

## The Mediation of Attitude on the Effect of Motivation and Infrastructure on Learning Achievements at Tambolaka City High School

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**Abstract:** This study indicated that students final achievement on the economic learning is low since the 2014/2015 to 2016/2017 school year in Tambolaka High School. Hence this study purposes to determine the mediation of attitudes on the influence of motivation and infrastructure on learning achievement. This research is a survey research with a quantitative approach. The population in this study were class XI students with 2044 students. This study uses proportional random sampling technique. The sample used was 341 students. The data is analyzed by using multiple regression analysis. The results of this study show that motivation and infrastructure have a negative influence on economic learning achievement of students in Tambolaka City High School. Furthermore, mediating effect of attitudes is decreasing the influence of motivation and infrastructure facilities on learning achievement. The effect of motivation, facilities and mediation on attitudes toward learning achievement is proven in a formal manner.

**Keywords:** Motivation, Infrastructure, Attitude, Learning Achievement

### Introduction

Teaching and learning activities include three whole series that are interconnected with one another. These three things include preparation, implementation, and evaluation of learning. The essence of the preparation of the teaching and learning process is the readiness of all things needed for the on going learning process to achieve good learning achievement. Those achievement indivate the quality of education. Student achievements are describe in various ways. It is a student's success in meeting short or long term goals in education (Bossart et al, 2011), or the academic achievement is a measure of a degree of success in performing specific tasks in a subject or area of study by students after a teaching / learning experience (Sigilai, 2013). Whereas others argue that the learning achievement is the result obtained or achieved by students after following the learning process in school through tests / evaluations that are realized in the form of numbers or letters. Initially it is found that student achievement in Tambolaka City High School is low. It is indicated by the low result of national exam results (UN) on economic subjects from the 2014/2015 academic year to 2016/2017 (table 1)

Table 1 The National Examination (UN) test result of economic course of Tambolaka City High School student

No	School Name	The Average Grading for Economic Course		
		2014/ 2015	2015/2016	2016/2017
1	SMAS St. Thomas Aquinas	31.55	32.83	62.50
2	SMA Alfonsus	31.35	37.57	45.63
3	SMA Seminari Sinar Buana	43.90	44.72	63.75
4	SMA Swasta Taman Siswa Kodi Kambero	28.75	25.47	25.67
5	SMA Manda Elu	29.54	34.37	60.42
6	SMA Negeri I Kodi	27.41	30.64	20.63
7	SMA Negeri I Loura	45.53	37.58	41.88
8	SMA Negeri I Wewewa Timur	24.70	28.27	33.07
9	SMA Negeri I Wewewa Utara	52.58	56.87	38.75
10	SMA Negeri I Wewewa Selatan	58.14	52.71	42.78
	<b>Average</b>	<b>37.34</b>	<b>38.10</b>	<b>43.51</b>

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Scholars argue that the low student achievement is influenced by internal factors and external factors such as attitude, motivation, and infrastructure facilities of learning (Istiharoh & Indartono, 2019; Mirhadizadeh, 2016; Ramli, Muljono, Afendi, & Farit, 2018). The initial interviews with teachers in Tambolaka City High School indicate that these three factors have the most influence on economic learning achievement. Learning attitude is one of the internal factors that influence learning achievement. According to Mazana, Montero, & Casmir (2019), "Attitude refers to a learned tendency of a person to respond positively or negatively towards objects, situations, a concept, or a person". While according to. Whereas according to Moenikia & Zahed-Babelan (2010), "Attitude is defined as a mental set or disposition, readiness to respond and the psychological basis of attitudes, their permanence, learned nature and evaluative character". Student learning attitude determines learning achievement that obtained after passing the learning process. According to Guido (2013), "One of the most significant factors which affect students' academic success is their attitudes towards school, lessons and academic success. Attitude is a tendency for individuals who organize thoughts, emotions and behaviors towards a psychological object ". The influence of learning attitudes toward positive learning achievement is supported by research (Handayani, & Indartono, 2016; Nurhayati, 2010; Agustin, 2015; and Purnomo, 2016).

Based on the results of interviews, the attitudes of high school students in Tambolaka City varied such as not paying attention, not taking notes, talking to friends, daydreaming, playing handphones, being unable to ask questions / silent, unable to answer, even students who were sleeping in class. This negative reality will certainly lead to the achievement of learning achieved. The influence of negative learning attitudes is supported by research conducted by Meifiani (2013) and Hartati (2015). In addition to learning attitudes, learning motivation also has an influence on learning achievement. According to Tella (2007) that "motivating learners is seen as an important aspect of effective learning". This opinion is supported by Abdurrahman & Garba (2014), who stated that "Highly motivated students perform better academically than the lowly motivated students." Furthermore, according to Sahidin and Jamil (2013) "Students who have good achievement motivation are characterized by several things, namely: students are responsive to challenges in learning, rational in thinking, responsible, always honest, passionate about learning, trying to excel in groups, and always be able to adjust in interacting with his friends. The influence of positive and significant learning motivation is supported by prior reports (Tella, 2007; Abdurrahman & Garba, 2014; Sharma & Sharma, 2017; Arulmoly & Branavan 2017; Asvio, Arpinus, & Suharmon, 2017).

Reality in the field shows that student learning motivation decreases as evidenced by the behavior of students who are lazy, not serious, skipping, and not doing assignments. As a result, students' grades decline due to lack of motivation to learn and achievement. The influence of negative learning motivation, also supported by research conducted by Amrai, Motlagh, Zalani, & Parhon (2011). In addition to learning attitudes and motivation, learning facilities and infrastructure factors are one of the external factors that also influence learning achievement are infrastructure. According to Musa & Zarita (2012), "Physical assets for education comprise land, building and furniture and it includes physical facilities for teaching spaces and ancillary rooms". Furthermore, Timilehin (2012: 208) revealed that "the school facilities and students have a significant relationship between achievement and the psychomotor domain of learning between school facilities and students" .

According to Legiwati (2016), that "one of the important things in supporting a student's success in learning activities is the completeness of the facilities and infrastructure to support teaching and learning activities that can be utilized by students". The same thing was revealed by Djumati (2017), that "Education facilities and infrastructure play an important role because the quality of education can be improved through. Based on the results of the interview, the researcher found that not all private and public schools in high schools had complete learning facilities and infrastructure such as the availability of school libraries with complete books or developments following the books, and the availability of school (wireless fidelity). This of course, will be difficult for students in supporting their learning activities. Therefore, facilities and infrastructure are needed to support student learning processes, so students are more interested and easy to learn and can get good learning achievements. The purpose of this study was to determine the factors that led to the low economic learning achievement of students at Tambolaka City High School. The practical benefits of this study are to be used as a reference in improving the economic learning achievement of students in Tambolaka City High School. In addition, to find out the mediation of the effect of learning attitudes on the influence of motivation and infrastructure on student achievement in adding knowledge assets

**Research Method**

**Research Population and Samples**

The population in this study were class XI students consisting of four private schools and five public schools in the 2017/2018 school year in Tambolaka City High School. The sample in this study amounted to 341 people. The sample used in this study was class XI students in Tambolaka City High School. The reason the researchers chose class XI as a sample of this study was because based on the data from the National Examination (UN) that had been described previously, the UN scores for the 2017/2018 academic year did not yet exist. So, researchers predict the value of UN in the 2017/2018 academic year can be represented by students of class XI. In addition, students of class XII in Tambolaka City High School are currently preparatory class students to attend the National Examination which should not be disturbed by their concentration in learning. The sampling technique used in this study is proportional random sampling which is to determine the number of samples of the population. Meanwhile, to find out the number of samples that will be used by researchers using Slovin formula Tabel 2 Distribusi Sampel Penelitian.

Table 2 Research Sample Distribution

No	School Name	Population	Sample
1	SMA Alfonsus	256	$256/2044 \times 340 = 43$
2	SMA Seminari Sinar Buana	34	$34/2044 \times 340 = 6$
3	SMA Swasta Taman Siswa Kodi Kambero	178	$178/2044 \times 340 = 30$
4	SMA Manda Elu	397	$397/2044 \times 340 = 66$
5	SMA Negeri I Kodi	421	$421/2044 \times 340 = 70$
6	SMA Negeri I Loura	74	$74/2044 \times 340 = 12$
7	SMA Negeri I Wewewa Timur	221	$221/2044 \times 340 = 37$
8	SMA Negeri I Wewewa Utara	168	$168/2044 \times 340 = 28$
9	SMA Negeri I Wewewa Selatan	295	$295/2044 \times 340 = 49$
<b>Total</b>		<b>2044</b>	<b>341</b>

Source: Primary Data Processed

**Research Instrument**

The instrument used in this study is to measure learning attitudes, learning motivation and infrastructure facilities are questionnaires / questionnaires and documentation. In this study, the indicators and questionnaires of the learning attitude variables distributed to respondents were indicators and adoption questionnaires from Widoyoko (2017: 241-242). However, researchers developed the instrument by adjusting the name of the object to be studied (from IPS to Economics). So, in the end, the results and quality of the questionnaire are truly valid, reliable, and relevant to the research.

The indicators and questionnaires of the student learning motivation variables distributed to respondents are indicators and questionnaires that were also adopted from Widoyoko (2017: 236-238), which have been tested for validity and reliability. However, researchers also developed the instrument by adjusting the names of the objects to be studied, from IPS to Economics. While the indicators and questionnaires of the facilities and infrastructure variables were adopted from the Ministry of National Education and Culture (2010), which were distributed to respondents. The researcher also developed the instrument by eliminating several indicators and questions about facilities and infrastructure that were not suitable in measuring economic learning achievement.

**Research Results & Discussion**

The CFA test data in the table 3, shows that not all question items are declared valid (> 0.35), so some invalid question items will be eliminated. Items that have a factor loading value of less than 0.35 are deleted and are not used in testing analysis prerequisites or in testing hypotheses. The number of items declared deciduous is 7 items out of 52 items, so the statement used is 45 items. Based on the table 4, it can be seen that there is no overlapping correlation between variables and indeed measuring different things. Based on the table 4, The results of the reliability test show that each Cronbach Alpha value of each variable is greater than the Cronbach Alpha standard which is 0.7. This shows that all indicators of each variable in the study are declared reliable and the research instrument can be used more than once using the same research variable.

Table 3 CFA Test Results

No	Variable	Item questions	Component			
			motivation	Infrastructure facilities	Attitudes	
1		S1			.905	
2		S2				
3		S3			.370	
4		S4			.972	
5	Attitudes (X1)	S5				
6		S6			.901	
7		S7			.523	
8		S8			.468	
9		S9			.390	
10			M1	.548		
11			M2	.469		
12			M3	.384		
13			M4	.384		
14		M5	.499			
15		M6	.649			
16		M7	.448			
17		M8	.561			
18		M9	.491			
19		M10				
20		M11	.411			
21	Motivasi (X2)	M12	.425			
22		M13	.510			
23		M14	.618			
24		M15	.500			
25		M16	.413			
26		M17	.367			
27		M18	.481			
28		M19	.370			
29		M20	.612			
30		M21	.399			
31		M22	.520			
32		M23	.447			
33			SP1			
34		SP2		.544		
35		SP3		.653		
36		SP4		.888		
37		SP5		.854		
38		SP6		.811		
39		SP7				
40		SP8	.372			
41		SP9	.398			
42	Infrastructure (X3)	SP10	.415			
43		SP11				
44		SP12	.368			
45		SP13				
46		SP14	.374			
47		SP15	.398			
48		SP16	.365			
49		SP17	.366			
50		SP18	.425			
51		SP19	.439		.350	
52	SP20	.448		.362		

Source: Primary Data Processed

**Table 4 Inter Variable Correlation**

	Mean	Std. Deviation	1	2	3	4	5	6	7
Gender	1.42	.495	-						
Age	17.79	.801	.096	-					
School	5.15	2.495	-.017	.005	-				
income	618,621.70	574,428.75	-.003	-0.152**	-.025	-			
Facilities	3.2628	.64766	-.061	-.045	.066	.120	0.865		
Motivations	3.4705	.39715	-.005	-.053	-0.321**	.095	0.142**	0.882	
Attitudes	2.4445	.66366	-.001	-.034	0.111*	.039	.036	.058	0.845
Achievements	78.80	4.831	.030	-0.110*	0.143**	-.067	-.065	-.078	-.084

Source: Processed Results of Primary Data

**Test Reliability**

**Table 5 Test Reliability Instruments**

Variable	Alpha Cronbach's	Remarks
Motivasi belajar	0,882	Reliable
Sarana dan prasarana belajar	0,865	Reliable
Sikap belajar	0,845	Reliable

Source: Processed Data Primary

Based on the table 6, student learning motivation negatively affects learning achievement where the value of  $\beta = -0.035$  ( $p > 0.005$ ;  $p = 0.536$ ). The p-value that is not significant, indicates that this influence only applies to respondents and cannot be generalized to the population. The contribution of students' learning motivation to economic learning achievement ( $\Delta R^2$ ) is 0.001 or 1%. In other words, the effect of learning motivation in explaining student learning achievement is only 1%, while the remaining 99% is explained by other variables. Table 6 also shows that student learning facilities have a negative effect on learning achievement where the value of  $\beta = -0.069$  ( $p > 0.005$ ;  $p = 0.202$ ). The p-value that is not significant, indicates that this influence only applies to respondents and cannot be generalized to the population. The contribution of the influence of student learning infrastructure to economic learning achievement ( $\Delta R^2$ ) is 0.005 or 5%. In other words, the effect of learning infrastructure in explaining student learning achievement is only 5%, while the remaining 95% is explained by other variables.

**Testing The Hypothesis**

**Table 6 Summary of the Results of Regression Analysis**

No	Variable	Model 1 ( $\beta$ )	Model 2 ( $\beta$ )	Model 3 ( $\beta$ )	Model 4 ( $\beta$ )	Model 5 ( $\beta$ )
1	Gender	0.045	0.045	0.045	0.041	0.041
2	Age	-0.128 *	-0.131 *	-0.129 *	-0.129 *	-0.133 *
3	Schools	0.143 **	0.154 **	0.132 *	0.147 **	0.154 **
4	income	-0.083	-0.079	-0.080	-0.075-0,075	-0,080-0,070
5	facilities		-0,069			-0,064
6	motivation			-0.035		-0.014
7	Attitudes				-0.102	-0.100
8	R <sup>2</sup>	0.042	0.052	0.043	0.046	0.056
9	$\Delta R^2$	0.042 **	0.005	0.001	0.010	0.015

\*\*\* p < 0.001; \*\* p < 0.01; \* p < 0.05

Source: Primary Data Processed Results

In addition, it is known that student learning attitudes also negatively affect learning achievement where the value of  $\beta = -0.102$  ( $p > 0.005$ ;  $p = 0.057$ ). The p-value that is not significant, indicates that this influence only applies to respondents and cannot be generalized to the population. The contribution of the influence of students' learning attitudes towards economic learning achievement ( $\Delta R^2$ ) is 0.010 or 10%. In other

words, the influence of learning infrastructure in explaining student learning achievement is only 10%, while the remaining 90% is explained by other variables.

Furthermore, based on table 6, the effect of learning motivation on learning achievement mediated by learning attitudes is decreasing where the value of  $\beta = -0.035$  ( $p > 0.005$ ;  $p = 0.536$ ) becomes  $\beta = -0.014$  ( $p > 0.005$ ;  $p = 0.805$ ) and the influence of facilities and infrastructure mediated by learning attitudes also decreased where from the value of  $\beta = -0.069$  ( $p > 0.005$ ;  $p = 0.202$ ) to  $\beta = -0.064$  ( $p > 0.005$ ;  $p = 0.238$ ). The contribution of learning motivation and prasarana facilities is mediated by learning attitudes ( $\Delta R^2$ ) 0.015 ( $p > 0.005$ ;  $p = 0.157$ ) or 15%. Thus, the effect of learning motivation and infrastructure facilities mediated by learning attitudes is not significant. Thus, the conclusion of the results of hypothesis analysis 4 (four) only applies to respondents and cannot be generalized to the population.

## **Discussion**

### **Effect of learning motivation on student achievement in Tambolaka City High School**

The results showed that students' learning motivation negatively affected economic learning achievement in Tambolaka City High School. This is caused by the low self-confidence of students in the classroom when the learning process takes place. Students who do not have confidence in learning activities describe the motivation to learn in the classroom, for example, are lazy to discuss (ask questions, think, and answer questions from friends and teachers), make noise in class, play gadgets, and so on. In addition, the relationship between teachers and students is not good, due to the teacher's attitude that is not liked by the students. This is in accordance with the results of interviews with respondents who say that students do not like the learning done by the teacher because the teacher always gives punishment or sanctions to students. This encourages students to find their own ways to improve their learning achievement, for example by searching for the latest resources, using internet media to study on their own, asking friends who are more capable (outside the classroom), looking for the shortest way to understand economics etc. The influence of this negative learning motivation is not in line with the research conducted by Murtiningsih (2017) who said that there was an effect of learning motivation on students' social studies learning outcomes. The same thing, according to Gunawan (2018) found that learning motivation simultaneously had a positive and significant effect on achieving student achievement. While, according to Aini (2016), that student achievement in economics is not determined by extrinsic motivation. Because the value of  $p$  (0.536) is greater than the significant value (0.05), the results in this study cannot be generalized to the population but can only represent respondents.

### **Effect of learning facilities and infrastructure on student achievement in Tambolaka City High School**

The results showed that student learning infrastructure had a negative effect on economic learning achievement in Tambolaka City High School. This is caused by the incomplete library infrastructure, not yet using electricity (Taman Siswa High School), there is no WIFI school (high school Taman students, Public High School I Kodi, Public High School I Kodi Loura, and other high schools). In accordance with the results of interviews with the principal in the Taman SMA high school students, namely Mr. Petrus Pati Nani, S.M who said that our school had not yet used electricity and did not have adequate library infrastructure. Based on observations the researchers also found that the school's WIFI infrastructure did not yet exist, and even if it was there it was usually damaged. So, this will certainly affect and hinder the smooth and effective learning process of students. Only students who have cellphones, laptops, and gadgets can use internet media to study and complete the assignments given by the teacher. The poor infrastructure in Tambolaka City High School still produces good learning achievements. This indicates that the influence of infrastructure on student achievement in Tambolaka City High School is good. The influence of this negative learning infrastructure is not in line with the research conducted by Syahputra (2015), that there is a significant positive effect partially on learning infrastructure facilities on student learning achievement. Likewise according to Legiwati (2016), that there is a significant influence on the use of learning facilities and infrastructure on the learning outcomes of students' social studies. Then according to Banikusna and Santoso (2018), learning facilities and infrastructure provide a positive and significant influence on student learning achievement. Because the  $p$  value (0.202) is greater than the significant value (0.05), the results in this study cannot be generalized to the population but can only represent respondents.

### **Mediation of learning attitudes on the influence of motivation and learning infrastructure facilities on student achievement in Tambolaka City High School**

The results showed that the mediation of learning attitudes reduced the effect of learning motivation on student learning achievement. This means that bad student attitudes will reduce the influence of learning motivation on learning achievement. This is caused by students' dislike in taking economic lessons. The more students are not happy in taking economic lessons, the students will not be diligent in learning and it is

increasingly difficult to understand economics. Thus, the influence of motivation on learning achievement achieved is getting weaker. Finally, to get good learning outcomes students use internet media to study, ask friends who are more able, and copy friends' work during the daily test or the End of semester Examination (UAS). This is consistent with the opinion of Chiu & Chow (2015) that "The influence of students' academic achievement through immediate interactions (e.g., academic assistance, positive attitudes toward reading) or sharing tangible or intangible family resources.

Furthermore, the mediation of learning attitudes to the influence of infrastructure on learning achievement declined. This means that bad student attitudes will reduce the influence of learning facilities on learning achievement. This is caused by feelings of displeasure and boredom of students towards economic lessons. Students feel bored because of the incomplete and inadequate infrastructure, such as library, electricity, and school WIFI. Finally, to get good learning outcomes, students find their own ways, for example by searching for the latest resources, asking friends (outside the classroom), and looking for the shortest ways and using internet media (mobile phones, laptops, gaded) to learn on their own. This is in accordance with the opinion of Erdogan, et al (2008) "that is based on academic achievement." The effect of web based education on attitudes toward learning that is intended to be beneficial to learning and interested in the lessons.

The mediation of learning attitudes on the influence of learning motivation and infrastructure is not in line with the research conducted by Akomolafe & Adesua (2016), which shows "that there was a significant relationship between physical facilities and students level of motivation and academic performance". Furthermore, according to Sari (2016), that together, learning motivation, learning methods and educational facilities influence student achievement. In addition, according to Jeffrey and Zein (2017), that achievement motivation, work discipline, and learning facilities simultaneously have a significant influence on learning outcomes. Because the value of p (0.157) is greater than the significant value (0.05), the results in this study cannot be generalized to the population but can only represent respondents.

### **Conclusion**

Based on the results of the research, the motivation and infrastructure in a positive way have a negative and not significant effect on economic learning achievement. As a result, the influence of motivation and infrastructure with mediated attitudes towards learning achievement declined. Because the contribution of this research is not significant, it cannot be generalized to the population but can only represent respondents. With this limitation, can provide suggestions for further research on the influence of motivational factors, facilities and learning attitudes in more depth.

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