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Examining Positive Emotions on Student Engagement During COVID-19 Situation with Academic Psychological Capital as a Mediating Variable

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Abstract. Student engagement is an important aspect of an individual's school adaptation and adjustment to changes. Students who engage in learning will be more likely to succeed in their studies and get good performance. This study aimed to determine the effect of positive emotions on student engagement with academic psychological capital as a mediator. This study adopted a survey method in which 396 seventh grade students of nine junior high schools in Surabaya City participated in cluster random sampling and stratified random sampling was employed as recruitment strategies. The data collected were analyzed using Structural Equation Modeling with Partial Least Squares approach. Results indicate that academic psychological capital partially mediates the influence of positive emotions on student engagement. Partial mediation shows that positive emotions have a direct influence on students' engagement to the existence of academic psychological capital as a mediator.

Keywords: academic psychological capital; middle school students; positive emotions; student engagement

School closures have impacted more than 98 percent of the students all over the world as a result of the COVID-19 pandemic United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2020). As a consequence, remote learning has been used to substitute face-to-face learning that was hampered by the enforcement of school closures (UNESCO, 2020). Since then, conventional ways of delivering education have steadily transformed with the expanded use of technology and methods for online learning and teaching. Students and teachers have encountered obstacles as a consequence of the fast move to online learning (Almendingen et al., 2021).

The transition to online learning has affected the psychological aspects of learners. Adolescent learners feel significant levels of anxiety and stress as the effect of online learning can induce a variety of mental health problems (Baltà-Salvador et al., 2021). A report from UNESCO (2020) indicates that adolescents have different capabilities to process this change, many of them are not able to benefit from these unusual learning contexts, while others are just struggling to keep up with the learning schedule while remaining motivated and interested. In the absence of direct and immediate teacher support, students in online learning have difficulties creating meaning by assuming learning

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activity, beginning and sustaining meaningful communications, and acquiring conceptual knowledge via active engagement through digital resources (Hartnett, 2016).

The level of student engagement in the adolescent year and at junior high school is crucial because students experience a transition period from elementary school, which involves a great deal of change and adaptation in the learning environment. Junior high school presents a larger and more heterogeneous circle, socializing with groups that are more socially diverse. Middle schools have competitive academic demands, characteristics, and culture. Middle school students are also characterized by weak social relations between students, teachers, peers and a lack of personal support (Addi-Raccah et al., 2011).

Students experience many developmental changes, one of the most important is the improvement of cognitive functions such as reasoning, decision making, and critical thinking. Those changes require students to be given many opportunities to learn and participate actively in class so that students' needs are met, and students can be maximally involved in learning at school (Biancalana, 2013) because many students experience difficulties especially in the first year of junior high school (Anderman & Anderman, 2020).

Students' engagement can develop learning outcomes in school (Pascarella et al., 2010). A survey by the National Survey of Student Engagement in 2018 in the US and Canada shows that student engagement plays a role in creating various positive educational outcomes, such as moral reasoning, critical thinking, personal well-being, effectiveness, and positive orientation towards literacy activities (National Survey of Student Engagement, 2018). Student engagement is negatively related to burnout in schools, learning demands, and symptoms of depression (Upadyaya & Salmela-Aro, 2013). Engaged students are very happy with what is happening at their school and about what is learned. Students who participate in the learning environment are psychologically committed in school. Engaged pupils feel comfortable in school, develop good relationships with educators and other students, feel acknowledged, and learn essential things that will help them in the future (Gallup, 2018). Students with high engagement have positive emotions and cognitive conditions related to learning, research, and work (Gong et al., 2018).

Evidence presented above set the foundation on the importance of having student engagement at school. However, based on data obtained from several surveys, there are still many students who lack engagement at school. Research by Mustika and Kusdiyati (2015) about the level of student engagement in schools in Bandung showed that 66% of students have low engagement. The author conducted a preliminary study in one of the middle schools in Surabaya with 37 seven graders using a student engagement measurement tool (Schaufeli & Bakker, 2004). The result of this initial survey was that the ratio of students who had good and bad engagement was 45.9% and 54%. This data is also supported by the results of the author's observations and interviews with teachers in junior high schools in Surabaya, which will be the place for gathering surveys for this research.

Observations on the teaching process involving 30 students in 2 hours of lessons showed that there were still many students who did not pay attention to the teacher. The class atmosphere was not conducive because many students were noisy and busy minding their own business in the classroom.

The assignments given by the teacher were ignored by the students and the students chatted a lot in class until it was too late to collect assignments. Students also exercised less effort in doing assignments independently, and further performed dishonest conducts such as cheating.

Low engagement in school can carry a variety of negative effects. Disengaged students do not actively interact in class or school events, are not intellectually engaged in learning, not creating or sustaining a sense of school ownership, and engage in disgraceful behavior (Christenson et al., 2012). Disengaged students can cause academic problems, bad behavior, and decreased school performance (Finn & Zimmer, 2012). Disengagement is associated with lower achievement and the relationship between students' engagement to achievement tends to be reciprocal, the cycle is strengthened over time. achievement can be the result of disengagement, but it can also contribute to the process (Hancock & Zubrick, 2015).

Based on the explanation above, it can be seen how the problem of student engagement becomes a matter of concern. Factors that influence student engagement also become important to be known. This study aimed to examine what factors influencing student engagement, focusing on positive emotions and academic psychological capital.

Literature Review

Students' engagement in schools is positioned as a characteristic that determines high-quality teaching and learning in schools and makes students more involved in learning to achieve learning success (Ashwin & McVitty, 2015). Student engagement is the extent to which students are involved in activities that are proven to be related to high-quality learning outcomes (Kerri-Lee Krause and Hamish Coates, 2008). Student engagement is the time and effort that students devote to activities that are empirically related to the results of studies at educational institutions (Kuh, 2009).

Student engagement is defined in three ways. The first is behavioral engagement, that refers to the participation of students. Behavioral engagement requires the absence of disruptive behavior and the presence of positive behavior. Behavioral engagement is also shown in involvement in learning and doing academic assignments and includes behavior such as effort, perseverance, concentration, asking questions, attention, etc. Additionally, it includes participation in school activities such as athletic or organizational activities. The second is emotional engagement that is the reaction given by students to teachers, friends, and school. Emotional engagement refers to the affective state of students in the class, including interests, happiness, boredom, anxiety, and sadness. Emotional engagement affects the willingness to learn, doing assignments, and homework. And the third is cognitive engagement, an investment given by the students in the form of attention and a willingness to utilize the effort required to master an idea or skill. Cognitive engagement can be demonstrated by memorizing simple material to the use of independent learning strategies that promote deep understanding and expertise (Fredricks et al., 2004).

Several studies have shown the influence of positive emotions on students' engagement (Carmona-Halty et al., 2019; Denovan et al., 2019; Gong et al., 2018; Ouweneel et al., 2011). Low student engagement can occur due to negative emotional perceptions of learning. Positive emotions are short

and multisystem responses to changes in the way individuals assess or interpret a situation. When an individual responds to a situation that is bad for themself, negative emotions arise and conversely when the response raises good opportunities, positive emotions emerge (Fredrickson, 2013). There are ten positive emotions, namely interest, attentiveness, excitement, alertness, inspired, enthusiasm, determination, pride, strength, and active (Watson et al., 1988).

Previous studies have also shown an influence between students' academic psychological capital and performance in school (Datu & Valdez, 2015; B. C. Luthans et al., 2013; Siu et al., 2013). Psychological capital is a positive individual psychological state characterized by having self-efficacy to tasks, making positive attributions about success now and in the future (optimism), persevering towards the goal and if necessary, directing the path to the goal to succeed when faced with problems and difficulties (hope), individuals can survive and rise again, even exceeding the initial effort to achieve success (resilience) (F. Luthans et al., 2006). Thus, academic psychological capital dimensions consist of four aspects, namely hope, optimism, resilience, and self-efficacy which influence student engagement. This aspect of academic psychological capital is shown when students who have efficacy in learning and who are hopeful and optimistic about the future show a high level of engagement (B. C. Luthans et al., 2013).

Academic psychological capital can also be a mediator of the influence of positive emotions and student engagement (Gong et al., 2018; K. W. Luthans et al., 2016; Ouweneel et al., 2011; You, 2016). Positive emotional experiences lead to students' resources or psychological capital in the future which will then lead to students' engagement (Ouweneel et al., 2011). Positive emotions will broaden a student's mind and build personal resources, such as hope, optimism, self-efficacy, and resilience (K. W. Luthans et al., 2016).Psychological capital is a capacity that can be developed and an increase in psychological capital can lead to an increase in students' engagement in learning. The efficacy was related indirectly to student engagement through its impact on positive emotions over time (Salanova et al., 2011). A study found that academic psychological capital influences student engagement through its role as a mediator with positive emotions as predictors. Positive emotions in students can build academic psychological capital, then will lead to student engagement, which can also increase academic achievement (Carmona-Halty et al., 2019).

The influence between variables can be explained through broad-and-build theory (B&B) by Fredrickson (2001) and the Conservation of Resources (COR) theory by (Hobfoll, 2002). B&B theory (Fredrickson, 1998, 2001, 2013) suggests that positive emotions will broaden thoughts and actions by encouraging exploration that creates learning opportunities and goal achievement. This helps individuals to build personal resources. Momentary emotions can produce conditions that lead not only to students' engagement through expansion of thought and action but can also contribute to building psychological capital such as optimism, self-efficacy, resilience, and hope, which are more durable than momentary emotions (Fredrickson, 2013).

The influence of academic psychological capital on student engagement can be explained through the COR theory by (Hobfoll, 2002) which explains that individuals invest their resources to overcome stressful conditions and prevent negative results. Individuals will also try to accumulate

their resources to get new resources. Academic psychological capital facilitates the positive assessment process needed to have attention, interpretation, and retention. This will lead to well-being and success, such as engagement (F. Luthans & Youssef-Morgan, 2017).

Research by K. W. Luthans et al. (2016) and Ouweneel et al. (2011) explained that optimistic and hopeful students will be motivated to take on more challenging tasks. This supports students' ability to overcome obstacles when achieving academic success, such as talking to lecturers outside the classroom about grades or tasks. A high level of self-efficacy will make students more confident to look for and involve in academic activities such as study programs, internships, independent study, or following the community. Students with high levels of resilience can easily recover from failure and tend to engage in activities that support their academic goals, such as talking about a career path with educators, working with academics on activities other than lectures, etc. And thus, students who feel positive emotions and have hope, optimism, self-efficacy, and resilience will participate more and engage in positive academic activities, and are willing to invest their efforts in achieving academic goals and success so that they have an engagement in school.

The role of personal resources, such as academic psychological capital which is an important determinant of optimal functioning and well-being, has not been studied among students. This needs to be considered because, in the context of work, personal resources are positively related to engagement (Xanthopoulou et al., 2009). Similarly with the role of individual emotions and their relation to engagements that have not yet been explored. Ouweneel et al. (2011) suggested in their journal for further research It would be intriguing to see the findings of this study repeated with younger pupils in compulsory school. Ouweneel et al. (2011) expected students in schools to experience fewer engagements in their learning because they are not free to choose their courses or majors, in contrast to students at universities.

Based on previous studies, it is crucial to examine the effects of positive emotions toward student engagement with academic psychological capital as a mediator. The purpose of this study was to analyze the influence of positive emotions on student engagement in seventh-grade middle school students with academic psychological capital as a mediator. This study hypothesized that positive emotions influence student engagement in seventh-grade middle school students with academic psychological capital as a mediator.

Methods

Research Design, Population, and Sampling

This research is a quantitative study. The characteristics of the participants were being in seventh grade of State Junior High School students in Surabaya, both male and female, and aged between 12-14 years. The population in this study was 37,864 students (Kemendikbud, 2019) and samples were calculated using the Slovin formula with a confidence level of 95% and 5% of error. Therefore, the number of samples used in this study was 396 students. Students were recruited using an online survey and the researcher also ensured the consent was given by the students from the online form.

The sampling technique used was cluster sampling to determine schools from each region in Surabaya, namely North, South, West, East, and Central Surabaya. This study also used proportional sampling to determine the number of students sampled from each school to match the number of participants in each region. This study used an online survey method that contains informed consent, student demographic data, student engagement scale, academic psychological capital scale, and positive emotional scale.

Instruments and Measurement

The Student Engagement Scale consists of 25 items and this scale has been used by previous researchers (Wibowo, 2019) referencing prior studies (Fredricks et al., 2004). The scale of positive emotions is measured using PANAS (Positive Affect and Negative Affect Schedule) (Watson et al., 1988). This scale has 20 items. However, the measurement of positive emotion variables in this study is limited by using only positive affect items, hence only 10 items containing positive emotions were used. The authors modified this scale by adjusting it to the academic context for students.

The academic psychological capital scale used is a translation that refers to the PCQ (Psychological Capital Questionnaire) (F. Luthans et al., 2006). PCQ consists of 24 items but in a work context. All measuring instruments use a Likert scale for their choice of answers, from never occurring = 1 to always occurring = 5.The author modified the PCQ scale by adjusting it to the academic context for students to become Academic Psychological Capital Scale. The adaptation process starts with identifying items that need to be adjusted to the academic psychological capital theory because the measuring instrument is already in the Indonesian version. The next step is conducting preliminary tests on respondents for examining the content of the item. The preliminary test was conducted on 37 middle school students. The instrument was then tested for the validity and reliability of the items. The validity was tested using expert judgments and CVR (content validity ratio), then the items were revised based on the CVR and reliability score. Through that testing and revision, the instrument is ready to be used for this research to gather the data from the subject population.

Validity of The Instruments

The student engagement scale has gone through an expert judgment process. Selection items on the student engagement scale are also done by looking at the item index and total correlation, which is between .317 to .643 (Wibowo, 2019). As a result of selection based on the discriminant power of students' engagement scales, there were nine items aborted because they had an item index value and a total correlation < .3 (Azwar, 2013; F. Luthans et al., 2006). Thus, there are 25 items left that will be used on the student engagement scale.

The validity on the scale of academic psychological capital and positive emotions was carried out with CVR and seven experts were involved to assess each item. There are several items on the scale that were revised according to the rater's suggestion. The value CVI (Content Validity Index) score of the academic psychological capital scale is .92 and the positive emotions scale is .97. This shows that the scale is very good and valid because it meets the CVI standard scare of >.8 (Polit & Beck, 2008)

The author tested 50 students in Surabaya to test the scale discriminant power. The academic psychological capital scale has a CITC range of .307 - .805. The positive emotions scale has a range of .558 - .852. All grades are by standards >.3 (Azwar, 2013). This indicates that the instruments are valid and able to distinguish the level of academic psychological capital students and the positive emotions of students well.

Reliability of The Instruments

The author tested 50 students in Surabaya to test the scale's reliability. The coefficient of Cronbach's alpha on student engagement is .77, the score on academic psychological capital is .86, and the positive emotions is .89. This shows that the three scales are reliable or are consistent because they meet the standard value of >.6 (Arikunto, 2010).

Data Collection and Analysis

This research was conducted at nine schools in five regions in Surabaya. Data was collected using an online survey via Google Form. There were 614 responses collected from 9 schools, which exceeded the research sample. Therefore, the data was chosen by a sampling technique that has been explained.

The collected data were analyzed using Structural Equation Modeling (SEM). This study uses the Partial Least Squares (PLS) technique because there are formative variables in this study. The data in this study were analyzed using statistical analysis through the WarpPLS program.

Result

Demographic

Based on the gender frequency distribution of participants, it can be seen from the 396 research participants, as many as 159 students (40.2%) were male and the majority aged 13 years old were 112 students (28.3%), the remaining 31 students (7.8%) were 14 years old, and 16 students (4%) were 12 years old. The number of female students is 237 (59.8%), and the majority of 13-year-olds as many as 166 students (41.9%), the remaining 56 students (14.1%) aged 14 years old and 15 students (3.8%) were 12 years old. Based on these data, there were more female participants than male participants and the majority were 13 years old.

Norms and Category

Table 1
Descriptive Analysis of Research Variables

Variable	Mean	SD	Category		
			Low	Moderate	High
Student Engagement	91.2121	10.17992	54 (13.6%)	270 (68.2%)	72 (18.2%)
Academic Psychological Capital	87.4394	13.53285	57 (14.4%)	264 (66.7%)	75 (18.9%)
Positive Emotion	39.2475	7.09426	59 (14.9%)	244 (61.1%)	93 (23.5%)

The group names are made in three categories through calculation from the mean ± standard deviation (see table 1). The majority of 396 students have moderate levels of student engagement, academic psychological capital, and positive emotions. The three variables also have the same pattern, namely the most frequent categories are medium level, then high and low levels.

Outer Model

The measurement model or outer model contains convergent validity and discriminant validity derived from latent variable indicators. The outer model also measures composite reliability and Cronbach's alpha for the indicator group.

Convergent validity can be determined from the value of the loading on an indicator that measures the variable. The indicator is valid when the loadings score >.7 with p <.05, or from .4 to .7 if the AVE score >.5 and composite reliability score >.7. If the indicator has a loadings score >.7 with AVE and composite reliability score inadequate, the item must be removed (Sholihin & Ratmono, 2013). Table 2 shows the convergent validity test results for each variable.

Table 2
Combined Loadings and Cross-Loadings

Variable	Aspects	Student Engagement	Academic Psychological Capital	Positive Emotion	*P*-value
Student Engagement	Behavior	(.827)	.056	-.015	<.001
	Cognitive	(.846)	-.068	-.098	
	Emotional	(.826)	.013	.116	
Academic Psychological Capital	Self-Efficacy	-.033	(.829)	-.104	
	Hope	-.131	(.912)	.138	
	Optimism	.014	(.820)	-.023	
	Resiliency	.166	(.816)	-.025	
Positive Emotion	Attentive	.000	-.183	(.746)	
	Interested	-.165	.014	(.681)	

Table 2 (Continued)

Combined Loadings and Cross-Loadings

Variable	Aspects	Student Engagement	Academic Psychological Capital	Positive Emotion	*P*-value
	Alert	-.061	.121	(.739)	
	Excited	.211	-.051	(.745)	
	Enthusiastic	-.104	-.049	(.679)	
	Inspired	-.071	-.083	(.671)	
	Proud	.005	.117	(.647)	
	Determined	.026	.118	(.763)	
	Strong	.107	-.106	(.740)	
	Active	.022	.105	(.735)	

Based on the convergent validity test with the loadings score in the table above, it is known that all dimensions of each variable have a loading score >.7 which means that the student engagement variable is valid. The highest score in student engagement is cognitive engagement with a value of .846. This means that cognitive aspects explain the most of student engagement. In the academic psychological capital, the indicator that has the highest loadings is hope (.912). This means that hope explains most of the psychological capital construct. In the positive emotion variable, there are several dimensions whose loadings are <.7, but the AVE score is > .5 (look at table 3). Thus, there are no removed dimensions. The indicator that has the highest loadings is determined (.763). This means that the aspect of determination explains the construct of students' positive emotions the most.

Discriminant validity is determined from the cross-loading indicator with its construct. The indicator must have the highest loading in its construct compared to other constructs. Based on the results of the discriminant validity test, it is seen that the loading value on all dimensions in each variable is greater compared to the other latent variables (see table 2). This means that all variables have met the discriminant validity requirements and all indicators of the construct can explain the construct well. The standard AVE value that must be met is >.5. Good composite composition shows a value of >.7 and the standard Cronbach alpha value is >.6. Table 3 shows the test results for each variable.

Table 3

Scales Reliability

Coefficient	Student Engagement	Academic Psychological Capital	Positive Emotion
Cronbach's alpha	.779	.866	.894
Average variances extracted (AVE)	.694	.714	.512
Composite reliability	.872	.909	.913

Based on the convergent validity test through the coefficient values of latent variables, all variables have a value of AVE >.5. This means that all variables can explain more than half the variance of the indicators. Based on reliability testing through Cronbach's alpha, all variables have a value of >.7, and based on composite reliability, all variables have a value of >.7. This means that all scales in this study are reliable, accurate, and precise in measuring the appropriate construct.

Inner Model

Inner models measuring the direct effect between variables to determine the value of the path coefficients and R2, which is the percentage likelihood of the variables affecting other variables. Q2 shows the predictive level of relevance in the model. The model has a predictive relevance when the value of Q2 > 0, conversely, when the model shows a value of Q2 <0, the model has less predictive relevance (Ghozali & Latan, 2014). Table 4 shows the results of the inner model test.

Table 4
Direct Effect Test

Path	Path coefficients	R2	Q2	*p*-value
PE → APC	.74	.55	.547	<.001
APC → SE	.56	.45	.460	<.001
PE → SE	.14	.45	.460	.002

Based on the results of the direct effect test, each exogenous variable on the endogenous variable has a positive and significant effect. Positive emotions can explain 55% of academic psychological capital and the rest of the other 45% is explained by other factors outside the model. Student engagement can be explained by the positive emotions and academic psychological capital by 45% and the remaining 55% is explained by other factors outside the model. Both variables have Q2 values >0. This means that exogenous variables have a good predictive relevance to endogenous variables, positive emotions can explain and predict psychological capital academic and student engagement.

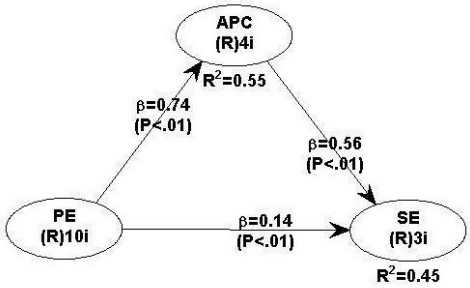
Hypothesis Test

Hypothesis testing started by testing the indirect effect. The indirect effect of positive emotions on students' engagement through academic psychological capital is .41 with a *p*-value of .001 (p <.05). This means that positive emotions indirectly and significantly affect student engagement through academic psychological capital, or it can be stated that academic psychologically significant mediating effect of positive emotions on student engagement.

Hypothesis testing is done based on the estimation of the coefficient of determination (R2) with a beta coefficient (β) and the *p*-value. The β value describes the direction of effect between the variables in the hypothesis and the *p*-value must be $\leq$.05 for the effect to be significant.

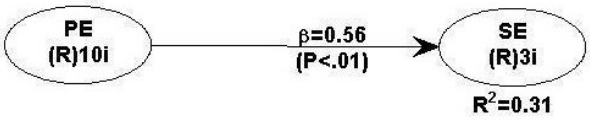
The results of the hypothesis test can be seen in Figure 1

Figure 1
Indirect Effects Between Variables



The hypothesis in this study can be concluded after the direct influence of positive emotions on student engagement can be proven. Figure 2 describes the results of the analysis.

Figure 2
Direct Effects Between Variables



Based on the results of the hypothesis test above, it is known that there are differences in the value of β in the testing of the direct effect and indirect effect. This proves that there is a mediating effect on the variable. The form of mediation can be seen by looking at the significance level of the value of p. Based on Figure 1, all paths connecting the variables have a value of p <.01. This means that mediation exists and is partial (partial mediation). The results of this test support the hypothesis that positive emotions affect students' engagement with academic psychological capital as a mediator.

The next test is to calculate the indirect effect variance (VAF). Based on the calculation of the VAF formula, academic psychological capital mediates as much as 74.8% in student engagement. The effect of mediation is said to be full or perfect mediation when the VAF value is $\geq$80%. The next test is the goodness of fit model test, which is testing the suitability of the variables in the model designed in this study. This test uses four criteria to determine the suitability of the model, namely Average R-Square (ARS), Average Adjusted R-Squared (AARS), Average Path Coefficient (APC), and Average block Variant Inflation Factor (AVIF). The model is appropriate if it has a *p*-value <0.05 and the standard AVIF value is $\leq$ 3.3 (Ghozali & Latan, 2014). Based on the results of the goodness of fit model test, it is known that the value of ARS, AARS, APC has a significance value of p .001 (p <.05). AVIF value is 2.261 which means this value meets the ideal requirement. These results indicate that the model used does not contain multicollinearity problems between dimensions and between variables.

Discussion

Early adolescence is a contractionary phase. At this developmental period, students demand to be independent, while parents and teachers do not give much freedom. Students face a lot of competition, and this is the time when students start thinking about their future (Hurlock, 2001). In the cognitive aspect, students can think and logically use differentiation, association, causality, and comparison which are abstract, although still limited. Intellectual intelligence also shows rapid development and students' talents begin to emerge more clearly. In the cognitive, emotional, affective, and personality aspects, students show their physiological needs, security, affection, self-esteem, and self-actualization (Makmun, 2003). Adolescence is a particularly perilous time for motivation that leads to engagement (Eccles et al., 1997).

Hypothesis test results between variables in this study indicate that academic psychological capital significantly mediates the influence of positive emotions on student engagement. This means that positive emotions significantly affect student engagement indirectly through academic psychological capital. The mediating effect of academic psychological capital is indicated by a decrease in the value of β the direct effect and indirect effect test. This proves the influence of mediation which is by academic psychological capital. The results of this data analysis support the research hypothesis that positive emotions influence students' engagement with academic psychological capital as a mediator.

The results of the hypothesis test are following the research of Ouweneel et al. (2011) and Carmona-Halty et al. (2019), which stated that academic psychological capital mediates the influence between positive emotions and student engagement. This study discusses the influence of variables through the broaden-and-build theory (B&B) (Fredrickson, 2013) and the theory of conservation of resources (COR) by Hobfoll (2002). Both of these theories will explain that positive emotions can affect personal resources, in this case, academic psychological capital and this will increase student engagement.

First, the findings in this study are consistent with a prior study on B&B Theory (Fredrickson, 1998), when students experience positive emotions associated with studies, students are more likely to have higher levels of personal resources in the form of academic psychological capital (Gong et al., 2018; B. C. Luthans et al., 2012; K. W. Luthans et al., 2016; Oriol-Granado et al., 2017; Ouweneel et al., 2011; Upadyaya & Salmela-Aro, 2013; You, 2016). Second, consistent with a prior study on COR theory (Hobfoll, 2002), the research found that students who show academic psychological capital are more likely to show positive results in the form of engagement to students (Gong et al., 2018; B. C. Luthans et al., 2012; K. W. Luthans et al., 2016; Oriol-Granado et al., 2017; Ouweneel et al., 2011; Upadyaya & Salmela-Aro, 2013; You, 2016).

According to B&B Theory, when students have higher positive emotions, they will build some personal resources such as self-efficacy, optimism, hope, and resilience, which are relatively more durable than emotional states (Fredrickson, 2013). According to the COR theory, academic psychological capital facilitates student engagement through involvement with student learning and academic assignments. Students who are optimistic and hopeful will be motivated to complete academic assignments. In addition, students will overcome obstacles to achieve academic success. Self-efficacy makes students confident in finding and participating in academic activities. Students with resilience can bounce back from failure and engage in beneficial academic activities (K. W. Luthans et al., 2016; Ouweneel et al., 2011). Positive emotions help students imagine challenges and goals, then uncover productive thoughts and plan to solve problems using resources from academic psychological capital, so that this makes students more engaged in their study.

The model used in this study shows the contribution and influence between variables and shows that positive emotions can affect academic psychological capital. This is in accordance with the research by Ouweneel et al. (2011), Gong et al. (2018), Denovan et al. (2019), and Carmona-Halty et al. (2019). Positive emotions encourage the exploration of thoughts and actions to learn and achieve goals and help to build personal resources, in this case, academic psychological capital (Fredrickson & Joiner, 2002). Gong et al. (2018) stated that positive emotions can cause long-term engagement through the process of building academic psychological capital. Ouweneel et al. (2011) explained that students with positive emotions will expand the mind and build hopes, optimism, resilience, self-efficacy, and resilience which are dimensions of academic psychological capital.

The value of some of the contributions to academic psychological capital can be explained by other factors outside the model. Other factors that can affect academic psychological capital are work characteristics in schools such as assignments and

tests, student personality, school climate, and teacher teaching style (Avey, 2014). In addition, Carmona-Halty et al. (2019) found that pupils who have good relationships with their teachers have the opportunity to have a high level of academic psychological capital. A good relationship with students will help increase psychological capital in an academic context. The need to relate or feel connected to others can affect students' academic psychological capital (Ryan & Deci, 2017). In this case the relation of students with peers, teachers, and staff in the school.

Positive emotions and academic psychological capital can influence student engagement. This is in accordance with the research of Oriol-Granado et al. (2017) Siu et al. (2013), Datu and Valdez (2015), Ouweneel et al. (2011), and Carmona-Halty et al. (2019). Oriol-Granado et al. (2017) found that positive emotions explain the process of students building personal resources, namely academic psychological capital. Siu et al. (2013) proved the influence between academic psychological capital and student engagement. Datu and Valdez (2015) stated that academic psychological capital increases motivation, cognition, and engagement in students.

Other factors that can affect student engagement can be divided into two, namely external and internal factors. External factors include the school level, a class context that contains the support of teachers, friends, class structure, autonomy support, and task characteristics (Fredricks et al., 2004). The structural influence of educational institutions, such as aspects of culture, policy, curriculum, assessment, and regulations can affect student engagement (Kahu, 2013). In addition, psychosocial influences from educational institutions, such as teaching, staff, support, and student workload. This is similar to the study where useful academic and administrative inputs, followed by a syllabus of lessons and facilities will influence student engagement (Sharma & Bhaumik, 2013). The research found that involvement and relationship between teachers and students become critical determinants to improve engagement (Martin & Collie, 2019).

Internal factors besides positive emotions and academic psychological capital that can influence student engagement are achievement motivation, interests, academic self-concepts (Astuti et al., 2016). In addition, according to Kahu (2013), there are structural influences from students, namely the background, support, family, and life burden of students, and also the psychosocial influence of students, namely motivation, abilities, identity, and self-efficacy of students. Students' learning styles and approaches will also affect their engagement (Wimpenny & Savin-Baden, 2013).

The model in this study has some variances indicating the mediating effect of academic psychological capital is partial and can directly or indirectly affect student engagement. Partial mediation effects can occur because positive emotions still have an influence on student engagement even with academic psychological capital as a mediator. Academic psychological capital reinforces the influence of positive emotions on student engagement and can be directly related to student engagement. This is in accordance with the prior research (Gong et al., 2018; B. C. Luthans et al., 2012; K. W. Luthans et al., 2016; You, 2016). Self-efficacy in the academic context is positively linked to student engagement. Self-efficacy refers to a greater willingness to provide effort and energy in completing assignments or in studying. Students who have higher self-efficacy will be more involved in learning because of it (Ouweneel et al., 2011; Schaufeli & Salanova, 2007). Hope allows one to direct energy and be dedicated to pursuing goals, such as achieving better grades in school. Students who have expectations will dedicate their time to study and be engaged (Ouweneel et al., 2011) Students who are optimistic will take on certain learning tasks with expectations for positive results. This can lead to student engagement through greater levels of involvement (Kahn, 1990; Ouweneel et al., 2011). Students with resilience more easily rise from failure and engage in activities that support their academic goals. This shows that psychological capital can also affect student engagement directly but can be a mediator influencing positive emotions on student engagement.

The practical implication of this research is to increase students' positive emotions. Teachers can focus more on students' feelings rather than focusing exclusively on increasing academic knowledge and skills. The focus on increasing positive emotions will affect the emergence of academic psychological capital and student engagement. Students who have enough positive emotions will expand their thoughts and actions before doing something or when facing challenges. Students who will take exams will know what they should do and leave, and they can build their resources, such as hope, optimism, self-efficacy, and resilience.

Teachers that are active in online learning will give emotional and motivational support in the form of pedagogical

caring, involvement, closeness, acceptance, and help as well as encouraging the formation of mutual trust among students in collaborative learning situations (Xie & Ke, 2010) and small discussion groups (Alamri et al., 2020). Students will therefore feel more welcomed, comfortable, effective, and independent, and they will retain their experience and demonstrate higher participation (Ryan & Deci, 2017). Teachers could use instant messaging technologies to hold interactive real-time classes and small teacher-student help groups consisting of one to five persons. Teaching with personalized materials (Chiu et al., 2020) and employing visual aids for communication, such as photos and emoji, to minimize miscommunication and establish a happy environment.

It is also important to increase students; academic psychological capital. The teacher should not only motivate students externally with gifts or punishments but also care about the internal aspects of students. Students who have personal resources will be more involved and bonded by their studies. Students who have expectations will have a high willingness to excel and find good ways to achieve their targets. Optimism will keep students motivated to be more involved in their studies to get good results. Students can feel challenged to complete the demands of the tasks given and be able to overcome their difficulties. Self-efficacy can make students more active in participating in class, such as communicating with teachers and friends to study together or attending school programs that support their quality. Students who have resilience will not be easily discouraged. Students can overcome failure by making plans and better behavior.

Autonomy-supportive teachers in online learning will examine student viewpoints, allow for options in learning, provide an explanation when the option is limited, minimize the use of commanding language, and decrease unneeded stress and expectations on students (Alamri et al., 2020). Teachers should provide students with access to diverse learning resources, assistance in selecting various learning materials (Bedenlier et al., 2020), recognizing and embracing students' particular interests, and giving freedom to adapt learning activities to personalized learning possibilities (Alamri et al., 2020). Teachers could provide and propose a variety of digital resources (such as videos, links, and presentations) and highlight their relevance to students (Bedenlier et al., 2020), allow students to complete their tasks using any digital format such as videos, slides, blogs, and tools, and allow students to study whenever and wherever they want. Students could freely make their own decisions and choices about their objectives and self-efficacy, as well as utilize their voices to ask for support, and therefore feel empowered in their learning (Alamri et al., 2020).

Conclusion

Positive emotions have a significant effect on academic psychological capital, academic psychological capital also has a significant effect on student engagement. This means that students who have positive emotions can form academic psychological capital, consequently, students can possess an engagement when learning in school. Academic psychological capital partially mediates the influence of positive emotions on student engagement. Partial mediation shows that positive emotions have a direct influence on students' engagement in the existence of academic psychological capital as a mediator. This form of mediation shows that the higher the level of positive emotions students have, will increase their academic psychological capital, and this will also increase the level of student engagement.

It needs to be acknowledged that this research was conducted during the COVID-19 pandemic, therefore the researcher could not gather data directly in schools. Data collection in this research was conducted online due to conditions that made it impossible for students to come to school. Although the data obtained by online form, the measurement tools used are guaranteed to be valid and reliable as explained in the method section.

Recommendation

This study has several limitations that must be considered. First, the author used only the positive emotion aspect, of which limited in capturing the dynamic effects within these variables. Second, the use of online questionnaires might cause the answers to contain subjectivity to the data due to lack of control from the author when the subject filled out the questionnaire. And third,

the research population is limited to seventh-grade students at State Middle School in Surabaya. These limitations cause the results of the analysis to only be applied to certain populations.

The suggestion for future research is to examine other mediators that can affect positive emotions on student engagement to examine the effect of the mediating nature of other variables on student engagement in the context of Indonesian culture. Researchers can also examine the causal relationship between positive emotions, academic psychological capital, and student engagement. The researcher can then expand the area and characteristics of the sample and study population to obtain more generalizable data. Future studies can conduct data collection directly by distributing questionnaires and meeting with students in-person. This will allow researchers to help students who may not fully understand the questionnaire items during data collection and observe student's responses at that time to improve the research results.

Declarations

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Author's Contribution

Nerinda wrote and did this research with the help of Mrs. Wiwin Hendriani and Mr. Nono Hery Yoenanto in designing the theoretical concept, preparing the measuring tools, collecting and analyzing the data. Mrs. Wiwin Hendriani and Mr. Nono Hery Yoenanto are Nerinda's supervisors and reviewers, as they both are lecturers at Airlangga University.

Conflict of Interest

The authors declare that there is no conflict of interest in this research.

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