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The Impact of Supportive Study Climate, Positive Emotion, and Psychological Capital on Academic Performance of Yogyakarta Students: Mediated by Student Engagement

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A B S T R A C T

This study aimed to investigate the influence of a supportive study climate, positive emotion, and PsyCap on academic performance, mediated by student engagement among university students around the Special Region of Yogyakarta. This research is a quantitative study. The population in this study was 120 students around the Special Region of Yogyakarta. The data collection technique used was convenience sampling, with a final sample of 100 respondents. Data was collected through the distribution of questionnaires and the analysis tool used was SmartPLS 4.0. The result of this study explain that supportive study climate has no direct or indirect influence on academic performance, Positive emotions and PsyCap have no direct influence but have an indirect influence on academic performance, and Student engagement has a direct influence on academic performance.

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INTRODUCTION

The rapid development of information technology has significantly changed the style of education. One of the most striking changes is the emergence of the online course phenomenon. The COVID-19 pandemic was the main cause of the acceleration of the adoption of this distance learning model. Large-scale social restriction have forced educational institutions to switch to digital platforms in conducting academic activities. Despite greater flexibility and accessibility, this sudden shift has also created various new challenges, especially in terms of maintaining the quality of created various new challenges, especially in terms of maintaining the quality of learning and student welfare. According to KOMPAS (2022), since the entry of the COVID-19 virus, many cities have implemented lockdowns. Because of this, many universities have changed their teaching method to online or distance learning.

Although online learning provides the benefit of convenience, it has also had a substantial impact on students' mental well-being. Since the onset of the pandemic, mental health issues have been on the rise. The Ministry of Health reported in 2022 that suicide rates surged in the initial five months following the COVID-19 outbreak. A survey revealed that a concerning one in five Indonesians aged between 15 and 29 years had contemplated suicide. A year after the pandemic, a separate survey found that this figure had alarmingly increased to two out of five individuals. By 2022, the statistics were even more sobering, with approximately half of the surveyed population considering ending their lives.

The social isolation resulting from online learning can induce feelings of loneliness, anxiety, and depression. The accumulation of tasks, the lack of face-to-face social interaction, and the uncertainty surrounding the future brought about by the pandemic can heighten stress levels and diminish motivation to learn. According to KOMPAS (2022), citing data from the Indonesian Pediatric Society (IDAI), on January 24, there were 679 reported cases of COVID-19 among children. However, by January 31, 2022, this number had surged to 2,775 cases, and by February 7, 2022, the confirmed cases of COVID-19 among children had reached a concerning 7,190. This situation not only impacts children's physical health but also significantly affects their mental well-being.

A supportive study climate is crucial for effective learning processes. Additionally, work climate is defined as the perceptions and experiences of work in an organization (Zhou & Shalley, 2008). This means that employee performance is a result of their abilities, the support they receive to do a good job, and the motivation to achieve a high level of performance. However, online learning often presents challenges in creating a supportive study climate.

Amidst these challenges, positive emotions play a crucial role in maintaining students' well-being. Compared to other mental responses, mood and evaluation are emotions that are "characterized by a high level of arousal and psychological intensity" (Slåtten, 2011). According to Fredrickson (2009), positive emotions have several important functions such as building resources, broadening thought and action, building social connections, improving physical health, and enhancing performance.

PsyCap (psychological capital) is also an important concern in the context of online learning. Luthans et al. (2007) define psychological capital as a construct consisting of four dimensions and argue that psychological capital can be developed and enhanced through various interventions. Psychological capital refers to an individual's psychological strengths composed of self-efficacy, hope, optimism, and resilience. Psychological capital can be labeled HERO (Hope, Efficacy, Resilience, Optimism) (Luthans & Youssef-Morgan, 2017). These four elements are interrelated and play a significant role in helping individuals overcome challenges and achieve goals.

As previously explained, the shift to online learning systems has brought a number of challenges for students, including impacts on mental health. To understand the mechanisms underlying the relationships between the variables discussed, it is necessary to consider student engagement as a mediating variable. Trowler (2001) defines student engagement as students' active participation in learning activities both inside and outside the classroom.

Student engagement refers to the level of students' active participation in academic activities, such as attending lectures regularly, interacting with lecturers and classmates, and completing assigned tasks. Bakker et al. (2011) define student engagement as the excitement or concentrated effort that students put into their education, together with their "psychological connection to their work." According to Bakker et al. (2008), there are three distinct aspects that comprise the concept of student engagement, which are absorption, dedication, and energy. High engagement can create a sense of belonging and responsibility for learning, thus increasing motivation and reducing feelings of isolation.

On the other hand, academic performance, as measured by GPA (Grade Point Average), is a logical consequence of the learning process. Azwar (2002) defines academic achievement as a student's rise in performance or accomplishment that serves as proof of their success or lack thereof in a course of study. As to Djamarah (2002), academic performance is the outcome that arises from learning activities that lead to personal changes in an individual. A high GPA indicates that students have successfully achieved the learning objectives set.

LITERATURE REVIEW

Hypothesis 1 proposes a positive influence of a supportive study climate on academic performance. From the discussion, it can be inferred that a supportive study climate can influence students' academic performance. Slåtten et al. (2020) proposed several indicators of a supportive study climate, one of which is the lecturer's interest in helping with studies. Thus, the better the lecturer's interest in helping with studies, the better the students' academic performance. This is related to the research conducted by Olivier et al. (2023), whose results showed that classroom climate can have a positive impact on academic performance. However, this research contradicts the research conducted by Raquel & Jasper (2023) which showed that the relationship

between parents and children does not have a significant relationship with academic performance, especially in English language learning.

Hypothesis 2 proposes a positive influence of positive emotions on academic performance. Positive emotions refer to pleasant and healthy feelings such as happiness, joy, love, gratitude, and optimism. These emotions have a positive impact on various aspects of life, including mental, physical, and social well-being. Positive emotions are the affective component of thoughts. Aspects like "emotional interpretations of perceptions, information, or knowledge" are included in the definition of affect, according to Huitt & Cain (2005). From emotions at one extreme to moods in the middle to assessments at the other, affect is a spectrum of diverse mental reactions (Peter & Olson, 1996). Compared to other mental responses, mood and evaluation are emotions that are "characterized by a high level of arousal and psychological intensity" (Slåtten, 2011). According to Fredrickson (2009), positive emotions have several important functions, including building resources, broadening thought and action, building social connections, improving physical health, and enhancing performance.

Hypothesis 3 proposes a positive influence of psychological capital on academic performance. Psychological capital refers to a set of psychological resources possessed by individuals, such as optimism, hope, self-efficacy, and resilience, which can help them achieve goals and overcome challenges in life and work. Psychological capital is a cognitive component of the mind. Cognition is related to "the processes of knowing and understanding" (Huitt & Cain, 2005). Therefore, one's psychological capital is the awareness or knowledge of "who you are" (Luthans et al, 2004). According to Luthans et al. (2005), psychological capital consists of four components: optimism, hope, self-efficacy, and resilience. Thus, the higher the psychological capital, the more optimistic individuals are that they can achieve positive results in the future, confident that they can achieve goals through effort, confident in their ability to complete tasks and overcome obstacles, and able to bounce back from difficulties.

Hypothesis 4 proposes a positive influence of student engagement on academic performance. Student engagement refers to activities undertaken by students to participate in classroom learning, such as asking questions, answering, collaborating on group assignments, and interacting with lecturers and fellow students with the aim of achieving learning objectives. According to Bakker et al. (2011), student engagement is about students' enthusiasm or focused effort on their studies and their "psychological connection to their work." Specifically, the concept of student engagement encompasses three dimensions: absorption, dedication, and vigour (Bakker et al., 2008).

Hypothesis 5 proposes a positive mediating effect of student engagement on the relationship between a supportive study climate and academic performance. Student engagement refers to activities undertaken by students to participate in classroom learning. Therefore, student engagement can be influenced by the classroom atmosphere or surrounding environment. According to Bakker et al. (2011), student engagement is about students'

enthusiasm or focused effort on their studies and their "psychological connection to their work." Meanwhile, a conducive learning climate is important to support effective learning. Furthermore, learning climate is defined as perceptions and experiences of work in an organization (Zhou & Shalley, 2008). Thus, the better the learning climate, the better the student engagement, which will improve academic performance. This hypothesis is supported by previous research conducted by Rashed et al. (2023) which showed that student engagement positively and significantly mediates the relationship between a creative learning environment and academic performance.

The sixth hypothesis puts out the idea that student engagement has a beneficial mediation influence on the association between happy feelings and academic achievement. It was previously said that the surrounding environment and the learning climate can have an impact on student involvement. In addition, there are other factors that can influence student engagement, such as positive emotions. According to Fredrickson (2009), positive emotions can broaden thought and action and build social connections. Thus, the better the positive emotions, the better the student engagement. The better the engagement, the better the academic performance, as student engagement can enhance academic performance, which is defined as an increase or achievement obtained by a student as a statement of the existence or absence of progress or success in an educational program (Azwar, 2002).

Hypothesis 7 states that there is a positive influence of student engagement that mediates the relationship between psychological capital and academic performance. Psychological capital consists of four components: optimism, hope, self-efficacy, and resilience (Luthans et al., 2005). Engagement in learning is defined as students' active participation in learning activities, both inside and outside the classroom (Trowler, 2001). This is related to one component of psychological capital, namely self-efficacy and optimism, as many students want to be involved in learning but lack confidence or optimism about the questions or arguments they want to put forward. Academic performance can be improved through the achievements obtained by students as a statement of the existence or absence of progress or success in an educational program (Azwar, 2002). Students can improve their performance through participation or involvement in the classroom.

Based on the discussion, the following research framework can be formulated:

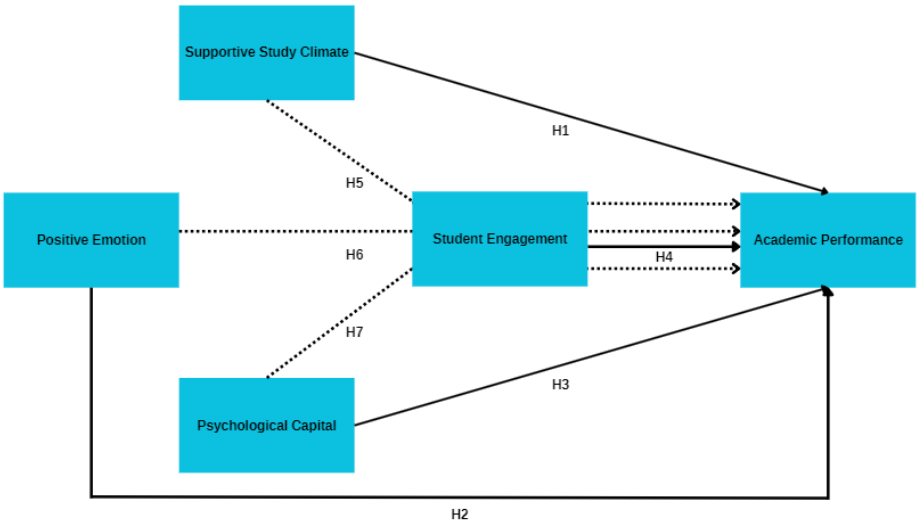

Figure 1. Conceptual Framework

METHODOLOGY

This research uses a quantitative approach method. The research location is Special Region of Yogyakarta, Indonesia, with data collection through an online questionnaire using Google Forms in August 2024. SEM (Structural Equation Model) with Partial Least Squares (PLS) method, SmartPLS 4.1.0.6, was used for data analysis. Measuring the exterior model (measurement), assessing the inner model (structural), and testing hypotheses comprise the analytical process. A bootstrapped significance threshold of 5% was used for the hypothesis testing.

RESEARCH RESULT

Descriptive Analysis

Data was collected using an online questionnaire through Google Forms with a convenience sampling technique. The questionnaire was distributed to students in the Special Region of Yogyakarta.

Table 1. Characteristic of respondent

Characteristic	Frequency	Percentage
Gender		
Male	57	57%
Female	43	43%
Age		
18-20	14	14%
21-23	68	68%
24 or above	18	18%
Total	100	100%

Source: Processed Primary Data, 2024

Based on the data in the table, the majority of respondents were male (57%) while females accounted for 43%. The largest age group was 21-23 years old, comprising 68% of the respondents, followed by those aged 24 and above (18%), and 18-20 years old (14%).

Data Analysis

The purpose of the data analysis was to assess the validity and reliability of the variables used in this research.

Table 2. Validity Test Result Using Loading Factor Values

Variable	Indicators	Outer loadings	Decision
Supportive Study Climate	X1.1	0.810	Valid
	X1.2	0.874	Valid
	X1.3	0.788	Valid
Positive Emotion	X2.1	0.76	Valid
	X2.2	0.898	Valid
	X2.3	0.832	Valid
	X2.4	0.835	Valid
PsyCap	X3.1	0.690	Valid
	X3.2	0.647	Valid
	X3.3	0.772	Valid
	X3.4	0.738	Valid
	X3.5	0.669	Valid
	X3.6	0.761	Valid
	X3.7	0.653	Valid
	X3.8	0.789	Valid
	X3.9	0.691	Valid
	X3.10	0.677	Valid
Academic Performance	Y1	1.000	Valid

Variable	Indicators	Outer loadings	Decision
Student Engagement	Z1	0.818	Valid
	Z2	0.698	Valid
	Z3	0.860	Valid
	Z4	0.772	Valid
	Z5	0.609	Invalid
	Z6	0.783	Valid

Source: Processed Primary Data, 2024

The results of the SmartPLS analysis, presented in Table 2, show the outer model or correlation between the construct and its variables. Some indicators have values below 0.70, but their values are close to the loading factor, suggesting they are still valid. According to Hair et al. (2018), an outer loading of 0.633 is still acceptable, although a loading of 0.700 is preferred. Therefore, indicator Z5 will not be used because its outer loading is 0.609.

Table 3. Validity Test Result Using Average Variance Extracted (AVE)

Variable	Average variance extracted (AVE)	Decision
Positive Emotion	0.693	Valid
Supportive Study Climate	0.680	Valid
Student Engagement	0.579	Valid
PsyCap	0.505	Valid

Source: Processed Primary Data, 2024

"Based on the data in Table 3, it can be seen that the AVE values for all variables exceed 0.5: positive emotions (0.693), supportive study climate (0.680), student engagement (0.579), and psychological capital (0.505). This indicates that all variables have achieved adequate discriminant validity.

Table 4. Reliability Test Result Using Composite Reliability

Variable	Composite reliability (rho_a)	Decision
Positive Emotion	0.867	Reliable
Supportive Study Climate	0.775	Reliable
Student Engagement	0.864	Reliable
PsyCap	0.899	Reliable

Source: Processed Primary Data, 2024

Based on the data in Table 4, it can be seen that the composite reliability values for all variables exceed 0.7: positive emotions (0.867), supportive study climate (0.775), student engagement (0.864), and psychological capital (0.899). This indicates that all variables are reliable.

Table 5. Reliability Test Result Using Cornbach's Alpha

Variable	Cronbach's alpha	Decision
Positive Emotion	0.852	Reliable
Supportive Study Climate	0.765	Reliable
Student Engagement	0.852	Reliable
PsyCap	0.891	Reliable

Source: Processed Primary Data, 2024

Based on the data in Table 5, it can be seen that Cronbach's alpha values for all variables exceed 0.7: positive emotions (0.852), supportive study climate (0.765), student engagement (0.852), and psychological capital (0.981). This indicates that all variables have Cronbach's alpha values greater than 0.7, suggesting that all four variables are reliable.

Hypothesis Testing

In this study, the T-statistics and P-values were examined to assess the hypotheses based on the data analysis. When a P-value is less than 0.05, a hypothesis is considered accepted. Because this study includes independent, dependent, and mediating variables, there are both direct and indirect effects. The Bootstrapping method and Path Coefficient in SmartPLS provide insight into the outcomes of hypothesis testing.

Table 6. Direct Effect Test Results

Hypothesis	Influence	Original Sample (O)	T-statistic	P-values
H1	SSC > AP	0,028	0,223	0,412
H2	PE > AP	0,106	0,743	0,229
H3	PsyCap > AP	-0,111	0,743	0,229
H4	SE > AP	0,264	2,375	0,009

Notes: SSC (Supportive Study Climate), PE (Positive Emotion), SE (Student Engagement), AP (Academic Performance).

The first hypothesis was rejected. The T-statistic was 0.223, which is less than 1.967. This means the effect size was small at only 2.8% and the p-value of 0.412 is greater than 0.05. Therefore, we can conclude that there is no significant direct effect of a supportive study climate on academic performance.

The second hypothesis was rejected. The T-statistic was 0.743, which is less than 1.967. This means the effect size was small at only 10.6% and the p-value of 0.229 is greater than 0.05. Therefore, we can conclude that there is no significant direct effect of positive emotions on academic performance.

The third hypothesis was rejected. The T-statistic was 0.743, which is less than 1.967. This means the effect size was small at only 11.1% and the p-value of 0.229 is greater than 0.05. Therefore, we can conclude that there is no significant direct effect of psychological capital on academic performance.

The fourth hypothesis was supported. The T-statistic was 2.375, which is greater than 1.967. This means the effect size was moderate at 26.4% and the p-value of 0.009 is less than 0.05. Therefore, we can conclude that there is a significant positive direct effect of student engagement on academic performance.

Table 7. Indirect Effect Test Result

Hypothesis	Influence	Mediation	Original Sample (O)	T-statistik	P-values
H5	SSC > AP	SE	0,025	1,023	0,153
H6	PE > AP	SE	0,087	2,092	0,018
H7	PsyCap > AP	SE	0,124	2,033	0,021

Notes: SSC (Supportive Study Climate), PE (Positive Emotion), SE (Student Engagement), AP (Academic Performance).

The fifth hypothesis was rejected. The t-statistic was 1.023, which is less than 1.967. This means the effect size was small at only 2.5% and the p-value of 0.153 is greater than 0.05. Therefore, we can conclude that student engagement does not have a significant direct effect in mediating the relationship between a supportive study climate and academic performance.

The sixth hypothesis was supported. The t-statistic was 2.092, which is greater than 1.967. This means the effect size was moderate at 8.7% and the p-value of 0.018 is less than 0.05. Therefore, we can conclude that student engagement has a significant positive mediating effect on the relationship between positive emotions and academic performance.

The seventh hypothesis was supported. The t-statistic was 2.033, which is greater than 1.967. This means the effect size was moderate at 12.4% and the p-value of 0.021 is less than 0.05. Therefore, we can conclude that student engagement has a significant positive mediating effect on the relationship between psychological capital and academic performance.

DISCUSSION

The results of the hypothesis test for hypothesis 1 indicated that there was no significant relationship between a supportive study climate and academic performance among university students in the Special Region of Yogyakarta. This finding is supported by previous research conducted by Luna & Del (2023), which revealed that a supportive study climate was not significantly correlated with academic performance, particularly in English language courses.

The results of the hypothesis test for hypothesis 2 indicated that there was no significant relationship between positive emotions and academic performance among university students in the Special Region of Yogyakarta.

This finding is supported by previous research conducted by Carmona-Halty et al. (2019), which revealed that positive emotions were not significantly correlated with academic performance.

The results of the hypothesis test for hypothesis 3 indicated that there was no significant relationship between PsyCap and academic performance among university students in the Special Region of Yogyakarta. This finding is supported by previous research conducted by Anuj & Vimala (2024), which revealed that PsyCap was not significantly correlated with academic performance.

The results of the hypothesis test for hypothesis 4 indicated a significant positive relationship between student engagement and academic performance among university students in the Special Region of Yogyakarta. This finding is supported by previous research conducted by Kuzminykh etl al. (2021) and Agosto (2024), which demonstrated that student engagement positively influenced academic performance.

The results of the hypothesis test for hypothesis 5 indicated that student engagement did not significantly mediate the relationship between a supportive study climate and academic performance among university students in the Special Region of Yogyakarta. This finding is supported by previous research conducted by Ganyang (2019), which demonstrated that the work environment did not influence work engagement, thus preventing work engagement from mediating the relationship between the work environment and performance, and the work environment did not directly influence performance.

The results of the hypothesis test for hypothesis 6 indicated that student engagement significantly mediated the positive relationship between positive emotions and academic performance among university students in the Special Region of Yogyakarta. This finding is supported by previous research conducted by Omer (2023) and Carmona-Halty et al. (2021), which demonstrated that student engagement mediated the significant positive relationship between positive emotions and academic performance.

The results of the hypothesis test for hypothesis 7 indicated that student engagement significantly mediated the positive relationship between PsyCap and academic performance among university students in the Special Region of Yogyakarta. Prior studies by Calleja-Blanco & Nunez-Carballosa (2024) and Liu & Huang (2022) supporting this conclusion showed that student engagement moderated the considerable positive association between PsyCap and academic achievement.

CONCLUSIONS AND RECOMMENDATIONS

This study aims to gain a deep understanding of the supportive study climate, positive emotions, and psychological capital on academic performance mediated by student engagement among university students in the Special Region of Yogyakarta. Based on this research, a supportive study climate does not have a direct or indirect relationship with academic performance, while student engagement has a direct relationship with academic performance.

Furthermore, positive emotions and psychological capital have an indirect relationship with academic performance, mediated by student engagement. This indicates that student engagement is a crucial factor that can influence students' academic performance. Therefore, to improve academic performance, universities can create programs that can enhance student engagement, such as education on mental health, which is related to psychological capital and positive emotions. These variables can indirectly influence academic performance.

ADVANCED RESEARCH

This study has several limitations. Firstly, the research was limited in scope, focusing solely on specific variables such as supportive study climate, positive emotions, psychological capital, academic performance, and student engagement. Additionally, the research was geographically constrained to the Special Region of Yogyakarta. Future research should expand its scope by including additional variables related to the aforementioned constructs and by studying a wider geographical area.

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