and the latter three measuring approach motivation. BIS includes seven items pertaining to responses in anticipation of punishment (e.g., "I worry about making mistakes"). BAS-RR includes five items measuring positive responses in anticipation of reward or the occurrence of reward (e.g., "When I get something I want, I feel excited and energized"). BAS-D includes four items measuring the tendency to pursue desired goals (e.g., "When I want something, I usually go all-out to get it"). BAS-FS includes four items measuring desires for new rewards and willingness to seek out potentially rewarding experiences (e.g., "I crave excitement and new sensations"). Each item was rated on a 4-point Likert scale (1 = *very false*, 4 = *very true*) with two items from the BIS

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subscale being reverse scored (α_{BIS} = .81; $\alpha_{BAS\text{-}RR}$ = .78; $\alpha_{BAS\text{-}D}$ = .80; $\alpha_{BAS\text{-}FS}$[5] = .65; overall α_{BAS} = .81). Higher scores on the BIS scale reflect a greater avoidance motivation and higher scores on the combined BAS scale reflect a greater approach motivation.

Perceived Busyness. Perceived busyness was measured by two items that reflected individuals' perception of their state of busyness (adapted from Wilcox et al., 2016). Both were rated on a 7-point Likert scale ("How busy have you been?" rated on 1 = *not busy at all* to 7 = *extremely busy* and "How many tasks do you have to complete in the next two weeks?" rated on 1 = *very few tasks* to 7 = *many tasks*). Higher scores indicate higher levels of perceived busyness (α = .78).

Use of Effective Time Management Strategies. Two measures were used to form a composite score for use of ETM strategies. First, the 9-item *Planning and Using Aids to Manage Time* subscale of the *Time Management Scale* (Liu et al., 2009) assessed participants' tendency to engage in planning and use of aid in managing their time (e.g., "Marking dates on calendar", "Making lists of things to do" and "Planning ahead of time"). Each of the nine items was rated on a 5-point Likert scale (1 = *never*, 5 = *always*). Second, for each item participants indicated "how effective was this for you in managing your time?" on a 5-point Likert scale (1= *not at all effective*, 5 = *very effective*). Both the tendency of engagement (α = .83) and perceived effectiveness of each time management behaviour (α = .81) showed good reliability. The overall use of ETM strategies was firstly derived by multiplying the score of each item from

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[5] Although BAS-FS subscale did not show a good reliability score in the present study, the alpha value was comparable to that of the original scale validation paper (i.e., $\alpha_{BAS\text{-}FS}$ = .66) by Carver and White (1994).

the first measure (i.e., the tendency of engaging in the behaviour) with that of the corresponding item from the second measure (i.e., perceived effectiveness of each behaviour), then averaging the computed scores. A higher score reflects a more frequent use of ETM strategies (α = .83).

Academic Procrastination. Academic procrastination was assessed by the 25-item *Academic Procrastination Questionnaire* (McCloskey, 2011) that measures individuals' tendency to procrastinate on academic activities. The items (e.g., "I put off projects until the last minute") were rated on a 7-point Likert scale (1= *Strongly disagree* and 7 = *Strongly agree*; α = .94). There were five reverse items. The score for all items were averaged such that higher scores indicate a higher tendency to procrastinate on academic activities.

Social Desirability. Social desirability was measured by the 13-item *Marlowe-Crowne Social Desirability Scale* (Reynolds, 1982). Participants were asked to respond with either "True" or "False" to each item concerning their personal attitudes and traits (e.g., "It is sometimes hard for me to go on with my work if I am not encouraged," "I sometimes feel resentful when I don't get my way"). There were 5 reverse items. The scores for all 13 items were summed up such that higher scores indicate a higher social desirability response tendency (α = .65).

4.2 Results

4.2.1 Convergent and Discriminant Validity of Perfectionistic Strivings and Perfectionistic Concerns

Results showed that perfectionistic strivings and perfectionistic concerns were quite weakly correlated ($r = .22$, $p < .001$; see Table 1 in Appendix B). To further elucidate the construct of perfectionistic strivings and perfectionistic concerns, I examined the zero-order correlations between perfectionistic strivings, perfectionistic concerns, promotion-prevention regulatory foci and approach-avoidance motivation.

Findings revealed that perfectionistic strivings was moderately associated with promotion regulatory focus ($r = .56$, $p < .001$), but weakly correlated with prevention regulatory focus ($r = .35$, $p < .001$). Moreover, perfectionistic strivings was positively related to approach motivation ($r = .20$, $p < .001$), but not avoidance motivation ($r = - .02$, $p = . 784$). In contrast, perfectionistic concerns was more strongly correlated with prevention regulatory focus ($r = .57$, $p < .001$) than promotion focus ($r = .16$, $p = .009$); positively correlated with avoidance motivation ($r = .33$, $p < .001$), but not approach motivation ($r = .01$, $p = .931$).

In sum, the correlational analysis confirmed my expectation that perfectionistic strivings is related to approach motivation and perfectionistic concerns is related to avoidance motivation. Although both perfectionistic strivings and perfectionistic concerns correlated with the two regulatory foci to some degree, perfectionistic strivings is more related to promotion focus and perfectionistic concerns is more related to prevention focus.

4.2.2   *Regression Analysis (Moderated Mediation)*

Two separate moderated mediation models were tested with either perfectionistic strivings or perfectionistic concerns as the independent variable, use of ETM strategies as the mediator, perceived busyness as the moderator and academic procrastination as the dependent variable (see Figure 1 in Appendix B). All continuous variables were standardized before performing the analyses using IBM SPSS Statistics version 26 with PROCESS macro version 4.0 Model 7. The significance of the indirect effect was tested using a bias-corrected bootstrap resampling method with 5,000 samples. For the model with perfectionistic strivings (perfectionistic concerns) as the independent variable, perfectionistic concerns (perfectionistic strivings) were statistically controlled for. Additional analyses were conducted by further controlling the effect of social desirability response tendencies.

Perfectionistic Strivings. In the first path, perfectionistic strivings, controlling for perfectionistic concerns, positively predicted use of ETM strategies ($\beta = .38$, $SE = .06$, $p < .001$; see Figure 2 in Appendix B). In the second path, use of ETM strategies negatively predicted academic procrastination ($\beta = -.16$, $SE = .06$, $p = .009$). Overall, perfectionistic strivings negatively predicted academic procrastination. The direct effect of perfectionistic strivings on academic procrastination ($\beta_{direct} = -.32$, $SE_{direct} = .06$, $p < .001$) was significant, as well as the indirect effect (see Table 2a in Appendix B) through use of ETM strategies at all three levels of perceived busyness (1 SD below mean: $\beta_{indirect} = -.08$, $SE_{boot} = .04$, 95% CI_{boot} [-0.15, -0.02]; mean level: $\beta_{indirect} = -.06$, $SE_{boot} = .03$, 95% CI_{boot} [-0.12, -0.01]; 1 SD above mean: $\beta_{indirect} = -.04$, $SE_{boot} = .02$, 95% CI_{boot} [-0.09, -0.01]). Thus, Hypothesis 1a was fully supported.

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In addition, the moderating effect of perceived busyness on perfectionistic strivings and use of ETM strategies was significant ($\beta_{\text{interaction}}$ = - .13, $SE_{\text{interaction}}$ = .05, p = .012). A simple slope analysis (see Figure 3 in Appendix B) revealed that the positive relationship between perfectionistic strivings and use of ETM strategies is weakened at higher levels of perceived busyness (1 *SD* below mean: β = .50, *SE* = .07, p < .001; mean level: β = .38, *SE* = .06, p < .001; 1 *SD* above mean: β = .25, *SE* = .08, p = .003). Contrary to Hypothesis 2a, as participants with perfectionistic strivings perceived themselves getting busier, they indicated less usage of ETM strategies. This discrepancy between the hypothesis and the actual results could be attributed to the difference between perceived and actual use of ETM strategies (see Study 1 Discussion and General Discussion). Nevertheless, the overall moderated mediation model was significant (*Index* = 0.02; SE_{boot}= .01, 95% CI_{boot} [0.00, 0.05]). The results remained consistent after controlling for the effect of social desirability (see Table 2b in Appendix B).

Perfectionistic Concerns. In the first path, perfectionistic concerns, controlling for perfectionistic strivings, negatively predicted use of ETM strategies (β = -.17, *SE* = .06, p = .003; see Figure 4 in Appendix B). In the second path, use of ETM strategies negatively predicted academic procrastination (β = -.16, *SE* = .06, p = .009). Overall, perfectionistic concerns positively predicted academic procrastination. The direct effect of perfectionistic concerns on academic procrastination (β_{direct} = .32, SE_{direct} = .06, p < .001) was significant, as well as the indirect effect (see Table 3a in Appendix B) through use of ETM strategies at mean and low levels of perceived busyness but not at high levels of perceived busyness (1 *SD* below mean: β_{indirect} = .03,

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SE_{boot} = .02, 95% CI_{boot} [0.00, 0.07]; mean level: $\beta_{indirect}$ = .03, SE_{boot} = .01, 95% CI_{boot} [0.00, 0.06]; 1 SD above mean: $\beta_{indirect}$ = .02, SE_{boot} = .02, 95% CI_{boot} [-0.00, 0.06]). Thus, Hypothesis 1b was fully supported. However, the moderating effect of perceived busyness was non-significant ($\beta_{interaction}$ = .04, $SE_{interaction}$ = .05, p = .423). Given that the moderation effect was non-significant, the overall moderated mediation model was also non-significant (*Index* = - 0.01; SE_{boot} = .01, 95% CI_{boot} [-0.02, 0.01]).

When controlling the effect of social desirability (see Table 3b in Appendix B), the results were generally consistent except that the mediating effect of use of ETM strategies on the relation between perfectionistic concerns and academic procrastination became significant at all levels of perceived busyness (1 SD below mean: $\beta_{indirect}$ = .04, SE_{boot} = .02, 95% CI_{boot} [0.01, 0.09]; mean level: $\beta_{indirect}$ = .04, SE_{boot} = .02, 95% CI_{boot} [0.01, 0.07]; 1 SD above mean : $\beta_{indirect}$ = .03, SE_{boot} = .02, 95% CI_{boot} [0.00, 0.07]).

4.3   Discussion

Overall, supporting Hypothesis 1a and 1b, Study 1 demonstrated the mediating effect of using ETM strategies on the negative relationship between perfectionistic strivings and academic procrastination as well as the positive relationship between perfectionistic concerns and academic procrastination. More specifically, the results revealed that with higher levels of perfectionistic strivings, individuals engaged in ETM strategies more frequently, which in turn leads to less procrastination on academic activities. In contrast, individuals higher in perfectionistic concerns adopted ETM strategies less frequently, thus leading to greater academic procrastination.

Besides establishing use of ETM strategies as a proximal explanatory variable accounting for the two different types of perfectionism-procrastination relationships, Study 1 also explored the role of perceived busyness in influencing the strength of these two relationships. Specifically, with higher levels of perfectionistic strivings, individuals engaged in the use of ETM strategies more frequently. However, this relationship is weakened as they experience busier schedules. In other words, as high perfectionistic strivings individuals experience higher levels of busyness, they perceive themselves adopting ETM strategies less frequently. Such finding was unexpected given perfectionistic strivings individuals' approach orientation towards goal pursuit. With a busier schedule, they should be more motivated to engage in ETM strategies in order to maintain high levels of performance. It is plausible that perfectionistic strivings individuals are engaging in time management strategies more frequently as they get busier but not perceiving these strategies as sufficiently effective. Considering perfectionistic striving's tendency to strive for perfection, they are likely to evaluate the effectiveness of these strategies in terms of assisting them to complete every task at hand instead of merely more tasks. However, getting *all* work done versus getting *more* work done are essentially different. With infinitely increasing demands competing with limited time and resources, it is inevitable that it will become harder to fulfil all demands, even with good time management strategies. Perfectionistic strivings individuals' unrealistic expectations may have led them to perceive themselves not engaging in ETM strategies despite having more work completed. Given that Study 1 used self-reported measures that are highly susceptible to individuals' biasness, the moderating effect of perceived busyness on the

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relationship between perfectionism and use of ETM strategies warrants further investigation that involves more objective measures of use of ETM strategies.

Furthermore, while it was expected that higher perfectionistic concerns would predict less use of ETM strategies under higher (vs. lower) levels of perceived busyness (Hypothesis 2b), the results showed a null effect. That means, while higher perfectionistic concerns lead to less use of ETM strategies, this relationship was neither attenuated nor intensified by perceived busyness. Inconsistency in self-judgement and actual behaviours may account for such discrepancy (Baumeister et al., 2007). Echoing the previous point on the differences between self-reported use of ETM strategies and objective use of ETM strategies, further investigation is needed to shed light on the moderating role of perceived busyness on the negative relationship between perfectionistic concerns and actual use of ETM strategies. In view of this, Study 2 addressed the discrepancy between perceived and actual use of ETM strategies by experimentally manipulating participants' use of ETM strategies.

5   Study 2

Study 2 extended Study 1's correlational design by providing further experimental support for the hypothesized relationships through manipulating participants' use of ETM strategies in a non-academic setting. If the hypotheses are supported, this will suggest an important implication for introducing time management intervention in reducing perfectionists' procrastination and increasing their productivity.

5.1   Method

5.1.1   Participants

244 participants were recruited via a Singapore university and randomly assigned to either the control group or experimental group. 236 participants completed the study and were compensated with either 1 course credit with S$8 cash or S$13 cash. Six participants were removed for failing honesty and attention checks and another 21 participants were removed due to low quality responses[6].The final sample consisted of 209 undergraduate students (155 females; $M_{age} = 21.44$; $SD_{age} = 1.76$; Range = 18 – 28). The ethnic compositions of the sample consisted of 72.2% Chinese; 6.7% Malay; 12.0% Indian and 9.1% others.

5.1.2   Procedure

Study 2 consisted of two parts. Part 1 required participants to fill in an online questionnaire and Part 2 required participants to produce a personal testimonial about their school experiences within 10 days from the date they completed Part 1. For Part 1, participants were asked to login to Zoom, an online

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[6] 21 participants were removed as their planned date of submission was beyond the range of the submission window, suggesting that they were inattentive to the instructions. Hence, it is reasonable to suspect they may not have provided valid responses despite passing attention checks and honesty checks.

meeting platform, at a stipulated time slot to attend the briefing and complete the online questionnaire. As per Study 1, the online questionnaire contained scales measuring their perfectionistic tendencies, promotion focus, prevention focus, avoidance motivation, approach motivation, perceived busyness, and baseline use of ETM strategies. Next, participants were given instructions regarding the personal testimonial task. As an incentive, they were told that the best three testimonials will be awarded a Starbucks gift card of S$10. The compensation was only given after they have submitted their entry. After participants understood the task instructions, they were asked to decide when to submit the testimonial. After deciding on the planned date of submission, they were assigned randomly to either the experimental or the control condition to work on a respective activity (i.e., drafting an action plan vs. drawing the life cycle of a butterfly; see study conditions below) and then upload their work. At the end of the study session, they answered some demographic questions and were reminded to submit their personal testimonial within the next 10 days. A 3-day grace period was given to all participants who submitted late, and the grace period was only made known to them on Day 11, which was after the original 10-day deadline. When submitting the personal testimonial, participants also responded to a short survey reporting the amount of time they spent on the testimonial task, the extent to which they perceived themselves to have procrastinated on the testimonial task, the effectiveness of Part 1's activity in preventing them from procrastinating and assisting them with the testimonial task completion, and the perceived difficulty level of the task. Lastly, they completed the social desirability scale and received a debriefing note.

5.1.3   Study Conditions

Participants were randomly assigned to either the time management condition or the control condition. In the time management condition, participants were asked to watch a video about planning, and then indicate the subtasks that they need to complete for submission (e.g., reading up some information about the school, drafting some ideas, finalizing the idea etc). They were free to decide the subtasks they aim to complete. For each subtask, they were asked to indicate the (1) date, (2) time, and (3) duration they plan to do it, as well as the logistics required. In the control condition, the participants first watched a short video clip about the life cycle of a butterfly and then drew a picture depicting the butterfly's life cycle with the captions indicating the amount of time needed for the butterfly to move onto the next life stage. For both conditions, the entire activity was expected to take approximately 15 minutes.

5.1.4   Measures

As per Study 1, participants completed the same scales measuring perfectionism, prevention-promotion regulatory foci, approach-avoidance motivation, perceived busyness, baseline use of ETM strategies as well as social desirability response tendency (see Table 4 in Appendix B for reliability and descriptive statistics of these measures).

Procrastination. There were two behavioral measures of procrastination and one self-reported measure of procrastination. First, the number of days participants took to submit the personal testimonial from the date they knew of the task. Second, the difference between the planned and actual dates the participants submitted the entry. Third, participants' self-

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reported rating on their procrastination by responding to the question, "how much do you think that you have procrastinated on completing the personal testimonial?" (1 = *not at all*; 5 = *very much*).

Manipulation Checks. Two measures were used as manipulation checks. Both measures were reported on a 5-point Likert scale. First, participants were asked to rate the extent to which the planning activity (for experimental group) or the drawing activity (for control group) was effective in preventing them from procrastinating on the testimonial task (1 = *not at all effective* and 5 = *extremely effective*). Second, they were asked to indicate the extent to which the planning activity or the drawing activity was effective in assisting them to complete the testimonial task (1 = *not at all effective* and 5 = *extremely effective*).

Perceived Difficulty of Testimonial Task. Participants responded to the question, "To what extent do you think that the testimonial task was difficult to complete?" (1 = *not at all difficult*; 5 = *extremely difficult*).

Perceived Efforts. Participants indicated the amount of time they spent on completing the testimonial task in minutes.

5.2   Results

5.2.1   *Convergent and Discriminant Validity of Perfectionistic Strivings and Perfectionistic Concerns*

Similar to Study 1, Study 2 also examined the zero-order correlations between perfectionistic strivings, perfectionistic concerns, promotion-prevention regulatory foci, and approach-avoidance motivation (see Table 5 in Appendix B). As opposed to the weak positive correlation found in Study 1, Study 2 did not find a relationship between perfectionistic strivings and

perfectionistic concerns ($r = .04$, $p = .557$). However, consistent with Study 1, the results revealed that perfectionistic strivings was more strongly associated with promotion regulatory focus ($r = .53$, $p < .001$) than prevention regulatory focus ($r = .22$, $p = .002$); positively associated with approach motivation ($r = .27$, $p < .001$), but not with avoidance motivation ($r = - .07$, $p = .349$).

In contrast, perfectionistic concerns was positively correlated with prevention regulatory focus ($r = .60$, $p < .001$), but not with promotion focus ($r = .05$, $p = .481$). Although this was slightly different from Study 1's results, where it found that perfectionistic concerns was more strongly associated with prevention focus as compared to promotion focus, the moderate to strong positive association between perfectionistic concerns and prevention focus emerged consistently across two studies. Furthermore, perfectionistic concerns was moderately correlated with avoidance motivation ($r = .50$, $p < .001$), but very weakly correlated with approach motivation ($r = .19$, $p = .006$).

Overall, across Studies 1 and 2, perfectionistic strivings was consistently related to promotion focus and approach motivation, whereas perfectionistic concerns was consistently related to prevention focus and avoidance motivation.

5.2.2 *Manipulation Checks*

Independent samples *t*-tests were first conducted to examine the effects of time management manipulation (i.e., planning activity for the experimental group vs. drawing activity for the control group) on its perceived effectiveness in (1) preventing participants from procrastinating on the testimonial task and (2) assisting them in completing it.

First, in terms of preventing procrastination, participants from the experimental group ($N = 101$; $M = 2.69$, $SD = 1.16$) reported significantly higher

perceived effectiveness of the activity than those from the control condition (N = 108; M = 1.85, SD = 1.06), $t(207)$ = 5.50, p < .001. Second, significant differences were also found in the activity's effectiveness in assisting testimonial completion. Those in the experimental group (M = 2.87, SD = 1.07) perceived the manipulation as being more effective than the control group (M = 1.86, SD = 1.11), $t(207)$ = 6.72, p < .001. Hence, the results supported the validity of time management manipulation.

5.2.3   *Internal Validity Checks*

Besides confirming success of the experimental manipulation via manipulation checks, additional analyses were conducted to verify whether there were systematic differences across the experimental and control groups. The absence of systematic differences between the two groups could further suggest that any differences in procrastination can be attributed to the time management manipulation. Particularly, perceived difficulty of the testimonial task, perceived effort spent on the task, baseline use of ETM strategies, perceived busyness, and social desirability tendencies between the two groups were examined.

Perceived Task Difficulty. Results from independent samples *t*-tests revealed no difference in perceived task difficulty between the experimental condition (M = 1.89, SD = 0.95) and the control condition (M = 1.84, SD = 0.95), $t(207)$ = 0.37, p = .712.

Perceived Efforts. Similarly, participants did not differ in terms of perceived effort on the testimonial task. On average, those in the experimental group (M = 35.97 minutes, SD = 25.38 minutes) spent similar amount of time

on the task compared to those in the control group ($M = 33.13$ minutes, $SD = 25.14$ minutes), $t(207) = 0.81$, $p = .417$.

Baseline Use of ETM strategies. Participants did not differ in terms of baseline use of ETM strategies level, which is essentially a skill and habit developed over time (experimental: $M = 16.26$, $SD = 4.61$; control: $M = 15.25$, $SD = 5.14$), $t(207) = 1.49$, $p = .138$.

Perceived Busyness. Participants also did not differ in terms of their perceived busyness ($M = 5.63$, $SD = 0.94$; $M = 5.77$, $SD = 0.93$), $t(207) = - 1.08$, $p = .281$.

Social Desirability. Furthermore, the participants did not differ in terms of their social desirability ($M = 18.37$, $SD = 2.76$; $M = 18.34$, $SD = 2.67$), $t(207) = 0.06$, $p = .950$.

Overall, the *t*-tests results suggested that perceived task difficulty, perceived effort, baseline use of ETM strategies, perceived busyness, and social desirability, were not responsible for the differences in procrastination behaviors between the two groups. This lends further credentials to the validity of the time management manipulation in the present study.

5.2.4 *Effects of Time Management Manipulation on Procrastination*

Independent samples *t*-tests were conducted to examine the effects of time management manipulation on self-reported procrastination and behavioral procrastination (i.e., when the testimonial was submitted and the discrepancy between planned and actual submission dates). In term of self-reported procrastination, participants from the experimental group ($M = 2.42$, $SD = 1.29$) reported significantly lower perceived procrastination than those in the control condition ($M = 2.85$, $SD = 1.41$), $t(207) = - 2.33$, $p = .021$. Significant

differences were also found for the two behavioral procrastination measures. The participants in the experimental group (M = 4.50, SD = 3.26) submitted their testimonial 1.18 days earlier than those in the control group (M = 5.68, SD = 3.76), $t(205.83)$[7] = - 2.43, p = .016. Similarly, participants in the experimental group (M = - 0.11, SD = 3.50) had fewer days of delay from their planned day of submission as compared to those in the control group (M = 1.19, SD = 3.34), $t(207)$ = - 2.74, p = .007. More specifically, participants in the experimental group submitted 0.11 days earlier than their planned date while participants in the control group submitted 1.19 days later than their planned date of submission.

Overall, participants submitted their testimonial between 1 to 13 days after being informed of the task and submitted between 9 days earlier and 11 days later than their planned date of submission (note: several participants submitted later than the 10-day deadline). In total, five participants submitted within the 3-day grace period after the deadline, with two from the experimental group and three from the control group. Taken together, it was evident that the time management intervention could effectively lower perceived and actual procrastination.

5.2.5   *Analytical Plans for Main Analyses (Three-Way Interaction)*

Given two dimensions of perfectionism (perfectionistic strivings and perfectionistic concerns) and three measures of procrastination, a total of six multiple regression analyses were carried out to test the three-way interaction between perfectionism, time management manipulation, and perceived

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[7] Levene's Test for Equality of Variances was violated for the independent samples *t*-test on the number of days taken to submit the testimonial, F = 8.75; p = .003.

busyness on procrastination (see Figure 5 in Appendix B). Perfectionistic strivings and perfectionistic concerns were examined as two separate predictors with the other being statistically controlled for. Baseline use of ETM strategies was used as the control variable. All continuous variables were standardized before performing the analyses using IBM SPSS Statistics version 26 with PROCESS macro version 4.0 Model 3.

5.2.6 Three-Way Interaction between Perfectionistic Concerns, Time Management Manipulation, and Perceived Busyness on Procrastination

Number of Days Taken. There was a main effect of perfectionistic concerns on procrastination as measured by the number of days taken to submit the testimonial (β = .20, *SE* = .09, *p* = .025), controlling for perfectionistic strivings and baseline use of ETM strategies. This was qualified by the three-way interaction between perfectionistic concerns, time management intervention and perceived busyness (β = - .34, *SE* = .15, *F*(1, 199) = 5.35, *p* = .022). No other effects were significant (see Table 6a in Appendix B). To interpret the three-way interaction, I examined the two-way interaction between perfectionistic concerns and time management intervention at each level of perceived busyness (see Figure 6 in Appendix B).

The perfectionistic concerns and time management intervention interaction is only significant at high perceived busyness (β = - .57, *F*(1, 199) = 8.46, *p* = .004), but not at mean (β = - .23, *F*(1, 199) = 2.76, *p* = .099) and low perceived busyness (β = .11, *F*(1, 199) = 0.28, *p* = .598). Specifically, for participants who perceived a high level of busyness, perfectionist concerns positively predicted procrastination only for the control group (β = .33, *SE* = .12, *t* = 2.69, *p* = .008, 95% *CI*[0.09, 0.57]) who did not receive the time management

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intervention, but not for the experimental group (β = -.24, *SE* = .15, *t* = - 1.57, *p* = .117, 95% *CI*[-0.54, 0.06]). Hence, when high perfectionistic concerns participants were not busy, time management intervention might not be effective for them. However, when they were busy and received the time management intervention, unlike their counterparts not receiving the intervention and engaging in more procrastination, they did not show higher levels of procrastination.

Delay from Planned Date. Results revealed that there was a main effect of time management intervention (β = -.31, *SE* = .14, *p* = .024) and baseline use of ETM strategies on delay from planned date of submission (β = -.19, *SE* = .08, *p* = .015). In other words, participants who received time management intervention or have higher baseline use of ETM strategies tendencies had fewer days of delay from their planned date of submission. However, all other main and interaction effects were non-significant (see Table 6b in Appendix B).

Self-reported Procrastination. Similarly, results revealed that there was a main effect of time management manipulation on self-reported procrastination (β = -.29, *SE* = .14, *p* = .039), with those in the time management condition reporting less procrastination on the testimonial task. However, all other main and interaction effects were non-significant (see Table 6c in Appendix B).

In sum, the regression analysis results consistently showed that time management intervention reduced self-report and behavioral procrastination. In terms of the number of days taken to submit the task, a three-way interaction between perfectionistic concerns, perceived busyness, and time management intervention was found, such that under higher busyness, participants with

perfectionistic concerns showed more procrastination, but their counterparts receiving the time management intervention did not show such an increase in procrastination behaviour.

5.2.7 *Three-Way Interaction Between Perfectionistic Strivings, Time Management Manipulation, and Perceived Busyness on Procrastination*

Number of Days Taken. Results revealed that there was a main effect of time management intervention (β = -.32, *SE* = .14, *p* = .026), such that the participants who received the intervention took fewer days to submit their testimonial than those who did not. However, all other main and interaction effects were non-significant (see Table 7a in Appendix B).

Delay from Planned Date. There was a main effect of time management intervention (β = -.34, *SE* = .14, *p* = .015) and baseline use of ETM strategies on delay from planned submission date (β = -.19, *SE* = .08, *p* = .014). In other words, participants receiving the time management intervention or having higher baseline use of ETM strategies tendencies had fewer days of delay from their planned date of submission. All other main and interaction effects were non-significant (see Table 7b in Appendix B).

Self-reported Procrastination. Likewise, there was a main effect of time management manipulation on self-reported procrastination (β = -.34, *SE* = .14, *p* = .016), as those participants undergoing the time management intervention reported less procrastination on the testimonial task. However, all other main and interaction effects were non-significant (see Table 7c in Appendix B).

In sum, although significant three-way interactions between perfectionistic strivings, perceived busyness, time management intervention did

not emerge for the three procrastination measures, there was robust evidence demonstrating the effect of time management intervention on reducing procrastination across all procrastination measures.

5.2.8   *Additional Analyses[8]*

To check for the consistency of results across Studies 1 and 2, the same moderated mediation models as per Study 1, with self-reported procrastination as the dependent variable, were tested on the control group that did not receive the time management intervention.

Perfectionistic Strivings. In the first path, perfectionistic strivings, controlling for perfectionistic concerns, positively predicted baseline use of ETM strategies ($\beta = .35$, $SE = .09$, $p < .001$). In the second path, baseline use of ETM strategies did not significantly predict self-reported procrastination ($\beta = -.15$, $SE = .10$, $p = .134$). Further, the direct effect of perfectionistic strivings on self-reported procrastination ($\beta_{direct} = -.01$, $SE_{direct} = .10$, $p = .942$) was non-significant. As a result, the mediating effect of use of ETM strategies was non-significant at all levels of perceived busyness (1 SD below mean: $\beta_{indirect} = -.07$, $SE_{boot} = .05$, 95% CI_{boot} [-0.18, 0.03]; mean level: $\beta_{indirect} = -.05$, $SE_{boot} = .04$, 95% CI_{boot} [-0.14, 0.02]; 1 SD above mean: $\beta_{indirect} = -.04$, $SE_{boot} = .04$, 95% CI_{boot} [-0.12, 0.02]). In addition, the moderating effect of perceived busyness

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[8] Additionally, the present study tested for the effects of gender on perfectionism and procrastination respectively. Three participants from Study 1 and two participants from Study 2 did not reveal their gender. The final sample testing for the gender effects consisted of 265 participants (Study 1) and 207 participants (Study 2). Overall, the gender effects were largely inconsistent across Studies 1 and 2. Specifically, male participants ($N = 68$, $M = 5.34$, $SD = 0.78$) in Study 1 reported higher levels of perfectionistic strivings than females participants ($N = 197$, $M = 5.01$, $SD = 0.88$), $t(263) = 2.81$, $p = .005$, but no gender effect (male: $M = 3.57$, $SD = 1.01$; female: $M = 3.63$, $SD = 1.09$) was found on perfectionistic concerns, $t(263) = -0.40$, $p = .692$. In contrast, male participants ($N = 52$, $M = 3.54$, $SD = 1.05$) in Study 2 had lower levels of perfectionistic concerns than female participants ($N = 155$, $M = 3.94$, $SD = 1.19$); $t(205) = -2.16$, $p = .032$, but no gender effect (male: $M = 5.13$, $SD = 1.06$; female: $M = 4.96$, $SD = 0.91$) was found on perfectionistic strivings, $t(205) = 1.11$, $p = .270$.

was non-significant ($\beta_{interaction} = -.08$, $SE_{interaction} = .08$, $p = .303$). Given that both the mediation effect and the moderation effect were non-significant, the overall moderated mediation model was also non-significant ($Index = 0.01$; $SE_{boot} = .02$, 95% CI_{boot} [-0.01, 0.05]). Furthermore, the results remained consistent when the number of days taken and the delay from the planned date of submission were used as the dependent variable, respectively.

Perfectionistic Concerns. In the first path, perfectionistic concerns, controlling for perfectionistic strivings, did not predict use of ETM strategies ($\beta = -.13$, $SE = .08$, $p = .126$). In the second path, use of ETM strategies also did not predict self-reported procrastination ($\beta = -.15$, $SE = .10$, $p = .134$). Furthermore, the direct effect of perfectionistic concerns on self-reported procrastination ($\beta_{direct} = .18$, $SE_{direct} = .09$, $p = .054$) was non-significant, as well as the indirect effect through use of ETM strategies at all levels of perceived busyness (1 SD below mean: $\beta_{indirect} = .03$, $SE_{boot} = .03$, 95% CI_{boot} [-0.04, 0.09]; mean level: $\beta_{indirect} = .02$, $SE_{boot} = .02$, 95% CI_{boot} [-0.02, 0.07]; 1 SD above mean: $\beta_{indirect} = .01$, $SE_{boot} = .03$, 95% CI_{boot} [-0.02, 0.09]). In addition, the moderating effect of perceived busyness was non-significant ($\beta_{interaction} = .05$, $SE_{interaction} = .09$, $p = .608$). Given that the mediation effect and moderation effect were non-significant, the overall moderated mediation model was also non-significant ($Index = - 0.01$; $SE_{boot} = .02$, 95% CI_{boot} [-0.04, 0.05]). Furthermore, the results remained largely consistent when the number of days taken and delay from the planned date of submission were used as the dependent variable separately, except that the direct effect of perfectionistic concerns on the number of days taken became significant ($\beta_{direct} = .22$, $SE_{direct} = .10$, $p = .023$).

Overall, the results from Study 2 did not replicate that of Study 1. This could be because of the insufficient sample of the control group in Study 2 ($N = 108$).

5.3 Discussion

Supporting Hypothesis 4, Study 2 showed preliminary evidence for the three-way interaction between perfectionistic concerns, perceived busyness, and time management intervention on behavioral procrastination in a non-academic setting. With time management intervention, the positive relationship between perfectionistic concerns and procrastination (in terms of the number of days taken to complete the testimonial task) became non-significant. In contrast, without time management intervention, perfectionistic concerns positively predicted procrastination at high level of perceived busyness. Hence, it is evident that time management intervention is effective in buffering the negative impact of perfectionistic concerns on procrastination tendencies, especially at higher levels of perceived busyness, which is a normative experience in many societies today.

As expected, the three-way interaction between perfectionistic strivings, time management manipulation and perceived busyness did not influence procrastination. Given that individuals high in perfectionistic strivings are already adept at use of ETM strategies, the time management intervention might not make a difference. This reasoning was supported by the moderately strong positive correlation between perfectionistic strivings and baseline use of ETM strategies ($r = .40$, $p < .001$; see Table 5 in Appendix B) observed in Study 2. It is reasonable to argue that high perfectionistic strivings participants in the control condition will still effectively plan the usage of time on their own accord

to meet the deadline for the personal testimonial task. Therefore, the time management intervention did not further pose a benefit for this group of people.

The current study utilized different measures of procrastination. First, the number of days taken to submit the task measured whether participants' procrastination would make them unable to meet the experimenter-imposed deadline. Second, the difference between the planned date and the actual date of submission measured whether participants procrastinated in relation to their self-initiated deadline (i.e., the planned submission date was stipulated by the participants themselves). Third, self-reported procrastination measured their perceived amount of procrastination, which may contain some degree of biasness and subjectivity. Across different measures of procrastination, results supported that time management intervention is helpful in reducing procrastination. This demonstrates the robust effect of time management intervention on reducing procrastination and increasing productivity.

6   General Discussion

Across two studies, the present research examined the role of perfectionism (both perfectionistic strivings and perfectionistic concerns), use of ETM strategies, and perceived busyness on procrastination in both academic and non-academic settings. Findings largely supported the proposed hypotheses.

6.1   The Mediating Role of Using Effective Time Management Strategies

Specifically, use of ETM strategies mediated the negative relationship between perfectionistic strivings and academic procrastination, as well as the positive relationship between perfectionistic concerns and academic procrastination (Study 1), supporting Hypothesis 1a and 1b. Moreover, time

management intervention played a unique role in reducing procrastination regardless of perfectionism tendencies, perceived busyness, and baseline use of ETM strategies among participants (Study 2).

More importantly, it was found that when individuals with high perfectionistic concerns experienced a busier schedule (vs. a non-busy schedule), time management intervention served as a buffer for procrastination (Study 2), supporting Hypothesis 4. Furthermore, as expected, the three-way interaction between perfectionistic strivings, time management manipulation, and perceived busyness did not influence procrastination. This is because high perfectionistic strivings individuals are already adept at managing their time (i.e., higher baseline use of ETM strategies), which suggests that an external time management intervention may be unnecessary for them.

It is also important to note that while use of ETM strategies predicted less procrastination, these two concepts are not equivalent. This is supported by the weak correlation between use of ETM strategies and procrastination in Studies 1 ($r = -.31$, $p < .001$; see Table 1 in Appendix B) and Studies 2 ($r = -.16$; $p < .05$; see Table 5 in Appendix B).

6.2   The Moderating Role of Perceived Busyness

Nevertheless, the hypotheses regarding the moderating role of perceived busyness on the relationships between perfectionism and use of ETM strategies were largely unsupported (Hypotheses 2a and 2b). Since the measures used in Study 1 were self-reports, they were susceptible to biasness. Therefore, it is reasonable to attribute the discrepancies between the observed and expected results to the difference between perceived and objective use of ETM strategies.

First, while perceived busyness significantly moderated the positive

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relationship between perfectionistic strivings and use of ETM strategies, the direction of the moderating effect was opposite of the prediction in Hypothesis 2a. As high perfectionistic strivings individuals became busier, they perceived themselves engaging less instead of more in ETM strategies. Considering high perfectionistic strivings individuals' more proactive approach towards goal pursuit, they are likely to engage in time management behaviors more frequently under high perceived busyness. However, given their strive for perfection, they could be perceiving these time management strategies as less effective if they do not complete all the work at hand. With increased busyness coupled with limited time resources, it is undoubtedly harder to complete all the work despite the use of good time management strategies. Therefore, high perfectionistic strivings individuals' tendency to evaluate the effectiveness of time management strategies by whether they could complete all the work (vs. complete more work) might have masked the actual increase in their use of ETM strategies under high perceived busyness.

Second, contrary to Hypothesis 2b, high perfectionistic concerns individuals did not perceive an intensity change in their use of ETM strategies with increasing levels of perceived busyness. One plausible explanation for such result is the inconsistency in their self-judgment and actual ETM behaviors (Baumeister et al., 2007). With increased busyness, high perfectionistic concerns individuals could have become more avoidant in their goal pursuit by engaging less in ETM behaviors as they detect a higher possibility of failure but was biased in their self-judgment.

6.3   Theoretical Contribution

Taken together, the current research has increased our understanding on

the nature of perfectionistic strivings and perfectionistic concerns, as well as their relationships with procrastination. Firstly, the present study elucidated the differences between perfectionistic strivings and perfectionistic concerns. Across the correlational analyses in Studies 1 and 2, a consistent trend emerged. That is, perfectionistic strivings is more strongly associated with promotion focus and approach motivation while perfectionistic concerns is more strongly associated with prevention focus and avoidance motivation. Such distinction between perfectionistic strivings and perfectionistic concerns accounts for the differences in their approach to goal pursuit. Specifically, it shed light on why some, but not all perfectionists procrastinate, as a function of their usage of ETM strategies. High perfectionistic strivings individuals tend to engage in ETM strategies more frequently due to their more positive approach towards goal pursuits, whereas high perfectionistic concerns individuals tend to have less use of ETM strategies due to their greater emphasis on using avoidance strategies to reduce their fear of failure.

In addition, through using three different procrastination measures, the present study has explicated the difference between behavioral and self-reported procrastination measures, as well as the difference between procrastination on self-initiated deadlines and procrastination on other-imposed deadlines. When high perfectionistic concerns participants experienced high perceived busyness, time management intervention was effective as a buffer against procrastination only on other-imposed deadline, but not self-initiated deadlines and self-reported procrastination. The discrepancy in results between procrastination on other-imposed deadlines and self-reported measures could be accounted by individual's inconsistency in self-judgement and actual behavior (Baumeister et

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al., 2007). However, the discrepancy in results between procrastination on other-imposed deadline and self-imposed deadline, might be accounted by high perfectionistic concerns individuals' hyper-sensitivity to external evaluations (Hewitt et al., 2017). As opposed to self-initiated deadlines, external deadlines would exert a greater pressure on them. Therefore, at higher levels of perceived busyness, perfectionistic concerns individuals may be more likely to prioritise meeting external deadlines over meeting self-initiated deadlines.

Moreover, baseline use of ETM strategies uniquely predicted less procrastination on self-initiated deadlines, but not other-initiated deadlines or self-reported procrastination. In contrast to a one-time off time management intervention, baseline use of ETM strategies reflects a habit and a skill developed over time. This speaks the value of cultivating effective management habits for reducing procrastination on self-directed, less time sensitive, but essentials goals in life (e.g., health, relationships, personal development outside of work), which is presumably more lax and able to afford a higher degree of procrastination.

6.4   Practical Implications

Correspondingly, the present study has several practical implications. Procrastination is a prevalent issue among students and working adults, and is associated with adverse impact on achievement and well-being. Given that perfectionism is intricately linked to procrastination, it is of critical importance to examine the underlying mechanism for this relationship. Discoveries in this area has the value of reducing procrastination and alleviating its negative effects on people's psychological well-being and life outcomes.

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In addition, time management has become a critical skill in the post-modern society where students and working adults alike are constantly expected to juggle multiple commitments while fending off distractions. The current research has shed some light on the interactional effect of perfectionistic concerns, time management intervention and perceived busyness in reducing procrastination. By experimentally manipulating use of ETM strategies (vs. not) in Study 2, the present research provided strong evidence to demonstrate that time management intervention, as straightforward as having an actionable time-bound plan, can be an effective buffer against procrastination and increase productivity, especially for high perfectionistic concerns individuals experiencing high levels of busyness.

Moreover, the knowledge of distinctions between perfectionistic strivings and perfectionistic concerns can be applied in mentorship or work settings. Since high perfectionistic concerns individuals and high perfectionistic strivings individuals have different time management behaviors, a differentiated approach could be utilized to respectively increase their productivity. For instance, supervisors at workplace could regularly check on employees with high perfectionistic concerns and request time-bound actionable plan from them, to keep them on track, especially when they experience an increase in workload. In contrast, a less micro-managing style could be adopted in managing employees with high perfectionistic strivings as they can be trusted to manage time on their own.

6.5   Limitations and Future Direction

Notwithstanding its significant theoretical and practical implications, the current research has a few limitations to be addressed with future studies.

First, the present research adopted the dimensional approach in examining perfectionism with two independent dimensions—perfectionistic strivings and perfectionistic concerns. Although such approach is valuable for understanding the nature of the perfectionism construct, the current studies did not examine the two dimensions in tandem. As some individuals can be high in both dimensions, or low in both dimensions, it is worthy for future research to examine the interaction between perfectionistic strivings and perfectionistic concern. Relatedly, there is also promise to adopt a profile-based approach by classifying different individuals based on the combination of their perfectionistic strivings and perfectionistic concerns levels. This approach might be beneficial for gaining new insights on clinical patients who have adverse experiences given their perfectionistic tendencies, which usually require a more differentiated and personalized intervention.

Second, the current research only manipulated use of ETM strategies and found that it presented a buffering effect against procrastination among the participants with high perfectionistic concerns under higher levels of busyness. To further confirm the value of time management intervention under high busyness, future studies can experimentally manipulate perceived levels of busyness or even jointly manipulate use of ETM strategies and perceived busyness to establish more clearly their causal roles in the link between perfectionism and procrastination.

Third, Study 2 revealed that the time management intervention did not make a difference in procrastination tendencies among the participants with high perfectionistic strivings, but it seems to suggest that baseline time management habits (vs. one-off time management intervention) could be

beneficial for participants with either high perfectionistic strivings or perfectionistic concerns. Thus, a suggestion for future research is to conduct a longitudinal study that investigates ways to form enduring effective time management habits, so as to help individuals alleviate the negative impact of chronic procrastination and improve their psychological well-being and productivity.

Lastly, existing research (including the current studies) tends to focus on studying the maladaptive aspects of perfectionistic concerns on productivity and procrastination. Future studies can explore whether there are adaptive aspects of perfectionistic concerns under certain situations. For example, given that perfectionistic concerns may promote an excessive tendency to avoid mistakes, such trait could be beneficial under life-and-death or high-risk situations, where there is virtually no room for making errors. It would be insightful to shed light on both the maladaptive and adaptive aspects of perfectionistic concerns to provide a more nuanced understanding of this psychological construct.

7   Conclusion

The current research adds to the perfectionism literature by further elucidating the nature of perfectionistic strivings and perfectionistic concerns, as well as the roles played by use of ETM strategies and perceived busyness in affecting the relationship between perfectionism and procrastination. Understanding how perfectionism affects procrastination has downstream significance on promoting individuals' productivity and well-being. In our society today, productivity has been a key indicator of success. With its high-paced lifestyle, perceived busyness has become a commonplace phenomenon, implicating the crucial role of using ETM strategies in achieving high productivity. Addressing issues relating to procrastination and use of ETM strategies provides a much-needed antidote for coping with the challenges of many fast-moving, efficiency-driven societies today.

8   References

Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the

science of self-reports and finger movements: Whatever happened to

actual behavior? *Perspectives on Psychological Science*, *2*(4), 396-403.

https://doi.org/10.1111/j.1745-6916.2007.00051.x

Beck, A., & Verticchio, H. (2020). Levels of stress and characteristics of

perfectionism in CSD students. *Teaching and Learning in

Communication Sciences & Disorders*, *4*(1).

https://doi.org/10.30707/tlcsd4.1/jnus7982

Bong, M., Hwang, A., Noh, A., & Kim, S. (2014). Perfectionism and

motivation of adolescents in academic contexts. *Journal of

Educational Psychology*, *106*(3), 711-729.

https://doi.org/10.1037/a0035836

Brownlow, S., & Reasinger, R. D. (2000). Putting off until tomorrow what is

better done today: Academic procrastination as a function of

motivation toward college work. *Journal of Social Behavior and

Personality*, *15*, 15-34.

Burnam, A., Komarraju, M., Hamel, R., & Nadler, D. R. (2014). Do adaptive

perfectionism and self-determined motivation reduce academic

procrastination? *Learning and Individual Differences*, *36*, 165-172.

https://doi.org/10.1016/j.lindif.2014.10.009

Burns, D. D. (1980). The perfectionist's script for self-defeat. *Psychology

Today*, *14*(6), 34-52.

Burns, L. R., Dittmann, K. L., Nguyen, N., & Mitchelson, J. K. (1999).

Academic procrastination, perfectionism, and control: Associations

with vigilant and avoidant coping. *PsycEXTRA Dataset*.

https://doi.org/10.1037/e413782005-419

Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral

activation, and affective responses to impending reward and

punishment: The BIS/BAS scales. *Journal of Personality and Social*

Psychology, *67*(2), 319-333. https://doi.org/10.1037/0022-

3514.67.2.319

Claessens, B. J., Van Eerde, W., Rutte, C. G., & Roe, R. A. (2007). A review

of the time management literature. *Personnel Review*, *36*(2), 255-276.

https://doi.org/10.1108/00483480710726136

Cohen, J. (2020). *Perfectionism, Goal Pursuit, and Work-Related Outcomes:*

A Self-Determination Theory Perspective [Master's thesis].

https://curve.carleton.ca/1465a248-b41c-425a-84ad-af83629d7162

Curran, T., & Hill, A. P. (2019). Perfectionism is increasing over time: A

meta-analysis of birth cohort differences from 1989 to 2016.

Psychological Bulletin, *145*(4), 410-429.

https://doi.org/10.1037/bul0000138

De la Fuente, J., Lahortiga-Ramos, F., Laspra-Solís, C., Maestro-Martín, C.,

Alustiza, I., Aubá, E., & Martín-Lanas, R. (2020). A structural

equation model of achievement emotions, coping strategies and

engagement-burnout in undergraduate students: A possible underlying

mechanism in facets of perfectionism. *International Journal of*

Environmental Research and Public Health, *17*(6), 2106.

https://doi.org/10.3390/ijerph17062106

Dickinson, E. E. (2016). The cult of busy. *Johns Hopkins Health Review*, *3*(1), 27-49.

Dunkley, D. M., Blankstein, K. R., Halsall, J., Williams, M., & Winkworth, G. (2000). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology*, *47*(4), 437-453. https://doi.org/10.1037/0022-0167.47.4.437

Eddington, K. M. (2013). Perfectionism, goal adjustment, and self-regulation: A short-term follow-up study of distress and coping. *Self and Identity*, *13*(2), 197-213. https://doi.org/10.1080/15298868.2013.781740

Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review*, *13*(2), 73-92. https://doi.org/10.1023/A:1009009018235

Flett, G. L., Blankstein, K. R., Hewitt, P. L., & Koledin, S. (1992). Components of perfectionism and procrastination in college students. *Social Behavior and Personality: an international journal*, *20*(2), 85-94. https://doi.org/10.2224/sbp.1992.20.2.85

Flett, G. L., & Hewitt, P. L. (2002). *Perfectionism: Theory, research, and treatment*. American Psychological Association.

Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. I., & Neubauer, A. L. (1993). A comparison of two measures of perfectionism. *Personality and Individual Differences*, *14*(1), 119-126. https://doi.org/10.1016/0191-8869(93)90181-2

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, *14*(5), 449-468. https://doi.org/10.1007/bf01172967

Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, *2*(2), 15-34. https://doi.org/10.1002/1098-108x(198321)2:23.0.co;2-6

Gaudreau, P., & Thompson, A. (2010). Testing a 2×2 model of dispositional perfectionism. *Personality and Individual Differences*, *48*(5), 532-537. https://doi.org/10.1016/j.paid.2009.11.031

Gustavson, D. E., Miyake, A., Hewitt, J. K., & Friedman, N. P. (2014). Genetic relations among procrastination, impulsivity, and goal-management ability. *Psychological Science*, *25*(6), 1178-1188. https://doi.org/10.1177/0956797614526260

Hammer, C. A., & Ferrari, J. R. (2002). Differential incidence of procrastination between blue and white-collar workers. *Current Psychology*, *21*(4), 333-338. https://doi.org/10.1007/s12144-002-1022-y

Hewitt, P. L., & Flett, G. L. (1990). Perfectionism and depression: A multidimensional analysis. *Journal of Social Behavior and Personality*, *5*, 423-438.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, *60*(3), 456-470. https://doi.org/10.1037/0022-3514.60.3.456

Hewitt, P. L., Flett, G. L., & Mikail, S. F. (2017). *Perfectionism: A relational approach to conceptualization, assessment, and treatment*. Guilford Publications.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52*(12), 1280-1300. https://doi.org/10.1037/0003-066x.52.12.1280

Holland, T. (2001). The perils of procrastination. *Far Eastern Economic Review*, *164*(66-72).

Horney, K. (1950). *Neurosis and human growth: The struggle toward self-realization*. New York: Norton.

Huber, P. J. (1981). *Robust statistics*. New York: John Wiley.

Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, *82*, 26-33. https://doi.org/10.1016/j.paid.2015.02.038

Klassen, R. M., Krawchuk, L. L., & Rajani, S. (2008). Academic procrastination of undergraduates: Low self-efficacy to self-regulate predicts higher levels of procrastination. *Contemporary Educational Psychology*, *33*(4), 915-931.
https://doi.org/10.1016/j.cedpsych.2007.07.001

Klingsieck, K. B. (2013). Procrastination: When good things don't come to those who wait. *European Psychologist*, *18*(1), 24-34. https://doi.org/10.1027/1016-9040/a000138

Koh, B. (2019). *I want to be busy: Instrumental regulation of busyness among conscientious individuals* [Doctoral dissertation].
https://ink.library.smu.edu.sg/etd_coll/211/

Levine, S. L., & Milyavskaya, M. (2018). Domain-specific perfectionism: An examination of perfectionism beyond the trait-level and its link to well-being. https://doi.org/10.31234/osf.io/428xt

Leys, C., Ley, C., Klein, O., Bernard, P., & Licata, L. (2013). Detecting outliers: Do not use standard deviation around the mean, use absolute deviation around the median. *Journal of Experimental Social Psychology*, *49*(4), 764-766. http://dx.doi.org/10.1016/j.jesp.2013.03.013

Liu, O. L., Rijmen, F., MacCann, C., & Roberts, R. (2009). The assessment of time management in middle-school students. *Personality and Individual Differences*, *47*(3), 174-179. https://doi.org/10.1016/j.paid.2009.02.018

Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, *83*(4), 854-864. https://doi.org/10.1037/0022-3514.83.4.854

Luszczynska, A., Zarychta, K., Horodyska, K., Liszewska, N., Gancarczyk, A., & Czekierda, K. (2015). Functional perfectionism and healthy behaviors: The longitudinal relationships between the dimensions of perfectionism, nutrition behavior, and physical activity moderated by gender. *Current Issues in Personality Psychology*, *3*(2), 84-93. https://doi.org/10.5114/cipp.2015.52085

McCloskey, J. D. (2011). *Finally, my thesis on academic procrastination* [Doctoral dissertation]. https://rc.library.uta.edu/uta-ir/handle/10106/9538

Oettingen, G., Kappes, H. B., Guttenberg, K. B., & Gollwitzer, P. M. (2015).
Self-regulation of time management: Mental contrasting with
implementation intentions. *European Journal of Social Psychology*,
45(2), 218-229. https://doi.org/10.1002/ejsp.2090

Parker, W. D. (2000). Healthy perfectionism in the gifted. *Journal of
Secondary Gifted Education*, *11*(4), 173-182.
https://doi.org/10.4219/jsge-2000-632

Pirlott, A. G., & MacKinnon, D. P. (2016). Design approaches to experimental
mediation. *Journal of Experimental Social Psychology*, *66*, 29-38.
https://doi.org/10.1016/j.jesp.2015.09.012

Powers, T. A., Koestner, R., & Topciu, R. A. (2005). Implementation
intentions, perfectionism, and goal progress: Perhaps the road to hell is
paved with good intentions. *Personality and Social Psychology
Bulletin*, *31*(7), 902-912. https://doi.org/10.1177/0146167204272311

Pychyl, T. A., Lee, J. M., Thibodeau, R., & Blunt, A. (2000). Five days of
emotion: An experience sampling study of undergraduate student
procrastination. *Journal of Social Behaviour & Personality*, *15*(5),
239-254.

Reynolds, W. M. (1982). undefined. *Journal of Clinical Psychology*, *38*(1),
119-125. https://doi.org/10.1002/1097-4679(198201)38:13.0.co;2-i

Rhéaume, J., Freeston, M. H., Ladouceur, R., Bouchard, C., Gallant, L.,
Talbot, F., & Vallières, A. (2000). Functional and dysfunctional
perfectionists: Are they different on compulsive-like behaviors?
Behaviour Research and Therapy, *38*(2), 119-128.
https://doi.org/10.1016/s0005-7967(98)00203-4

Rice, K. G., & Ashby, J. S. (2007). An efficient method for classifying perfectionists. *Journal of Counseling Psychology*, *54*(1), 72-85. https://doi.org/10.1037/0022-0167.54.1.72

Rousseeuw, P. J., & Croux, C. (1993). Alternatives to the median absolute deviation. *Journal of the American Statistical Association*, *88*(424), 1273-1283. https://doi.org/10.1080/01621459.1993.10476408

Sagar, S. S., & Stoeber, J. (2009). Perfectionism, fear of failure, and affective responses to success and failure: The central role of fear of experiencing shame and embarrassment. *Journal of Sport and Exercise Psychology*, *31*(5), 602-627. https://doi.org/10.1123/jsep.31.5.602

Seo, E. H. (2008). Self-efficacy as a mediator in the relationship between self-oriented perfectionism and academic procrastination. *Social Behavior and Personality: an international journal*, *36*(6), 753-764. https://doi.org/10.2224/sbp.2008.36.6.753

Shih, S. (2017). Factors related to Taiwanese adolescents' academic procrastination, time management, and perfectionism. *The Journal of Educational Research*, *110*(4), 415-424. https://doi.org/10.1080/00220671.2015.1108278

Sirois, F. M., & Molnar, D. S. (2016). Conceptualizations of perfectionism, health, and wellbeing: An introductory overview. In *Perfectionism, Health and Well-being* (pp. 45-68). Switzerland: Springer.

Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2017). A meta–analytic and conceptual update on the associations between procrastination and multidimensional perfectionism. *European Journal of Personality*, *31*(2), 137-159. https://doi.org/10.1002/per.2098

Sironic, A., & Reeve, R. A. (2015). A combined analysis of the frost multidimensional perfectionism scale (FMPS), child and adolescent perfectionism scale (CAPS), and almost perfect scale—Revised (APS-R): Different perfectionist profiles in adolescent high school students. *Psychological Assessment*, *27*(4), 1471-1483. https://doi.org/10.1037/pas0000137

Slade, P. D., & Owens, R. G. (1998). A dual process model of perfectionism based on reinforcement theory. *Behavior Modification*, *22*(3), 372-390. https://doi.org/10.1177/01454455980223010

Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, *31*(4), 503-509. https://doi.org/10.1037/0022-0167.31.4.503

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, *89*(6), 845-851. https://doi.org/10.1037/0022-3514.89.6.845

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65-94. https://doi.org/10.1037/0033-2909.133.1.65

Stoeber, J. (1998). The frost multidimensional perfectionism scale revisited: More perfect with four (instead of six) dimensions. *Personality and Individual Differences*, *24*(4), 481-491. https://doi.org/10.1016/s0191-8869(97)00207-9

Stoeber, J. (2012). The 2×2 model of perfectionism: A critical comment and some suggestions. *Personality and Individual Differences*, *53*(5), 541-545. https://doi.org/10.1016/j.paid.2012.04.029

Stoeber, J. (2018). The Psychology of Perfectionism: An Introduction. In *The psychology of perfectionism: Theory, research, applications*. Routledge.

Stoeber, J., & Becker, C. (2008). Perfectionism, achievement motives, and attribution of success and failure in female soccer players. *International Journal of Psychology*, *43*(6), 980-987. https://doi.org/10.1080/00207590701403850

Stoeber, J., Damian, L. E., & Madigan, D. J. (2018). Perfectionism: A Motivational Perspective. In *The psychology of perfectionism: Theory, research, applications*. Routledge.

Stoeber, J., Harris, R. A., & Moon, P. S. (2007). Perfectionism and the experience of pride, shame, and guilt: Comparing healthy perfectionists, unhealthy perfectionists, and non-perfectionists. *Personality and Individual Differences*, *43*(1), 131-141. https://doi.org/10.1016/j.paid.2006.11.012

Stoeber, J., Hutchfield, J., & Wood, K. V. (2008). Perfectionism, self-efficacy, and aspiration level: Differential effects of perfectionistic striving and self-criticism after success and failure. *Personality and Individual Differences*, *45*(4), 323-327. https://doi.org/10.1016/j.paid.2008.04.021

Stoeber, J., & Joormann, J. (2001). Worry, Procrastination, and Perfectionism: Differentiating Amount of Worry, Pathological Worry, Anxiety, and

Depression. *Cognitive Therapy and Research*, *25*, 49-60.

http://dx.doi.org/10.1023/A:1026474715384

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism:

Approaches, evidence, challenges. *Personality and Social Psychology*

Review, *10*(4), 295-319. https://doi.org/10.1207/s15327957pspr1004_2

Tice, D. M., & Baumeister, R. F. (1997). Longitudinal study of

procrastination, performance, stress, and health: The costs and benefits

of dawdling. *Psychological Science*, *8*(6), 454-458.

https://doi.org/10.1111/j.1467-9280.1997.tb00460.x

Uzun Ozer, B., O'Callaghan, J., Bokszczanin, A., Ederer, E., & Essau, C.

(2014). Dynamic interplay of depression, perfectionism and self-

regulation on procrastination. *British Journal of Guidance &*

Counselling, *42*(3), 309-319.

https://doi.org/10.1080/03069885.2014.896454

Van Eerde, W. (2003). A meta-analytically derived nomological network of

procrastination. *Personality and Individual Differences*, *35*(6), 1401-

1418. https://doi.org/10.1016/s0191-8869(02)00358-6

Vansteenkiste, M., Smeets, S., Soenens, B., Lens, W., Matos, L., & Deci, E. L.

(2010). Autonomous and controlled regulation of performance-

approach goals: Their relations to perfectionism and educational

outcomes. *Motivation and Emotion*, *34*(4), 333-353.

https://doi.org/10.1007/s11031-010-9188-3

Wilcox, K., Laran, J., Stephen, A. T., & Zubcsek, P. P. (2016). How being

busy can increase motivation and reduce task completion time. *Journal*

of Personality and Social Psychology, *110*(3), 371-384.

https://doi.org/10.1037/pspa0000045

Wolters, C. A. (2003). Understanding procrastination from a self-regulated

learning perspective. *Journal of Educational Psychology*, *95*(1), 179-

187. https://doi.org/10.1037/0022-0663.95.1.179

Xie, Y., Yang, J., & Chen, F. (2018). Procrastination and multidimensional

perfectionism: A meta-analysis of main, mediating, and moderating

effects. *Social Behavior and Personality: an international journal*,

46(3), 395-408. https://doi.org/10.2224/sbp.6680

9   Appendix A (Material)

Study 1 Materials

Commitment Check Question

You will have to complete the survey in one setting in a quiet environment. The survey will take about 30 minutes to complete. Do you commit to providing your thoughtful and honest answers to the questions in this survey?

- I will provide my best answers.
- I will not provide my best answers.
- I can't promise either way

Perfectionism Measures

Frost's Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990; Stoeber, 1998)

Please answer the following questions in relation to how much they apply to you. Do not spend too much time on any one question. (Score on a 1 to 7 scale where 1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Somewhat disagree*, 4 = *Neither agree nor disagree*, 5 = *Somewhat agree*, 6 = *Agree, 7 = Strongly agree*)

Subscale 1: Personal Standards (PS)

PS1	If I do not set the highest standards for myself, I am likely to end up a second-rate person.
PS2	It is important to me that I am thoroughly competent in everything I do.
PS3	I set higher goals than most people.
PS4	I am very good at focusing my efforts on attaining a goal.
PS5	I have extremely high goals.
PS6	Other people seem to accept lower standards from themselves than I do.
PS7	I expect higher performance in my daily tasks than most people.

Subscale 2: Concerns over Mistakes and Doubts (CMD)

CMD1	If I fail at work/school, I am a failure as a person.
CMD2	I should be upset if I make a mistake.
CMD3	If someone does a task at work/school better than I, then I feel

	as if I failed the whole task.
CMD4	If I fail partly, it is as bad as being a complete failure.
CMD5	Even when I do something very carefully, I often feel that it is not quite right.
CMD6	I hate being less than the best at things.
CMD7	People will probably think less of me if I make a mistake.
CMD8	If I do not do as well as other people, it means I am an inferior being.
CMD9	If I do not do well all the time, people will not respect me.
CMD10	I usually have doubts about the simple everyday things that I do.
CMD11	I tend to get behind in my work because I repeat things over and over.
CMD12	It takes me a long time to do something "right".

Subscale 3: Parental Expectations and Criticism (PEC)

PEC1	My parents set very high standards for me.
PEC2	As a child, I was punished for doing things less than perfect.
PEC3	My parents never tried to understand my mistakes.
PEC4	My parents wanted me to be the best at everything.
PEC5	Only outstanding performance is good enough in my family.
PEC6	My parents have expected excellence from me.
PEC7	I never feel that I can meet my parents' expectations.
PEC8	My parents have always had higher expectations for my future than I have.
PEC9	I never feel that I can meet my parents' standards.

Subscale 4: Organization (O)

O1	Organization is very important to me.
O2	I am a neat person.
O3	I try to be an organized person
O4	I try to be a neat person.

| O5 | Neatness is very important to me. |
| O6 | I am an organized person. |

Measures of Correlates of Perfectionism

General Regulatory Focus Measure (GRFM; Lockwood et al., 2002)

Using the scale below, please choose the appropriate number for each statement. (Score on a 1 to 9 scale where 1 = *not at all true of me*, 9 = *very true of me*)

GRFM1	In general, I am focused on preventing negative events in my life.
GRFM2	I am anxious that I will fall short of my responsibilities and obligations.
GRFM3	I frequently imagine how I will achieve my hopes and aspirations.
GRFM4	I often think about the person I am afraid I might become in the future
GRFM5	I often think about the person I would ideally like to be in the future.
GRFM6	I typically focus on the success I hope to achieve in the future.
GRFM7	I often worry that I will fail to accomplish my academic goals.
GRFM8	I often think about how I will achieve academic success.
GRFM9	I often imagine myself experiencing bad things that I fear might happen to me.
GRFM10	I frequently think about how I can prevent failures in my life.
GRFM11	I am more oriented toward preventing losses than I am toward achieving gains.
GRFM12	My major goal in school right now is to achieve my academic ambitions.
GRFM13	My major goal in school right now is to avoid becoming an academic failure.
GRFM14	I see myself as someone who is primarily striving to reach my "ideal self"—to fulfill my hopes, wishes, and aspirations.
GRFM15	I see myself as someone who is primarily striving to become the self I "ought" to be—to fulfill my duties, responsibilities, and obligations.

GRFM16	In general, I am focused on achieving positive outcomes in my life.
GRFM17	I often imagine myself experiencing good things that I hope will happen to me.
GRFM18	Overall, I am more oriented toward achieving success than preventing failure.

Attention Check Question 1: For this question, please choose 7.

BIS/BAS (Carver & White, 1994)

Each item of this questionnaire is a statement that a person may either agree with or disagree with. For each item, indicate how much you agree or disagree with what the item says. Please respond to all the items; do not leave any blank. Choose only one response to each statement. Please be as accurate and honest as you can be. Respond to each item as if it were the only item. That is, do not worry about being 'consistent' in your responses. (Rate on a 1 to 4 scale where 1 = *Very false*, 2 = *Somewhat false*, 3 = *Somewhat true*, 4 = *Very true*)

Filler1	A person's family is the most important thing in life.
Filler2	How I dress is important to me.
Filler3	It is hard for me to find the time to do things such as get a haircut.
Filler4	I often wonder why people act the way they do.
BIS1	If I think something unpleasant is going to happen, I usually get pretty 'worked up.
BIS2	I worry about making mistakes.
BIS3	Criticism or scolding hurts me quite a bit.
BIS4	I feel pretty worried or upset when I think or know somebody is angry at me.
BIS5	Even if something bad is about to happen to me, I rarely experience fear or nervousness.*
BIS6	I feel worried when I think I have done poorly at something.
BIS7	I have very few fears compared to my friends.*
BAS-RR1	When I get something I want, I feel excited and energized.
BAS-RR2	When I am doing well at something, I love to keep at it.

BAS-RR3	When good things happen to me, it affects me strongly.
BAS-RR4	It would excite me to win a contest.
BAS-RR5	When I see an opportunity for something I like, I get excited right away.
BAS-D1	When I want something, I usually go all-out to get it.
BAS-D2	I go out of my way to get things I want.
BAS-D3	If I see a chance to get something I want, I move on it right away.
BAS-D4	When I go after something, I use a 'no holds barred' approach.
BAS-FS1	I will often do things for no other reason than that they might be fun.
BAS-FS2	I crave excitement and new sensations.
BAS-FS3	I am always willing to try something new if I think it will be fun.
BAS-FS4	I often act on the spur of the moment.

Note: There are 4 filler items. BIS = Behavioural Inhibition System; BAS-RR = Behavioural Activation System Reward Responsiveness; BAS-D = Behavioural Activation System Drive; BAS-FS = Behavioural Activation System Fun Seeking; * indicates reverse-scored item.

Perceived Busyness Measures (Adapted from Wilcox et al., 2016)

Perceived busyness is a subjective feeling of having a long and effortful work schedule. Please answer the following two questions regarding your perceived state of busyness.

1. "How busy have you been?" (1 = *not busy at all* and 7 = *extremely busy*)
2. "How many tasks do you have to complete in the next two weeks?" (1 = *very few tasks* and 7 = *many tasks*).

Use of ETM strategies Measures (Adapted from Liu et al., 2009)

Individuals use different ways to manage their time. How often do you engage in these activities in managing your time? (Score on a 1 to 5 scale where 1 = *Never* and 5 = *Always*)

For each of these activities, please also indicate the extent to which it was effective for you in managing your time. (Score on a 1 to 5 scale where 1 =

Not at all effective and 5 = *Very effective*)

ETM1	Making To-do lists
ETM2	Marking dates on the calendar
ETM3	Planning a schedule
ETM4	Writing tasks down
ETM5	Planning for tomorrow
ETM6	Following a routine
ETM7	Planning ahead of time
ETM8	Using technology to help manage time
ETM9	Knowing what to do next week

Attention Check Question 2: For this question, please choose 4.

Academic Procrastination Measures

Academic Procrastination Scale (APS; McCloskey, 2011)

The following questions assess your habits and routines as a student. Please answer the following as they apply to yourself.

How much do you, yourself, agree to the following statements? (Score on a 1 to 7 scale where 1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Somewhat disagree*, 4 = *Neither agree nor disagree*, 5 = *Somewhat agree*, 6 = *Agree, 7 = Strongly agree*).

AP1	I usually allocate time to review and proofread my work.*
AP2	I put off projects until the last minute.
AP3	I have found myself waiting until the day before to start a big project.
AP4	I know I should work on school work, but I just don't do it.
AP5	When working on school work, I usually get distracted by other things.
AP6	I waste a lot of time on unimportant things.
AP7	I get distracted by other, more fun, things when I am supposed to work on schoolwork.
AP8	I concentrate on school work instead of other distractions. *
AP9	I can't focus on school work or projects for more than an hour

	until I get distracted
AP10	My attention span for schoolwork is very short.
AP11	Tests are meant to be studied for just the night before.
AP12	I feel prepared well in advance for most tests. *
AP13	"Cramming" and last-minute studying is the best way that I study for a big test.
AP14	I allocate time so I don't have to "cram" at the end of the semester. *
AP15	I only study the night before exams.
AP16	If an assignment is due at midnight, I will work on it until 11:59.
AP17	When given an assignment, I usually put it away and forget about it until it is almost due.
AP18	Friends usually distract me from schoolwork.
AP19	I find myself talking to friends or family instead of working on school work.
AP20	On the weekends, I make plans to do homework and projects, but I get distracted and hang out with friends.
AP21	I tend to put off things for the next day.
AP22	I don't spend much time studying school material until the end of the semester.
AP23	I frequently find myself putting important deadlines off.
AP24	If I don't understand something, I'll usually wait until the night before a test to figure it out.
AP25	I read the textbook and look over notes before coming to class and listening to a lecture or teacher. *

Note. * Indicates reverse-scored item.

Social Desirability Measures

Marlowe-Crowne Social Desirability Scale (Reynolds, 1982)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide how it pertains to you. Please respond either TRUE (T) or FALSE (F) to each item.

SD1	It is sometimes hard for me to go on with my work if I am not encouraged.
SD2	I sometimes feel resentful when I don't get my way.
SD3	On a few occasions, I have given up doing something because I thought too little of my ability.
SD4	There have been times when I felt like rebelling against people in authority even though I knew they were right.
SD5	No matter who I'm talking to, I'm always a good listener.*
SD6	There have been occasions when I took advantage of someone.
SD7	I'm always willing to admit to it when I make a mistake.*
SD8	I sometimes try to get even rather than forgive and forget.
SD9	I am always courteous, even to people who are disagreeable.*
SD10	I have never been irked when people expressed ideas very different from my own.*
SD11	There have been times when I was quite jealous of the good fortune of others.
SD12	I am sometimes irritated by people who ask favors of me.
SD13	I have never deliberately said something that hurt someone's feelings.*

Note. * Indicates reverse-scored item.

Demographic variables

1. **Age (in years):** _____

2. **Gender:**
   a. Male
   b. Female
   c. Non-binary/third gender
   d. Prefer not to say

3. **What is your ethnicity?**
   a. Chinese
   b. Malay
   c. Indian

    d. Other (please specify)

4. **Current Cumulative GPA:** _____**out of 4.0**

5. **How important is GPA to you?** (1 = *Not at all important*; 2 = *Slightly important*; 3 = *Moderately important*; 4 = *Very important*; 5 = *Extremely important*)

6. **Average monthly household income per person (in SGD):**
    a. $1000 and below
    b. $1,001-$3000
    c. $3001-$5000
    d. S$5001-S$7499
    e. S$7500-$9999
    f. S$10,000-S$12,499
    g. S$12,500-S$14,999
    h. S$15,000-S$17,499
    i. S$17,500-S$19,999
    j. More than S$20,000

Honesty Check Question

Have you responded to all questions within this survey carefully and attentively such that your data will be reasonably valid? Your honest answer to this question can help improve the validity of our data and conclusions. Please be assured that your responses are anonymous.

- Yes
- No

Study 2 Materials (Pre-manipulation)

<u>**Commitment Check Question**</u>

You will have to complete the survey in one setting in a quiet environment. The survey will take about 30 minutes to complete. Do you commit to providing your thoughtful and honest answers to the questions in this survey?

- I will provide my best answers.
- I will not provide my best answers.
- I can't promise either way

<u>**Perfectionism Measures**</u>

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CMD7	People will probably think less of me if I make a mistake.
CMD8	If I do not do as well as other people, it means I am an inferior being.
CMD9	If I do not do well all the time, people will not respect me.
CMD10	I usually have doubts about the simple everyday things that I do.
CMD11	I tend to get behind in my work because I repeat things over and over.
CMD12	It takes me a long time to do something "right".
CMD13	The fewer mistakes I make, the more people will like me.

Subscale 3: Parental Expectations and Criticism (PEC)

PEC1	My parents set very high standards for me.
PEC2	As a child, I was punished for doing things less than perfect.
PEC3	My parents never tried to understand my mistakes.
PEC4	My parents wanted me to be the best at everything.
PEC5	Only outstanding performance is good enough in my family.
PEC6	My parents have expected excellence from me.
PEC7	I never feel that I can meet my parents' expectations.
PEC8	My parents have always had higher expectations for my future than I have.
PEC9	I never feel that I can meet my parents' standards.

Subscale 4: Organization (O)

O1	Organization is very important to me.
O2	I am a neat person.
O3	I try to be an organized person
O4	I try to be a neat person.
O5	Neatness is very important to me.

O6	I am an organized person.

Measures of Correlates of Perfectionism

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GRFM6	I typically focus on the success I hope to achieve in the future.
GRFM7	I often worry that I will fail to accomplish my academic goals.
GRFM8	I often think about how I will achieve academic success.
GRFM9	I often imagine myself experiencing bad things that I fear might happen to me.
GRFM10	I frequently think about how I can prevent failures in my life.
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GRFM12	My major goal in school right now is to achieve my academic ambitions.
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GRFM14	I see myself as someone who is primarily striving to reach my "ideal self "—to fulfill my hopes, wishes, and aspirations.
GRFM15	I see myself as someone who is primarily striving to become the self I "ought" to be—to fulfill my duties, responsibilities, and obligations.
GRFM16	In general, I am focused on achieving positive outcomes in my

	life.
GRFM17	I often imagine myself experiencing good things that I hope will happen to me.
GRFM18	Overall, I am more oriented toward achieving success than preventing failure.

Attention Check Question 1: For this question, please choose 7.

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Filler2	How I dress is important to me.
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BIS1	If I think something unpleasant is going to happen, I usually get pretty 'worked up.
BIS2	I worry about making mistakes.
BIS3	Criticism or scolding hurts me quite a bit.
BIS4	I feel pretty worried or upset when I think or know somebody is angry at me. *
BIS5	Even if something bad is about to happen to me, I rarely experience fear or nervousness.
BIS6	I feel worried when I think I have done poorly at something.
BIS7	I have very few fears compared to my friends. *
BAS-RR1	When I get something I want, I feel excited and energized.
BAS-RR2	When I am doing well at something, I love to keep at it.
BAS-	When good things happen to me, it affects me strongly.

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RR3	
BAS-RR4	It would excite me to win a contest.
BAS-RR5	When I see an opportunity for something I like, I get excited right away.
BAS-D1	When I want something, I usually go all-out to get it.
BAS-D2	I go out of my way to get things I want.
BAS-D3	If I see a chance to get something I want, I move on it right away.
BAS-D4	When I go after something, I use a 'no holds barred' approach.
BAS-FS1	I will often do things for no other reason than that they might be fun.
BAS-FS2	I crave excitement and new sensations.
BAS-FS3	I am always willing to try something new if I think it will be fun.
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Note: There are 4 filler items. BIS = Behavioural Inhibition System; BAS-RR = Behavioural Activation System Reward Responsiveness; BAS-D = Behavioural Activation System Drive; BAS-FS = Behavioural Activation System Fun Seeking; * indicates reverse-scored item.

Perceived Busyness Measures (Adapted from Wilcox et al., 2016)

Perceived busyness is a subjective feeling of having a long and effortful work schedule. Please answer the following two questions regarding your perceived state of busyness.

1. "How busy have you been?" (1 = *not busy at all* and 7 = *extremely busy*)
2. "How many tasks do you have to complete in the next two weeks?" (1 = *very few tasks* and 7 = *many tasks*).

Baseline Use of ETM strategies Measures (Adapted from Liu et al., 2009)

Individuals use different ways to manage their time. How often do you engage in these activities in managing your time? (Score on a 1 to 5 scale where 1 = *Never* and 5 = *Always*)

For each of these activities, please also indicate the extent to which it was effective for you in managing your time. (Score on a 1 to 5 scale where 1 = *Not at all effective* and 5 = *Very effective*)

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ETM1	Making To-do lists
ETM2	Marking dates on the calendar
ETM3	Planning a schedule
ETM4	Writing tasks down
ETM5	Planning for tomorrow
ETM6	Following a routine
ETM7	Planning ahead of time
ETM8	Using technology to help manage time
ETM9	Knowing what to do next week

Attention Check Question 2: For this question, please choose 4.

<u>Personal Testimonial Instructions</u>

You are required to submit a personal testimonial about your experience as a SMU undergraduate, demonstrating how your experiences with SMU have impacted you. The testimonial can be presented in any formats, from a prose to a poem, a poster to a video.

Three most authentic, creative, and inspiring entries will be awarded with a Starbucks gift card of $10 cash. The best three entries will be decided by the principal investigator of this study and her team.

You are required to upload your work onto a separate Qualtrics link no later than 10 days from today. If today is 26th August, you will need to submit the testimonial on 5th September. The separate Qualtrics link will be sent to you via email by tomorrow noon. You may submit your entry as early as tomorrow noon, although an early submission may not increase your chances of winning the Starbucks gift card.

Before moving on the next section of the survey. **Please indicate the date that you plan to submit the personal testimonial.**

<u>Study Conditions</u>

<u>Time Management Condition Instruction and Materials:</u>

In this section, you will be asked to do a short activity that may assist you in completing the personal testimonial.

First, watch a video about planning.

Next, on a piece of blank paper, write down the subtasks that you plan to do to complete the personal testimonial.

Also, for each subtask, indicate the (1) date. (2) time, and (3) duration you plan to do it, as well as the logistics required.

Finally, please take a picture of this paper with the plans that you have made and upload it to the drop box provided below. Name the file with your participant ID and make sure that the file size is not larger than 16 MB.

Please keep this paper with you until you have submitted the personal testimonial.

Control Condition Instruction and Materials:

In this section, you will be asked to do a short activity that may assist you in completing the personal testimonial.

First, please watch the following short video clip describing the life cycle of a butterfly.

Next, on piece of blank paper, draw the life cycle of a butterfly.

Also, indicate the estimated amount of time needed for the butterfly to progress from one life stage to the next.

Finally, please take a picture of this paper with the butterfly life cycle that you have drawn and upload it to the drop box provided below. Name the file with your participant ID and make sure that the file size is not larger than 16 MB.

Please keep this paper with you until you have submitted the personal testimonial.

Demographic variables

1. **Age (in years):** _____

2. **Gender:**
    a. Male
    b. Female
    c. Non-binary/third gender
    d. Prefer not to say

3. **What is your ethnicity?**
    a. Chinese
    b. Malay
    c. Indian
    d. Other (please specify)

4. **Current Cumulative GPA:** _____ out of 4.0

5. **How important is GPA to you?** (1 = *Not at all important*; 2 = *Slightly important*; 3 = *Moderately important*; 4 = *Very important*; 5 = *Extremely important*)

6. **Average monthly household income per person (in SGD):**
    a. $1000 and below
    b. $1,001-$3000
    c. $3001-$5000
    d. S$5001-S$7499
    e. S$7500-$9999
    f. S$10,000-S$12,499
    g. S$12,500-S$14,999
    h. S$15,000-S$17,499
    i. S$17,500-S$19,999
    j. More than S$20,000

Honesty Check Question

Have you responded to all questions within this survey carefully and attentively such that your data will be reasonably valid? Your honest answer to this question can help improve the validity of our data and conclusions. Please be assured that your responses are anonymous.

- Yes
- No

Study 2 Materials (Post-manipulation)

Testimonial Submission Instruction

Please upload your personal testimonial onto the drop box provided below.

Please use your Student ID as the file name (e.g., 01355031). Ensure that the file size is not larger than 16 MB.

Before concluding the study, please answer the following questions about your experiences when you were working on this personal testimonial.

Procrastination Measures

Behavioral Measure: The difference between the planned date of submission and the actual date of submission will be calculated.

Self-reported Measure: How much do you think that you have procrastinated on completing the personal testimonial? (Rate on a 1 to 5 scale where 1 = not at all and 5 = very much)

Manipulation Checks

Time Management Condition:

1. To what extent do you think the planning activity that you did during the survey session was effective in preventing you from procrastinating on the testimonial task? (Rate on a 1 to 5 scale where 1 = *not at all effective* and 5 = *extremely effective*)

2. To what extent do you think that the planning activity that you did during the survey session was effective in assisting you to complete the testimonial task? (Rate on a 1 to 5 scale where 1 = *not at all effective* and 5 = *extremely effective*).

Control Condition:

1. To what extent do you think the butterfly lifecycle activity that you did during the survey session was effective in preventing you from procrastinating on the testimonial task? (Rate on a 1 to 5 scale where 1 = *not at all effective* and 5 = *extremely effective*)
2. To what extent do you think that the butterfly lifecycle activity that you did during the survey session was effective in assisting you to complete the testimonial task? (Rate on a 1 to 5 scale where 1 = *not at all effective* and 5 = *extremely effective*).

Social Desirability Measures

Marlowe-Crowne Social Desirability Scale (Reynolds, 1982)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide how it pertains to you. Please respond either TRUE

(T) or FALSE (F) to each item.

SD1	It is sometimes hard for me to go on with my work if I am not encouraged.
SD2	I sometimes feel resentful when I don't get my way.
SD3	On a few occasions, I have given up doing something because I thought too little of my ability.
SD4	There have been times when I felt like rebelling against people in authority even though I knew they were right.
SD5	No matter who I'm talking to, I'm always a good listener.*
SD6	There have been occasions when I took advantage of someone.
SD7	I'm always willing to admit to it when I make a mistake.*
SD8	I sometimes try to get even rather than forgive and forget.
SD9	I am always courteous, even to people who are disagreeable.*
SD10	I have never been irked when people expressed ideas very different from my own.*
SD11	There have been times when I was quite jealous of the good fortune of others.
SD12	I am sometimes irritated by people who ask favors of me.
SD13	I have never deliberately said something that hurt someone's feelings.*

* Indicates reverse-scored item.

Validity Check Question

How long did you take to complete the personal testimonial (in minutes)?

To what extent do you think that the testimonial task was difficult to complete? (1 = *not at all difficult*, 5 = *extremely difficult*)

During the study, did you try to figure out the aim of the study? If yes, please elaborate briefly what you thought the aim of the study was.

Honesty Check Question

Have you responded to all questions within this survey carefully and attentively such that your data will be reasonably valid? Your honest answer to

this question can help improve the validity of our data and conclusions. Please be assured that your responses are anonymous.

- Yes
- No

10   Appendix B (Hypothesized Model & Result Summary)

Figure 1

Hypothesized Moderated Mediation Model of Studies 1 and 2.
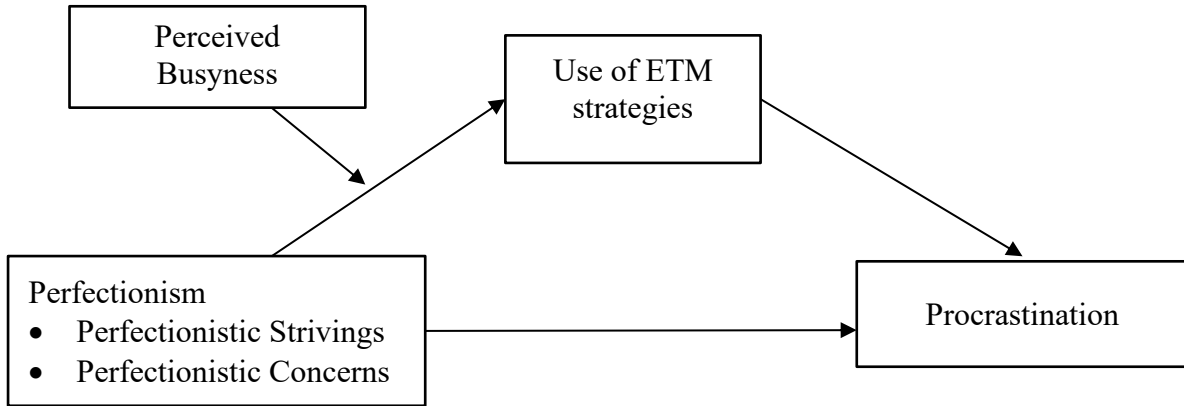
Note. Hypothesized moderated mediation model demonstrating the relationship between perfectionism (perfectionistic strivings and perfectionistic concerns) and procrastination via use of effective time management (ETM) strategies with perceived busyness as the first-stage moderator.

Figure 2

Results of Moderated Mediation Model with Perfectionistic Strivings as the Predictor.
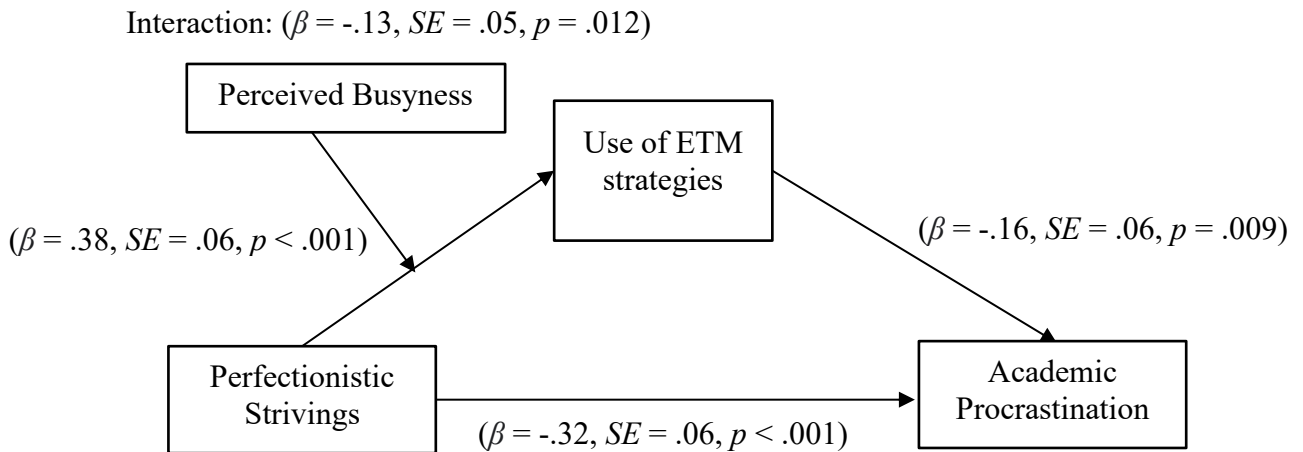
Figure 3

Simple Slopes Showing the Moderating Effect of Perceived Busyness.
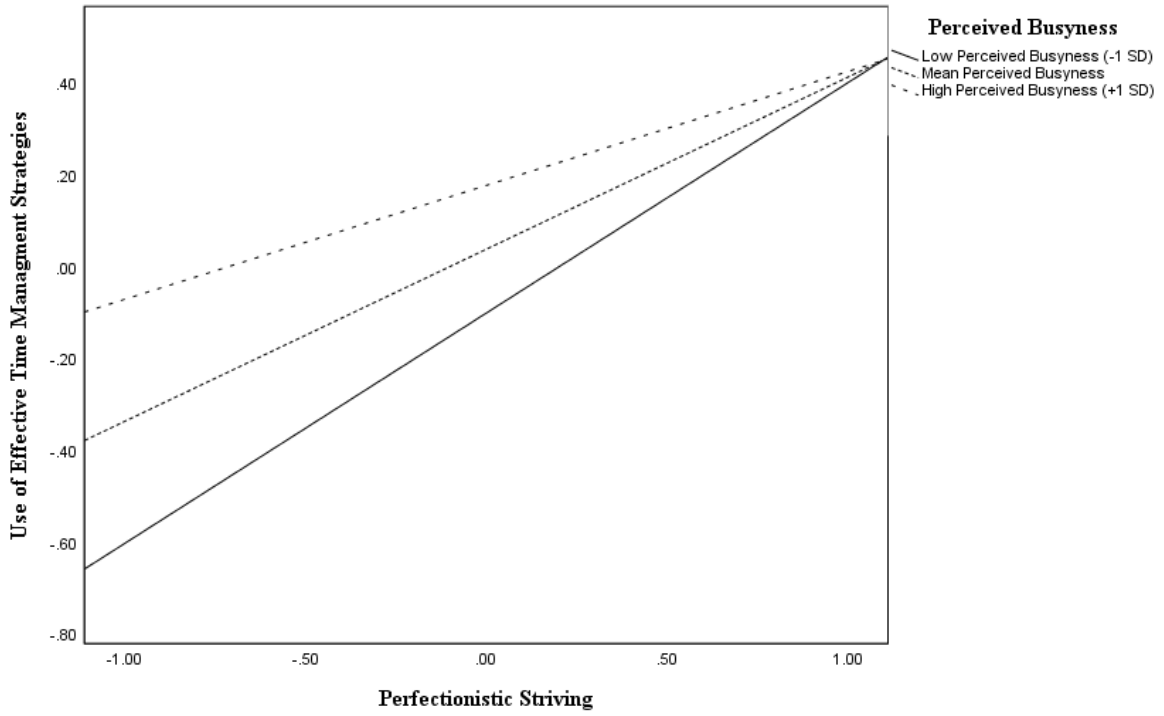
Figure 4

Results of Moderated Mediation Model with Perfectionistic Concerns as the Predictor.

Interaction: (β = .04, *SE* = .05, *p* = .423)
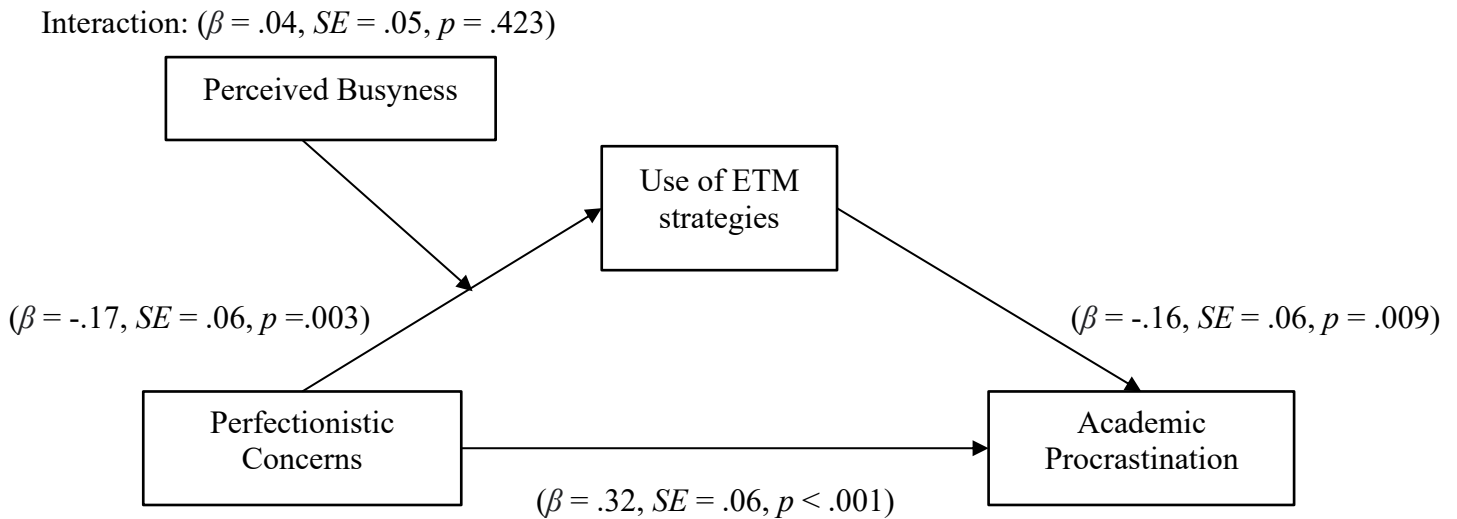
Figure 5

Statistical Model of Study 2.
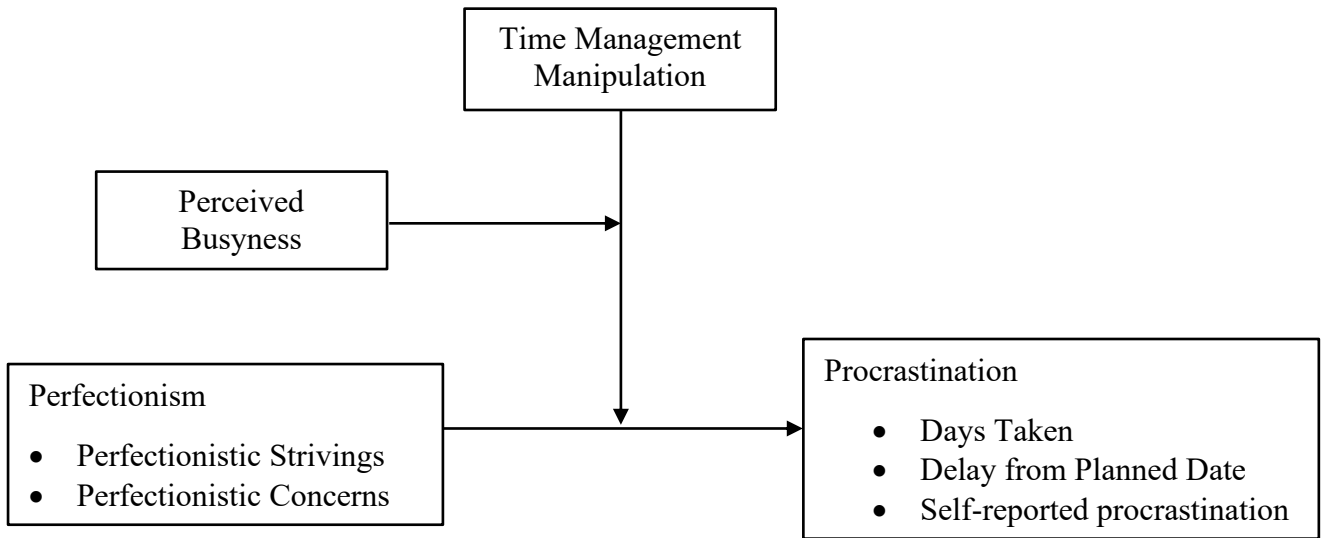
Figure 6

*Two-way Interaction between Perfectionistic Concerns and Time Management
Intervention at Different Levels of Perceived Busyness.*
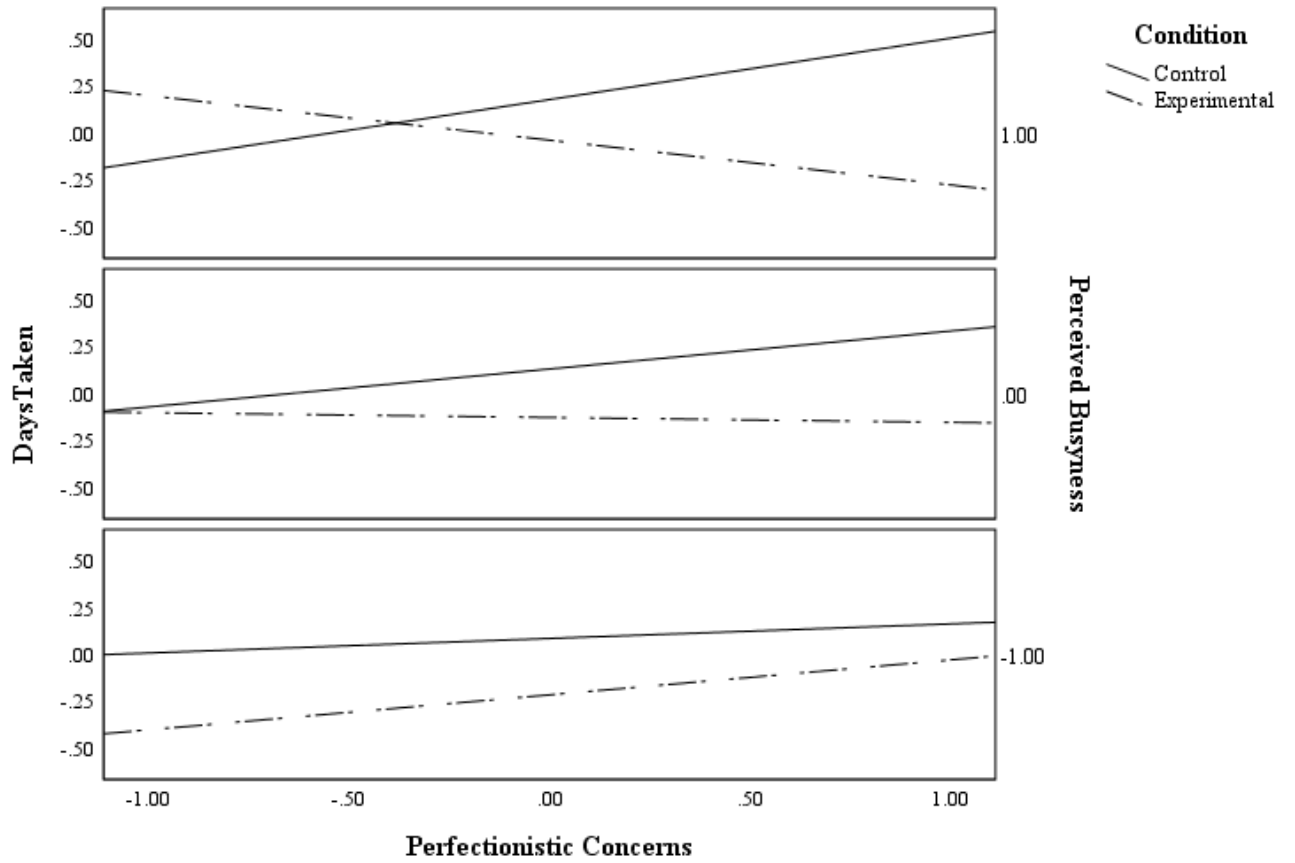
Table 1

Descriptive Statistics and Cronbach's Alphas of Key Variables in Study 1.

	Variable	*M (SD)*	Scale Range (Actual Range)	α	Zero-Order Correlations								
					1	2	3	4	5	6	7	8	9
1	Perfectionistic Strivings	5.08 (0.86)	1 – 7 (2.10 – 7.00)	.88									
2	Perfectionistic Concerns	3.62 (1.07)	1 – 7 (1.19 – 6.85)	.92	**.22*****								
3	Prevention Focus	5.89 (1.47)	1 – 9 (1.78 – 9.00)	.88	**.35*****	**.57*****							
4	Promotion Focus	6.55 (1.20)	1 – 9 (2.22 - 9.00)	.87	**.56*****	**.16****	**.44*****						
5	Avoidance Motivation	3.11 (0.52)	1 – 4 (1.00 – 4.00)	.81	-.02	**.33*****	**.41*****	.06					
6	Approach Motivation	3.04 (0.40)	1 – 4 (1.68 – 3.92)	.81	**.20*****	.01	.03	**.30*****	.12				
7	Use of ETM strategies	15.45 (4.83)	1 – 25 (3.22 – 25.00)	.83	**.40*****	-.07	**.14***	**.30*****	-.02	**.16****			
8	Academic Procrastination	3.43 (1.08)	1 – 7 (1.20 – 6.52)	.94	**-.32*****	**.26*****	**.17****	**-.15***	**.13***	-.03	**-.31*****		
9	Perceived Busyness	5.01 (1.22)	1 – 7 (1.00 – 7.00)	.78	**.32*****	**.14***	**.18****	**.27*****	.07	**.16****	**.24*****	-.02	
10	Social Desirability	18.47 (2.59)	13 – 26 (13.00 – 25.00)	.65	.10	**-.17****	**-.16***	-.01	**-.15***	-.07	-.05	**-.26*****	0.02

Notes. N = 268; ***p < .001 (2-tailed); **p < .01 (2-tailed); *p < .05 (2-tailed). All significant zero-order correlations were bolded.

Table 2a

Regression Analyses for the Moderated Mediation Model with Perfectionistic Strivings as the Predictor in Study 1.

Predictor	Use of ETM strategies				Academic procrastination			
	β (SE)	*t*	*p*	*95%CL*	*β (SE)*	*t*	*p*	*95%CL*
Perfectionistic strivings	0.38 (0.06)	6.36	0.000	[0.26, 0.49]	-0.32 (0.06)	-5.33	0.000	[-0.44, -0.20]
Perceived busyness	0.14 (0.06)	2.42	0.016	[0.03, 0.25]				
Perfectionistic strivings X Perceived busyness	-0.13 (0.05)	-2.52	0.012	[-0.23, -0.03]				
Perfectionistic concerns	-0.17 (0.06)	-2.97	0.003	[-0.28, -0.06]	0.32 (0.06)	5.79	0.000	[0.21, 0.43]
Use of ETM strategies					-0.16 (0.06)	-2.64	0.009	[-0.27, -0.04]
R^2		0.219***				0.236***		

Conditional effects of perfectionistic strivings on use of ETM strategies

Perceived busyness	*β (SE)*	*t*	*p*	*95%CL*
-1 SD	0.50 (0.07)	6.90	0.000	[0.36, 0.65]
M	0.38 (0.06)	6.36	0.000	[0.26, 0.49]
+1 SD	0.25 (0.08)	3.02	0.003	[0.09, 0.41]

Conditional indirect effects of perfectionistic strivings on academic procrastination

Perceived busyness	*β (BootSE)*	*95%BootCL*
-1 SD	-0.08 (0.04)	[-0.15, -0.02]
M	-0.06 (0.03)	[-0.12, -0.01]
+1 SD	-0.04 (0.02)	[-0.09, -0.01]

Index of moderated mediation

Mediator	*Index*	*BootSE*	*95%BootCL*
Use of ETM strategies			
n = 268	0.02	0.01	[0.00, 0.05]

Note. ***$p < .001$ (2-tailed); **$p < .01$ (2-tailed); *$p < .05$ (2-tailed).

Table 2b

Regression Analyses for the Moderated Mediation Model with Perfectionistic Strivings as the Predictor and Social Desirability as the Covariate in Study 1.

Predictor	Use of ETM strategies				Academic procrastination			
	β (SE)	*t*	*p*	*95%CL*	*β (SE)*	*t*	*p*	*95%CL*
Perfectionistic strivings	0.39 (0.06)	6.65	0.000	[0.28, 0.51]	-0.29 (0.06)	-4.70	0.000	[-0.40, -0.17]
Perceived busyness	0.14 (0.06)	2.44	0.015	[0.03, 0.25]				
Perfectionistic strivings X Perceived busyness	-0.13 (0.05)	-2.54	0.012	[-0.23, -0.03]				
Perfectionistic concerns	-0.19 (0.06)	-3.37	0.001	[-0.30, -0.08]	0.28 (0.06)	5.02	0.000	[0.17, 0.39]
Social desirability	-0.12 (0.06)	-2.21	0.028	[-0.23, -0.01]	-0.19 (0.05)	-3.57	0.000	[-0.30, -0.09]
Use of ETM strategies					-0.18 (0.06)	-3.14	0.002	[-0.30, -0.07]
R^2	.233***				.271***			

Conditional effects of perfectionistic strivings on use of ETM strategies

Perceived busyness	*β (SE)*	*t*	*p*	*95%CL*
-1 SD	0.52 (0.07)	7.15	0.000	[0.38, 0.66]
M	0.39 (0.06)	6.65	0.000	[0.28, 0.51]
+1 SD	0.27 (0.08)	3.24	0.001	[0.10, 0.43]

Conditional indirect effects of perfectionistic strivings on academic procrastination

Perceived busyness	*β (BootSE)*	*95%BootCL*
-1 SD	-0.10 (0.04)	[-0.17, -0.03]
M	-0.07 (0.03)	[-0.13, -0.02]
+1 SD	-0.05 (0.02)	[-0.10, -0.01]

Index of moderated mediation

Mediator	*Index*	*BootSE*	*95%BootCL*
Use of ETM strategies			
n = 268	0.02	0.01	[0.00, 0.05]

Note. ***$p < .001$ (2-tailed); **$p < .01$ (2-tailed); *$p < .05$ (2-tailed).

Table 3a

Regression Analyses for the Moderated Mediation Model with Perfectionistic Concerns as the Predictor in Study 1.

Predictor	Use of ETM strategies				Academic procrastination			
	β (SE)	*t*	*p*	*95%CL*	*β (SE)*	*t*	*p*	*95%CL*
Perfectionistic concerns	-0.17 (0.06)	-3.04	0.003	[-0.28, -0.06]	0.32 (0.06)	5.79	0.000	[0.21, 0.43]
Perceived busyness	0.14 (0.06)	2.39	0.018	[0.02, 0.26]				
Perfectionistic concerns X Perceived busyness	0.04 (0.05)	0.80	0.423	[-0.06, 0.14]				
Perfectionistic strivings	0.39 (0.06)	6.63	0.000	[0.28, 0.51]	-0.32 (0.06)	-5.33	0.000	[-0.44, -0.20]
Use of ETM strategies					-0.16 (0.06)	-2.64	0.009	[-0.27, -0.04]
R^2			0.202***				0.236***	

Conditional effects of perfectionistic concerns on use of ETM strategies

Perceived busyness	*β (SE)*	*t*	*p*	*95%CL*
-1 SD	-0.21 (0.08)	-2.76	0.006	[-0.36, -0.06]
M	-0.17 (0.06)	-3.04	0.003	[-0.28, -0.06]
+1 SD	-0.13 (0.07)	-1.79	0.074	[-0.28, 0.01]

Conditional indirect effects of perfectionistic concerns on academic procrastination

Perceived busyness	*β (BootSE)*	*95%BootCL*
-1 SD	0.03 (0.02)	[0.00, 0.07]
M	0.03 (0.01)	[0.00, 0.06]
+1 SD	0.02 (0.02)	[-0.00, 0.06]

Index of moderated mediation

Mediator	*Index*	*BootSE*	*95%BootCL*
Use of ETM strategies			
n = 268	-0.01	0.01	[-0.02, 0.01]

Note. ***p < .001 (2-tailed); **p < .01 (2-tailed); *p < .05 (2-tailed).

Table 3b

Regression Analyses for the Moderated Mediation Model with Perfectionistic Concerns as the Predictor and Social Desirability as the Covariate in Study 1.

Predictor	Use of ETM strategies				Academic procrastination			
	β (SE)	t	p	95%CL	β (SE)	t	p	95%CL
Perfectionistic concerns	-0.20 (0.06)	-3.41	0.001	[-0.31, -0.08]	0.28 (0.06)	5.02	0.000	[0.17, 0.39]
Perceived busyness	0.14 (0.06)	2.40	0.017	[0.03, 0.25]				
Perfectionistic concerns X Perceived busyness	0.03 (0.05)	0.69	0.490	[-0.06, 0.13]				
Perfectionistic strivings	0.41 (0.06)	6.90	0.000	[0.29, 0.53]	-0.29(0.06)	-4.70	0.000	[-0.40, -0.17]
Social desirability	-0.12 (0.06)	-2.14	0.033	[-0.23, -0.01]	-0.19(0.05)	-3.57	0.000	[-0.30, -0.09]
Use of ETM strategies					-0.18(0.06)	-3.14	0.002	[-0.30, -0.07]
R^2		0.216***				0.271***		

Conditional effects of perfectionistic concerns on use of ETM strategies

Perceived busyness	β (SE)	t	p	95%CL
-1 SD	-0.23 (0.08)	-2.99	0.003	[-0.38, -0.08]
M	-0.20 (0.06)	-3.41	0.001	[-0.31, -0.08]
+1 SD	-0.16 (0.07)	-2.17	0.031	[-0.31, -0.01]

Conditional indirect effects of perfectionistic concerns on academic procrastination

Perceived busyness	β (BootSE)	95%BootCL
-1 SD	0.04 (0.02)	[0.01, 0.09]
M	0.04 (0.02)	[0.01, 0.07]
+1 SD	0.03 (0.02)	[0.00, 0.07]

Index of moderated mediation

Mediator	Index	BootSE	95%BootCL
Use of ETM strategies			
n = 268	-0.01	0.01	[-0.03, 0.01]

Note. ***p* < .001 (2-tailed); ***p* < .01 (2-tailed); **p* < .05 (2-tailed).

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Table 4

Descriptive Statistics and Cronbach's Alphas of Key Measures in Study 2.

	Variable	*M (SD)*	Scale Range (Actual Range)	α
1	Condition (control = 0; experimental = 1)	0.48 (0.50)	0 – 1 (0 – 1)	-
2	Perfectionistic Strivings	5.01 (0.95)	1 – 7 (1.85 – 6.64)	.90
3	Perfectionistic Concerns	3.87 (1.19)	1 – 7 (1.76 – 6.94)	.94
4	Prevention Focus	5.94 (1.47)	1 – 9 (1.78 – 9.00)	.87
5	Promotion Focus	6.73 (1.26)	1 – 9 (1.67 – 9.00)	.89
6	Avoidance Motivation	3.18 (0.51)	1 – 4 (1.57 – 4.00)	.78
7	Approach Motivation	3.11 (0.36)	1 – 4 (2.03 – 4.00)	.77
8	Baseline Use of ETM strategies	15.74 (4.91)	1 – 25 (1.78 – 25.00)	.84
9	Self-reported Procrastination	2.64 (1.37)	1 – 5 (1.00 – 5.00)	-
10	Delay from Planned Date	0.56 (3.47)	-9 – 12 (-9 – 11)	-
11	Days Taken	5.11 (3.57)	1 – 13 (1 – 13)	-
12	Perceived Busyness	5.71 (0.93)	1 – 7 (2.50 – 7.00)	.64
13	Social Desirability	18.35 (2.71)	13 – 26 (13 – 25)	.68
14	Perceived Task Difficulty	1.87 (0.95)	1 – 5 (1 – 5)	-
15	Manipulation Check 1	2.26 (1.18)	1 – 5 (1 – 5)	-
16	Manipulation Check 2	2.35 (1.2)	1 – 5 (1 – 5)	-

Table 5

Correlations of Key Variables in Study 2.

Variable		Zero-Order Correlation													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Condition (control = 0; experimental = 1)															
2	Perfectionistic Strivings	.01														
3	Perfectionistic Concerns	-.05	.04													
4	Prevention Focus	-.09	**.22****	**.60*****												
5	Promotion Focus	-.08	**.53*****	.05	**.31*****											
6	Avoidance Motivation	-.07	-.07	**.50*****	**.54*****	-.04										
7	Approach Motivation	-.01	**.27*****	**.19****	**.21****	**.41*****	-.04									
8	Baseline Use of ETM strategies	.10	**.40*****	-.07	.08	**.27*****	.01	**.19****								
9	Self-reported Procrastination	**-.16****	-.07	.11	.11	.08	.05	.05	-.13							
10	Delay from Planned Date	**-.19****	.02	.08	.11	.12	.09	.10	**-.16***	**.43*****						

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11	Days Taken	**-.17***	-.10	**.14[*]**	.07	.07	.13	.02	**-.16[*]**	**.66^{***}**	**.58^{***}**					
12	Perceived Busyness	-.07	**.24^{***}**	.07	**.23^{**}**	**.21^{**}**	.10	**.17[*]**	**.31^{***}**	-.06	.06	.02				
13	Social Desirability	.00	**.15[*]**	**-.25^{***}**	**-.25^{***}**	.09	**-.35^{***}**	-.03	**.15[*]**	-.11	-.02	-.05	-.03			
14	Perceived Task Difficulty	.03	-.12	.12	.07	**-.21^{**}**	-.00	-.05	-.08	.09	-.04	.01	-.01	-.09		
15	Manipulation Check 1	**.36^{***}**	.08	-.09	-.09	-.10	-.13	.00	.07	**-.33^{***}**	**-.15[*]**	**-.25^{***}**	-.07	.10	.13	
16	Manipulation Check 2	**.42^{***}**	.11	-.06	-.02	-.06	**-.16[*]**	-.08	**.15[*]**	**-.16[*]**	-.10	-.10	-.00	.12	.13	**.69^{***}**

Notes. $N = 209$; ***$p < .001$ (2-tailed); **$p < .01$ (2-tailed); *$p < .05$ (2-tailed). All significant zero-order correlations were bolded.

Table 6a

Regression Analyses for the Three-Way Interaction between Perfectionistic Concerns, Time Management Intervention and Perceived Busyness on Days Taken to Submit Task.

	Days taken			
Predictors	*β (SE)*	*t*	*p*	*95%CL*
Perfectionistic concerns	**0.20 (0.09)**	**2.26**	**0.025**	**[0.03, 0.38]**
Condition (0 = control; 1 = experimental)	-0.26 (0.14)	-1.91	0.058	[-0.53, 0.01]
Perfectionistic concerns X Condition	-0.23 (0.14)	-1.66	0.099	[-0.50, 0.04]
Perceived busyness	0.05 (0.10)	0.47	0.636	[-0.15, 0.24]
Perfectionistic concerns X Perceived busyness	0.13 (0.10)	1.27	0.204	[-0.07, 0.32]
Condition X Perceived busyness	0.04 (0.14)	0.31	0.760	[-0.23, 0.31]
Perfectionistic concerns X Condition X Perceived busyness	**-0.34 (0.15)**	**-2.31**	**0.022**	**[-0.63, -0.05]**
Perfectionistic strivings	-0.09 (0.07)	-1.15	0.250	[-0.23, 0.06]
Baseline use of ETM strategies	-0.12 (0.08)	-1.50	0.135	[-0.27, 0.04]

Test of conditional perfectionistic concerns X condition at each level of perceived busyness

Perceived busyness	*β*	*F(1,199)*	*p*	
-1 SD	0.11	0.28	0.598	
M	-0.23	2.76	0.099	
+1 SD	**-0.57**	**8.46**	**0.004**	

Conditional effects of the focal predictor at each level of the moderators

Perceived busyness		*β (SE)*	*t*	*p*	*95%CL*
	-1 SD	0.08 (0.14)	0.54	0.587	[-0.20, 0.36]
Control condition	M	**0.20 (0.09)**	**2.26**	**0.025**	**[0.03, 0.38]**
	+1 SD	**0.33 (0.12)**	**2.69**	**0.008**	**[0.09, 0.57]**
	-1 SD	0.19 (0.15)	1.25	0.213	[-0.11, 0.48]
Experimental condition	M	-0.03 (0.1)	-0.25	0.805	[-0.23, 0.18]
	+1 SD	-0.24 (0.15)	-1.57	0.117	[-0.54, 0.06]

Table 6b

Regression Analyses for the Three-Way Interaction between Perfectionistic Concerns, Time Management Intervention and Perceived Busyness on Delay from Planned Date of Submission.

Predictors	Delay from planned date			
	β (SE)	t	p	95%CL
Perfectionistic concerns	0.10 (0.09)	1.10	0.273	[-0.08, 0.28]
Condition (0 = control; 1 = experimental)	**-0.31 (0.14)**	**-2.27**	**0.024**	**[-0.58, -0.04]**
Perfectionistic concerns X Condition	-0.13 (0.14)	-0.91	0.363	[-0.40, 0.15]
Perceived busyness	0.00 (0.10)	0.03	0.978	[-0.20, 0.20]
Perfectionistic concerns X Perceived busyness	0.00 (0.10)	0.03	0.978	[-0.19, 0.20]
Condition X Perceived busyness	0.17 (0.14)	1.22	0.223	[-0.10, 0.44]
Perfectionistic concerns X Condition X Perceived busyness	-0.05 (0.15)	-0.37	0.714	[-0.35, 0.24]
Perfectionistic strivings	0.07 (0.08)	0.93	0.352	[-0.08, 0.22]
Baseline use of ETM strategies	**-0.19 (0.08)**	**-2.47**	**0.015**	**[-0.34, -0.04]**

Test of conditional perfectionistic concerns X condition at each level of perceived busyness

Perceived busyness	β	F(1,199)	p
-1 SD	-0.07	0.12	0.728
M	-0.13	0.83	0.363
+1 SD	-0.18	0.85	0.358

Conditional effects of the focal predictor at each level of the moderators

Perceived busyness		β (SE)	t	p	95%CL
	-1 SD	0.10 (0.14)	0.67	0.503	[-0.19, 0.38]
Control condition	M	0.10 (0.09)	1.10	0.273	[-0.08, 0.28]
	+1 SD	0.10 (0.12)	0.83	0.408	[-0.14, 0.35]
	-1 SD	0.02 (0.15)	0.16	0.873	[-0.27, 0.32]
Experimental condition	M	-0.03 (0.11)	-0.26	0.796	[-0.24, 0.18]
	+1 SD	-0.08 (0.15)	-0.51	0.607	[-0.38, 0.22]

Table 6c

Regression Analyses for the Three-Way Interaction between Perfectionistic Concerns, Time Management Intervention and Perceived Busyness on Self-reported Procrastination.

Predictors	Self-reported procrastination			
	β (SE)	*t*	*p*	*95%CL*
Perfectionistic concerns	0.17 (0.09)	1.91	0.057	[-0.01, 0.35]
Condition (0 = control; 1 = experimental)	**-0.29 (0.14)**	**-2.07**	**0.039**	**[-0.56, -0.01]**
Perfectionistic concerns X Condition	-0.20 (0.14)	-1.45	0.148	[-0.48, 0.07]
Perceived busyness	-0.06 (0.10)	-0.59	0.554	[-0.26, 0.14]
Perfectionistic concerns X Perceived busyness	0.13 (0.10)	1.29	0.200	[-0.07, 0.33]
Condition X Perceived busyness	0.07 (0.14)	0.52	0.606	[-0.20, 0.35]
Perfectionistic concerns X Condition X Perceived busyness	-0.21 (0.15)	-1.43	0.154	[-0.51, 0.08]
Perfectionistic strivings	-0.05 (0.08)	-0.61	0.543	[-0.19, 0.10]
Baseline use of ETM strategies	-0.08 (0.08)	-0.96	0.336	[-0.23, 0.08]

Test of conditional perfectionistic concerns X condition at each level of perceived busyness

Perceived busyness	*β*	*F(1,199)*	*p*	
-1 SD	0.01	0.00	0.967	
M	-0.20	2.11	0.148	
+1 SD	**-0.42**	**4.41**	**0.037**	

Conditional effects of the focal predictor at each level of the moderators

Perceived busyness		*β (SE)*	*t*	*p*	*95%CL*
	-1 SD	0.05 (0.15)	0.32	0.751	[-0.24, 0.33]
Control condition	M	0.17 (0.09)	1.91	0.057	[-0.01, 0.35]
	+1 SD	**0.30 (0.12)**	**2.44**	**0.016**	**[0.06, 0.55]**
	-1 SD	0.05 (0.15)	0.36	0.719	[-0.25, 0.36]
Experimental condition	M	-0.03 (0.11)	-0.27	0.785	[-0.24, 0.18]
	+1 SD	-0.11 (0.15)	-0.73	0.465	[-0.42, 0.19]

Table 7a

Regression Analyses for the Three-Way Interaction between Perfectionistic Strivings, Time Management Intervention and Perceived Busyness on Days Taken to Submit Task.

Predictors	Days taken			
	β (SE)	*t*	*p*	*95%CL*
Perfectionistic strivings	-0.02 (0.10)	-0.19	0.851	[-0.21, 0.18]
Condition (0 = control; 1 = experimental)	**-0.32 (0.14)**	**-2.24**	**0.026**	**[-0.59, -0.04]**
Perfectionistic strivings X Condition	-0.10 (0.14)	-0.73	0.469	[-0.39, 0.18]
Perceived busyness	-0.04 (0.10)	-0.35	0.728	[-0.24, 0.17]
Perfectionistic strivings X Perceived busyness	-0.15 (0.08)	-1.75	0.082	[-0.31, 0.02]
Condition X Perceived busyness	0.14 (0.15)	0.93	0.352	[-0.15, 0.43]
Perfectionistic strivings X Condition X Perceived busyness	0.12 (0.13)	0.91	0.365	[-0.14, 0.38]
Perfectionistic concerns	0.12 (0.07)	1.74	0.084	[-0.02, 0.25]
Baseline use of ETM strategies	-0.13 (0.08)	-1.72	0.086	[-0.29, 0.02]

Test of conditional perfectionistic strivings X condition at each level of perceived busyness

Perceived busyness	*β*	*F(1,199)*	*p*	
-1 SD	-0.22	1.51	0.220	
M	-0.10	0.53	0.469	
+1 SD	0.01	0.00	0.946	

Conditional effects of the focal predictor at each level of the moderators

Perceived busyness		*β (SE)*	*t*	*p*	*95%CL*
	-1 SD	0.13 (0.13)	0.96	0.340	[-0.14, 0.39]
Control condition	M	-0.02 (0.10)	-0.19	0.851	[-0.21, 0.18]
	+1 SD	-0.17 (0.12)	-1.33	0.184	[-0.41, 0.08]
	-1 SD	-0.09 (0.13)	-0.73	0.468	[-0.35, 0.16]
Experimental condition	M	-0.12 (0.11)	-1.11	0.268	[-0.34, 0.10]
	+1 SD	-0.15 (0.17)	-0.91	0.364	[-0.48, 0.18]

Table 7b

Regression Analyses for the Three-Way Interaction between Perfectionistic Strivings, Time Management Intervention and Perceived Busyness on Delays from Planned Date of Submission.

Predictors	Delay from planned date			
	β (SE)	*t*	*p*	*95%CL*
Perfectionistic strivings	0.05 (0.10)	0.49	0.628	[-0.15, 0.24]
Condition (0 = control; 1 = experimental)	**-0.34 (0.14)**	**-2.45**	**0.015**	**[-0.62, -0.07]**
Perfectionistic strivings X Condition	0.08 (0.14)	0.59	0.559	[-0.20, 0.37]
Perceived busyness	0.00 (0.10)	-0.04	0.968	[-0.21, 0.20]
Perfectionistic strivings X Perceived busyness	-0.04 (0.08)	-0.46	0.649	[-0.20, 0.13]
Condition X Perceived busyness	0.19 (0.15)	1.27	0.205	[-0.10, 0.48]
Perfectionistic strivings X Condition X Perceived busyness	0.11 (0.13)	0.86	0.388	[-0.14, 0.37]
Perfectionistic concerns	0.05 (0.07)	0.71	0.477	[-0.09, 0.18]
Baseline use of ETM strategies	**-0.19 (0.08)**	**-2.49**	**0.014**	**[-0.35, -0.04]**

Test of conditional perfectionistic strivings X condition at each level of perceived busyness

Perceived busyness	*β*	*F(1,199)*	*p*	
-1 SD	-0.03	0.02	0.875	
M	0.08	0.34	0.559	
+1 SD	0.20	0.91	0.341	

Conditional effects of the focal predictor at each level of the moderators

Perceived busyness		*β (SE)*	*t*	*p*	*95%CL*
	-1 SD	0.09 (0.13)	0.64	0.522	[-0.18, 0.35]
Control condition	M	0.05 (0.10)	0.49	0.628	[-0.15, 0.24]
	+1 SD	0.01 (0.12)	0.08	0.939	[-0.24, 0.25]
	-1 SD	0.06 (0.13)	0.44	0.658	[-0.20, 0.31]
Experimental condition	M	0.13 (0.11)	1.19	0.235	[-0.09, 0.35]
	+1 SD	0.21 (0.17)	1.24	0.217	[-0.12, 0.54]

Table 7c

Regression Analyses for the Three-Way Interaction between Perfectionistic Strivings, Time Management Intervention and Perceived Busyness on Self-reported Procrastination.

Predictors	Self-reported procrastination			
	β (SE)	*t*	*p*	*95%CL*
Perfectionistic strivings	0.00 (0.10)	0.04	0.965	[-0.19, 0.20]
Condition (0 = control; 1 = experimental)	**-0.34 (0.14)**	**-2.44**	**0.016**	**[-0.62, -0.07]**
Perfectionistic strivings X Condition	-0.05 (0.14)	-0.38	0.707	[-0.34, 0.23]
Perceived busyness	-0.15 (0.11)	-1.41	0.159	[-0.36, 0.06]
Perfectionistic strivings X Perceived busyness	-0.17 (0.08)	-1.96	0.051	[-0.33, 0.00]
Condition X Perceived busyness	0.17 (0.15)	1.12	0.262	[-0.13, 0.46]
Perfectionistic strivings X Condition X Perceived busyness	0.18 (0.13)	1.39	0.165	[-0.08, 0.44]
Perfectionistic concerns	0.10 (0.07)	1.48	0.141	[-0.03, 0.24]
Baseline use of ETM strategies	-0.09 (0.08)	-1.15	0.253	[-0.24, 0.06]

Test of conditional perfectionistic strivings X condition at each level of perceived busyness

Perceived busyness	*β*	*F(1,199)*	*p*	
-1 SD	-0.24	1.70	0.194	
M	-0.05	0.14	0.707	
+1 SD	0.13	0.38	0.537	

Conditional effects of the focal predictor at each level of the moderators

Perceived busyness		*β (SE)*	*t*	*p*	*95%CL*
	-1 SD	0.17 (0.14)	1.26	0.210	[-0.10, 0.44]
Control condition	M	0.00 (0.10)	0.04	0.965	[-0.19, 0.20]
	+1 SD	-0.16 (0.13)	-1.29	0.199	[-0.41, 0.09]
	-1 SD	-0.07 (0.13)	-0.52	0.606	[-0.33, 0.19]
Experimental condition	M	-0.05 (0.11)	-0.45	0.654	[-0.27, 0.17]
	+1 SD	-0.03 (0.17)	-0.19	0.846	[-0.36, 0.30]

Table 8a

Regression Analyses for the Moderated Mediation Model with Perfectionistic Strivings as the Predictor in Study 2 control group.

Predictor	Baseline use of ETM strategies				Self-reported procrastination			
	β (SE)	t	p	95%CL	β (SE)	t	p	95%CL
Perfectionistic strivings	0.35 (0.09)	3.89	0.000	[0.17, 0.52]	-0.01 (0.10)	-0.07	0.942	[-0.21, 0.20]
Perceived busyness	0.26 (0.10)	2.64	0.010	[0.06, 0.45]				
Perfectionistic strivings X Perceived busyness	-0.08 (0.08)	-1.04	0.303	[-0.24, 0.07]				
Perfectionistic concerns	-0.12 (0.08)	-1.48	0.143	[-0.29, 0.04]	0.18 (0.09)	1.95	0.054	[-0.00, 0.37]
Baseline use of ETM strategies					-0.15 (0.10)	-1.51	0.134	[-0.36, 0.05]
R^2	0.253***				0.066			

Conditional effects of perfectionistic strivings on baseline use of ETM strategies

Perceived busyness	β (SE)	t	p	95%CL
-1 SD	0.43 (0.12)	3.61	0.001	[0.19, 0.66]
M	0.35 (0.09)	3.89	0.000	[0.17, 0.52]
+1 SD	0.27 (0.12)	2.23	0.028	[0.03, 0.50]

Conditional indirect effects of perfectionistic strivings on self-reported procrastination

Perceived busyness	β (BootSE)	95%BootCL
-1 SD	-0.07 (0.05)	[-0.18, 0.03]
M	-0.05 (0.04)	[-0.14, 0.02]
+1 SD	-0.04 (0.04)	[-0.12, 0.02]

Index of moderated mediation

Mediator	Index	BootSE	95%BootCL
Baseline use of ETM Strategies			
$n = 108$	0.01	0.02	[-0.01, 0.05]

*Note. N = 108; ***p < .001 (2-tailed); **p < .01 (2-tailed); *p <.05 (2-tailed).*

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Table 8b

Regression Analyses for the Moderated Mediation Model with Perfectionistic Concerns as the Predictor in Study 2 control group.

Predictor	Baseline use of ETM strategies				Self-reported procrastination			
	β (SE)	*t*	*p*	*95%CL*	*β (SE)*	*t*	*p*	*95%CL*
Perfectionistic concerns	-0.13 (0.08)	-1.54	0.126	[-0.30, 0.04]	0.18 (0.09)	1.95	0.054	[-0.00, 0.37]
Perceived busyness	0.30 (0.10)	3.12	0.002	[0.11, 0.49]				
Perfectionistic concerns X Perceived busyness	0.05 (0.09)	0.51	0.608	[-0.14, 0.24]				
Perfectionistic strivings	0.34 (0.09)	3.82	0.000	[0.17, 0.52]	-0.01 (0.10)	-0.07	0.942	[-0.21, 0.20]
Baseline use of ETM strategies					-0.15 (0.10)	-1.51	0.134	[-0.36, 0.05]
R^2		0.247***				0.066		

Conditional effects of perfectionistic concerns on baseline use of ETM strategies

Perceived busyness	*β (SE)*	*t*	*p*	*95%CL*
-1 SD	-0.18 (0.13)	-1.37	0.174	[-0.44, 0.08]
M	-0.13 (0.08)	-1.54	0.126	[-0.30, 0.04]
+1 SD	-0.08 (0.12)	-0.68	0.500	[-0.32, 0.16]

Conditional indirect effects of perfectionistic concerns on self-reported procrastination

Perceived busyness	*β (BootSE)*	*95%BootCL*
-1 SD	0.03 (0.03)	[-0.04, 0.09]
M	0.02 (0.02)	[-0.02, 0.07]
+1 SD	0.01 (0.03)	[-0.02, 0.09]

Index of moderated mediation

Mediator	Index	BootSE	*95%BootCL*
Baseline use of ETM Strategies			
n = 108	-0.01	0.02	[-0.04, 0.05]

Note. N = 108; ***p* < .001 (2-tailed); ***p* < .01 (2-tailed); **p* <.05 (2-tailed).