

## THE ROLE OF SOCIAL SUPPORT AND ACADEMIC INFRASTRUCTURE ON STUDENT LEARNING ACHIEVEMENT WITH LEARNING INTENSITY

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### Abstract

*This research is based on the research gap between the involvement of social support and academic infrastructure on student learning achievement. High or low social support has no effect on learning achievement, but if it is mediated by learning intensity, there is an influence on learning achievement. The aim of the research is to examine the influence of Social Support and Academic Infrastructure on Academic Achievement with mediation in the form of Learning Intensity for Muhammadiyah University Gresik students. The location of the research was at Muhammadiyah University Gresik which has a population of 5,411 people. This research uses quantitative methods with a population of all Muhammadiyah University Gresik students, using Stratified Random Sampling for each faculty. The number of samples obtained was 372 respondents. The results of this research show that (1) Social Support does not have a significant influence on Learning Achievement, (2) Academic Infrastructure has a significant influence on Learning Achievement, (3) Learning Intensity has a significant influence on Learning Achievement, (4) Social Support also influences Learning Intensity, (5) Academic Infrastructure has a significant effect on Learning Achievement, (6) For the results of the indirect effect test through the mediating variable Learning Intensity, Social Support has a significant effect on Learning Achievement with the mediation of Learning Intensity, (7) Academic Infrastructure has a significant effect on Learning Achievement with the mediation of Intensity.*

**Keywords :** *Social Support; Academic Infrastructure; Learning Intensity; Learning Achievement*

## INTRODUCTION

Human resources play an important role in all organizational activities, including in the field of education. Some people also prioritize learning achievements which can be identified based on the results of the teaching and learning process, which can be in the form of scores, grades or increases in statistical data. Learning achievement can significantly build a moral personality, logical reasoning and abilities that support competitiveness in the form of communication and problem solving by finding the right solution for students (Adiele & Abraham, 2013).

Several studies confirm that social support, specifically support from social friends, is not significantly related to student learning achievement (Adhi et al., 2022). Other research obtained insignificant results, meaning that the social support variable had no effect on student learning achievement. Apart from that, the academic infrastructure factors studied by Andrianus & Alfatih, (2023) showed that student achievement was also not influenced by academic infrastructure. Research by Arifiyana & Devianti, (2022) conducted on grade 10 TKJ students at SMK Negeri 2 Donorejo, it was said that learning intensity had insignificant results with learning independence or problem solving abilities.

The finding of a research gap, namely differences in results from previous research conducted, made researchers interested in deepening it by testing the variables of social support, academic infrastructure and learning intensity, whether they influence learning achievement or not. This research will be conducted on students at Muhammadiyah University of Gresik with a total population of 5,870 people from various departments and different classes. The number of students at Muhammadiyah University is increasing, both active and non-active students.

This shows the great interest of students to continue to a higher level by studying at the Muhammadiyah University of Gresik. Apart from that, Muhammadiyah Gresik University has many facilities including classrooms, toilets, mosques, parking lots and canteens that support the student learning process in the campus environment. If you look at Republic of Indonesia Law Number 12 of 2012 concerning Higher Education, Muhammadiyah Gresik University has met the minimum standards for providing academic infrastructure for students by providing various classroom learning facilities along with face-to-face learning support equipment such as LCDs, projectors, tables and benches as well as

supporting facilities such as canteens, toilets, places of worship and libraries that can be used by students of Muhammadiyah University of Gresik.

Based on student attendance data from Muhammadiyah University of Gresik, the majority of students have an attendance rate above 80%, but there are some students with an attendance of 70% or below, which shows that the intensity of face-to-face learning in the classroom is inconsistent. Thus, it shows that not all students have a high intensity of learning face to face during lectures.

Based on the background description, learning achievement is the final result of learning in higher education institutions with various influencing factors such as social support, academic infrastructure and learning intensity, however there is a research gap based on several studies conducted previously, some of which have significant results which means there is an influence and some others show insignificant values, meaning there is no influence on learning achievement.

## **METHODS**

This research uses a quantitative method. The research was conducted at Muhammadiyah University Gresik in June-August 2022. The population in this study was the total number of active students at Muhammadiyah University Gresik, totaling 5,411 people with 9 faculties.

Sampling was carried out at all faculties at Muhammadiyah University of Gresik, including:

1. Faculty of Economics and Business = 6.8% of total students
2. Faculty of Engineering = 6.8% of total students
3. Faculty of Teacher Training and Education = 6.8% of total students
4. Islamic Faculty = 6.8% of total students
5. Faculty of Agriculture = 6.8% of total students
6. Faculty of Psychology = 6.8% of total students
7. Faculty of Health = 6.8% of total students
8. Faculty of Law = 6.8% of total students
9. Postgraduate = 6.8% of total students

If you add up all the samples, it will show a total of 372 Muhammadiyah University Gresik students who filled out the research questionnaire.

The data collection technique was carried out using a questionnaire distributed via gform. Meanwhile, data analysis uses path analysis assisted by the SEMPLS application. The analysis stages start from validity and reliability tests, which are called outer model tests. Next, carry out an inner model test and end with a hypothesis test.

## RESULTS

### 1. Evaluation of the Measurement Model Test or Outer Model

Based on the results of PLS analysis together with PLS Algorithm for validity and reliability testing, the coefficient of determination of the model and the path coefficient for the model

equation, below is the image produced based on the results

The PLS Algorithm SmartPLS output can be seen in Figure 1 below:

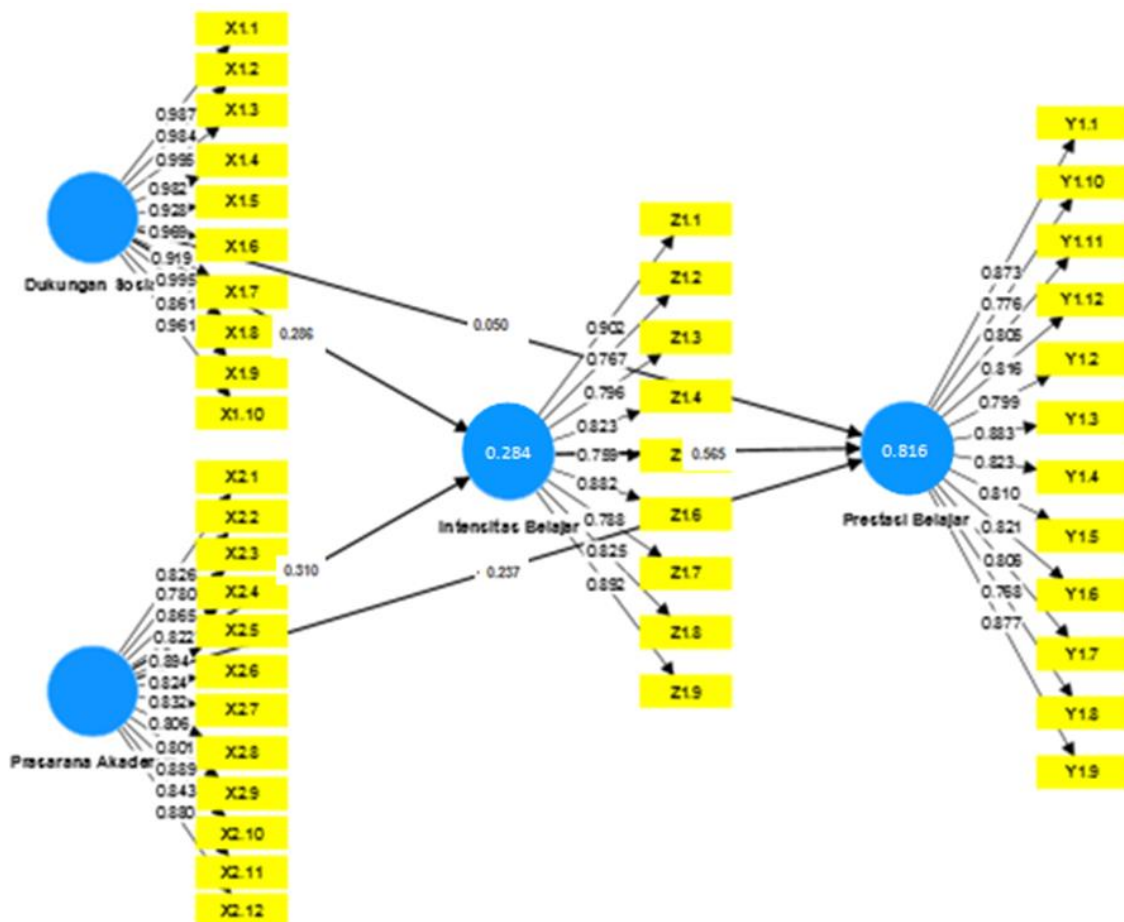


Figure 1. Outer Model Convergent Validity Test Results

The results of the Outer Loading Convergent Validity test can be seen in Table 1.

**Table 1.** Outer Loading Convergent Validity

<b>Statement</b>	<b>Social Support</b>	<b>Academic Infrastructure</b>	<b>Learning Intensity</b>	<b>Learning achievement</b>
X1.1	0.920			
X1.2	0.740			
X1.3	0.935			
X1.4	0.923			
X1.5	0.717			
X1.6	0.740			
X1.7	0.924			
X1.8	0.918			
X1.9	0.931			
X1.10	0.722			
X2.1		0.967		
X2.2		0.893		
X2.3		0.926		
X2.4		0.931		
X2.5		0.959		
X2.6		0.943		
X2.7		0.918		
X2.8		0.898		
X2.9		0.977		
X2.10		0.923		
X2.11		0.905		
X2.12		0.936		
Z1.1			0.851	
Z1.2			0.776	
Z1.3			0.758	
Z1.4			0.787	
Z1.5			0.837	
Z1.6			0.822	
Z1.7			0.836	
Z1.8			0.868	
Z1.9			0.832	
Y1.1				0.898
Y1.2				0.732
Y1.3				0.886
Y1.4				0.754
Y1.5				0.754
Y1.6				0.720
Y1.7				0.846
Y1.8				0.857
Y1.9				0.888
Y1.10				0.744
Y1.11				0.824
Y1.12				0.724

Furthermore, the table below shows the cross loading values for each indicator:

**Table 2 Discriminant Validity**

<b>Statement</b>	<b>Social Support</b>	<b>Academic Infrastructure</b>	<b>Learning Intensity</b>	<b>Learning achievement</b>
X1.1	0.920	0.915	0.844	0.445
X1.2	0.740	0.432	0.590	0.376
X1.3	0.935	0.851	0.606	0.455
X1.4	0.923	0.922	0.862	0.442
X1.5	0.717	0.437	0.739	0.358
X1.6	0.740	0.432	0.587	0.376
X1.7	0.924	0.896	0.606	0.427
X1.8	0.918	0.910	0.824	0.428
X1.9	0.931	0.921	0.862	0.461
X1.10	0.722	0.447	0.661	0.361
X2.1	0.839	0.967	0.821	0.399
X2.2	0.750	0.893	0.767	0.431
X2.3	0.888	0.926	0.825	0.438
X2.4	0.772	0.931	0.769	0.377
X2.5	0.929	0.959	0.864	0.461
X2.6	0.786	0.943	0.784	0.378
X2.7	0.767	0.918	0.794	0.466
X2.8	0.738	0.898	0.764	0.464
X2.9	0.910	0.977	0.846	0.445
X2.10	0.878	0.923	0.831	0.411
X2.11	0.861	0.905	0.794	0.413
X2.12	0.853	0.936	0.800	0.426
Z1.1	0.703	0.590	0.851	0.488
Z1.2	0.827	0.834	0.776	0.383
Z1.3	0.666	0.719	0.758	0.409
Z1.4	0.661	0.720	0.787	0.434
Z1.5	0.694	0.582	0.837	0.460
Z1.6	0.731	0.803	0.822	0.439
Z1.7	0.773	0.857	0.836	0.402
Z1.8	0.746	0.631	0.868	0.444
Z1.9	0.732	0.594	0.832	0.443
Y1.1	0.447	0.459	0.434	0.898
Y1.2	0.276	0.324	0.290	0.732
Y1.3	0.415	0.485	0.441	0.886
Y1.4	0.450	0.317	0.580	0.754
Y1.5	0.411	0.298	0.500	0.754
Y1.6	0.278	0.298	0.271	0.720
Y1.7	0.378	0.385	0.387	0.846
Y1.8	0.408	0.417	0.411	0.857
Y1.9	0.452	0.462	0.427	0.888
Y1.10	0.341	0.224	0.434	0.744
Y1.11	0.416	0.434	0.440	0.824
Y1.12	0.288	0.291	0.273	0.724

Based on table 2 above, it can be said that all indicators in the research variables have the largest cross loading values on the variables they form compared to the cross loading values on other variables. Based on the results obtained, it can be stated that the indicators used in this research have good discriminant validity.

Furthermore, the AVE test results can be seen in Table 3.

**Tabel 3.** Average Variants Extract (AVE)

<b>Variable</b>	<b>Average Variants Extract (AVE)</b>
Social Support	0.815
Academic Infrastructure	0.754
Learning Intensity	0.716
Learning achievement	0.734

Based on table 3 above, it can be said that all research variables have an average variance extracted (AVE) value greater than 0.5. Thus, it can be stated that each variable has good discriminant validity.

## **2. Composite Reliability Test Result**

The following are the composite reliability values of all the variables used in this research:

**Tabel 4.** Composite Reliability

<b>Variable</b>	<b>Composite Reliability</b>	<b>Cronbach's Alpha</b>
Social Support	0.934	0.887
Academic Infrastructure	0.902	0.836
Learning Intensity	0.883	0.804
Learning achievement	0.917	0.879

Based on table 4 above, it can be said that the composite reliability value for all research variables is greater than  $> 0.7$ . These results indicate that all variables have met composite reliability so that it can be stated that all variables have a high level of reliability.

### 3. Path Coefficient Test

The test results can be seen in Table 5.

**Tabel 5.** Path Coefficient

Construct	Path Coefficient	Information
Social Support -> Learning Achievement	0.050	Weak
Social Support -> Learning Intensity	0.286	Weak
Academic Infrastructure -> Learning Achievement	0.237	Weak
Academic Infrastructure -> Learning Intensity	0.310	Weak
Learning Intensity -> Learning Achievement	0.565	Currently

Based on the results of the analysis of all inner model schemes that have been displayed in Figure 5, an explanation was obtained that the largest path coefficient value was shown with the influence of learning intensity on learning achievement of 0.555. Then the influence of academic infrastructure on learning intensity is 0.310. Furthermore, the effect of social support on learning intensity is 0.298. Meanwhile, the weakest path coefficient value is considered to be the influence of academic infrastructure on learning achievement of 0.232 and social support on learning achievement of 0.030.

Based on the description of the results themselves, it shows that all variables in the following model have a path coefficient using positive numbers. The following shows that the greater the path coefficient value in one exogenous variable on the endogenous variable, the stronger the influence of the exogenous variables on the endogenous variable itself.

Based on data processing that has been carried out using the smart PLS 4.0 program, the R-Square values are obtained as follows:

**Table 6.** Model Goodness Test

Variable	R Square
Learning Intensity	0.284
Learning achievement	0.816

Based on table 6 above, it can be seen that the R-Square value for the Learning Intensity variable is 0.284. Obtaining this value explains that the percentage of Social Support and Academic Infrastructure can be explained by Learning Intensity of 28.4%. Then the R-Square value obtained for the Learning Achievement variable is 0.816. This value explains



that Social Support, Academic Infrastructure and Learning Intensity can be explained by Learning Achievement of 81.6%.

Goodness of fit is seen from the Q-Square value. The Q-Square value has the same meaning as the determination coefficient (R-Square) in regression analysis, the higher the Q-Square, the more fit the model can be to the data. The following are the results of calculating the Q-Square value:

$$\text{Q-Square} = 1 - [(1 - R21) \times (1 - R22)] = 0,868$$

Based on the calculation results above, the Q-Square value is 0.868. This shows that the large diversity of research data that can be explained by the research model is 86.8%. Meanwhile, the remaining 13.2% is explained by other factors. Thus, from these results, this research model can be said to have good and positive goodness of fit.

#### 4. Direct Effect Test Results

Test direct influence (*Direct effects*) is the result of hypothesis testing obtained through the inner model:

**Table 7.** T-Statistics and P-Value

HP	Variable	Original Sample	T-Statistic	P Values
1	Social Support-> Learning Achievement	0,050	0,652	0.514
2	Academic Infrastructure -> Learning Achievement	0,237	3,647	0.000
3	Learning Intensity -> Learning Achievement	0,565	9,492	0.000
4	Social Support -> Learning Intensity	0,286	4,680	0.000
5	Academic Infrastructure -> Learning Intensity	0,310	4,788	0.000
6	Social Support ->Learning Intensity->Learning Achievement	0,172	4,089	0.000
7	Academic Infrastructure -> Learning Intensity->Achievement	0,165	3,237	0.001

## DISCUSSION

### 1. Social Support for Learning Achievement

The results of the research show that testing the Social Support variable on Learning Achievement obtained a t-statistics value of 0.652 with a p-value of 0.514. Because the p-value is greater than  $\alpha$  ( $0.514 > 0.05$ ),  $H_0$  is accepted, thus Social Support has no effect on

Learning Achievement. Based on the research results, it is known that Social Support does not affect student learning achievement, which is a learning outcome achieved through skills that were not previously possessed with indicators of changes in student behavior, attitudes and development of abilities. This means that the better social support does not have a significant effect on the better student learning achievement, indicating that the hypothesis is rejected.

Social support can be obtained from family support, peers and organizations that students join. The research results showed that some students did not receive support from their families, especially in terms of materials, so they sought their own income to continue their college education. Many students do not join any organizations at all, however, even though they do not get support from their families and organizations, they still have good achievements in college.

If we look at the results of the respondents for the Social Support variable, the mean result is 4.102 with the criteria of strongly agreeing, while the mean for each indicator is divided into the lowest average of 3.642 with the criteria of agreeing that the organization provides support to students. Meanwhile, the highest average was 4.562 with the criteria of strongly agreeing that families provide social support to students.

Social support for students at Muhammadiyah University of Gresik is good as seen from the number of active students, which means 5,411 people have paid UKT in 2023 with an upward trend every year since 2020. Muhammadiyah University also has many organizations including student associations, executive bodies, legislative bodies and various student activity units with various areas of specialization such as sports, arts, nature lovers, literacy, entrepreneurship, scientific work and many more. Lecturers also usually give group assignments to each student so that they can stimulate inner connection and cooperation between students to complete the assignment.

The results of this research analysis show that the results have no effect as the results of research conducted by Albay, (2019) on students majoring in mathematics at the Palopo Islamic Institute who confirmed that social support, specifically support from social friends, was not significantly related to the student's learning achievement. In this research, it is also known that the majority of students have families who are very supportive of their studies and carry out active discussions regarding their studies. Most students are

supported materially by their families by covering the student's tuition fees, but there are also a small number of students who pay for their studies independently.

However, the amount of social support cannot directly influence increasing learning achievement. Even though social support has a large weight, the value of learning achievement does not necessarily have a large weight as well. This confirms that there are other factors that influence learning achievement results apart from social support factors. Even though a student does not have an organization to join or friends who support him, as long as the student studies diligently and improves his personal abilities, he will be able to improve the student's learning achievement.

## **2. Academic Infrastructure on Learning Achievement**

The results of the research show that testing the Academic Infrastructure variable on Learning Achievement obtained a t-statistics value of 3.647 with a  $p$ -value of 0.000. Because the  $p$ -value is greater than  $\alpha$  ( $0.000 < 0.05$ ),  $H_0$  is rejected, thus Academic Infrastructure has a significant effect on Learning Achievement. Based on the research results, it is known that academic infrastructure can influence student learning achievement, which is a learning outcome with indicators of changes in student behavior, attitudes and development of abilities.

This means that the better the academic infrastructure, the better the student's learning achievement will be, indicating that the hypothesis is accepted. Academic infrastructure includes face-to-face classroom facilities such as benches, tables, boards, projectors, etc. The supporting facilities such as the provision of a mosque, parking area, canteen, library have all been provided by the Muhammadiyah University of Gresik. With the large amount of infrastructure available, students' needs both physically and psychologically are met so that they can increase students' focus in studying without any distractions or lack of facilities. Apart from that, the many increasingly sophisticated information technology facilities certainly make it easier for students to gain maximum knowledge.

If we look at the results of the respondents for the Academic Infrastructure variable, the mean result is 3.777 with the criteria of agreeing, while the mean for each indicator is divided into the lowest average of 3.712 with the criteria of agreeing that the independent learning infrastructure in students' homes is adequate. Meanwhile, the highest average was 3.890 with the criteria of agreeing that the information support met student expectations.

The academic infrastructure at Muhammadiyah University of Gresik is adequate in accordance with the requirements stated in the regulations for providing facilities for the management of higher education facilities in Indonesia. There are 45 large classrooms and 12 small classrooms complete with various facilities including student chairs, whiteboards, LCDs, projectors and instruments inside. Apart from that, there are also supporting facilities with a canteen, toilets, mosque as a place of worship, fields and laboratories which can be utilized by every academic community at Muhammadiyah University of Gresik.

Hee et al., (2020), stated that academic infrastructure has a significant and positive effect on learning achievement. This academic infrastructure is further expanded with the main infrastructure indicators such as classrooms, benches, projectors as well as the main needs for teaching and supporting infrastructure such as canteens, parks, bathrooms which of course support all learning activities for students at the school. In line with research by Alashry et al., (2019) which states that the significant relationship between academic infrastructure variables has a positive influence on student learning achievement.

### **3. Learning Intensity on Learning Achievement**

The results of the research show that testing the Learning Intensity variable on Learning Achievement obtained a t-statistics value of 9.492 with a  $p$ -value of 0.000. Because the  $p$ -value is greater than  $\alpha$  ( $0.000 < 0.05$ ),  $H_0$  is rejected, thus Learning Intensity has a significant effect on Learning Achievement. Based on the research results, it is known that learning intensity can influence student learning achievement, which is a learning outcome with indicators of changes in student behavior, attitudes and development of abilities.

This means that the better the learning intensity, the better the student's learning achievement will be, indicating that the hypothesis is accepted. Learning intensity includes discipline, motivation and the frequency of learning carried out by students when exploring their knowledge and abilities. The high level of student motivation to learn will make them more enthusiastic and regularly carry out learning activities and activities that hone their abilities. The more routine student learning is, the more students' level of knowledge and abilities will increase significantly according to the field being studied.

If we look at the results of the respondents for the Academic Infrastructure variable, the mean result is 4.134 with the criteria of agreeing, while the mean for each indicator is divided into the lowest average of 3.823 with the criteria of agreeing that the independent learning infrastructure in students' homes is adequate. Meanwhile, on average the highest is

4.409 with the criteria of agreeing that the supporting information meets student expectations.

If we look at the learning intensity of students at Muhammadiyah University of Gresik based on the absence of students attending face-to-face classes, at least 80% of the total classes held are 5,099 students with a percentage of 93%. These figures show that the majority of students actively attend lectures. By consistently attending face-to-face classes with lecturers, students have great potential to improve their abilities, knowledge and experience in the courses they take. In this way, learning intensity can support increased student learning achievement.

The results of this research are in accordance with research conducted by Alam, (2019) has a significant positive relationship, which means that the learning intensity of mathematics education students at Muhammadiyah University of Pringsewu as a research sample has a positive effect on their learning achievements, such as increasing their GPA, increasing their learning abilities and performance. This significant result is also the same as Bibri et al., (2020) research results on high school students in Mataram, which means there is a relationship between learning intensity and learning achievement. This means that the better the intensity of learning, the better the student's learning achievement will be.

#### **4. Social Support for Learning Intensity**

The results of the research show that testing the Social Support variable on Learning Intensity obtained a t-statistics value of 4.680 with a  $p$ -value of 0.000. Because the  $p$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ),  $H_0$  is rejected, thus Social Support has a significant effect on Learning Intensity. Based on the research results, it is known that Social Support can influence student learning intensity, the efforts made by Muhammadiyah University Gresik students can result in increased knowledge, understanding and skills that support academics.

This means that the better the social support, the better the student's learning intensity will be, indicating that the hypothesis is accepted

If we look at the results of the respondents for the Social Support variable, the mean result is 4.102 with the criteria of strongly agreeing, while the mean for each indicator is divided into the lowest average of 3.642 with the criteria of agreeing that the organization provides support to students. Meanwhile, the highest average was 4.562 with the criteria of strongly agreeing that families provide social support to students.

Social support for students at Muhammadiyah University of Gresik is good as seen from the number of active students, which means 5,411 people have paid UKT in 2023 with an upward trend every year since 2020. Muhammadiyah University also has many student organizations and lecturers usually give group assignments to each student. so that it can stimulate inner connection and cooperation between students to complete the task. With this social support, students are encouraged to increase their efforts in learning, develop their talents and abilities.

This research is in accordance with the results presented by Kim et al., (2018) on mathematics study program students at the State Islamic Institute. Palopo showed that the test results showed that family support on learning intensity had a significant influence on the family support variable. Apart from that, the influence of the social friends variable on learning intensity is statistically significant because it means there is a significant influence of the social friends variable on the learning intensity variable.

## **5. Academic Infrastructure on Learning Intensity**

The results of the research show that testing the Academic Infrastructure variable on Learning Intensity obtained a t-statistics value of 4.788 with a  $q$ -value of 0.000. Because the  $q$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ) then  $H_0$  is rejected, thus Academic Infrastructure has a significant effect on Learning Intensity.

Based on the research results, it is known that academic infrastructure can influence student learning intensity, the efforts made by Muhammadiyah University Gresik students can result in increased knowledge, understanding and skills that support academics. This means that the better the social support, the better the student's learning intensity will be, indicating that the hypothesis is accepted if we look at the results of the respondents for the Academic Infrastructure variable, the mean result is 3.777 with the criteria of agreeing, while the mean for each indicator is divided into the lowest average of 3.712 with the criteria of agreeing that the independent learning infrastructure in students' homes is adequate. Meanwhile, the highest average was 3.890 with the criteria of agreeing that the information support met student expectations.

The academic infrastructure at Muhammadiyah University of Gresik is adequate in accordance with the requirements stated in the regulations for providing facilities for the management of higher education facilities in Indonesia. There are 45 large classrooms and 12 small classrooms complete with various facilities including student chairs, whiteboards,

LCDs, projectors and instruments inside. Apart from that, there are also supporting facilities with a canteen, toilets, mosque as a place of worship, fields and laboratories which can be utilized by every academic community at Muhammadiyah University of Gresik. With the various facilities that the campus has provided for students, it can increase the intensity of students' learning.

The research results show that there is a relationship between academic infrastructure and research intensity, but no specific research has been found that explains the relationship between academic infrastructure and learning intensity, but what has been obtained is only the learning intensity variable, such as research by Burr & Beck Dallaghan, (2019), stated that academic infrastructure has a significant and positive effect on learning achievement. This academic infrastructure is further expanded with the existence of main infrastructure indicators such as classrooms, benches, projectors as well as the main needs for teaching and supporting infrastructure such as canteens, gardens, bathrooms which of course support all learning activities for students at the school.

## **6. Social Support for Learning Achievement with Learning Intensity as Mediation**

The research results show that testing the variable Social Support for Learning Achievement with Learning Intensity as mediation obtained a t-statistics value of 4.089 with a  $p$ -value of 0.000. Because the  $p$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ),  $H_0$  is rejected, thus Social Support influences Learning Achievement with Learning Intensity as a mediating variable. Based on the research results, it is known that Social Support can influence Learning Achievement if it is through Learning Intensity first as mediation. This means that the better the social support, the better the student's learning achievement through the intensity of learning as a mediation which shows whether the hypothesis is accepted.

If we look at the results of the respondents for the Social Support variable, the mean result is 4.102 with the criteria of strongly agreeing, while the mean for each indicator is divided into the lowest average of 3.642 with the criteria of agreeing that the organization provides support to students. Meanwhile, the highest average was 4.562 with the criteria of strongly agreeing that families provide social support to students.

Social support for students at Muhammadiyah University of Gresik is good as seen from the number of active students, which means 5,411 people have paid UKT in 2023 with an upward trend every year since 2020. Muhammadiyah University also has many student



organizations and lecturers usually give group assignments to each student. so that it can stimulate inner connection and cooperation between students to complete the task. With this social support, students are encouraged to increase their efforts in learning, develop their talents and abilities. With high consistency efforts in learning as well Armed with high motivation can also have an influence on achieving learning achievement.

The results of this research analysis show significant results according to the hypothesis test carried out by Caskurlu et al., (2020) proves that student GPA is influenced indirectly by family support through study intensity as an intervening variable. The research results confirm that students' GPA is influenced by friends they associate with indirectly through learning intensity as an intervening variable. This shows that there is an indirect relationship between social support and learning achievement with the mediation of the learning intensity variable.

## **7. Academic Infrastructure on Learning Achievement with Learning Intensity as Mediation**

The results of the research show that testing the Academic Infrastructure variable on Learning Achievement with Learning Intensity as mediation obtained a t-statistics value of 3.237 with a  $p$ -value of 0.000. Because the  $p$ -value is smaller than  $\alpha$  ( $0.000 < 0.05$ ),  $H_0$  is rejected, then it is known that the Original Sample  $H_2$  value has a smaller value than  $H_7$ . So based on these results it can be concluded that the mediating variable for learning intensity is a variable that does not have mediation, thus Academic Infrastructure has no effect on Learning Achievement with Learning Intensity as a mediating variable.

Based on the research results, it is known that academic infrastructure can influence learning achievement if learning intensity is used first as mediation. This means that the better the academic infrastructure, the better the student's learning achievement through the intensity of learning as a mediation which shows whether the hypothesis is accepted. If we look at the results of the respondents for the Social Support variable, the mean result is 4.102 with the criteria of strongly agreeing, while the mean for each indicator is divided into the lowest average of 3.642 with the criteria of agreeing that the organization provides support to students. While the average is the most high 4.562 with the criteria of strongly agreeing that families provide social support to students.

If we look at the results of the respondents for the Academic Infrastructure variable, the mean result is 3.777 with the criteria of agreeing, while the mean for each indicator is



divided into the lowest average of 3.712 with the criteria of agreeing that the independent learning infrastructure in students' homes is adequate. Meanwhile, the highest average was 3.890 with the criteria of agreeing that the information support met student expectations.

The academic infrastructure at Muhammadiyah University of Gresik is adequate in accordance with the requirements stated in the regulations for providing facilities for the management of higher education facilities in Indonesia. There are 45 large classrooms and 12 small classrooms complete with various facilities including student chairs, whiteboards, LCDs, projectors and instruments inside. Apart from that, there are also supporting facilities with a canteen, toilets, mosque as a place of worship, fields and laboratories which can be utilized by every academic community at Muhammadiyah University of Gresik. With the various facilities that the campus has provided for students, it can increase the intensity of students' learning. By increasing the intensity of learning, there is the potential for students' academic achievements to increase.

The results of this research show that there is mediation from learning intensity which connects academic infrastructure to student learning achievement. However, no specific research was found that explains the relationship between academic infrastructure and learning achievement and learning intensity as a mediating variable, but what was found was only the learning intensity variable, such as research by Adhi et al., (2022), stated that academic infrastructure has a significant and positive effect on learning achievement. This academic infrastructure is further expanded with the main infrastructure indicators such as classrooms, benches, projectors as well as the main needs for teaching and supporting infrastructure such as canteens, parks, bathrooms which of course support all learning activities for students at the school.

## **CONCLUSION**

Based on the results of testing the seven hypotheses that have been proposed in this research, there are six hypotheses that show a significant influence, while one hypothesis shows no influence. The following are the conclusions in this research, namely:

1. There is no direct influence of Social Support on the Learning Achievement of Muhammadiyah University Gresik students. This shows that the greater the social support does not affect how much learning achievement a student achieves.

2. There is a direct influence of Academic Infrastructure on the Learning Achievement of Muhammadiyah University Gresik students. This shows that Based on the results of testing the seven hypotheses that have been proposed in this research, there are six hypotheses that show a significant influence, while one hypothesis shows no influence. The following are the conclusions in this research, namely what students achieved.
3. There is a direct influence of Learning Intensity on the Learning Achievement of Muhammadiyah University Gresik students. This shows that the greater the learning intensity, the greater the learning achievement achieved by students.
4. There is a direct influence of Social Support on the Learning Intensity of Muhammadiyah University Gresik students. This shows that the greater the social support, the more it will influence the student's learning intensity.
5. There is a direct influence of Academic Infrastructure on the Learning Intensity of Muhammadiyah University Gresik students. This shows that the better the academic infrastructure, the more it will influence the students' learning intensity.
6. There is an indirect influence of Social Support on student learning achievement through Learning Intensity as mediation. This shows that the greater the Social Support will influence Learning Achievement with the mediation of how big the student's Learning Intensity is.
7. There is no indirect influence of Academic Infrastructure on student Learning Achievement through Learning Intensity as mediation. This shows that the better the Academic Infrastructure will influence Learning Achievement by mediating how great the student's Learning Intensity is.

## REFERENCES

- Adhi, S., Achmad, D., & Herminarto, S. (2022). Developing a blended learning model in islamic religious education to improve learning outcomes. *International Journal of Information and Education Technology*, 12(2), 100–107.
- Adiele, E. E., & Abraham, N. M. (2013). Achievement of Abraham Maslow's Needs Hierarchy Theory among Teachers: Implications for Human Resource Management in the Secondary School System in Rivers State. *Journal of Curriculum and Teaching*, 2(1), 140–144. <https://eric.ed.gov/?id=EJ1157714>
- Alam, T. G. M. R. (2019). Comparative analysis between pre-test/post-test model and post-test-only model in achieving the learning outcomes. *Pakistan Journal of Ophthalmology*, 35(1).

- Alashry, S. A. A.-N., Qoura, A. A.-S., & Gohar, R. H. A.-A. (2019). The Impact of Frayer Model and Contextual Redefinition strategy on Improving Preparatory Stage Pupils' Vocabulary Learning. *Journal of Research in Curriculum Instruction and Educational Technology*, 4(4), 11–36. <https://doi.org/10.21608/jrciet.2019.31954>
- Albay, E. M. (2019). Analyzing the effects of the problem solving approach to the performance and attitude of first year university students. *Social Sciences & Humanities Open*, 1(1), 100006.
- Andrianus, F., & Alfatih, K. (2023). Pengaruh Infrastruktur terhadap Kemiskinan dengan Menggunakan Data Panel 34 Provinsi di Indonesia. *Jurnal Informatika Ekonomi Bisnis*, 56–62. <https://doi.org/10.37034/infeb.v5i1.206>
- Arifiyana, D., & Devianti, V. A. (2022). Upaya Peningkatan Pengetahuan Siswa SMK/SMA Mengenai Kosmetik yang Aman dengan Metode Daring. *Jurnal Abdi Masyarakat Kita*, 2(1), Article 1. <https://doi.org/10.33759/asta.v2i1.182>
- Bibri, S. E., Krogstie, J., & Kärholm, M. (2020). Compact city planning and development: Emerging practices and strategies for achieving the goals of sustainability. *Developments in the Built Environment*, 4, 100021. <https://doi.org/10.1016/j.dibe.2020.100021>
- Burr, J., & Beck Dallaghan, G. L. (2019). The Relationship of Emotions and Burnout to Medical Students' Academic Performance. *Teaching and Learning in Medicine*, 31(5), 479–486. <https://doi.org/10.1080/10401334.2019.1613237>
- Caskurlu, S., Maeda, Y., Richardson, J. C., & Lv, J. (2020). A meta-analysis addressing the relationship between teaching presence and students' satisfaction and learning. *Computers & Education*, 157, 103966.
- Hee, O. C., Shi, C. H., Kowang, T. O., Fei, G. C., & Ping, L. L. (2020). Factors Influencing Job Satisfaction among Academic Staffs. *International Journal of Evaluation and Research in Education*, 9(2), 285–291. <https://eric.ed.gov/?id=EJ1256319>
- Kim, L. E., Dar-Nimrod, I., & MacCann, C. (2018). Teacher personality and teacher effectiveness in secondary school: Personality predicts teacher support and student self-efficacy but not academic achievement. *Journal of Educational Psychology*, 110(3), 309.