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# Beyond Laziness: A Psychological and Cross-Cultural Study of Procrastination

**Athanasia ZERVOS**

*The Pingry School, Basking Ridge, New Jersey, USA*
*athanasiazervos2028@gmail.com*

**Abstract:** Procrastination is the act of unnecessarily and intentionally postponing tasks even though it will create negative consequences. It is often influenced by temporal discounting or the tendency to devalue future benefits when immediate rewards are available. Unlike laziness, which is characterized by a lack of initiative and ambition, procrastination involves feeling motivated but failing to act on that motivation due to a failure of self-regulation. It can happen for academic, occupational, or interpersonal reasons and may disrupt the daily functioning of individuals globally. This paper will examine the significant psychological factors that drive procrastination. Studies have shown that specific personality traits from the Big Five model and procrastination have a strong correlation, with a particular emphasis on traits such as conscientiousness and neuroticism (Hidalgo-Fuentes et al., 2024). Through further research, it has additionally been found that negative emotions, especially common among those with mental health disorders, are linked to procrastinatory behavior. People with internalizing and neurodevelopmental disorders often experience excessive negative emotions, low self-esteem, or impulsivity, each of which contributes significantly to procrastination. Understanding the severity and complexity of the factors that trigger procrastination can make it easier to overcome the detrimental behavior. Rather than simply a time-management issue, procrastination is a psychological response that differs among individuals based on personality traits and mental health disorders. This paper aims to compare procrastination levels across individuals from diverse cultures, environments, and mental health states to understand the primary causes of procrastination.

**Keywords:** Procrastination, Psychological Factors, Personality Traits, Self-Regulation, Negative Emotions, Mental Health, Cultural Differences, Academic Performance, Conscientiousness, Time Management

## Introduction

Procrastination is a behavior that affects approximately 80% of people worldwide at some point, but is particularly common among young students who must balance both their academic and personal goals (Sirois, 2022). Statistics have revealed that 20% of people consider their habits to be chronic and disruptive to their daily functioning (Phillips, 2019). Often, procrastination is regarded as the result of laziness, a time management error, or a weakness of will. Yet, research has suggested that it is the result of, or a combination of, multi-factor psychological mechanisms, including personality traits, emotions, and brain structure.

The Big Five Model of personality is a widely accepted psychological model that separates personality traits into five broad categories. Created by Costa and McCrae, the

model has been helpful in numerous studies, including assessments of one's personality. It has been validated in over 50 languages and has therefore been used in cross-cultural studies to examine how certain traits affect emotions, cognition, and decision-making. Among the five traits, individuals are placed on a continuous spectrum within each trait, rather than being defined by a single bracket of personality. The model includes conscientiousness, openness to experience, agreeableness, neuroticism, and extraversion. Those who exhibit conscientiousness are considered responsible, diligent, and complete tasks efficiently. Individuals higher on the openness to experience spectrum are more likely to embrace new ideas and engage in novel activities. Individuals who show agreeableness are considered more cooperative and considerate of others. Those who exhibit more neuroticism tend to experience more negative emotions like anxiety, stress, and self-doubt. Lastly, extraversion is a personality trait characterized by sociability and assertiveness.

Sirios (2022) has further classified procrastination as an emotional response intended to avoid negative emotions. It serves as a short-term mood booster, but it increases the long-term costs of such actions. Individuals do not refrain from working, but elude the unpleasant emotions that come with the task they need to complete. Whether avoiding feelings of fear, anxiety, or stress, individuals often choose the more gratifying choice of procrastinating. Those with internalizing disorders and neurodevelopmental conditions have a greater tendency to experience negative emotions.

Additionally, individuals with low self-esteem or a fear of failure tend to exhibit less confidence in their own abilities. Those who exhibit perfectionism may fear that their work is not good enough, so they may use procrastination as a means of protection against their concerns. Due to a natural neurological process called temporal discounting, there is a tendency to prioritize immediate relief over long-term benefits. Temporal discounting alters the perception of value, meaning that individuals may recognize that not procrastinating is the better option, but the immediacy of procrastinating obscures its consequences. Due to temporal discounting, individuals may be more tempted to scroll on social media because it is more convenient than studying for an exam. Although studying provides greater long-term benefits on the day of the exam, scrolling is often chosen because its rewards are immediate, whereas the benefits of studying are delayed. Neuroimaging studies have demonstrated that the prefrontal cortex in the brain is responsible for executive functions, including decision-making and impulse control. The limbic system is responsible for processing emotions, such as pleasure or discomfort, as well as emotional impulses (Insight Psychology, 2024). When rational decisions cannot overpower the limbic system, individuals cannot refrain from the choices that are psychologically desirable, even if those choices have negative consequences. These naturally occurring circuits in the brain will be further discussed in the section "Neurological basis of procrastination."

## Personality traits and procrastination

Of the five personality traits in the Big Five Model of Personality, conscientiousness is the most influential on procrastinatory behavior. Of the five personality traits in the Big Five Model of Personality, each has a different contribution to procrastination patterns among individuals. Neuroticism makes one more prone to distractions and negative emotions like stress and anxiety, each of which makes accomplishing tasks more difficult. Individuals who exhibit high levels of conscientiousness tend to experience less procrastination, as they are often perceived as disciplined and hardworking. Extraversion means that someone exhibits high energy and positivity, making it less likely for them to procrastinate. Those who show openness to experience may lead one to embrace new and engaging tasks making them eager to complete the assignment they have to complete. Although studies have not found a significant connection between agreeableness and procrastination,

agreeableness is associated with cooperative behaviors that can help reduce procrastination. This indirect impact on procrastination is especially prevalent in collaborative settings. Typically, individuals who score high on agreeableness are also found to be considerate of others, empathetic, and driven to please or agree with others to maintain peace within a group. In group projects, for example, one will be driven to complete the task assigned to them as soon as possible, meaning to procrastinate as little as they can to avoid disappointing others or disrupting the group's progress. This effect was observed in the study "The role of big five traits and self-esteem on academic procrastination in Honduran and Spanish university students: A cross-cultural study" by Hidalgo-Fuentes and colleagues. In this study, college students from Honduras and Spain were assessed for their personality traits and levels of procrastination. In both countries, procrastination was lower when traits such as conscientiousness, agreeableness, extraversion, and openness to experience were higher. Yet, among the four, high conscientiousness showed the strongest correlation with low levels of procrastination. Those who are more conscientious tend to be reliable, organized, and self-disciplined, which are traits that contribute to less procrastination, as they can be more controlled and confident in managing the tasks they need to complete. The students' self-esteem was additionally measured. It was found that across both countries, students with higher self-esteem procrastinated less because they had more confidence in their abilities.

Later, Gao et al. (2021) conducted a neuroimaging study that revealed the neural mechanisms underlying the relationship between conscientiousness and procrastination. They employed voxel-based morphometry (VBM) and resting-state functional connectivity (RSFC) methods to investigate the structure and function of participants' brains. Based on the VBM scan, in participants who reported increased levels of conscientiousness, there was an increase in gray matter volume in three brain areas. The dorsolateral prefrontal cortex is the executive control center of the brain responsible for decision-making, planning, and self-control. Each of these functions is crucial to resisting procrastination and understanding which choice is more beneficial. The orbital frontal cortex regulates emotions, allowing individuals to manage anxiety or boredom, which can lead to procrastination. The putamen, which is part of the basal ganglia, is crucial in reward processing and habit formation, both of which facilitate the initiation of a task, in turn leading to less procrastination. A student with a substantial reward and habit loop through their putamen will immediately start their homework when they get home from school. By quickly avoiding procrastination and initiating a task, the brain is rewarded as motivation is linked to action. As this habit develops over time, the student's putamen starts automatically influencing behaviors that are free of procrastination.

In contrast, a negative correlation was observed between conscientiousness and gray matter volume in the insula of the brain. The insula is responsible for emotional processing and cognition (Gogolla, 2017). Therefore, individuals with increased gray matter in their insula may experience a heightened awareness of their body's emotional processing. As an example, one may avoid an assignment because the anxiety they feel from attempting to complete it is so intolerable. Since they experience feelings so profoundly, they are more likely to avoid their emotions by procrastinating.

## Mental health disorders and procrastination

Mental health disorders can serve as a determinant and an effect of procrastination. Distinguishing the two is essential to understanding when to seek professional help. With depression, people experience heightened negative emotions like hopelessness or a lack of energy. With these emotions constantly interfering with their daily life, it can be difficult even to begin a task they want to complete. For those suffering from Attention-

Deficit/Hyperactivity Disorder (ADHD), symptoms include inattention and impulsivity. With increased traits such as these, focusing on a task can be extremely difficult and will ultimately lead to procrastination. Obsessive-Compulsive Disorder (OCD) is linked to perfectionist behaviors, which create feelings of self-doubt and fears of making mistakes. With this, people with OCD may prefer to procrastinate to avoid these feelings. OCD and ADHD differ significantly in terms of their relationship with procrastination. For those suffering from OCD, procrastination is due to their increased levels of perfectionist tendencies. As they are constantly ensuring tasks or actions are completed just right, they are simultaneously delaying the task that needs to be completed.

A separate type of behavior of OCD that elevates procrastination is perfectionism-driven delay of tasks, which impacts individuals differently from OCD compulsions that take up their time. In addition to perfectionism, those with OCD are usually stuck in a loop of constant obsessive thoughts, which then drive compulsive actions. For example, individuals with OCD may compulsively wash their hands, thereby depriving themselves of time that could be spent on a more productive task (Wadmin, 2023). In contrast, ADHD-driven procrastination originates from executive function challenges and a dopamine deficiency. When executive functions are impaired, one cannot plan, initiate tasks, or manage their time correctly, each of which directly contributes to procrastination.

Additionally, since dopamine is the neurotransmitter that enables people to be motivated and feel good, a lack of it results in decreased focus, attention, and energy. Individuals with autism spectrum disorder (ASD) produce less dopamine than those who are neurotypical. As a result, gratifying tasks—such as scrolling or playing video games—are more likely to be chosen because they provide an instant dopamine boost (Green & Bradford, 2025).

**Procrastination as a psychological defense mechanism**

When overwhelmed by pressure and expectations, procrastination is used as a temporary means to avoid emotional discomfort. Multiple experts in psychology have classified procrastination as a defense mechanism that helps individuals avoid negative emotions associated with specific tasks. Such emotions can range from aversiveness, anger, fear, boredom, or stress (Sirios, 2022). When needed to complete a task, people who have a fear of failure, or atychiphobia, are more likely to procrastinate. This fear is characterized by persistent anxiety about not meeting expectations or achieving success. In such cases, one will procrastinate to avoid blaming one's own skill for a poor performance. This way, their abilities won't be challenged or judged (The McGraw Center, 2025). In terms of procrastination, low self-esteem, perfectionism, and a fear of failure create a continuous cycle that reinforces each of these behaviors. Low self-esteem ultimately leads to a fear of failure. A lack of confidence in one's abilities can make it difficult to generate the positive thoughts necessary to excel at a specific task. This often leads to a fear of failure, which may result in the creation of unrealistic standards to ensure satisfactory performance, ultimately contributing to the development of perfectionism. As a result, self-inflicted emotional pressure is created, leading to higher levels of procrastination. As procrastination continues, tasks get put off, and individuals fall behind, leading to even more shame and self-criticism, which perpetuates the cycle.

Additionally, individuals with low self-esteem or a lack of confidence in their own abilities are more prone to procrastination. As mentioned previously, in the study "The role of big five traits and self-esteem on academic procrastination in Honduran and Spanish university students: A cross-cultural study", self-esteem was studied in terms of how it correlates with procrastination levels. Research has found that students with higher self-esteem tend to report lower levels of procrastination (Hidalgo-Fuentes et al., 2024).

In alignment with these ideas, a study was conducted at Uppsala University, Sweden, to differentiate between severe and moderate procrastinators who are willing to seek help and to examine the extent of the effects of their procrastination. Differentiating between moderate and severe procrastinators is crucial to creating tailored treatment for those who are suffering. Someone with moderate procrastination may only need simple strategies to combat their behavior. In contrast, those with severe procrastination will likely require clinical help that addresses the psychological roots of their behavior explicitly. When conducting academic investigations, differentiating between the two allows for more accurate results. In studies, if all procrastinators are labeled into one category, the relationships between procrastination and other behaviors will not be accurately represented. Anxiety, depression, stress, quality of life, impulsivity, and perfectionism are indicators of procrastination, so participants conducted tests on each subject to differentiate severe from moderate procrastinators. In addition, evaluations specific to procrastination were performed. Based on the study, it was found that students considered severe procrastinators experience more anxiety, depression, stress, a lower quality of life, impulsivity, and perfectionism. Traits such as perfectionism and negative emotions are significant contributors and can result from high levels of procrastination.

**Neurological basis of procrastination**

Procrastination happens due to a neurological clash in the brain between impulses and rational control. The prefrontal cortex is an area located at the front of the brain, responsible for executive functions, including decision-making, planning, and emotion regulation. With these functions, one can prioritize and achieve long-term goals. This part of the brain is frequently overridden by the limbic system, a collection of brain structures responsible for processing emotions and memory (InsightPsychology, 2024). Within the limbic system, a structure known as the amygdala processes emotions such as fear and anxiety. When faced with a task that evokes such feelings, the limbic system's emotional drives overpower logical intentions. Studies have further shown that individuals with severe tendencies toward procrastination have a reduced amount of gray matter in their prefrontal cortex compared to the average person. This prohibits them from efficiently managing their impulses or controlling their desires, making them more inclined to procrastinate. This neurological conflict also directly contributes to temporal discounting, a process in which immediate but minor rewards are valued more highly than delayed benefits. Instead of initiating tasks that offer future advantages, individuals often seek instant relief (InsightPsychology, 2024). Research on this topic using fMRI scans has suggested that the prefrontal cortex is activated when individuals make decisions involving future rewards. However, when immediate benefits overshadow future rewards, the limbic system overpowers the prefrontal cortex, leading to a tendency toward procrastination.

Procrastination is not solely the result of the processes that happen in the limbic system. Hormones and neurotransmitters also play a role in influencing procrastination. The combination of such functions is what results in procrastination. Dopamine and serotonin are two neurotransmitters or chemical messengers that each have a direct impact on procrastination. When engaging in pleasurable activities, dopamine is released from the nervous system. It is associated with pleasure and awards, but also serves multiple other purposes. It enables us to stay alert, be motivated, and set goals, all of which are crucial to preventing procrastination. An imbalance of dopamine in the systems challenges the brain in deciding between an immediate reward, which can lead to procrastination, and completing a task with future benefits. As a result of this imbalance, procrastinating seems more gratifying when deciding which option to choose. Similarly, serotonin, or the "feel-good" neurotransmitter, primarily functions to control impulses and regulate moods. Low

levels of serotonin result in feelings of anxiety, depression, and mood swings. Since procrastination is often considered an emotional struggle, these negative emotions from an imbalance of neurotransmitters directly correlate to increased levels of procrastination (InsightPsychology, 2024). External factors, such as stress, genetic factors, and hormonal factors, cause these neurotransmitter imbalances. Hormones are specialized chemical messengers, similar to neurotransmitters, but are released by endocrine glands throughout the body. When we experience something stressful, such as anxiety about completing a task, the brain releases the hormone cortisol. This stress hormone is the body's natural response to stressful situations. When too much of a hormone is released, the process of neurotransmitters signaling throughout the body becomes disrupted, leading to increased procrastination.

Based on these neurological and psychological mechanisms, there are various treatment strategies aimed at combating these natural processes and, in turn, procrastinatory behaviors. One includes Cognitive Behavioral Therapy (CBT), a type of psychotherapy focused on altering negative thoughts, feelings, and behaviors that are connected. It is based on the principles that psychological issues in one's life stem from negative emotions, detrimental behaviors, and the idea that one can find ways to alter them. To achieve this, a patient will work collaboratively with their psychologist to identify the issues, address the thoughts or behaviors that may be causing them, and then prepare strategies tailored to each individual that will help them. For example, someone who experiences procrastination often has negative thoughts about each assignment, such as "I will never finish this," which enables them to continue procrastinating. Yet, with therapy, this thought will be transformed into "I can start with one small step." Slowly, the once-automatic negative thoughts about one's procrastination turn into positive ones that provide them with confidence in their own abilities. In the behavioral portion of CBT, individuals dealing with procrastination may practice breaking down large tasks into smaller, more manageable steps. As one practices these strategies, big assignments seem less overwhelming, easier to complete, and the patient will grow to refrain from their avoidance patterns that create procrastination (American Psychological Association, 2025). Another strategy would be Acceptance and Commitment Therapy (ACT). ACT is a strategy used to improve one's well-being and health. It teaches someone to accept behaviors of discomfort like stress or anxiety, but still work towards their goals even though they feel a certain way. It allows one to embrace the highs and lows because they are each essential parts of life. For someone who procrastinates, instead of avoiding assignments because of the emotions they elicit, one will learn to cope with obstructive feelings.

## How Societal Attitudes Influence Procrastination

Although procrastination is acknowledged globally, perceptions and causes vary across different cultures. In the study, "The role of big five traits and self-esteem on academic procrastination in Honduran and Spanish university students: A cross-cultural study," Hidalgo-Fuentes et al. (2024) compared procrastination among students in Honduras and Spain. In addition to self-esteem and personality traits, society was another factor observed. Based on pre-existing cross-cultural studies, Hofstede's individualism index was used to establish that Spain is considered individualist, scoring 51 on the index, and Honduras is labeled as collectivist, with a score of only 20. An individualist society emphasizes the needs and rights of individuals rather than those of a collective group. With this, personal achievement and self-sufficiency are rewarded. Collectivist societies, on the other hand, value cooperation, loyalty, and those who prioritize the needs and desires of others over their own. Individuals are rewarded based on how well they benefit the group rather than their individual accomplishments (Hidalgo Fuentes et al., 2024). Individualists perceive

procrastination as a personal failure, whereas collectivist students view it as a failure that directly impacts and lets down the group.

Using the Academic Procrastination scale, it was determined that students from Spain reported higher levels of procrastination as compared to students from Honduras. In collectivist societies, there is a greater sense of security and belonging, making it easier for people to turn to academic support when they are struggling. Whether they receive assistance from their parents or mentors, collaboration and assistance are heavily encouraged. In addition, due to the emphasis on group harmony and cooperation, students feel they must procrastinate less to avoid being detrimental to the group. This social pressure encourages individuals to take responsibility for their own tasks. In contrast, students from individualist cultures tend to procrastinate more because they perceive procrastination as an individual struggle. Individualist students would be less likely to seek help in situations related to procrastination because they are expected to understand their personal struggles independently. Due to the emphasis on self-reliance, addressing these issues becomes challenging. Without a support system, students often resort to avoidance strategies instead of seeking help, which in turn leads to procrastination. Even though procrastination is detrimental and professionals recommend seeking help, some researchers actually contradict this point. In moderation, procrastination can actually be beneficial, helping someone complete a task more effectively than trying to stop procrastinating completely. Purposefully procrastinating is a process known as active delay. In this case, one procrastinates a task until it is due so that they are pressured to complete it and work more efficiently. This differs from avoidant delay, in which someone does not necessarily procrastinate on purpose, but because they are avoiding negative emotions. Additionally, taking a brief moment to stop a task will promote idea incubation and stress relief. This process is known as constructive incubation, in which the subconscious mind continues to work on a task even when we are not actively engaged. It leads to more effective work and new creative ideas that are made during the brief moment of a break.

## Comparison and Social Media Usage Impacting Procrastination

Social media plays a significant role in the lives of young students. In the digital age, it serves as a method of interacting with peers, accessing information, and entertainment, and fostering an environment of self-expression online. Despite these social benefits, social media has detrimental effects academically and increases procrastination. The addictive and enjoyable nature of social media reduces the time available for completing tasks or work. In a study called “The role of academic procrastination on Internet addiction among Thai university students: A cross-sectional study,” Nadajaran et al. (2023) explored the relationship between internet addiction and procrastination. Using the Internet Addiction Test and the Procrastination Assessment Scale, approximately 500 students were assessed based on their internet use and procrastination tendencies. The tests revealed that procrastination and internet addiction had a positive correlation. When faced with constant academic pressure, using social media or other applications online is an easily accessible and instantly gratifying way to escape. Instead of initiating homework, students may scroll on TikTok because they find it more enjoyable. Such usage creates a continuous, detrimental cycle of the two that is difficult to break. Procrastination creates internet usage, just as internet usage addiction enables individuals to procrastinate. Internet usage, video games, and social media, especially, are designed to provide rewards quickly, keeping users entertained by the app. These rewards may include “likes” on posts or messages from friends—interactions that trigger the release of dopamine, a neurotransmitter or natural chemical messenger in the brain that enables individuals to feel good. The release of dopamine strengthens the habit loop of smartphone use. As social media is used more

frequently, the brains constantly anticipate and crave these instant rewards. The dopamine reward system in the brain, which reinforces behaviors such as smartphone use, is also the same system that contributes to procrastination. The brain's preference for frequent, immediate rewards that induce dopamine is what makes individuals choose more gratifying activities over responsibilities. As a result, when faced with academic tasks that will take longer to complete or involve delay gratification, it becomes harder to stay focused on or even initiate the task.

In addition, nearly a thousand students are admitted to social media, interfering with how productive and efficient they are in completing tasks. A poll of 1,500 undergraduate students conducted by the app *Stop Procrastinating* aimed to identify the causes of procrastination trends. Of the students surveyed, 74% identified that distractions from internet usage significantly fuel their procrastination. To be prepared for a statistic as severe as this, policymakers and universities must develop strategies to reduce the 74%. Technology should be managed in educational settings, and more opportunities should be created for students to learn how to deal with procrastination in today's modern age of technology. The same study reported that 51% respondents lost at least an hour of productivity to social media, and 44% stated that they became anxious about the quality of their work due to procrastination resulting from social media use (Morford, 2014). Social media also creates platforms in which one is constantly exposed to others' personal and even academic achievements. When individuals compare their own achievements with those of others, it can undermine their perceptions of their abilities, which can lead to lower self-esteem. This lowered self-esteem, in turn, contributes to increased procrastination (Kayala et al., 2023).

## Conclusion

Procrastination is much more complex than a time management issue. It results from one or a combination of neurological and psychological factors, making some individuals more prone to it than others. These include personality traits, mental health disorders, emotions, and the natural neurological processes of the brains. It even extends to societal influences and social media usage, which has become essential in today's times. Rather than a lack of willpower to complete something, procrastination serves as a temporary relief for the brain. With personality traits, studies have supported that those high in neuroticism are most likely to procrastinate because they are prone to experience negative emotions. In contrast, those who test for high levels of conscientiousness are less likely to procrastinate, as they are perceived as responsible, disciplined, and highly motivated by their goals. People who have mental health disorders like ADHD and OCD are both more prone to procrastination. Someone diagnosed with either disorder experiences either perfectionism, trouble focusing, or anxiety, which are each symptoms of someone that have a direct cause on procrastinatory tendencies. Due to this, clinicians and educators must employ personalized approaches to address procrastination effectively. They must also understand all the possible causes of procrastination that may impact people differently.

Each of these directly links to the idea that procrastination is an emotional defense mechanism against the negative thoughts or feelings that specific actions evoke. Individuals don't avoid completing an assignment, but are avoiding the discomfort and unpleasantness of completing that assignment. It becomes tempting not to procrastinate, especially when more enjoyable tasks are available as an alternative. Neurological research has supported the insight that procrastination also stems from the tendency to choose more gratifying options. The functional imbalances between the prefrontal cortex and limbic system in the brain are responsible for such behaviors. The limbic system, which controls emotions and motivations, overrides the prefrontal cortex, which manages memory, decision-making, and

impulse control. The limbic system takes over and prioritizes feelings over long-term goals because they are not immediate. Rewards seem more gratifying when they are immediate rather than taking extended periods of time to develop. Societal and cultural influences have additionally impacted how the causes of procrastination are perceived and understood. Different kinds of societies and how they prioritize each other affect procrastination levels in varying ways. For example, a student living in a collectivist culture is likely to procrastinate less than a student in an individualist society. This is due to society's ideas on how success is perceived and how it needs to be achieved. In collectivist cultures, success is measured by how effectively an individual can benefit the entire group. In individualist ones, success is measured by how well someone can help themselves and their own growth.

Along with this, the digitalization of today has led to an increase in procrastination worldwide. Smartphone use becomes an addictive behavior that tunes into the very same system in the brain that causes procrastination: the dopamine reward system. Individuals use the internet and social media because they receive instant rewards that release dopamine. This is similar to procrastination, as the brain prioritizes instant rewards or relief over long-term ones that require more effort to achieve. Understanding each of these causes is essential to understanding which measures are necessary to address the extent of one’s procrastination.

## Implications

Each of these findings challenges the common misconception that procrastination is simply a result of laziness. It involves one's emotions, character traits, and neurological basis, making it more complex than most perceive it to be. From this and modern research on the topic, it has become understood as a multifaceted psychological concern. Not only can it stem from a single factor, but procrastination can also be a combination of multiple components described throughout this paper. This understanding of procrastination has implications for treatment to overcome procrastination, the school environment, and workplace settings. To manage procrastination in these environments, various school designs or workplace norms need to be implemented.

When determining how to treat someone with procrastination, it is essential to tailor the approach to their individual needs. People who procrastinate range from mild to chronic procrastinators, meaning that each individual will require different methods to deal with it. It also results from a range of psychological causes that differ among individuals, meaning that each individual's procrastination is not due to the same factors, and therefore can not be treated the same way. As an example, those who procrastinate because they have high levels of neuroticism will need emotional support therapy. Those who procrastinate because of a mental health disorder like ADHD will require executive functioning support and learn methods on how to control their impulsivity. Treatment should also be aligned with cultural values, as understood through the way different societies operate and perceive success. For example, individuals in collectivist societies must employ different approaches to managing procrastination compared to those in individualist societies. Early intervention is also a key measure to prevent procrastination before it becomes a chronic issue. Chronic procrastination is more prevalent among students, so universities and school settings can implement strategies to help students manage this tendency. Students can take personality assessments and mental health tests to understand their likelihood of procrastination. Then, institutions can create programs aimed at helping students develop their self-esteem and emotional resilience against the negative emotions that contribute to procrastination.

Based on the findings in this paper, several directions for further research emerge. Longitudinal studies, as well as more cross-cultural studies, can be conducted to better understand the extent of societal influences on procrastination. Further investigations into

the roles of treatment for specific individuals can be conducted to evaluate the effectiveness of certain treatment plans. Lastly, the monitoring of smartphone usage to track digital behavior patterns and how they differ among those with differing levels of procrastination. Self-report questionnaires can be administered by individuals across institutions who want to help themselves overcome procrastination to determine the best methods to treat their own procrastination.

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