

# Psychological Capital and Academic Procrastination: The Mediating Role of Self-Regulated Learning among College Students

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## Abstract

Academic procrastination has always posed a challenge in both offline and online learning environments. In order to mitigate delays in academic assignments, students need to adopt positive attitudes towards their academic life and actively regulate their learning process. Therefore, this study aimed to investigate the mediating role of self-regulated learning in the relationship between psychological capital and academic procrastination among college students. The study utilized the Academic Psychological Capital Questionnaire-12, the Motivated Strategies for Learning Questionnaire, and the Academic Procrastination Scale. The findings, based on a sample of 207 college students from Indonesia, revealed that self-regulated learning fully mediated the link between psychological capital and academic procrastination. Moreover, further analysis indicated that the method of learning could differentiate levels of academic procrastination, while no significant difference was observed based on gender. This study offers valuable insights to students, lecturers, and other stakeholders in the field of education, emphasizing the significance of psychological capital and self-regulated learning in students' academic journey.

**Keywords:** *Academic procrastination, psychological capital, self-regulated learning*

Received 17 November 2022/Accepted 27 May 2023 ©Author all rights reserved

## Introduction

Procrastination has emerged as a pervasive issue globally and poses a significant challenge within academic settings, commonly referred to as academic procrastination. Academic procrastination denotes a behavioral inclination to purposefully delay academic tasks, often engaging in unrelated activities instead of completing assigned responsibilities (Tuckman, 1991; Steel & Klingsieck, 2016). This tendency towards procrastination hinders many students from achieving optimal performance in their academic endeavors (Steel, 2007; Madjid et al., 2021).

Notably, procrastination appears to be more prevalent among college students. Extensive research has consistently demonstrated that academic procrastination, such as postponing assignments and studying for exams, is more widespread among university students compared to those at other educational levels (Klingsieck, 2013; Patrzek et al., 2015). Moreover, studies have shown that over 70% of undergraduate students experience academic procrastination in their daily lives (Schraw et al., 2007; Steel, 2007). In a recent study by Haryanti and Santoso (2020), the percentage of academic procrastination among university students was examined based on various categories. The findings indicated that 74% of university students fell into the moderate category of procrastination, while 13.4% were classified in the high category.

Academic procrastination has witnessed a surge in online learning amidst the Covid-19 pandemic. In a recent study conducted by Herdian and Zamal (2021), it was revealed that 3.6% of university students experienced a high level of academic procrastination, while 22.3% and 49.2% reported high and moderate levels of procrastination, respectively. The transition to online learning during the pandemic has resulted in decreased productivity for many college students. The flexibility associated with online learning allows individuals to engage in multiple activities simultaneously, leading to a diversion of time away from academic pursuits (Segura & Bizberge, 2021).

The aforementioned description underscores the persistent nature of academic procrastination, prevalent in both online and offline learning contexts, including the blended learning approach that combines online and offline components in the current new normal era. Procrastination poses a critical issue with negative consequences for those who engage in it. Research indicates that college students who procrastinate or delay their academic responsibilities exhibit significantly lower performance compared to their non-procrastinating counterparts (Steel et al., 2001; Kağan et al., 2010). In addition to diminishing academic achievement and productivity, academic procrastination can hinder individuals from reaching their full potential, increase stress levels, diminish quality of life, waste substantial amounts of time without producing meaningful outcomes, strain interpersonal relationships, impede timely graduation, and even contribute to dropout rates (Tuckman, 1991; Kim & Seo, 2015; Fernie et al., 2017; Madjid et al., 2021).

Psychological capital (PsyCap) is believed to be one of the influential factors in academic procrastination. Previous studies have indicated that students' PsyCap can impact their propensity for academic procrastination (Hicks & Wu, 2015; Saman & Wirawan, 2021). PsyCap encompasses positive psychological resources such as self-efficacy, optimism, resilience, and hope (Luthans et al., 2007; Nelson & Cooper, 2007). Individuals with high PsyCap exhibit confidence in facing challenges, believe in their ability to overcome difficulties, demonstrate resilience in the face of adversity, and effectively set goals to accomplish desired achievements (Luthans et al., 2007; Luthans et al., 2010). Therefore, PsyCap is considered a factor that can diminish students' levels of procrastination in their academic pursuits. Put simply, individuals with high levels of PsyCap tend to exhibit lower levels of procrastination compared to those with lower levels of PsyCap (Hicks & Wu, 2015; Saman & Wirawan, 2021).

Although previous research has found a negative and significant relationship between PsyCap and academic procrastination in university students, there is still limited research focusing on the role of PsyCap in academic procrastination, particularly in the context of Indonesia. This may be attributed to the relatively novel nature of the concept of PsyCap, warranting further investigation into the relationship between these two variables. Furthermore, studies conducted by Saman and Wirawan (2019; 2021) did establish the impact of PsyCap on academic procrastination; however, its contribution was found to be only 10%. Consequently, it is estimated that there are additional factors at play that influence academic procrastination among university students.

Previous studies have demonstrated that self-regulated learning significantly influences the level of academic procrastination among students (Steel, 2007; Howell & Watson, 2007). Moreover, recent experimental and pre-experimental studies (Umah, 2021; Naderi et al., 2021; Afandy & Fuat, 2021) have highlighted the efficacy of self-regulated learning strategies in reducing students' tendency to procrastinate academically. Self-regulated learning (SRL) encompasses students' active participation in their learning process, encompassing metacognition, motivation, and behaviors aimed at achieving learning objectives (Zimmerman, 1986; Zimmerman & Moylan, 2009). Students with high levels of SRL exhibit the ability to select, organize, and create an optimal learning environment. They also assume greater responsibility for their learning process and their future within the academic realm.

Zimmerman (2000) stated that students with strong self-regulation are less likely to engage in procrastination. Furthermore, Asri et al. (2017) observed that individuals with high levels of procrastination tend to lack effective learning strategies or management skills.

Previous research has established that Psychological Capital (PsyCap) influences Self-Regulated Learning (SRL) among university students (You, 2016). A higher level of PsyCap in individuals is positively associated with their development in the learning process, including a sense of competence and accomplishment in academic assignments. According to You (2016), when college students experience positive emotions, confidence, and adaptability during the learning process, they are more inclined to invest greater energy and effort towards achieving their learning goals by utilizing cognitive, metacognitive, and strategic approaches. This finding is corroborated by Sava et al. (2020), who found a positive and significant relationship between PsyCap and cognitive strategies as well as self-regulation in the learning process. The study suggests that PsyCap functions as a motivating factor, determining students' willingness to employ strategies and skills during the learning process.

Based on the aforementioned discussion, it can be postulated that PsyCap may potentially influence academic procrastination through its impact on SRL among university students. However, to date, no study has explored the relationship among these three variables. Furthermore, this study aims to investigate how SRL, as a facet encompassing metacognition and behavior, may mediate the positive attitudes towards learning inherent in PsyCap, thereby reducing academic procrastination within the current hybrid and blended learning environment. Consequently, this study aims to examine the influence of PsyCap on academic procrastination among college students, with SRL acting as a mediator. The research hypothesis posits that SRL mediates the relationship between PsyCap and academic procrastination among college students in Indonesia.

Additionally, this research aims to examine the potential differences in academic procrastination between male and female students, as there is still inconsistency in the findings regarding the relationship between academic procrastination and gender. Several previous studies have indicated a significant difference in procrastination levels between male and female students, with males tending to procrastinate more than females (Khan et al., 2014; Balkis & Duru, 2017; Kassim et al., 2022; Lubis

& Meliala, 2018). However, other studies have found no significant difference in procrastination between male and female students (Astuti et al., 2021; Gohil, 2014).

This research endeavors to contribute to the field of educational psychology by enhancing our understanding of psychological capital as a variable that has received limited attention in the context of education in Indonesia, as well as self-regulated learning as a variable that plays a significant role in addressing various learning challenges. Furthermore, the findings of this study can offer fresh insights for university students, teachers, parents, and practitioners, including psychologists, regarding the importance of self-regulated learning and psychological capital in optimizing students' learning processes, particularly in the current environment characterized by constant challenges and changes. The results can provide valuable information on approaches, strategies, and programs that can be implemented to help students prevent or overcome academic procrastination.

## **Method**

### *Participants*

The study recruited participants who were actively pursuing diploma or undergraduate degrees at universities in Indonesia and were aged between 17 and 25 years. The sampling technique employed was accidental sampling, which involved distributing the questionnaire online. This approach was chosen considering the ongoing Covid-19 pandemic and the need to reach participants from various universities across different provinces in Indonesia. Initially, 215 participants completed the questionnaire. However, after data cleaning, it was determined that 7 participants did not meet the research criteria, and 1 participant was identified as an outlier, necessitating their exclusion from the analysis. Therefore, the final sample size for this study comprised 207 university students, whose data were suitable for further processing and analysis.

### *Design and Procedures*

This study employed a non-experimental quantitative research design with a cross-sectional approach. The research variables were not manipulated, and data were collected from participants at a single point in time. The study received ethical clearance from the Institutional Review Board at the

Faculty of Psychology, Universitas Indonesia (Approval No. 006/FPsi.Ethics Committee/PDP.04.00/2022). Prior to data collection, a pilot test was conducted to assess the suitability of the research instruments for the participants involved in this study. Data were collected using online questionnaires administered through Google Forms between 6th and 13th February 2022. Questionnaire links were distributed to eligible participants, including individuals identified through personal connections as well as through the dissemination of electronic recruitment posters and messages via social media platforms such as Instagram and WhatsApp. As an appreciation for their participation, a random draw was conducted, and 25 participants were selected to receive a small token in the form of electronic money worth Rp. 20,000. Subsequently, the researchers performed data screening and cleaning using Microsoft Excel software to identify participants who met the inclusion criteria. Data processing was then conducted using statistical analysis software, IBM SPSS 25.

### *Instruments*

Psychological capital was assessed using the Academic Psychological Capital Questionnaire-12 (Academic PCQ-12) developed by Luthans et al. (2007) and adapted for an academic context by Martinez et al. (2019). For this study, the researchers utilized the Indonesian adaptation of the Academic PCQ-12 translated by Sechan (2021). The measurement instrument consisted of 12 items, and participants responded on a Likert scale with six response options ranging from 1 (very inappropriate) to 6 (very appropriate). One example item from the questionnaire was: "Saya optimis dengan apapun yang terjadi pada diri saya di masa depan yang berkaitan dengan studi saya" (translated as "I'm optimistic about what will happen to me in the future as it pertains to my studies"). The reliability test results demonstrated that the Academic PCQ-12 exhibited good internal consistency with a Cronbach's Alpha value of 0.898. Moreover, the scale demonstrated its validity based on the range of corrected item-total correlation values, which fell between 0.492 and 0.688. Higher scores on the scale indicated a higher level of psychological capital, while lower scores indicated a lower level.

Self-regulated learning was assessed using the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich and De Groot (1990) and adapted and translated into Indonesian by Ananda (2019). The measurement instrument consisted of 44 items, and participants responded on a Likert scale with seven response options ranging from 1 (very inappropriate) to 7 (very appropriate). One example item from the questionnaire was: "Sebelum mulai belajar, saya berpikir mengenai hal-hal yang perlu saya pelajari" (translated as "Before starting to study, I think about the things I need to learn"). Among the 44 statement items, five were reversed items. The reliability test results indicated that the scale demonstrated good internal consistency with a Cronbach's Alpha value of 0.918. Additionally, the scale demonstrated its validity based on the range of corrected item-total correlation values, which fell between 0.360 and 0.696. Higher scores on the scale indicated a higher level of self-regulated learning, while lower scores indicated a lower level.

Academic procrastination was measured using the Academic Procrastination Scale (APS) developed by McCloskey and Scielzo (2015) and adapted and translated into Indonesian by Qadriani (2018). The measurement instrument consisted of 25 items, and participants responded on a Likert scale with six response options ranging from 1 (very inappropriate) to 6 (very appropriate). One example statement item was: "Saya menunda suatu tugas hingga menit terakhir" (translated as "I put off projects until the last minute"). Among the 25 items, five were reversed items. The reliability test results indicated that the academic procrastination scale exhibited good internal consistency with a Cronbach's Alpha value of 0.937. Moreover, the scale demonstrated its validity based on the range of corrected item-total correlation values, which fell between 0.313 and 0.791. Higher scores on the scale indicated a higher level of academic procrastination, while lower scores indicated a lower level.

### *Data Analysis*

The first step in data analysis involved conducting descriptive analysis to gain an overview of the participants' characteristics. Following that, a correlation test using the Pearson Correlation technique was performed to examine the relationships between the research variables. Before testing the research model, the classical assumption test was conducted. The subsequent data analysis utilized the PROCESS V4.0 macro (Hayes, 2018) within the SPSS 25 software to investigate the mediating role of self-regulated learning in the relationship between psychological capital and academic

procrastination. Furthermore, additional analyses were conducted, including a one-way ANOVA test and an independent samples t-test, to explore potential differences in the level of procrastination based on learning method and gender, respectively.

## **Result**

Table 1 presents the sociodemographic characteristics of the participants, including gender, age, learning method, and employment status. The analysis revealed that females constituted the majority, accounting for 72.9% of the participants, while males represented 27.1%. In terms of age, participants within the 20-22 years range were the most prevalent, comprising 59.9% of the sample, whereas those aged 23-25 years accounted for only 10.1%. Regarding educational institutions, participants from Universitas Jambi (26.6%) and Universitas Indonesia (15.9%) were the most represented. However, the majority of participants (36.2%) were enrolled in various higher education institutions across Indonesia. Due to the small number of participants from each of these institutions (less than five participants), they were collectively categorized as "other," which encompassed a total of 54 institutions.

The sociodemographic data of the participants also provided information about the learning methods employed. During the data collection period, it was found that 19.8% of participants were engaged in online learning, 17.8% followed a blended learning approach, and 3.4% practiced offline learning. Additionally, 58.9% of participants did not provide information regarding their learning method. Regarding employment status, it was observed that a portion of participants (20.3%) were studying while also working, although this percentage was lower compared to those who were not employed (79.7%).



**Table 1**  
*Sociodemographic Characteristics of Participants*

Characteristics	Frequency (N)	Percentage (%)
<b>Gender</b>		
Man	56	27.1%
Woman	151	72.9%
<b>Ages</b>		
17 - 19	62	29.8%
20 - 22	124	59.9%
23 - 25	21	10.1%
<b>Higher Education Institution</b>		
Universitas Jambi	55	26.6%
Universitas Indonesia	33	15.9%
Universitas Sriwijaya	18	8.7%
Universitas Bengkulu	14	6.8%
Universitas Andalas	6	2.9%
Universitas Negeri Padang	6	2.9%
Other	75	36.2%
<b>Learning Methods</b>		
Online	41	19.8%
Offline	7	3.4%
Blended	37	17.8%
No Answer	122	58.9%
<b>Occupation Status</b>		
Working	42	20.3%
Not Working	165	79.7%

N=207

Subsequently, a descriptive analysis was conducted by the researchers for each research variable. As depicted in the table below, the majority of participants exhibited a moderate level of PsyCap (M=55.30, SD=9.83), SRL (M=227.81, SD=28.85), and academic procrastination (M=82.64, SD=23.89).

**Table 2**  
*Descriptive Statistics for Study Variables*

	Min	Max	Mean	SD
Psychological capital	31	72	55.30	9.83
Self-regulated learning	156	287	227.81	28.85
Academic procrastination	28	138	82.64	23.89

Prior to addressing the research hypothesis, the researchers performed a correlation test to examine the relationships among the research variables. The analysis revealed a significant positive correlation between PsyCap and SRL ( $r=0.70$ ,  $p<0.01$ ), indicating that mediation testing can be conducted. Additionally, the results indicated a significant negative correlation between SRL and academic procrastination ( $r=-0.48$ ,  $p<0.01$ ), as well as a significant negative correlation between PsyCap and academic procrastination ( $r=-0.35$ ,  $p<0.01$ ).

**Table 3**

*Correlations for Study Variables*

	Psychological capital	Self-regulated learning	Academic procrastination
Psychological capital	-		
Self-regulated learning	0.70**	-	
Academic procrastination	-0.35**	-0.48**	-

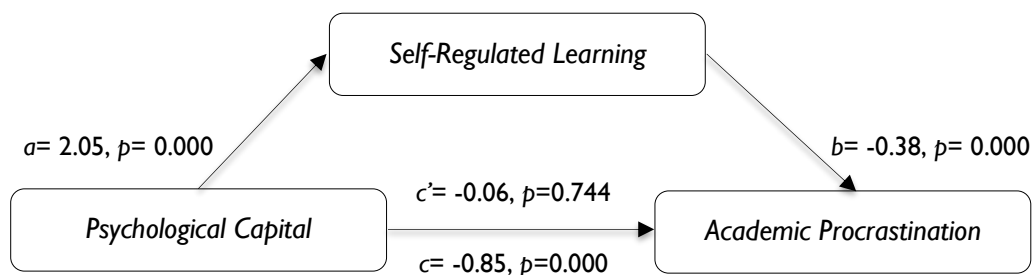
\*\*  $p < .001$ .

The researchers also conducted the classical assumption test, including normality, multicollinearity, and heteroscedasticity, on the research data. The results indicated that the data were normally distributed ( $p=0.208$ ), exhibited no multicollinearity (tolerance=0.509; VIF=1.963), and did not show any specific pattern of heteroscedasticity. Subsequently, a mediation test was performed to examine the proposed research hypotheses. The analysis results demonstrated that in path A, PsyCap significantly predicted SRL ( $\beta=2.05$ ,  $p=0.000$ ). Path B revealed that SRL significantly predicted academic procrastination ( $\beta=-0.38$ ,  $p=0.000$ ). Additionally, an analysis was conducted to explore the impact of PsyCap on academic procrastination, and the findings indicated that PsyCap significantly predicted academic procrastination ( $\beta=-0.85$ ,  $p=0.000$ ). The results of the mediation analysis are presented in the table below.

**Table 4**  
*Mediation Analysis Results*

	$\beta$	SE	P	LLCI	ULCI
(Path A) PsyCap → SRL	2.05	0.14	0.000	1.76	2.34
(Path B) SRL → Academic procrastination	-0.38	0.71	0.000	-0.52	-0.24
Total Effect (Path C) PsyCap → Academic procrastination	-0.85	0.15	0.000	-1.16	-0.54
Direct effect (Path C') PsyCap → Academic procrastination	-0.06	0.20	0.744	-0.47	0.34
Indirect effect (Path A*B) PsyCap → SRL → Academic procrastination	-0.79	0.13	0.000	-1.06	-0.53

Furthermore, the results of the conducted mediation tests revealed the presence of an indirect effect with a value of  $\beta = -0.79$  and a significance of  $p = 0.000$ . The confidence interval for this indirect effect, ranging from  $-1.06$  to  $-0.53$ , did not exceed 0. These findings indicate that self-regulated learning (SRL) plays a mediating role in the relationship between psychological capital (PsyCap) and academic procrastination. On the other hand, the direct effect of PsyCap on academic procrastination, with SRL as a mediator, yielded a value of  $\beta = -0.06$  and a significance of  $p = 0.744$ . The confidence interval for this direct effect, ranging from  $-0.47$  to  $0.34$ , included 0.



**Figure 1.** *The Mediation Model Results*

These findings suggest that the relationship between psychological capital (PsyCap) and academic procrastination becomes non-significant when self-regulated learning (SRL) acts as a mediator. Thus, it can be concluded that there is a full mediation effect in this study, indicating that SRL plays a complete or perfect mediating role in the relationship between PsyCap and academic procrastination. Consequently, the hypothesis proposed in this study is supported.

Furthermore, additional analysis was conducted to examine the association between academic procrastination and learning methods. The results revealed significant differences in academic procrastination among students based on their learning methods ( $p < .05$ ). Specifically, significant differences were observed between students who pursued offline and blended learning approaches ( $p < .05$ ). Students engaged in offline learning displayed a higher level of procrastination in this study. However, no significant differences were found in the academic procrastination levels of students in online learning compared to those in offline learning and blended learning ( $p > .05$ ). Moreover, another additional analysis was performed to explore the relationship between academic procrastination and the gender of the participants. The results indicated that there was no significant difference in the level of academic procrastination between male and female students ( $p > .05$ ).

## **Discussion**

Based on the obtained results, it was evident that the majority of students exhibited a moderate level of procrastination. This tendency may be attributed to the fact that self-regulated learning (SRL) and psychological capital (PsyCap), which are influential factors, were also at a moderate level for most participants. These findings align with previous studies conducted during the COVID-19 pandemic, which highlighted that students in Indonesia displayed self-confidence, optimism, and resilience in their learning processes, despite the challenges and changes faced (Halawa, 2020; Sari et al., 2020; Roza, 2021). These positive attitudes seem to impact how students set goals and motivate themselves, leading university students to persevere with their academic assignments even amidst more enticing activities. This observation is supported by a study conducted by Sartika (2021), which emphasized the influence of goal orientation on students' self-regulated learning. Hence, the inclination of students to procrastinate is not excessively high, despite the continuous transitions from offline to online, and vice versa, as well as blended learning formats.

This study aimed to investigate the mediating role of self-regulated learning (SRL) in the relationship between psychological capital (PsyCap) and academic procrastination in students. The results of the data analysis indicate that SRL indeed acts as a mediator in the relationship between PsyCap and academic procrastination. This implies that as PsyCap increases, SRL also increases, consequently leading to a reduction in students' academic procrastination. The findings of this study reveal that PsyCap exerts an influence on SRL. It suggests that students who possess self-confidence, optimism, hope, and resilience towards the learning process are more likely to have a greater ability to actively and independently direct and manage their own learning process. On the other hand, students with less positive attitudes towards their learning process tend to exhibit lower levels of SRL. These results are consistent with a recent study conducted by Sava et al. (2020), which demonstrated that PsyCap influenced students' cognitive preferences, metacognitive abilities, and utilization of effort strategies in their learning. Additionally, You (2016) explained that students with a positive attitude towards their learning process demonstrate a strong desire to exert energy and effort, employing cognitive and metacognitive strategies that are integral components of SRL.

SRL has been observed to exert a negative influence on academic procrastination among university students, indicating that when students possess sufficient SRL, they are less likely to engage in procrastination within their academic pursuits. This finding aligns with previous research conducted by Ulum (2016), which demonstrated a reduction in academic procrastination among university students who received SRL interventions. Similar outcomes have also been reported in recent studies focusing on university students (Naderi et al., 2021; Umah, 2021). By employing SRL strategies such as planning, implementation, monitoring, and evaluation, university students gain the ability to regulate their learning activities, allowing them to concentrate solely on their academic responsibilities. Effective time management, a crucial component of learning strategies, further assists students in attaining their learning objectives by efficiently completing assignments without unnecessary delays (Umah, 2021). Sheikhi and Shahmorady (2015) additionally emphasized that the application of learning strategies empowers students, enabling them to assume a more proactive role in their education by organizing and directing their thoughts and actions. These factors collectively contribute to the prevention or reduction of academic procrastination among students, regardless of whether their

learning environment is offline, online, or blended. Consequently, students perceive themselves as capable of actively and independently steering their learning process.

The findings of this study indicate a significant negative effect of PsyCap on academic procrastination, even when not considering SRL. These findings align with previous research that demonstrated a significant negative relationship between PsyCap and academic procrastination (Hicks & Wu, 2015; Saman & Wirawan, 2019; 2021). However, the contribution of PsyCap to academic procrastination in this study was only 12%. Consequently, when SRL was included as a mediator in the mediation model test, the impact of PsyCap on academic procrastination was no longer significant. These results suggest that SRL fully mediates the relationship between PsyCap and academic procrastination. This implies that while PsyCap is important in preventing or reducing academic procrastination among students, its effectiveness is contingent upon the presence of adequate SRL skills.

Students who possess positive attitudes towards their academic pursuits, including self-confidence, optimism, hope, and resilience, demonstrate a strong drive and aspiration to achieve their goals. This motivation compels them to invest greater effort in their learning. These individuals employ specific strategies, such as goal-setting, planning, utilizing effective learning strategies, and engaging in self-evaluation and reflection (Zimmerman & Moylan, 2009). The presence of self-regulated learning (SRL) in university students empowers them to actively and independently participate in their learning activities and enables them to effectively address challenges encountered during the learning process. Consequently, they are better equipped to minimize procrastination and complete their academic assignments in a timely manner (Umah, 2021).

Based on the additional analysis conducted, it was observed that academic procrastination varies based on the learning methods chosen by university students. Specifically, students attending offline courses exhibited higher levels of procrastination compared to those in blended learning environments. However, no significant difference in procrastination levels was found between students in online and blended learning settings, as well as online and offline learning. These findings deviate from previous studies that favored offline learning over online learning in various aspects (Nambiar, 2020). Online learning was believed to decrease students' motivation and engagement,

leading to higher levels of procrastination (Melgaard et al., 2022). The disparity in these findings may be attributed to the fact that the university students in the offline learning group had previously experienced nearly two years of online learning. Transitioning to offline learning increased their mobility, which could have contributed to a tendency to postpone assignments when at home due to exhaustion from increased physical activity on campus. This may also explain the lack of differences in procrastination levels between students in online and offline learning. While their procrastination levels may be similar, the underlying reasons differ, with online learning aligning with previous studies and offline learning leading to exhaustion and subsequent assignment delays. Nonetheless, these findings should be cautiously interpreted, as the proportion of participants engaged in offline learning was only 3.4%, and some participants' learning method was unknown. Future research should further investigate these observations and expand the sample size to provide more comprehensive insights.

Another additional analysis revealed that there was no significant difference in academic procrastination between male and female students. These findings contrast with many previous studies that reported higher levels of procrastination among male students compared to females (Khan et al., 2014; Balkis & Duru, 2017; Kassim et al., 2022; Lubis & Meliala, 2018). However, this research aligns with other studies that found no gender-based differentiation in academic procrastination (Astuti et al., 2021; Gohil, 2014). Some studies have suggested that females exhibit higher levels of self-regulation, a factor that predicts academic procrastination, compared to males (Liu et al., 2021; Rohman et al., 2020). Nevertheless, no significant difference in the level of self-regulated learning was observed between male and female students in this study. Therefore, this finding may be attributed to the disparity in the number of male (27.1%) and female (72.9%) participants. It is possible that previous studies reporting gender differences in academic procrastination had an equal number of male and female participants.

This study has several limitations that need to be acknowledged. Firstly, the examination of PsyCap and SRL was limited to a unidimensional approach in relation to academic procrastination, and the exploration of the specific components of each construct and their individual impact on academic procrastination was not thoroughly investigated. Furthermore, the participant sample in this study was not sufficiently diverse to represent the entire population of Indonesian college students, as the

majority of participants were from Java and Sumatra. Additionally, there was an imbalance in the proportion of male and female participants, as well as participants who underwent offline learning methods compared to online and blended learning methods. Moreover, the learning methods of some participants could not be determined, which restricted the researchers from conducting further analysis on demographic data.

## **Conclusion**

This study provides evidence that self-regulated learning fully mediates the relationship between psychological capital and academic procrastination in college students. This implies that psychological capital alone does not directly reduce academic procrastination; instead, it requires the presence of adequate self-regulated learning. However, both psychological capital and self-regulated learning are crucial for students to avoid procrastination in their academic pursuits. Therefore, fostering a positive attitude towards learning is essential for students to develop the necessary skills to actively and independently manage their learning process, enabling them to complete tasks on time and optimize their performance in the dynamic college learning environment.

These findings offer valuable insights for educational institutions to design training programs that enhance students' self-regulated learning, thereby mitigating procrastination irrespective of the learning method employed. Comprehensive training programs that encompass the different components of psychological capital can be particularly effective in promoting students' self-regulated learning. By empowering students to take an active role in their learning, these programs not only contribute to the reduction of academic procrastination but also optimize overall learning outcomes. Future research should delve into the individual components of psychological capital and self-regulated learning concerning academic procrastination to gain a more comprehensive understanding of their specific roles. Additionally, it is important to ensure a more representative distribution of participants throughout Indonesia by utilizing probability sampling techniques. Furthermore, researchers should strive for a balanced representation of participants based on learning methods and gender to enhance the external validity of the study. Further investigation into the role of different learning methods in relation to students' academic procrastination can also enrich our knowledge in this area.



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