

Academic Self-Concept as Mediator Between Mindfulness and Academic Procrastination of University University Students

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ABSTRACT

Academic procrastination occurs in more than 70% of University Students in various parts of the world, including University Students in Indonesia. Academic procrastination in University Students will impact academic achievement, psychological disorders, and social relations, so it needs to be a concern. This study looks at the role of academic self-concept in the relationship between mindfulness and academic procrastination. 326 Indonesian University Students who participated in the study were taken using a convenience sampling technique. The research instrument consisted of the Irrational Procrastination Scale-IPS ($\alpha=0.701$) adapted from Steel (2010), The Academic Self-Concept Questionnaire-ASCQ ($\alpha=0.854$) adapted from Liu & Wang (2005), The Mindfulness Attention and Awareness Scale-MASS ($\alpha=0.834$) adapted from Brown & Ryan (2003). The data analysis technique in this study used a simple mediation analysis with the help of the JASP program. The results showed that all predictor variables significantly correlated with academic procrastination. Academic self-concept has also been shown to mediate the relationship between mindfulness and academic procrastination significantly. However, the mediation model is partial. The implications of further research are discussed.

Keywords: Academic procrastination; Mindfulness; Academic self-concept

INTRODUCTION

Procrastination can be interpreted as delaying academic-related activities (McCloskey & Scielzo, 2015). *Academic procrastination* can also be defined as delaying starting or completing an academic task intentionally and irrationally and hurting the perpetrator (Steel & Klingsieck, 2016; Klingsieck, 2013; Zacks & Hen, 2018). Referring to the definition of academic procrastination, academic procrastination cannot be seen as procrastination behaviour caused by situational factors; more than that, academic procrastination has become a kind of habit caused by psychology, such as irrational thoughts about tasks.

The prevalence of academic procrastination behaviour among University Students is high. According to research by Klingsieck et al. (2013), more than 70% of University Students tend to procrastinate regularly on academic assignments. Other research has stated that as many as 80% of University Students procrastinate academically (Steel & Ferrari, 2013). According to research by Suhadianto et al. (2019), 500 University Students in Indonesia found that the most significant delays for University Students occurred in the task of reading references (76.8%), followed by delays in writing papers (73%), then delays in learning assignments (61.8%), delays in attended class (56.8%), and the most minor delays were those related to

administration (54.4%). Research by Suhadianto and Ananta (2022) also shows that 82.51% of University Students have academic procrastination in the moderate to high category. This means that academic procrastination among university University Students has remained the same over time, even though the impact of academic procrastination is known for sure. Academic procrastination was reported to have increased significantly during the COVID-19 pandemic; many university University Students experienced difficulties adjusting and adapting to online learning; they felt disturbed by the home environment, which was not conducive to studying, so they postponed it (Geng, 2021). The lack of direct interaction in the learning process also causes university University Students to have higher anxiety and stress during the teaching and learning process, thus contributing to increased academic procrastination (Rahimi & Valleran, 2020). In addition, the ease of accessing the internet causes university University Students to spend more time viewing social media and streaming videos, which has an impact on increasing academic procrastination (Lie et al., 2022; Wang & Zhao, 2023).

Academic procrastination seriously impacts individuals and society in various ways, so it needs attention (Pychyl & Flett, 2012). According to research by Grunschel, et al. (2013), academic procrastination has a negative impact on various domains of life: (1) has an affective impact, such as feelings of fear, anxiety, feelings of discomfort, depression, dissatisfaction, regret and lack of enthusiasm; (2) have an impact on the mental and physical such as mental stress, physical stress reactions, sleep problems, fatigue, and cause illness; (3) impact on personality such as low self-concept; (5) length of study time and low knowledge; (6) impact on personal life such as finances, problems in social relations, and limited future perspectives. Even though the impact of academic procrastination is very serious, and there has been much research on this, the prevalence of academic procrastination among university University Students is still very high. This means that research that aims to identify the dominant factors influencing academic procrastination still needs to be carried out. Academic procrastination is influenced by various very complex factors, ranging from low motivation, anxiety, and learning environment to social media, which has recently been suspected to be the cause of high academic procrastination (Liu & Feng, 2022; Wang & Zhao, 2023). Therefore, research still needs to be carried out to identify causal factors and design appropriate strategies to reduce academic procrastination.

Factors that cause academic procrastination can be grouped into internal factors and external factors (Ferrari, 2010). Other experts use the terms personal factors and situational factors (Klingsieck, 2013; Egan et al., 2014; Rozental & Carlbring, 2014; Steel & Klingsieck, 2016). Personal factors can be in the form of physical conditions such as health and psychological conditions such as emotional regulation, self-confidence, mindfulness and so on (Ferrari, 2010). The situational factors can be in the form of teaching methods used by teachers (Babadagon, 2010; Santyasa et al., 2020; Santyasa et al., 2021), boring classes and assignments that are too difficult (Shalev, 2018; Grunschel et al., 2013).

Previous studies have found various factors that cause academic procrastination because academic procrastination can be explained from various perspectives, such as psychodynamics, behavioristic, cognitive, and Temporal Motivation Theory (TMT) (Rosenthal & Carlbring, 2014). According to TMT's view, academic procrastination can be determined by an individual's assessment of the assignments received, and if individuals judge the task as too difficult and feel unable to do it, academic procrastination will occur. In addition, academic procrastination can also be caused by the quality of individual attention and awareness of long-term goals; if individuals are easily distracted by short-term goals or pleasure, academic procrastination will occur (Djing, 2010; Siaputra et al., 2011; Steel, 2012).

Based on the TMT view, academic procrastination is closely related to academic self-concept. Academic self-concept can be defined as an individual's perception of himself related to academics. Academic self-concept can be reflected in the existence of self-confidence, self-acceptance, and self-esteem (Mars, 1992; Azis, 2015). Individuals who have a low academic self-concept tend to lack confidence in their academic

abilities, causing feelings of fear to start and complete academic assignments. In turn, this can increase academic procrastination.

Referring to the TMT view and looking at the characteristics of academic procrastinators who tend to be impulsive or easily distracted by short-term pleasures, such as playing and watching television (McCloskey & Scielzo, 2015), it can be concluded that academic procrastinators have mindfulness. Mindfulness is increased awareness by focusing on the here and now. Individuals with mindfulness can focus on the current situation and accept internal and external experiences without giving judgment (Flook et al., 2013; Kang & Gray, 2013).

Prior to this, many studies have found a relationship between mindfulness and academic procrastination (Sirois & Tosti, 2012; Jobaneh, 2016; Cheung & Ng, 2019; Schutte & Ed Bolger, 2020). Longitudinal research conducted by Cheung and Ng (2019) for two years also proved a high and consistent correlation. However, Cheung and Ng's research (2019) still leaves questions because mindfulness does not significantly affect academic procrastination in the first span of time, so there is possibly an indirect correlation between mindfulness and academic procrastination. This means that it is very possible that there are variables that can significantly mediate the relationship between mindfulness and academic procrastination. A study in Indonesia recently reported that emotional regulation can be a significant mediator between mindfulness and academic procrastination. However, the mediation is still partial, so there is still an opportunity to identify which variables have perfect mediation (Dzakiah & Widyasari, 2021).

Theoretically, one of the variables mediating between mindfulness and academic procrastination is academic self-concept because the two variables have similarities in self-acceptance and self-esteem. Individuals with high mindfulness are characterised by their ability to accept various experiences or events in life (Kabat-Zinn, 2021), while individuals with high academic self-concept are characterised by their ability to realise and positively accept their academic potential (Arens, et al., 2021). Mindfulness makes university University Students more focused on the learning process without passing judgment on themselves; this can increase university University Students' self-confidence and give them a positive view of academic abilities (Waters et al., 2023). Mindfulness can reduce anxiety and stress, which often hinder university University Students' academic achievement. In addition, empirical evidence shows that consistent use of mindfulness training has been proven to improve psychological well-being, which in turn can improve academic self-concept (Schneider, 2021; Marsh, et al., 2022).

The relationship between academic self-concept and academic procrastination can be explained when university University Students have doubts about their academic abilities; then, university University Students will use procrastination as a mechanism to avoid failure and negative assessments of themselves (Steel, 2022). Furthermore, feelings of inadequacy and lack of self-confidence can increase anxiety and stress, which worsen the habit of academic procrastination (Kim & Seo, 2021). In contrast, university University Students with a positive self-concept tend to have greater motivation and confidence in completing a task; this makes them less likely to engage in academic procrastination (Nordby et al., 2023).

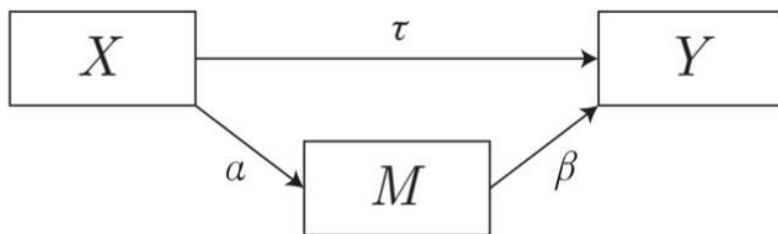
Based on these theoretical arguments, this research aims to analyse whether there is a significant relationship between mindfulness and academic procrastination in university University Students?, is there a relationship between mindfulness and academic self-concept?, is there a relationship between academic self-concept and academic procrastination in university University Students ?, Can academic self-concept be a mediator of the relationship between mindfulness and academic procrastination?, Which is stronger, whether the direct relationship between mindfulness and academic procrastination, or whether the relationship between mindfulness and academic procrastination of university University Students is mediated through academic self-concept? If the hypothesis in this research is proven, then this research can be used to strengthen previous findings related to the use of mindfulness as an intervention to reduce academic procrastination. The use of mindfulness-based teaching methods or the use of mindfulness

exercises in counselling activities for University Students with academic procrastination problems becomes more likely to be explored.

METHOD

This research uses a quantitative approach and is a type of correlational research which aims to examine the role of academic self-concept in mediating the relationship between mindfulness and academic procrastination. Theoretically, the model of the relationship between variables in this research is presented in Figure 1. Mindfulness as an independent variable (X) can be directly related to academic procrastination (dependent variable / Y), but the pattern of relationship between mindfulness and academic procrastination can be through academic self-concept (variable mediator / M). This research will test whether academic self-concept can significantly mediate the relationship between mindfulness and academic procrastination. Mediation analysis will use the mediation model available in the Structural Equation Modelling (SEM) module in Jeffrey's Amazing Statistics Program (JASP).

Figure 1 Mediation Model



This research took a population of Diploma, Undergraduate and Postgraduate University Students in Indonesia. Participants in this research were 326 University Students taken using convenience sampling techniques. Researchers chose to use a convenience sampling technique because this research was conducted during the COVID-19 pandemic, so it was not possible to use probability, which statistically has advantages in terms of generalising research results. Participants involved in this research were only active University Students who had filled out a statement of consent as research participants. Even though using this technique is very easy and saves costs for initial exploration purposes, the use of this technique will cause bias in the generalisation of the results, so in future studies, researchers recommend using random techniques in recruiting research participants. Random techniques provide an equal opportunity for each member of the population to be selected as a research participant so that bias can be avoided (Creswell & Creswell, 2017). Detailed participant demographic data is presented in Table 1.

Table 1 Participant Demographic Data

Gender	Male	99	326
	Female	227	
Program Level	Diploma	24	326
	Undergraduate	279	
	Postgraduate	15	
	Doctoral	8	
College	State University	98	326
	Private	228	

Demographic data information, as presented in Table 1, is important to know as part of what needs to be considered in the process of generalising research results. A study abroad reported that men tend to engage

in academic procrastination more easily than women (Steel & Klinsieck, 2016), but a study in Indonesia reported that there was no difference in academic procrastination between men and women (Widiyanto & Huda, 2020). Meanwhile, most previous research reports show that postgraduate University Students have lower academic procrastination than undergraduate University Students because postgraduate University Students often have higher academic motivation and responsibility (Tice & Baumeister, 2019; Steel & Ferrari, 2020). University status also influences academic procrastination; University Students at state universities are reported to have lower academic procrastination rates than University Students at private universities. These differences can be caused by lecturers, administrative staff and various academic facilities that are different at the two types of universities (Rahmawati & Fadlilah, 2019; Kusumaningrum & Wahyuni, 2022).

Data collection in this study was carried out online via Google form using three psychological scales, namely: (1) the Irrational Procrastination Scale (IPS), (2) The Academic Self Concept Questionnaire (ASCQ) and (3) The Mindfulness Attention and Awareness Scale (MASS). The researcher adapted the three scales by translating the original version of the scale into Indonesian using the back-translation method. Technically, the researcher translated the original version of IPS into Indonesian and then translated it back into English. The back-translation process was then reviewed by English language experts and tested on 326 University Students who were research participants.

Irrational Procrastination Scale (IPS), adapted from Steel (2010), consists of nine questions measuring academic procrastination's irrational nature. The IPS scale is presented using four answer choices: Very Often, Frequently, Rarely and Never. Examples of questions on this scale include "I often regret not doing assignments earlier" and "I procrastinate beyond what is reasonable". Researchers chose to use IPS because this scale can measure academic procrastination, which has become a habit due to irrational thoughts about assignments (Steel, 2019). IPS measures academic procrastination caused by situational factors and academic procrastination caused by cognitive, emotional, and other psychological factors (Sirois & Kitner, 2015). Apart from that, IPS can provide comprehensive information about patterns of irrational academic procrastination, which is not found on other scales (Gustavson, et al., 2020).

Proving the validity of the Indonesian version of IPS is carried out through assessments by two experts in the field of Psychology, which aims to ensure that the IPS items are appropriate to the Indonesian cultural context. The content of the IPS scale has been declared valid with the Content Validity Index (I-CVI=1.00) and has fulfilled the provisions required by Polit and Back content of the IPS scale has been declared valid with the Content Validity Index (I-CVI=1.00) and has fulfilled the provisions required by Polit & Back which requires I-CVI=1.00 for scales validated by less than 5 experts (Polit & Back, 2006). Before use, the researcher conducted cognitive interviews with three University Students to ensure that Indonesian University Students could understand the social studies items. After going through a readability test, IPS was then tested on 203 University Students.

Proving the construct validity of the IPS scale was carried out through Confirmatory Factor Analysis (CFA) with the help of the JASP program version 0.16.40. The CFA test was carried out using the Diagonally Weighted Least Square (DWLS) parameter estimation method. DWLS parameter estimates are used because the research data is ordinal, so it cannot meet the assumption of multivariate normality (Mindrila, 2010). The test results from the 9 items of the original version of IPS left 6 items in the Indonesian version, which had a loading factor above 0.30; 3 items, namely IPS-2, IPS-5, and IPS-7, had a loading factor below 0.30, so they were not used. Although most studies use a factor loading of ≥ 0.5 (Truong & McColl, 2011; Riadi, 2018), a factor loading of 0.30 can still be used (Hair et al., 2009). Testing the measurement model obtained a Chi-Square Score/ $df=43$; $p=0.009$ (≤ 0.05), $GFI=0.993$ (≥ 0.90), $SRMR=0.050$ (≤ 0.1), $RMSEA=0.065$ (≤ 0.07), $CFI=0.986$ (≥ 0.90), $NFI=0.976$ (≥ 0.90), $TLI=0.976$ (≥ 0.90), meaning that the fit indices have met the goodness of fit criteria ($RMSEA < 0.70$ with $CFI \geq 0.92$, and $GFI \geq 0.90$) (Hair et al., 2019). The

reliability of IPS is shown through Cronbach's Alpha score $\alpha = 0.701$ (high category).

The Academic Self Concept Questionnaire (ASCQ) is adapted from Liu and Wang (2005). The ASCQ scale was compiled by Liu and Wang (2005), referring to the Academic Self-Esteem Subscale (Battle, 1981), the School Subjects Self-Concept (Marsh et al., 1983) and the *General and Academic Status Scale* (Piers & Harris, 1964). The original version of the ASCQ scale has 20 items which are divided into aspects of *University Students' academic confidence* (10 items) and aspects of *University Students' academic effort* (10 items). The ASCQ scale is presented using four answer choices: Strongly Agree, Agree, Disagree and Strongly Disagree. Examples of questions on this scale are "I can follow the lesson easily" and "most of my classmates are smarter than me". ASCQ is a very complete instrument because it can distinguish different dimensions of academic self-concept, such as competence, social relationships and self-evaluation of academic achievement (Liem et al., 2018; Marsh & Abduljabbar, 2018). The use of ASCQ also allows researchers to conduct a more in-depth analysis of academic self-concept (Krolak, et al., 2021).

Proving the validity of the Indonesian version of ASCQ is carried out through assessments by two experts in the field of Psychology, which aims to ensure that the ASCQ items are appropriate to the Indonesian cultural context. The content of the IPS scale has been declared valid with the Content Validity Index (I-CVI=1.00) and has fulfilled the provisions required by Polit and Back. The content of the ASCQ scale has been declared valid with the Content Validity Index (I-CVI=1.00) and has fulfilled the provisions required by Polit & Back, which requires I-CVI=1.00 for scales validated by less than 5 experts (Polit & Back, 2006). Before use, the researcher conducted cognitive interviews with three University Students to ensure that Indonesian University Students could understand the social studies items. After going through a readability test, ASCQ was then tested on 203 University Students.

Proving the construct validity of the ASCQ scale was carried out through Confirmatory Factor Analysis (CFA) with the help of the JASP program version 0.16.40. The CFA test was carried out using the Diagonally Weighted Least Square (DWLS) parameter estimation method. DWLS parameter estimates are used because the research data is ordinal, so it cannot meet the assumption of multivariate normality (Mindrila, 2010). The test results of the 20 ASCQ items in the original version left 18 items in the Indonesian version, which had a loading factor above 0.50; 2 items, namely ASCQ-4 and ASCQ-5, had a loading factor below 0.30, so they were not used. Most studies use factor loadings ≥ 0.5 (Truong & McColl, 2011; Hulland, 1995; Riadi, 2018). Testing the measurement model in second order obtained a Chi-Square Score/df=43; $p=0.009$ (≤ 0.05), GFI= 0.944 (≥ 0.90), SRMR= 0.10 (≤ 0.1), RMSEA= 0.052 (≤ 0.07), CFI= 0.929 (≥ 0.90), NFI=0.916 (≥ 0.90), TLI= 0.916 (≥ 0.90), meaning that the fit indices have met the goodness of fit criteria (RMSEA < 0.70 with CFI ≥ 0.92 , and GFI ≥ 0.90) (Hair et al., 2019). The reliability of IPS is shown through the Cronbach's Alpha score $\alpha = 0.854$ (very high category).

The Mindfulness Attention and Awareness Scale (MASS) was adapted from Brown & Ryan (2003). This scale consists of 15 items that measure *attention* and *awareness* in *mindfulness*. The MASS scale is presented using four answer choices: Strongly Agree, Agree, Disagree and Strongly Disagree. Examples of questions on this scale include "I experienced several emotions and sank into them until a few moments later" and "I broke or spilt something because I was careless, unfocused, or thinking about something else." MASS has been widely used and translated into various languages. MASS has a small number of statements and measures the essence of mindfulness, namely attention and awareness, so it does not take long to complete (Keng, et al., 2011). MASS has also been proven to have a high correlation with various indicators of psychological well-being, so MASS can provide deeper insight into psychological well-being (Grossman et al., 2004).

Proving the validity of the Indonesian version of MASS is carried out through assessments by two experts in the field of Psychology, which aims to ensure that the MASS items are appropriate to the Indonesian cultural context. The content of the IPS scale has been declared valid with the Content Validity Index (I-

CVI=1.00) and has fulfilled the provisions required by Polit and Back. The content of the ASCQ scale has been declared valid with the Content Validity Index (I-CVI=1.00) and has fulfilled the provisions required by Polit & Back, which requires I-CVI=1.00 for scales validated by less than 5 experts (Polit & Back, 2006). Before use, the researcher conducted cognitive interviews with three University Students to ensure that Indonesian University Students could understand the social studies items. After going through a readability test, MASS was then tested on 203 University Students.

Proving the construct validity of the MASS scale was carried out through Confirmatory Factor Analysis (CFA) with the help of the JASP program version 0.16.40. The CFA test was carried out using the Diagonally Weighted Least Square (DWLS) parameter estimation method. DWLS parameter estimates are used because the research data is ordinal, so it cannot meet the assumption of multivariate normality (Mindrila, 2010). The test results of the 15 MASS items in the original version left 13 items in the Indonesian version, which had a loading factor above 0.50; 2 items, namely MASS-5 and MASS-11, had a loading factor below 0.30, so they were not used. Most studies use factor loadings ≥ 0.5 (Truong & McColl, 2011; Hulland, 1995; Riadi, 2018). Testing the measurement model in second order obtained a Chi-Square Score/df=43; $p=0.900$ (≥ 0.05), GFI= 0.989 (≥ 0.90), SRMR= 0.04 (≤ 0.1), RMSEA= 0.00 (≤ 0.07), CFI= 1.000 (≥ 0.90), NFI=0.973 (≥ 0.90), TLI= 1.009 (≥ 0.90), meaning that the fit indices have met the goodness of fit criteria (RMSEA < 0.70 with CFI ≥ 0.92 , and GFI ≥ 0.90) (Hair et al., 2019). The reliability of MASS is shown through the Cronbach's Alpha score $\alpha = 0.834$ (very high category).

The collected data was then analyzed using a mediation test with the help of the JASP program version 0.14.1.0. The mediation test in this research uses the model available in the SEM module in JASP. The mediation analysis procedure in the JASP program can be carried out via the SEM module, followed by selecting the mediation analysis menu. The research uses bootstraps available in JASP to minimise bias in generalising research results (Biesanz, et al., 2010). Researchers also carried out multivariate normality tests and linearity and multicollinearity tests. The results of the normality test using Kolmogorov-Smirnov showed that the data was normally distributed (df=326; Sig. 0.200). The results of the linearity test show that there is a linear relationship between the mindfulness variable and academic procrastination (F=102.563; $p<0.001$) and between the academic self-concept variable and academic procrastination (F=65.150; $p<0.001$). The results of the multicollinearity test showed that there was no multicollinearity between the mindfulness variables and academic self-concept (VIF=1.158; Tolerance=0.863).

RESULTS

As presented in Table 2, the descriptive test using the help of the JASP program obtained an overview of 48.16% of research participants having academic procrastination in the moderate category, 27.91% of participants having high academic procrastination, and 6.44% of participants having academic procrastination lofty. The remaining 16.87% of participants had low academic procrastination, and 0.61% had very low academic procrastination. Only around 17% of university University Students have academic procrastination in the low category. This means that the problem of academic procrastination in the future still needs attention from researchers. Research aimed at exploring causal factors and experimental research aimed at testing interventions to reduce academic procrastination is still very much needed.

Table 2 Categories of University Student Academic Procrastination

Variable	Range	Category	Frequency / Percentage
of Academic Procrastination	>20	Very High	21 / 6.44%
	17-20	High	91 / 27.91%
	13-16	Moderate	157 / 48.16%

	9-12	Low	55 / 16.87%
	<9	Very Low	2 / 0.61%

As presented in Table 3, the descriptive test using the help of the JASP program obtained an overview of 50.61% of research participants having an academic self-concept in the moderately positive category, as many as 23.30% of participants had a positive academic self-concept, and as many as 5.52% of participants had academic self-concept is very positive. The remaining 17.17% of the participants had a negative academic self-concept, and 3.37% had a very negative one. Even though most research participants have an academic self-concept in the medium category, a few still have a high academic self-concept. This also needs attention from academics because low academic self-concept can cause high academic procrastination and vice versa. Strategies to improve academic self-concept need to be explored.

Table 3 Categories of University Student Academic Self-Concept

Variable	Range	Category	Frequency / Percentage
Academic self-concept	>63	Very positive	18 / 5.52%
	55-63	Positive	76 / 23.71%
	46-54	Fairly positive	165 / 50.61%
	38-45	Negative	56 / 17.17%
	<38	Very Negative	11 / 3.37%

As presented in Table 4, the descriptive test using the JASP program assistance obtained an overview of 47.85% of research participants having *mindfulness* in the medium category, as many as 26.07% of participants have *mindfulness*, and as many as 2.76% of participants have *mindfulness* very high. The remaining 20.24% of participants had *mindfulness*, and 3.06% had very low *mindfulness*. Even though most of the research participants had *mindfulness* in the medium category, not many had *mindfulness* in the high category. This needs attention from academics because low *mindfulness* can cause high academic procrastination and vice versa. Strategies to increase *mindfulness* need to continue to be explored through experimental research.

Table 4 Categories of University Student Mindfulness

Variable	Range	Category	Frequency / Percentage
Mindfulness	>49	Very High	9 / 2.76%
	41-49	High	85 / 26.07%
	33-40	Moderate	156 / 47.85%
	24-32	Low	66 / 20, 24%
	<24	Very Low	10. / 3.06%

After conducting a descriptive test, the researcher conducted a Product Moment correlation test to determine the correlation matrix between research variables. As presented in Table 5, it can be seen: (1) The correlation between *mindfulness* and academic procrastination is -0.289 with a significance of $p=0.000$ ($p<0.01$), which means there is a very significant negative relationship between *mindfulness* and academic procrastination. This means that the hypothesis in this study is accepted; (2) The correlation between academic self-concept and academic procrastination is -0.361 with a significance of $p<0.001$, which means a very significant negative relationship exists between academic self-concept and academic procrastination.

This means that the hypothesis in this study is accepted; (3) The correlation between *mindfulness* and academic self-concept is 0.410 with a significance of $p < 0.001$, meaning there is a very significant positive relationship between *mindfulness* and emotion regulation. This means that the hypothesis in this study is accepted. The findings of this research strengthen previous research which reported the same thing, such as Eltayeb's (2021) research which reported there was a significant negative relationship between mindfulness and academic procrastination, Syabilla and Sigit's (2018) research which reported there was a negative relationship between academic self-concept with academic procrastination, and the research of Armani, et al. (2020) who reported a significant positive relationship between mindfulness and academic procrastination.

Table 5 Correlation Matrix

	Pearson's r		p
Mindfulness	– Academic Procrastination	-0.486	< .001
Mindfulness	– Academic Self Concept	0.370	< .001
Academic Self Concept	– Academic Procrastination	-0.412	< .001

A mediation test was carried out to determine whether academic self-concept can function as a mediator variable in the relationship between mindfulness and academic procrastination. The media test was carried out using mediation analysis, which is available in the JASP program. As presented in Table 6, direct effect testing shows that mindfulness significantly correlates negatively with academic procrastination ($z = -2.400$; $p = 0.016$). Meanwhile, testing the indirect effect between mindfulness-academic self-concept – and academic procrastination, as presented in Table 7, obtained a z score = $-3.393/p = < 0.001$, which means that academic self-concept can be a significant mediator between mindfulness and academic procrastination. However, because the direct relationship between mindfulness and academic procrastination is also significant, it can be said that academic self-concept can partially mediate the relationship between mindfulness and academic procrastination (Hayes, 2018).

Partial mediation can occur when variable X (Independent Variable) still has a significant direct relationship with variable Y (Dependent Variable) after the researcher enters variable M (Mediator Variable). It can be interpreted that although in this research, academic self-concept is proven to have an important role in the relationship between mindfulness and academic procrastination, other factors still contribute to the relationship between mindfulness and academic procrastination (Baron & Kenny, 1986). These factors can come from the individual (internal factors) or from outside the individual (external factors). Testing of other variables is still very open in the future.

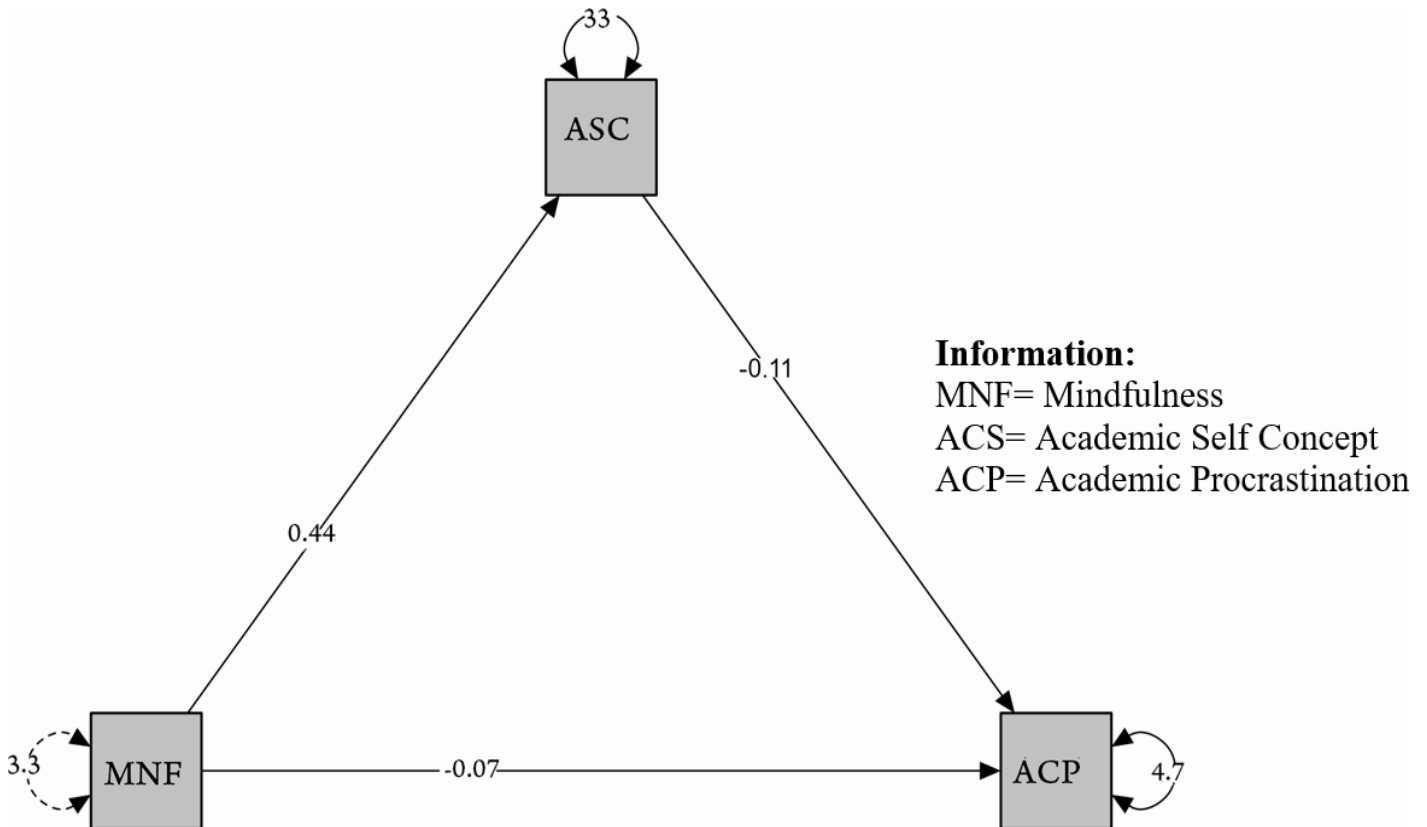
Table 6 Direct Effects of Mindfulness Variables – Academic Procrastination

Mindfulness – Academic Procrastination	Estimate	Std. Error	z-value	p	95% Confidential Interval	
					Lower	Upper
	-0.07	0.030	-2.400	0.016	-0.129	-0.013

Table 7 Indirect Effects of Mindfulness Variables – Academic Procrastination

Mindfulness–Academic Self Concept– Academic Procrastination	Estimate	Std. Error	z-value	p	95% Confidential Interval	
					Lower	Upper
-0.048	0.014	-3.393	<0.001	-0.076	-0.020	

Figure 2 Mediation Test Plots



DISCUSSION

The research results show that there is a significant positive relationship between mindfulness and academic procrastination in university University Students. This means that the higher the mindfulness of university University Students, the higher their academic self-concept will be. When an individual has high mindfulness, the individual will be able to focus on the situation at hand, such as when participating in a learning activity, an individual with high mindfulness is able to focus on the activity without passing judgment on the competence they have (acceptance), so that they can improve their self-concept academic (Nisa'Fiddaroini, 2020).

Furthermore, a study reported that mindfulness can help individuals release themselves from negative thoughts and stress (Maex, 2011; Waters et al., 2023). Thus, individuals who have mindfulness will be more able to accept themselves and ultimately can improve their academic self-concept. Several studies in Indonesia also show that individuals who have mindfulness will avoid depression and have high psychological well-being, which in turn can improve academic self-concept (Waskito, et al., 2018; Fourianalistyawati & Listyandini, 2017). Other research also reports that the use of mindfulness in education can make University Students better able to organise ideas and thoughts, have better memory, be calmer when facing tasks, increase self-esteem, be better able to concentrate, be more attentive, increase self-regulation, be better able to organise time, more intrinsically motivated, and willing to accept tedious tasks (Thye et al., 2016). The positive effects of mindfulness are closely related to academic self-concept, which can be reflected in self-confidence, self-acceptance and self-esteem (Azis, 2015).

This study's findings align with research from several studies that examined similar topics. A study reported that mindfulness had a significant negative relationship with anxiety and had a significant positive relationship with academic self-concept (Hjeltnes, et al., 2018). Various experimental studies also report that

the use of mindfulness interventions has proven effective for increasing academic self-concept, and one study even reports that the use of mindfulness has proven effective for increasing academic self-concept in University Students with special needs (Zenner, et al. 2016; Broderic, et al., 2017; Kuyken, et al., 2018; Lin et al., 2020). The findings of various previous studies certainly strengthen the findings in this study; although not all of these studies examined university University Students, some examined participants in high school. As far as researchers know, there is still very little research investigating the relationship between mindfulness and academic self-concept in Indonesia.

The results of this research also show that there is a negative correlation between academic self-concept and academic procrastination. Academic self-concept is a psychological construct used to describe how University Students believe in their academic abilities (Flower, et al., 2013 in Blegur, 2017). University Students who have self-confidence in their academic abilities and show maximum effort in completing academic assignments are the main indicators of academic self-concept (Liu & Wang, 2015). When university University Students have a positive assessment of their academic abilities, they will become more motivated to study and become more confident in their abilities to complete assignments received from lecturers. Psychological conditions like this cause University Students with a positive academic self-concept to engage in academic procrastination less often than University Students with a negative self-concept (Nordby, et al., 2023). University Students who have a negative self-concept are always haunted by feelings of inadequacy and doubt about their academic abilities; this, in turn, causes anxiety and fear to increase so that University Students who have a negative self-concept will choose to carry out academic procrastination as a form of self-defence mechanism (Kim & Seo, 2021; Steel, 2022).

The findings of this research are in line with various other studies. Research by Ferrari, et al. (2021) reported that University Students with low academic self-concept tend to engage in academic procrastination more often. Longitudinal research conducted by Van Eerde, et al. (2022) also reported that the academic self-concept of new University Students in their first year of college was correlated with a decrease in academic procrastination. Research on Indonesian participants conducted by Wiworo dan Suharnan (2012), Khotimah et al. (2016) and Mukti et al. (2019) also reported the same results.

Testing the direct effect between mindfulness and academic procrastination shows that there is a significant negative correlation between mindfulness and academic procrastination. This means that the higher a University Student's mindfulness, the lower their academic procrastination will be, and vice versa; the lower their mindfulness, the higher their academic procrastination will be. University Students with high mindfulness will find it easier to recognise the various thoughts and feelings accompanying academic tasks. Full awareness of negative thoughts and emotions related to assignments makes University Students more capable of self-regulation so that they accept accepted academic assignments more quickly and have an impact on reducing academic procrastination (Eckert et al., 2021; Scent & Boes, 2022; Wohl et al., 2023).

The findings in this study support previous studies, which also reported a negative correlation between mindfulness and academic procrastination (see Sirois & Tosti, 2012; Jobaneh, 2016; Cheung & Ng, 2019; Schutte & Ed Bolger, 2020). Longitudinal research conducted by Cheung and Ng (2019), which was conducted over two years, proved that mindfulness was consistently related to academic procrastination. However, Cheung and Ng's (2019) research still leaves questions because, for the first time, mindfulness did not significantly affect academic procrastination, so it is possible that there is an indirect correlation between mindfulness and academic procrastination. This is the reason why researchers are trying to identify significant mediating variables between mindfulness and academic procrastination.

Testing the indirect relationship between mindfulness and academic procrastination through academic self-concept as a mediator proved to be significant; however, the mediating influence of academic self-concept was still partial. It is said to be partial because testing the direct relationship between mindfulness and academic procrastination also shows a significant negative relationship (Hayes, 2018). It can be more

clearly reported that high mindfulness can directly have a significant relationship with low academic procrastination and can indirectly have a significant negative relationship with low academic procrastination (through the medium of academic self-concept). Even though the indirect effect is proven to be greater than the direct effect, academic self-concept still cannot be a perfect mediator. This means that it is still very possible that there are other variables that can function more strongly as mediators of the relationship between mindfulness and academic procrastination. Research by Dzakiah & Widyasari (2021), for example, reports that emotional regulation can be a mediator of the relationship between mindfulness and academic procrastination, although this research also reports that emotional regulation can only be a partial mediator, not yet a perfect mediator.

As far as researchers know, most researchers in Indonesia are still investigating the direct relationship between academic self-concept and academic procrastination (see Zurika, 2021; Andini & Syaimi, 2022; Khotimah et al., 2024). Researchers have not found research that academics place self-concept as a mediator. This is what makes this research different or new compared to previous studies, especially in the Indonesian context. However, research that places academic self-concept as a mediator variable is certainly not the first time; previously, research by Armani et al. (2020) also researched the same thing. However, the results of Armani and colleagues' research are different from this research. Armani and colleagues reported that academic self-concept could be a perfect mediator because the relationship between mindfulness and academic procrastination became insignificant after including academic self-concept variables (Baron & Kenny, 1986).

Apart from comparing the results of this research with the research of Armani and colleagues, we also need to note that this research and Armani's research used participants in different countries and universities so that this will influence the research results because some literature mentions external factors such as the teaching methods used by teachers, The university's academic atmosphere and learning facilities also influence the occurrence of academic procrastination (Babadagon, 2010; Santyasa, et al., 2020; Santyasa, et al., 2021). Another difference is that Armani's research involved more University Students at the Faculty of Medicine and used random techniques, while this research used incidental sampling and involved more University Students from the Social Sciences. Apart from that, the instruments used to measure academic procrastination and academic self-concept are also different. These differences can be noted when using the results of the two studies. Armani and colleagues' research used the Procrastination Assessment Scale for University Students (PASS) instrument to measure academic procrastination. PASS measures academic procrastination behaviour without considering psychological factors such as emotional regulation, academic self-concept and motivation, which are the causes (Conti, 2022; Steel & Klingsieck, 2023). The strength of this research lies in the use of the Irrational Procrastination Scale (IPS); IPS does not only measure academic procrastination caused by situational factors but can measure academic procrastination caused by cognitive, emotional and other psychological factors (Sirois & Kitner, 2015).

CONCLUSION

The results of this study indicate that academic self-concept can partially mediate the relationship between mindfulness and university University Students' academic procrastination. It is called a partial mediator because mindfulness still has a significant relationship with academic procrastination after researchers included academic self-concept as a mediator. However, the indirect effect between mindfulness and academic procrastination through academic self-concept is stronger than the direct effect. This study's results differ from the research of Armani and colleagues, who reported that academic self-concept could be a perfect mediator. However, the two studies used different instruments to measure academic procrastination.

Based on the results of this research, the following can be suggested: (1) teachers need to pay attention to University Student's academic self-concept in the process of learning activities; teachers can apply several

strategies such as providing constructive feedback to University Students, developing an inclusive learning environment and collaborative, providing assistance to University Students who experience difficulties and so on. Apart from that, the use of mindfulness in the process of learning activities can also be a strategy. Teachers can provide attention concentration exercises to University Students 5 minutes before learning activities or can use breathing meditation exercises in the middle of the learning activity process, which aims to make participants more relaxed; (2) universities can create training programs to improve reducing academic procrastination, such as using cognitive therapy on University Students who have high academic procrastination, providing mindfulness-based cognitive therapy training which has been proven to reduce academic procrastination, and so on; (3) Future researchers could consider conducting the same research using larger participants and random sampling techniques, considering that the findings of this study are different from the findings of previous studies, so the further proof is still needed. In addition, future research could investigate the variables of emotional regulation, intrinsic motivation, and self-efficacy, which theoretically also have a very strong relationship with mindfulness and academic procrastination.

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