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Perfectionism and Life Satisfaction: The Role of Procrastination and Self-Regulation

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ABSTRACT

The general objective of this study is to explore the relationship between negative perfectionism and life satisfaction. Specifically, the study aims to address two research goals: (1) to investigate the mediating role of procrastination in the relationship between perfectionism and life satisfaction, and (2) to examine the moderating role of self-regulation in the relationship between perfectionism and procrastination. Using a cross-sectional design, this study examined the responses of a convenience sample of 202 adults aged between 18 and 59 years. The mediation analysis indicated that procrastination partially explains the relationship between negative perfectionism and life satisfaction. In contrast, the moderation analysis did not support the role of self-regulation as a moderator; the influence of perfectionism on procrastination is not significantly shaped by self-regulatory behaviors. The study revealed a significant relationship between maladaptive perfectionism, procrastination, and life satisfaction, supporting the mediating role of procrastination. Although the moderating role of self-regulation was not supported by the data, it remains a relevant variable in understanding procrastinatory behavior, as procrastination is often considered a failure of the self-regulation process.

Keywords: negative perfectionism, procrastination, life satisfaction, self-regulation, high standards, performance

1. INTRODUCTION

Importance of the Topic

"What about us in a world that constantly demands more?" is one of the key questions addressed by Verhaeghe (2014) in his work What About Me? The Struggle for Identity in a Market-Based Society. The author examines the impact of modern culture on individual identity, arguing that contemporary society imposes high performance standards that negatively affect mental health and personal well-being. This idea is further supported by the meta-analysis conducted by Curran and Hill (2019), which confirms a linear increase in (maladaptive) perfectionism between 1989 and 2016. Their findings indicate that younger generations impose increasingly higher standards on themselves, while, simultaneously, perceiving others as more demanding of them. In this context, the belief that one must always be perfect becomes more persistent and it has been frequently observed among those who procrastinate (Flett et al.,2012), often leading to avoiding tasks in order to prevent being perceived negatively by others (Ferrari et al., 1995).

Procrastination is a behavior that has been present throughout history and across all societies, as noted by Ferrari (2010), who stated that "everyone procrastinates, but not everyone is a procrastinator". However, in today's distraction-filled world, this behavior is expected to become increasingly common. In this regard, it is estimated that between 70% and 95% of students engage in procrastinatory behaviour (Klassen et al., 2007) and approximately 20% of adults frequently and deliberately delay task completion (Ferrari & Tibbett, 2020). Procrastination has negative consequences upon one's career, personal relationships, financial situation and the management of health-related issues (Steel, 2007). Overall, while procrastination is an occasional behavior for most people, for some it becomes a persistent habit that can significantly affect their lives.

Therefore, the present study aims to investigate the relationship between negative perfectionism and life satisfaction, considering the mediating role of procrastination in this relationship, as well as the moderating role of self-regulation in the link between perfectionism and procrastination.

Perfectionism

In a broad sense, perfectionism is characterized both by setting extremely high and difficult-to-achieve standards for oneself and by a tendency to be self-critical (Yosopov, 2020). Perfectionists base their personal worth on their productivity and level of success (Burns, 1980), hold irrational beliefs that they must be perfect (Xie et al., 2018), and tend to exaggerate their failures, even when it comes to minor tasks (Pannhausen et al., 2020).

The concept was initially integrated by Freud into his psychodynamic theory, characterizing perfectionism as "a trait of the superego and an excessive desire for achievement" (Cohen, 2020). Alfred Adler's perspective also identifies perfectionism as an important element in personality development, arguing that the striving for perfection is an inherent drive and an integral part of the human experience, rooted in his theory of individual psychology (Ansbacher & Ansbacher, 1956). Adler's seminal work served as the basis for later contributions by authors such as Ansbacher and Ansbacher (1956), Burns (1980), Hamachek (1978), and Hollander (1965), all of which contributed to a better understanding of the nature of perfectionism—shifting from a one-dimensional, predominantly negative view to a multidimensional perspective that highlights both its positive and negative features (Frost et al., 1990; Hewitt & Flett, 1989). These multidimensional models were later analyzed by Frost et al. (1993), who identified two factors: "positive achievement striving", representing the adaptive and positive aspects of perfectionism, and "maladaptive evaluation concerns," reflecting its maladaptive and negative aspects.

Subsequent research has contributed to this two-factor approach by providing additional supporting evidence and identifying various dimensions of perfectionism, such as: positive and negative perfectionism (Terry-Short et al., 1995), neurotic and normal perfectionism (Ashby & Kottman, 1996), adaptive and maladaptive perfectionism (Rice et al., 1998), self-oriented and socially prescribed perfectionism (Stumpf & Parker, 2000), perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006), and internal versus external perfectionism (Ahmed et al., 2021).

This study adopts the dual model of perfectionism proposed by Terry-Short et al. (1995), which, unlike previous approaches, is derived from learning theory, being grounded in reinforcement theory (Carpenter et al., 2023). According to this model, positive perfectionism is defined as the motivation to achieve a goal in order to obtain a positive outcome, while negative perfectionism refers to the motivation to achieve a goal in order to avoid negative consequences (Terry-Short et al., 1995). Slade et al. (2009) support this distinction, explaining that positive perfectionism is characterized by thoughts and behaviors oriented toward achieving difficult goals for favorable outcomes, whereas negative perfectionism involves efforts driven by the desire to prevent or minimize adverse consequences.

Consequently, the Positive and Negative Perfectionism Scale (PANPS) developed by Terry-Short et al. (1995) has been used in numerous studies to examine the relationship between negative perfectionism and various psychological variables. Research has shown significant positive correlations between negative perfectionism and maladaptive traits such as anxiety (Fedewa et al., 2005; Sederlund et al., 2020), hostility and shame (Fedewa et al., 2005), depression (Bergman, 2007; Sederlund et al., 2020), maladaptive coping strategies (Burns & Fedewa, 2005), regret and emotional suppression as a coping strategy (Bergman, 2007), decreased life satisfaction (Sederlund et al., 2020), and procrastination (Sirois et al., 2017).

Procrastination

Procrastination is the tendency to voluntarily, but irrationally, delay the initiation or completion of a desired task (Ferrari & Tibbett, 2020), while simultaneously anticipating that the delay will lead to negative consequences (Steel, 2007). To better understand why people procrastinate, Steel and König (2006) proposed the Temporal Motivation Theory (TMT), an integrative motivational model that combines Expectancy Theory (Vroom, 1964, as cited in Steel & König, 2006), Need Theory (Dollard & Miller, 1950, as cited in Steel & König, 2006), Cumulative Prospect Theory (Tversky & Kahneman, 1992), and Picoeconomics, emphasizing time as a key motivational factor.

This theory explains procrastination as the result of a tendency to overvalue small but immediate rewards in comparison to delayed ones; in other words, the subjective value of a reward decreases the further it is in the future (Steel, 2007). There appears to be a discrepancy between the present self and the future self (Sirois & Pychyl, 2013), procrastination being negatively associated with a future-oriented time perspective and positively associated with a present-oriented one (Ferrari & Díaz-Morales, 2006).

Nevertheless, procrastination cannot be reduced solely to a temporal perspective, as it also involves affective, cognitive, and behavioral dimensions (Fee & Tangney, 2000, as cited in Xie et al., 2018).

From an affective standpoint, procrastination is closely linked to individuals' well-being, with evidence suggesting a reciprocal relationship between the two (Sirois, 2016). It has been associated with higher levels of perceived stress, anxiety, depression, and shame (Beutel et al., 2016; Oflazian & Borders, 2022; Rahimi et al., 2023; Van Eerde, 2003). The connection between adverse emotions and procrastination is supported by studies showing that improving emotion regulation skills contributes to preventing and reducing procrastination (Eckert et al., 2016).

A relevant perspective in this context is that procrastination may function as an emotion regulation strategy in itself (Pychyl & Sirois, 2016), where tasks are avoided in order to manage the short-term discomfort they produce, despite the long-term negative consequences (Sirois & Pychyl, 2013; Tice & Bratslavsky, 2000). However, this strategy eventually leads to greater negative affect, making individuals feel worse than if they had completed the task in the first place (Sirois & Pychyl, 2013; Tice & Baumeister, 1997).

The cognitive perspective focuses on the reasons why individuals consciously choose to procrastinate, despite the potential negative consequences of this behavior (Karas & Spada, 2009; Steel, 2007). A central factor in this regard is maladaptive, negative perfectionism, which has been found to be positively correlated with procrastination (Sirois et al., 2017; Xie et al., 2018; Zhang et al., 2022). This relationship can be explained by factors such as fear of failure (Zhang et al., 2022), perfectionistic concerns related to making mistakes and doubts about one's own actions (Xie et al., 2018). Individuals with high levels of maladaptive perfectionism tend to worry excessively about potential errors, question their own decisions, try to avoid disapproval from others, and fear failure—all of which may make them more prone to delaying tasks (Xie et al., 2018).

Research addressing the behavioral perspective views procrastination primarily as a behavioral problem (Beck et al., 2000, as cited in Ozer et al., 2014), focusing on the contexts in which task delay is most commonly observed. Numerous studies indicate that procrastination is significantly associated with reduced academic and occupational performance (Steel, 2007).

This behaviour is most frequently studied among students, where it has been shown to occupy more than one-third of a student's daily time, as they often choose to sleep, read, or watch television instead of studying (Pychyl et al., 2000). However, similar patterns are observed in the workplace, where high levels of procrastination are linked to lower income, shorter job tenure, increased unemployment (Nguyen et al., 2013), and counterproductive work behavior (Metin et al., 2016). Therefore, in terms of individual performance, people who procrastinate generally perform worse than those who do not (Steel et al., 2001).

The Role of Self-Regulation

Within the behavioral perspective, understanding the relationship between procrastination and self-regulation is particularly relevant. Several studies have conceptualized procrastination as a self-regulation failure (Baumeister et al., 2007; Howell & Watson, 2007; Pychyl & Flett, 2012; Steel, 2007). Self-regulation involves the control of thoughts, emotions, attention, and behavior (Bell & Deater-Deckard, 2007) and it relies on executive functions such as working memory, behavioral inhibition, and the ability to shift between tasks (Hofmann et al., 2012).

Moreover, self-regulation is a process through which individuals initiate, adjust, suspend, complete, or modify actions in order to facilitate the achievement of personal goals, plans, or standards (Baumeister et al., 1994, as cited in Heatherton & Baumeister, 1996; Howell & Watson, 2007). Thus, two distinct perspectives have been proposed regarding the role of self-regulatory failure in procrastination: such failure may result from under-regulation, defined as the lack of effort or inability to exert behavioral control, or from misregulation, which involves exerting self-control in a misguided or counterproductive way, such that the intended outcome is not achieved (Baumeister & Heatherton, 1996; Heatherton & Baumeister, 1996).

Life Satisfaction

Taking into account all the previously discussed perspectives, the complexity of this concept and its implications across various areas of life -personal, relational, academic, and professional - becomes evident. Therefore, it is justified to explore the relationship between procrastination and life satisfaction, along with other factors that influence this

relationship, such as perfectionism, which has been previously shown to be associated with both variables.

Life satisfaction refers to an evaluation of the overall quality of one's life (Pavot & Diener, 1993) and is considered the primary indicator of positive subjective well-being (Diener & Diener, 1995). It involves a personal judgment in which individuals compare their self-imposed standards with the actual conditions of their lives (Pavot & Diener, 1993). Similarly, perfectionism entails evaluating the quality of one's performance against self-defined standards (Hewitt & Flett, 1991). Thus, achieving these standards contributes to increased life satisfaction, whereas the greater the gap between expectations and actual performance, the lower the reported satisfaction (Çapan, 2010). This effect is particularly likely among perfectionists, who tend to set excessively high standards for themselves (Hewitt & Flett, 1991).

Regarding the relationship between procrastination and life satisfaction, research has primarily focused on student samples, as procrastination is a common behavior in academic settings (Steel, 2007). These studies consistently show that students who procrastinate tend to report lower levels of life satisfaction (Çapan, 2010; Kandemir, 2014; Özer & Saçkes, 2011). Later, Beutel et al. (2016) examined the role of procrastination in relation to a range of factors - including life satisfaction - using a representative sample of individuals aged 14 to 95. They assessed life satisfaction across eight key life domains: friendships, leisure activities/hobbies, general health, income, work/career, housing/living conditions, family life, and romantic/sexual relationships. Their results revealed a significant negative correlation between procrastination and all of the aforementioned domains, therefore indicating a significant overall negative correlation with general life satisfaction.

Study Contribution

Although previous research has identified relevant associations between perfectionism, procrastination, and life satisfaction, there remain theoretical and empirical gaps that require further investigation, gaps that the present study aims to address.

First, regarding the relationship between perfectionism and procrastination, meta-analyses conducted by Sirois et al. (2017) and Xie et al. (2018) reveal that most studies assess perfectionism using the classifications and scales developed by Frost et al. (1990), Hewitt and Flett (1991) or Slaney et al. (2001). In current literature, the factors from these frameworks are often theoretically reorganized into two higher-order dimensions of perfectionism: a maladaptive dimension, defined by perfectionistic concerns, and an adaptive dimension, defined by perfectionistic strivings (Stoeber & Otto, 2006).

However, a relevant and underexplored approach in relation to procrastination is the one proposed by Terry-Short et al. (1995), who distinguish between positive perfectionism, defined by the motivation to achieve a goal in order to obtain a favorable outcome, and negative perfectionism, defined by the motivation to achieve a goal in order to avoid negative consequences.

The present study argues that the relationship between negative perfectionism, as conceptualized by Terry-Short et al. (1995), and procrastination deserves further attention, particularly in light of its connection to achievement goals, especially avoidance-oriented goals (Seo, 2009). These goals play a central role in the study of achievement motivation (Elliot & McGregor, 2001), as they pertain to the purpose of one's behavior (Maehr, 1989), and the type of goal adopted shapes the self-regulatory framework that guides that behavior (McGregor & Elliot, 2002). Several studies (Howell & Watson, 2007; McGregor & Elliot, 2002; Scher & Osterman, 2002; Seo, 2009; Wolters, 2003) have explored the relationship between procrastination and achievement goals in academic settings, consistently reporting a significant positive association with mastery-avoidance and performance-avoidance goals.

These two types of goals were classified by Elliot and McGregor (2001) within the framework of the 2×2 Achievement Goals Model, in which achievement goals are defined along two fundamental dimensions: definition of competence, either intrapersonal, referenced to the self (mastery-based) or interpersonal/ referenced to others (comparative, performance-based) and the motivational valence, which can be either positive (approaching success) or negative (avoiding failure).Thus, the link between procrastination and failure avoidance-oriented goals supports the relevance of examining the relationship between negative perfectionism and procrastination, given that these two constructs appear to share a potentially common motivational basis.

Second, in addition to the direction previously discussed, the meta-analyses conducted by Sirois et al. (2017), Van Eerde and Klingsieck (2018) and Xie et al. (2018) highlight the predominant focus on academic procrastination, which is most often measured among student populations. Within this context, the present study aims to investigate procrastination in a sample drawn from the general adult population, thereby contributing to the broader empirical applicability of the findings.

Finally, although variables such as perfectionism, self-regulation, procrastination, and life satisfaction have been extensively studied, they are typically examined individually, in pairs, or within partial models. Therefore, this study aims to contribute by testing a unified and comprehensive model that examines these variables together.

The present study

The general objective of this study is to explore the relationship between negative perfectionism and life satisfaction. In this context, the research addresses two specific objectives. The first objective is to investigate the mediating role of procrastination in the relationship between negative perfectionism and life satisfaction. The second objective is to examine the moderating role of self-regulation in the link

between negative perfectionism and procrastination. The hypotheses are:

H1. *Procrastination significantly mediates the relationship between negative perfectionism and life satisfaction*.

H2. *Self-regulation significantly moderates the relationship between negative perfectionism and procrastination*.

2. METHOD

Participants

The research design of this study was cross-sectional. The sample consisted of 202 participants, of whom 131 identified as female (64.9%), 70 as male (34.7%), and 1 as non-binary (0.5%). Participants' ages ranged from 18 to 59 years (M = 24.92, SD = 11.55). A total of 120 participants (59.4%) were from urban areas, while 82 (40.6%) were from rural areas. Regarding educational background, most participants had completed lower secondary education (n = 79, 39.1%), followed by upper secondary education (n = 73, 36.1%), undergraduate education (n = 25, 12.4%), and graduate-level education (n = 25, 12.4%). The inclusion and exclusion criterion was participants' age, as the study targeted only individuals over the age of 18.

Instruments

Negative perfectionism was measured using the relevant items from the Positive and Negative Perfectionism Scale – Short Form (PANPS-SF) (Carpenter et al., 2023). Although the scale is bidimensional, this study focused solely on the negative perfectionism dimension, which is assessed using 10 items, such as: "No matter how well I do, I never feel satisfied with my performance" or "I feel guilty or ashamed if I do less than perfectly." Items are rated on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Higher scores indicate higher levels of negative perfectionism. The scale demonstrated excellent internal consistency, with Cronbach's alpha of $\alpha = .91$.

Procrastination was assessed using the General Procrastination Scale (GPS) (Lodha et al., 2019). This scale includes 23 items, of which 16 are positively worded and 7 are reverse-scored. It evaluates procrastination across four domains: academic, work-related, medical, and civic responsibilities. Sample items include: "I often try to avoid doing a task that I have little or no interest in," and "I prefer submitting an assignment before the deadline.". Items are rated on a 5-point Likert scale ranging from 1 ("never") to 5 ("always"), with higher scores indicating greater levels of procrastination. The scale showed good internal consistency, with a Cronbach's alpha of $\alpha = .83$.

Self-regulation was measured using the Short Self-Regulation Questionnaire – Short Form (SSRQ-SF) (Carey et al., 2004), which consists of 31 items, of which 18 are positively worded and 13 are reverse-scored. The questionnaire includes statements such as: "I usually keep track of my progress toward my goals" and "I get easily distracted from my plans." Items are rated on a 5-point Likert scale, where 1 indicates "strongly disagree" and 5 indicates "strongly agree." Higher scores reflect a higher level of self-regulation. The scale demonstrated strong internal consistency, with Cronbach's alpha of $\alpha = .94$.

Life satisfaction was measured using the Romanian adaptation of the Satisfaction with Life Scale (SWLS) (Stevens et al., 2012). The scale consists of 5 items, including statements such as: "In most ways, my life is close to my ideal" and "If I could live my life over, I would change almost nothing." Items are rated on a 7-point Likert scale, where 1 indicates "strongly disagree" and 7 indicates "strongly agree." Higher scores reflect a greater level of life satisfaction. The scale demonstrated good internal consistency, with a Cronbach's alpha of $\alpha = .85$.

Procedure

The sample was selected using a convenience sampling method, and responses were collected online via the Google Forms questionnaire. Participation in the study was voluntary. In the first section of the form, participants were presented with an informed consent statement that explained the purpose of the research and allowed them formally agree to take part in the study by confirming their consent before completing the questionnaires. They were also informed that they had the right to withdraw at any time, that participation involved no risk, and that their responses would remain anonymous. The only eligibility criterion for participation was being at least 18 years old.

Statistical Approach

The data in the present study were analyzed using the statistical software RStudio. Descriptive analyses and Pearson correlations were conducted, and collinearity indicators (VIF and Tolerance) were calculated. The lavaan package was used to test the mediation and moderation hypotheses.

3. RESULTS

The hypotheses were tested using the statistical software RStudio. Prior to conducting the mediation and moderation models, descriptive statistics were computed (Table 1), including an assessment of normality. Normality was evaluated using the following methods: skewness and kurtosis (acceptable values between –1 and 1), the Shapiro–Wilk test (with $p > .05$), and the Q-Q Plot. All three methods indicated that the data were normally distributed, allowing for the use of parametric tests in further analyses.

Descriptive statistics

Table 1

Descriptive statistics

Variable	N	M	SD	Median	Min	Max	Skewness	Kurtosis	SE
Perfectionism	202	31.61	9.67	32	10	50	-.08	-.92	.68
Procrastination	202	59.27	11.46	58.5	34	91	.17	-.19	.81
Self-regulation	202	113.09	20.09	113	62	155	-.10	-.75	1.41
Life satisfaction	202	24.22	6.13	25	5	35	-.54	-.01	.43

Before testing the mediation and moderation models, Pearson correlation coefficients were calculated to examine the relationships between the variables. As shown in Table 2, statistically significant relationships were found between perfectionism and procrastination ($r = .30$, $p < .001$), between negative perfectionism and life satisfaction ($r = –.35$, $p < .001$), and between procrastination and life satisfaction ($r = –.44$, $p < .001$).

Table 2

Pearson Correlation Coefficients Among the Variables

Variable	1	2	3	4
1. Perfectionism	-			
2. Procrastination	.30**	-		
3. Self-regulation	-.53**	-.62**	-	
4. Life satisfaction	-.35**	-.44**	.49**	-

Note. **p < .001

Given that the conditions for applying the mediation model were met, the first hypothesis was tested using the lavaan package. Results (Table 3) indicated that perfectionism significantly predicted procrastination ($a = .36$, $p < .001$), and procrastination had a significant negative effect on life satisfaction ($b = –.19$, $p < .001$). The indirect effect of perfectionism on life satisfaction through procrastination was also significant ($a \times b = –.07$, $p < .001$), indicating a mediation effect. However, the direct effect of perfectionism on life satisfaction remained significant ($c' = –.15$, $p < .001$), suggesting the presence of partial mediation. Approximately 31.5% of the total effect of perfectionism on life satisfaction is mediated by procrastination.

In order to test the second hypothesis, it was analyzed the role of self-regulation as a moderating variable in the relationship between perfectionism and procrastination. To verify the assumption of statistical independence between perfectionism and self-regulation, multicollinearity indicators were calculated. The VIF index values were below the threshold of 2 (1.40), and Tolerance values were acceptable (0.72), indicating no problematic multicollinearity. The moderation model was therefore tested using the lavaan package.

Results are presented below (Table 4) and show that the effect of perfectionism on procrastination, when self-regulation is held constant, was not significant ($b_1 = –.44$, $p > .05$), whereas the effect of self-regulation on procrastination was significant ($b_2 = –.47$, $p < .001$). The interaction effect between perfectionism and self-regulation on procrastination was not statistically significant ($b_3 = .003$, $p > .05$), indicating that self-regulation does not moderate the relationship between perfectionism and procrastination. Thus, the second hypothesis was not supported by the data.

Table 3

Mediation Analysis Results

Effect	Estimate	SE	Z	P
1. Perfectionism → Procrastination (a)	.36	.08	4.53	<.001
2. Procrastination → Life satisfaction (b)	–.19	.03	– 5.65	<.001
3. Indirect effect (a x b)	–.07	.02	– 3.53	<.001
4. Perfectionism → Life satisfaction (c') Procrastination – held constant	–.15	.04	– 3.73	<.001

Table 4
Moderation Analysis Results

Effect	Estimate	SE	Z	P
1. Perfectionism → Procrastination Self- regulation- held constant	– .44	.39	–1.13	.259
2. Self-regulation→Procrastination Perfectionism – held constant	– .47	.11	– 4.31	<.001
3. Self-regulation x Perfectionism→ Procrastination	.00	.00	1.02	.307

4. DISCUSSIONS

This study aimed to deepen the understanding of the relationship between negative perfectionism and life satisfaction by addressing two specific objectives. The first objective was to examine whether procrastination mediates the relationship between negative perfectionism and life satisfaction. The second objective focused on whether self-regulation moderates the relationship between negative perfectionism and procrastination. The proposed model was only partially supported by the data. The implications of these results are discussed below.

The first hypothesis of the study proposed that procrastination mediates the relationship between negative perfectionism and life satisfaction. The results support this hypothesis, showing that a high level of negative perfectionism predicts higher levels of procrastination, which, in turn, leads to lower life satisfaction.

The results indicated a significant direct relationship between negative perfectionism and life satisfaction, suggesting that individuals with higher levels of negative perfectionism tend to report lower levels of life satisfaction. This finding is consistent with previous studies that have explored the link between maladaptive perfectionism and life (Fekih-Romdhane et al., 2023; Liu et al., 2022; Şahin, 2021). One possible explanation for this relationship lies in the tendency of perfectionists to impose excessively high expectations on themselves (Hewitt & Flett, 1991) and when reality does not align with these standards, the perceived discrepancy may lead to decreased life satisfaction (Çapan, 2010).

In examining the mediating role of procrastination, it is important to analyze the indirect relationship between negative perfectionism and life satisfaction by considering the two pathways that form the mediation model.

The first path reflects the significant relationship between negative perfectionism and procrastination, a finding that is well-supported in the literature and consistent with the meta-analyses conducted by Sirois et al. (2017) and Xie et al. (2018). These studies explain the association in terms of perfectionism-related characteristics: concern over making mistakes, doubts about one's actions, fear of others' disapproval, and fear of failure—traits that may lead to task avoidance as a form of self-protection (Xie et al., 2018), aimed at preventing negative outcomes (Mansouri et al., 2022) and their consequences (Sirois, 2016b).

Moreover, given that in this study negative perfectionism was operationalized based on the model proposed by Terry-Short et al. (1995), which is grounded in reinforcement theory (Carpenter et al., 2023), this framework may offer a relevant theoretical basis for interpreting the observed relationship. Specifically, when the motivation to achieve a goal is reinforced by the desire to avoid a negative outcome (Terry-Short et al., 1995), the emergence of procrastinatory behavior may be facilitated. This explanation is further supported by the Achievement Goal Model developed by Elliot and McGregor (2001), which highlights that procrastination tends to occur more frequently when goals are oriented toward failure avoidance (Howell & Watson, 2007; McGregor & Elliot, 2002; Scher & Osterman, 2002; Seo, 2009; Wolters, 2003).

The second path of the mediation model is represented by the significant negative association between procrastination and life satisfaction, indicating that higher levels of procrastination are associated with lower levels of life satisfaction. This relationship is supported by several previous studies (Beutel et al., 2016; Çapan, 2010; Kandemir, 2014; Özer & Saçkes, 2011). One possible explanation lies in the frequent association of procrastination with elevated levels of perceived stress, anxiety, depression, and shame (Beutel et al., 2016; Oflazian & Borders, 2022; Rahimi et al., 2023; Van Eerde, 2003), which, in turn, negatively impact life satisfaction (Abolghasemi & Varaniyab, 2010; Macaskill, 2012; Serin et al., 2010; Sullivan et al., 2019).

The second hypothesis focused on the moderating role of self-regulation in the relationship between negative perfectionism and procrastination. However, the results did not support this hypothesis, indicating that self-regulation does not significantly change the way in which negative perfectionism influences procrastination. There are several possible explanations for this finding.

First, the statistical power of the test may have been insufficient to detect the moderating effect, given that moderation effects are generally small in magnitude and therefore difficult to identify without a sufficiently large sample size (Aguinis et al., 2005; McClelland & Judd, 1993).

Second, it is possible that self-regulation does not function as a moderator, but rather as a direct predictor of procrastination. This perspective is supported by several studies that conceptualize procrastination as a failure of self-regulation (Baumeister et al., 2007; Pychyl & Flett, 2012; Steel, 2007).

These findings suggest that individuals with high levels of self-regulation tend to procrastinate less, due to their ability to effectively manage their emotions, thoughts, attention, and behavior (Bell & Deater-Deckard, 2007) in relation to goal achievement (Howell & Watson, 2007). Therefore, even though the hypothesis regarding the moderating role of self-regulation was not supported, the variable remains relevant in understanding and potentially reducing procrastinatory behavior.

Theoretical and Practical Implications

At a theoretical level, the present study offers a valuable contribution by examining a less commonly explored model of perfectionism—namely, the concept of negative perfectionism proposed by Terry-Short et al. (1995). Integrating this form of perfectionism into an explanatory framework for procrastination provides a meaningful alternative to existing models, emphasizing the role of task delay as a behavior maintained through negative reinforcement- specifically, as an avoidance and self-protection strategy against making mistakes, experiencing failure, and receiving disapproval for perceived negative outcomes—characteristics often associated with perfectionistic individuals (Mansouri et al., 2022; Sirois, 2016b; Xie et al., 2018).

From a practical perspective, the results of this study may be useful for psychologists, educational counselors, teachers, parents and adults of all ages, given the high prevalence of procrastination (Ferrari & Tibbett, 2020; Klassen et al., 2007) and its documented consequences on career development, personal relationships, financial stability, and the management of health-related issues (Steel, 2007). The findings suggest that interventions should focus on identifying perfectionistic beliefs, clarifying personal motivation, and strengthening self-regulation skills, as these factors may contribute both to reducing procrastination and enhancing life satisfaction.

Limitations and Future Directions

The present study has certain limitations, and the results should be interpreted accordingly.

The first limitation concerns the use of a cross-sectional design, which does not allow for causal conclusions regarding the relationships between variables (Fairchild & McDaniel, 2017; Setia, 2016). Although significant associations were identified between negative perfectionism, procrastination, and life satisfaction, it cannot be determined with certainty in which direction the influence occurs. Therefore, to better understand the dynamics of these relationships, future research should employ experimental and longitudinal designs that can capture their development and reciprocal influences over time.

Another limitation relates to the sample size and representativeness. As previously mentioned, moderation analysis typically requires a larger number of participants than was included in the current study, especially given that moderation effects tend to be small in magnitude (Aguinis et al., 2005; McClelland & Judd, 1993). In addition, although participants ranged in age from 18 to 59 years, the sample was convenience-based and included underrepresented age groups, with the average age being approximately 25. Thus, future studies are encouraged to use larger and more heterogeneous samples that would allow for adequately powered tests of moderation effects and for the exploration of individual differences across demographic or contextual factors.

In addition, a relevant limitation lies in the exclusive use of self-report questionnaires for data collection. This method is susceptible to various sources of bias, such as social desirability, self-perception inaccuracies, and memory-related errors (Paulhus & Vazire, 2007). Furthermore, when all variables are measured using the same method, there is an increased risk of common method bias, which may lead to inflated estimates of the relationships between variables (Kock et al., 2021). For future research, the use of mixed-method approaches, commonly referred to as methodological triangulation (Morse, 1991), is recommended. This approach involves employing diverse methods of data collection and can contribute to the validation of conclusions, the generation of more detailed information and a more comprehensive understanding of the phenomenon under investigation (Bekhet & Zauszniewski, 2012; Casey & Murphy, 2009; Valencia, 2022).

Conclusion

In conclusion, this study highlighted a significant relationship between negative perfectionism, procrastination, and life satisfaction, supporting the mediating role of procrastination. Although the hypothesis regarding the moderating role of self-regulation was not supported by the data, self-regulation remains a relevant variable in understanding procrastinatory behavior. The findings contribute to clarifying possible explanatory mechanisms in the relationship between perfectionism and well-being and offer a starting point for future investigations aiming to explore these relationships in greater depth..

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