

The Effect of Using Smart phones, Campus Facilities and Lecturer Performance on Student Learning Achievement Through Motivation to Study at Muslim University of Indonesia, Makassar

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Abstract

This research aims to determine the level of influence of smartphones, facilities and lecturer performance on learning achievement through learning motivation. This research method is a quantitative method and the analysis tool uses PLS (Partial Least Square). the sampling to 399 students. The results of this study indicate that: Smartphone use, Campus Facilities, Lecturer performance have a positive and significant effect on learning motivation. Smartphone use, campus facilities and lecturer performance have a positive and significant effect on achievement. The use of Smartphones, Campus Facilities and Lecturer Performance have a positive and significant effect on learning achievement through learning motivation. Learning motivation has a positive and significant effect on learning achievement.

Keywords: Smartphone Use, Campus Facilities, Lecturer Performance, Learning Achievement, Learning Motivation

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I. INTRODUCTION

Human resources as one of the most important resources that can manage and manage other resources. The human resources formed are influenced by several factors, one of which is the educational factor. With good education, educated and qualified human resources are formed. To improve the quality of human resources through education, it needs to be improved, namely by developing educational institutions either through students, teachers or educational facilities and infrastructure^{1,2,3,4,5,6,7,8}.

However, it is very regrettable that in the era of globalization at this time where resources, technology, sarana and prasarana which are logically considered capable of increasing learning achievement are still not fully as seen from several previous studies. The previous studies stated that learning facilities do not have a significant effect on learning achievement^{2,6,9,10} and lecturer performance does not have a significant effect on learning motivation¹; the other study showed that the use of smartphones has no significant effect on learning achievement¹⁰; but there are different report stated that the use of smartphones either directly or indirectly has an impact on reducing learning achievement¹². The presence of these phenomena is a reference for our further research.

There are several previous studies that have stated that there are several factors that can affect learning achievement including the use of smartphones, campus facilities and lecturer performance. And these factors are important to re-examine because they found different results in previous research, and this is also a follow-up research. After reviewing the literature through "Publish or perish" found the following description:

Table no1: Literature Review

No.	Heading	Method	Result
1	The effect of smartphone use on sleep quality and its impact on student learning motivation/ Sintiya Halisy Pebriani, Lilly Marieni / 2020	Regression analysis	There is a direct influence of smartphone use on the direct negative of sleep quality on learning motivation and there is no direct influence of smartphone use on learning motivation ¹³
2	The effect of smartphone use on the learning achievement of class XI MIPA students of SMAN 10 Semarang / Mohamad afandi/ 2020	Simple regression	H0 is accepted and Ha is rejected which means there is no significant influence between smartphone use (X) on learning achievement (Y) ¹¹

3	The effect of lecturer performance and the quality of academic administration services on student satisfaction has an impact on learning achievement at pamulang university, south tangerang/ Nurlaela, Sugiyanto / 2019	AMOS	The performance of lecturers does not have a significant effect on student satisfaction. The quality of academic administration services has a significant effect on student satisfaction. Lecturer performance affects learning achievement. The quality of academic administration services towards learning achievement. Student satisfaction with learning achievement ²
4	Encourage learning motivation and learning facilities to social studies learning achievements of students of SMP Nurul Iman Parung Bogor For the 2017/2018 Academic Year/ Badrus Sholeh, Hamdah Sa'diah / 2018	descriptive analysis and multiple regression	no effect of learning facilities on learning achievement ⁶
5	The influence of learning motivation and gender on science learning achievement of bilingual class students of SMP (SLUB) Saraswati 1 Denpasar / Gusti Ayu Dewi Setiawati and Anak Agung Putu Arsana / 2018	Pearson product moment validity test	There is no positive and significant influence between learning motivation and learning achievement ¹⁰
6	The influence of lecturer performance on students with learning motivation / Petrus Nyavon / 2016	Product moment correlation test	Indicates both variables are insignificant ¹
7	The effect of smartphone use on child development, motivation and learning achievement in elementary school children in east Ciputat district / Euis Widanengsih / 2016	SEM	The use of smartphones among elementary school students in east Ciputat sub-district has been evenly distributed but with the intensity of not long time the use of smartphones either directly or indirectly has an impact on reducing learning achievement, but not significantly ¹²
8	The influence of learning motivation and the use of learning facilities on student learning achievement in economics class XI social studies subjects at SMA Muhammadiyah 2 Surabaya / Lukman Sunadi / 2013	Associative Quantitative	Partial utilization of learning facilities has no effect on learning achievement ⁹

II. Literature Review

Learning Achievements

Learning achievement is the result achieved from the results of practice, an experience supported by consciousness. Learning achievement is the perfection that a person achieves in thinking, feeling and doing. One of the indicators to study the quality of education is by looking at student learning achievement. Learning achievement is in the form of a value obtained when children follow the teaching and learning process at school^{3,14}.

Learning Motivation

Maslow's Need Hierarchy Theory is also called A Theory of Human Motivation, proposed by Maslow in 1943. The basis of this theory is that (a) human beings are social beings of desire; he always wanted more and continued until the end of life. (b) a satisfied need does not become a motivational tool for the culprit: only an unmet need becomes a motivational tool. (c) human needs as follows: (1) Physiological Needs; (2) Safety and Security Needs; (3) Affiliation or Acceptance Needs (Belongingness); (4) Esteem or Status Needs; and (5) Self Actualization¹⁵.

Motivation is a desire arising from a person to carry out activities or tasks⁴. Motivation is a condition that encourages or becomes the cause of a person doing something. The term motivation is closely related to the emergence of a tendency to make something in order to achieve the goals¹⁶. Satisfaction theory is a theory that bases on the factors of individual needs and satisfaction that cause to act and behave in a certain way. This theory focuses attention on factors in the person that strengthen, direct, support and stop his behavior. If the needs are met, then the spirit of work will be better¹⁷.

Smartphone Usage

This technology continues to be a concern, especially on the impact on its users, among them the relationship between information technologies, processes and achievements. One of the models for evaluating information technology is the Task-Technology Fit (TTF) model which is a construct between information technology and performance. TTF in general can be defined as how much a technology helps an individual in performing his tasks in achieving high individual performance¹⁸. TTF developed by Goodhue and Thompson (1995) is one of the behavioral theons used to examine the process of information technology adoption by end users. In such models TTF is an interaction between task, technological and individual characteristics. This

stream of research that focuses on task-technology compatibility argues that performance impact results from task-technology compatibility, that is, when technology provides the advantages, means, and support that are necessary to complete the tasks it supports^{18,19}.

A smartphone is a mobile phone with a built-in microprocessor, memory, screen and modem. Smartphones are multimedia phones that combine the functionality of pCs and handsets to produce luxurious gadgets, where there are text messages, cameras, music players, videos, games, email access, digital TV, search engines, personal information managers, GPS features, internet phone services and even there are phones that also function as credit cards²⁰.

Smartphones are sophisticated items created with various applications that can present various news media, social networks, hobbies, and even entertainment. Smartphones facilitate unlimited communication, and provide their own entertainment for users²¹.

Learning Facilities

Facilities means that facilitate or streamline the performance of tasks or work. Facilities when connected to learning activities are facilities that facilitate and streamline the teaching and learning process. Complete facilities will support teaching and learning activities to run smoothly so that learning goals can be achieved properly^{6,7,8,9}.

Lecturer Performance

Lecturer performance is the ability to carry out work or tasks that lecturers have in completing a job. The educational performance criteria aim to: (1) improve educational performance and output, (2) facilitate communication and exchange of information about the best educational practices with various types of educational institutions, and (3) as a tool to understand and improve the performance of educational institutions^{1,2,3,5}.

III. RESEARCH METHODS

The approach in this study is a quantitative approach. The location of this study is Muslim University of Indonesia (UMI), Makassar, Indonesia, with the total students population are 12,946 and sample of study are 399 respondents which determined using Slovin's formula²². The sampling technique is accidental sampling and the analysis method is PLS (Partial Least Square)^{23,24}.

IV. RESEARCH RESULTS

Description of Respondent's Identity

Characteristics of respondents describe the demographics of respondents who are used as research samples. The demographics of respondents can be seen based on Gender and Educational Strata based on the status of respondents. The characteristics of respondents presented in the following table:

Table no2: Identity of Respondents

No.	Characteristics of Respondents	Frequency (People)	Percentage (%)
1	Gender		
	Male	166	41.5
	Woman	233	58.5
2	Educational Strata		
	Sarjana (S1)	169	42.5
	Magister (S2)	137	34.2
	Doctor (S3)	93	23.3

Source: Primary Data (processed) 2022

Outer Model

Measurement model analysis (outer model) using 2 tests, including: (1) Construct reliability and validity and (2) Discriminant validity following the test results. The validity and reliability of a construct is a test to measure the reliability of a construct suantu. The reliability of the construct score should be high enough. The composite reliability criterion is $> 0.6^{25}$.

Table no3: Composite Reliability

Composite Reliability	
Smartphone Usage	0,752
Campus Facilities	0,894
Lecturer Performance	0,894
Learning Achievements	0,850
Learning Motivation	0,916

Source: Primary Data (processed) 2022

Discriminant validity is the degree to which a construct is completely different from other constructions (a construct is unique). The best recent measurement criterion is to look at the Heretroit-Monotrait Ratio (HTMT) value. If the HTMT value < 0.90 then a construct has good discriminant validity²⁵.

Table no4: Heretroit-Monotrait Ratio (HTMT)

	Smartphone Usage	Campus Facilities	Lecturer Performance	Learning Achievements	Learning Motivation
Smartphone Usage					
Campus Facilities	0,735				
Lecturer Performance	0,781	0,785			
Learning Achievements	0,763	0,638	0,808		
Learning Motivation	0,820	0,677	0,857	0,893	

Source: Primary Data (processed) 2022

Outer Model R square

R-Square is a measure of the proportion of variations in the value of the affected variable (endogenous) that can be explained by the variable that affects it (exogenous). This is useful for predicting whether the model is good/bad²⁵. Chin gives the criteria for R Square values of 0.67, 0.33 and 0.19 as strong, moderate, and weak²⁶.

Table no5: R Square

	R Square	R Square Adjusted
Learning Motivation	0,635	0,633
Learning Achievements	0,577	0,574

Source: Primary Data (processed) 2022

F Square

The measurement of F-Square or f2 effect size is a measure used to assess the relative impact of an influencing (exogenous) variable on the affected variable (endogenous). F2 values of 0.02, 0.15, and 0.35 can be interpreted as having a weak, medium or large influence²⁶.

Table no6: F Square

	Campus Facilities	Lecturer Performance	Learning Motivation	Smartphone Usage	Learning Achievements
Campus Facilities			0,027		
Lecturer Performance			0,251		0,053
Learning Motivation					0,211
Smartphone Usage			0,170		0,015
Learning Achievements					

Source: Primary Data (processed) 2022

Direct Effect

The criteria for testing the direct effect hypothesis are as seen in the section below. First, the path coefficient: (a) If the value of the path coefficient is positive, then the influence of one variable on another variable is unidirectional, if the value of the value of a variable increases/increases, then the value of another variable also increases/increases; and (b) If the value of the path coefficient is negative, then the influence of one variable on another variable is in the opposite direction, if the value of the value of a variable

increases/increases, then the value of another variable will decrease/decrease. Second, probability/significance value (p-Value): (1) If the value of p-Values < 0.05, then significant; and (2) If the p-Values value > 0.05, then it is not significant²⁵.

Table no7: Direct Effect

Hypothesis path	Original Sample	P Value	description
Smartphone Use -> Motivational Learning	0,268	0,000	Accepted
Campus Facilities -> Motivational Learning	0,138	0,001	Accepted
Lecturer Performance -> Learning Motivation	0,453	0,000	Accepted
Smartphone Usage -> Learning Achievement	0,268	0,000	Accepted
Campus Facilities -> Learning Achievement	0,067	0,002	Accepted
Lecturer Performance -> Learning Achievement	0,452	0,000	Accepted
Learning Motivation -> Learning Achievement	0,488	0,000	Accepted

Source: Primary Data (processed) 2022

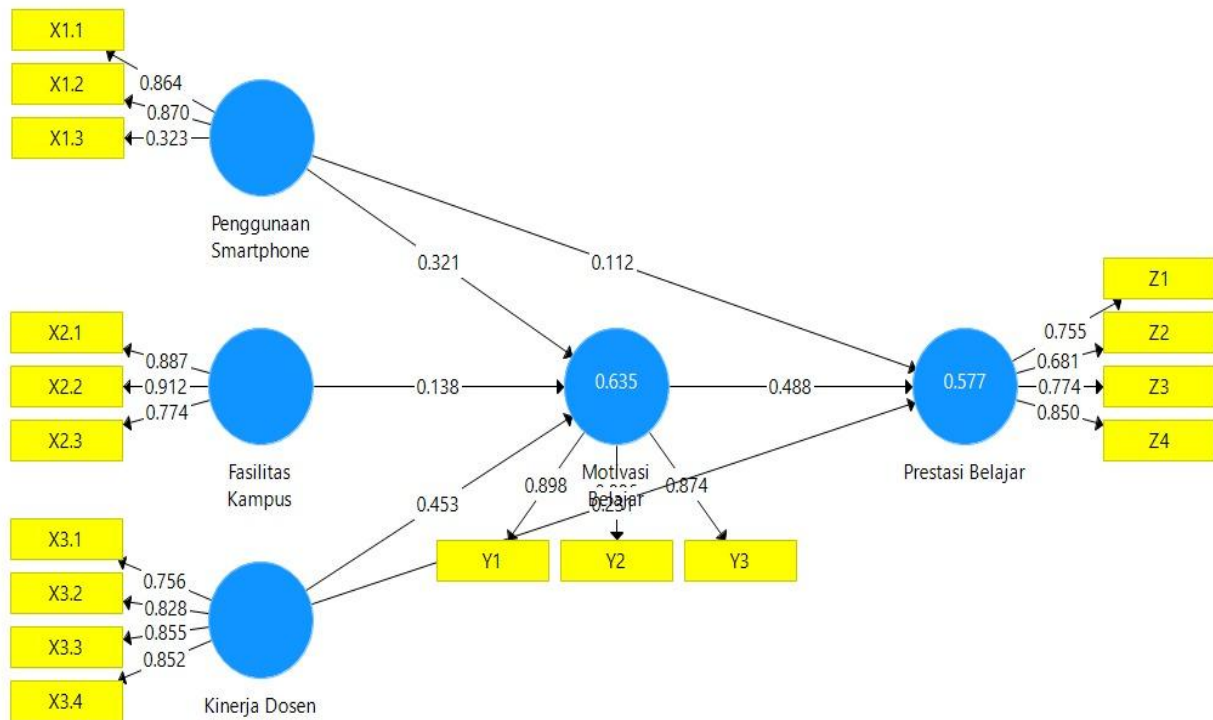


Figure no1: Mediation Effect

Indirect Effect

The purpose of indirect effect analysis is useful for testing the hypothesis of the indirect influence of a variable that affects (exogenous) on the influenced variable (endogenous) which is intermediate by an intervening variable (mediator variable)²⁵.

Table no8: Indirect Effect

Hypothesis Path	Original Sample	P Value	description
Smartphone Use -> Learning Motivation -> Learning Achievement	0,157	0,000	Accepted
Lecturer Performance -> Learning Motivation -> Learning Achievement	0,221	0,000	Accepted
Campus Facilities -> Learning Motivation -> Learning Achievement	0,067	0,002	Accepted

Source: Primary Data (processed) 2022

Total Effect

Table no9: Total Effect

	Original Sample	P-Values	description
Campus Facilities -> Motivational Learning	0,138	0,001	Accepted
Campus Facilities -> Learning Achievement	0,067	0,002	Accepted
Lecturer Performance -> Learning Motivation	0,453	0,000	Accepted
Lecturer Performance -> Learning Achievement	0,452	0,000	Accepted
Learning Motivation -> Learning Achievement	0,488	0,000	Accepted
Smartphone Use -> Motivational Learning	0,321	0,000	Accepted
Smartphone Usage -> Learning Achievement	0,268	0,000	Accepted

Source: Primary Data (processed) 2022

IV. DISCUSSION

Effect Smartphone Use on Learning Motivation

The results of data analysis showed that hypothesis H1 was declared significant with a path coefficient of 0.268 and p value of $0.000 < 0.05$, so in conclusion it states that hypothesis H1 = Accepted. Based on the findings of this study, it is known that there is a positive and significant influence between the use of smartphones on the motivation to study at Muslim University of Indonesia (UMI) Makassar. This finding means that a positive value indicates that if the use of smartphones is adequate in the Teaching and Learning Process, then student learning motivation also increases, this significant value means that the use of smartphones affects student learning motivation, because of the ease of lecture materials in access.

Effect Campus Facilities to Learning Motivation

The results of data analysis showed that hypothesis H2 was declared significant with a path coefficient of 0.138 and p value of $0.001 < 0.05$, so in its conclusion it states that hypothesis H2 = Accepted.

Based on the findings of this study, it is known that there is a positive and significant influence between learning facilities on learning motivation at UMI (Indonesian Muslim University) Makassar. This finding means that a positive value indicates that if the learning facility is adequate, then the motivation to learn also increases, the significant value means that the learning facility affects learning motivation as one of the factors supporting student learning. Due to adequate campus facilities, it can increase student learning motivation.

Effect Lecturer Performance on Learning Motivation

The results of data analysis showed that hypothesis H3 was declared significant with a path coefficient of 0.453 and p value of $0.000 < 0.05$, so in conclusion it states that hypothesis H3 = Accepted.

Based on the findings of this study, it is known that there is a positive and significant influence between lecturer performance on learning motivation at Muslim University of Indonesia (UMI) Makassar. This finding means that a positive value indicates that if the lecturer's performance is good, then the student's learning motivation also increases, a significant value also indicates that the lecturer's performance affects the student's learning motivation. Due to the good performance of lecturers, student learning achievement also increases.

Effect Smartphone Use on Learning Achievement

The results of data analysis showed that hypothesis H4 was declared significant with a path coefficient of 0.268 and p value of $0.020 < 0.05$, so in its conclusion it states that hypothesis H4 = Accepted.

Based on the findings of this study, it is known that there is a positive and significant influence between the use of smartphones on learning achievement at Muslim University of Indonesia (UMI) Makassar. This finding means that a positive value indicates that if the use of smartphones is adequate in the Teaching and Learning Process, student learning achievement also increases, this significant value means that the use of smartphones affects student learning achievement, because with the use of adequate smarthone, student learning achievement is easy to get.

Effect Campus Facilities towards Learning Achievement

The results of data analysis showed that the H5 hypothesis was declared significant with a path coefficient of 0.067 and a P Value of $0.002 < 0.05$, so in its conclusion it states that the H 5 hypothesis = Accepted.

Based on the findings of this study, it is known that there is a positive and significant influence between learning facilities on learning achievement at Muslim University of Indonesia (UMI) Makassar. This finding means that a positive value indicates that if learning facilities are adequate, then learning achievement also increases, this significant value means that learning facilities affect learning achievement as one of the factors supporting student learning, because with adequate campus facilities, student learning achievement will be achieved.

Effect Lecturer Performance on Learning Achievement

The results of data analysis showed that hypothesis H6 was declared significant with a path coefficient of 0.452 and p value of $0.000 < 0.05$, so in its conclusion it states that hypothesis H6 = Accepted.

Based on the findings of this study, it is known that there is a positive and significant influence between lecturer performance on learning achievement at Muslim University of Indonesia (UMI) Makassar. This finding means

that positive values indicate that if the lecturer's performance is good, then student learning achievement also increases, a significant value also indicates that lecturer performance affects student learning achievement, because with the performance of good or competent lecturers, students are able to achieve the expected achievements.

Effect Smartphone Use of Learning Achievement through Learning Motivation

The results of data analysis showed that hypothesis H7 was declared significant with a path coefficient of 0.157 and p value of $0.000 < 0.05$, so in conclusion it states that hypothesis H7 = Accepted.

Based on the findings of this study, it is known that the indirect influence of smartphone use on learning achievement mediated by positive learning motivation is significant at Muslim University of Indonesia (UMI) Makassar. This means that learning motivation acts as an intervening variable (mediator) especially in this study. In scientific logic where motivation mediates the relationship between the use of smartphones and the achievement of the stages, the use of adequate smartphones in the Teaching and Learning Process will increase their learning motivation, that way the achievements will increase, due to the ease of access in finding lecture materials and completing learning tasks. that way his achievements will increase even more.

The Effect of Campus Facilities on Learning Achievement by passingthrough Learning Motivation

The results of data analysis showed that hypothesis H8 was declared significant with a path coefficient of 0.221 and p value of $0.002 < 0.05$, so in its conclusion it states that hypothesis H8 = Accepted.

Based on the findings of this study, it is known that the indirect influence of campus facilities on learning achievement mediated by positive learning motivation is significant at Muslim University of Indonesia (UMI) Makassar. This means that learning motivation acts as an intervening variable (mediator) especially in this study. In scientific logic where motivation dictates the relationship between facilities and stage achievements, adequate campus facilities will make students increase their learning motivation so that their achievements will increase. Due to the existence of supporting facilities such as a comfortable place to study, students' learning motivation increases and is able to achieve the desired achievements.

Effect Lecturer Performance towards Learning Achievement through Learning Motivation

The results of data analysis showed that hypothesis H9 was declared significant with a path coefficient of 0.067 and p value of $0.000 < 0.05$, so in conclusion it states that hypothesis H9 = Accepted.

Based on the findings of this study, it is known that the indirect influence of lecturer performance on learning achievement mediated by positive learning motivation is significant at Muslim University of Indonesia (UMI) Makassar. This means that learning motivation acts as an intervening variable (mediator) especially in this study. In scientific logic where motivation mediates the relationship between lecturer performance and stage achievement, good lecturer performance will make student learning achievement increase their learning motivation so that their achievements will increase, good lecturer performance will make student learning achievements increase more so that their achievements will increase.

Effect Learning Motivation towards Learning Achievement

The results of data analysis showed that the H10 hypothesis was declared significant with a path coefficient of 0.488 and a P Value of $0.000 < 0.05$, so in its conclusion it states that the H10 hypothesis = Accepted.

Based on the findings of this study, it is known that there is a positive and significant influence between learning motivation and learning achievement at Muslim University of Indonesia (UMI) Makassar. This finding means that positive values indicate that if the motivation to learn is good, then student learning achievement also increases, significant values also indicate that learning motivation affects student learning achievement, because with the increase in student learning motivation itself, it is able to achieve the desired learning achievement

RESEARCH FINDINGS

1. The results of research by Nyavon (2016) stated that lecturer performance did not have a significant effect on learning motivation², but not in line with the result of this study, it was found that lecturer performance had a significant positive effect on learning motivation.
2. The results of research by Widanengsih (2016) stated that the use of smartphones either directly or indirectly had an impact on reducing learning achievement¹², but not significant and not in line with research conducted by researchers found that there was a positive and significant influence on learning achievement.
3. The results of the research by Afandi et al. (2020) stated that the use of smartphones did not have a significant effect on learning achievement¹¹ and was not in line with researchers' research, it was found that the use of smartphones had a significant effect on learning achievement.
4. The results of research by Sholeh and Sa'diah (2018) stated that learning facilities do not have a significant effect on learning achievement (6) but not in line with researchers' research, it was found that learning facilities have a significant effect on learning achievement.
5. The results of research by Sunadi (2013) stated that learning facilities did not have a significant effect on learning achievement⁹ but not in line with researchers' research, it was found that learning facilities had a significant effect on learning achievement.

V. CONCLUSION

1. The results of this study found that empirically smartphones have a significant effect on the learning motivation of UMI students, so that the hypothesis in this study was accepted
2. The results of this study found that empirically the facility had a significant effect on the learning motivation of UMI students, so that the hypothesis in this study was accepted
3. The results of this study found that empirically the performance of lecturers had a significant effect on the learning motivation of UMI students, so that the hypothesis in this study was accepted
4. The results of this study found that empirically smartphones have a significant effect on the learning achievement of UMI students, so the hypothesis in this study was accepted
5. The results of this study found that empirically the facility had a significant effect on the learning motivation of UMI students, so that the hypothesis in this study was accepted
6. The results of this study found that empirically the performance of lecturers had a significant effect on the learning motivation of UMI students, so that the hypothesis in this study was accepted
7. The results of this study found that empirically smartphones have a significant effect on learning achievement through the learning motivation of UMI students, so that the hypothesis in this study was accepted
8. The results of this study found that empirically the facilities had a significant effect on learning achievement through the learning motivation of UMI students, so that the hypothesis in this study was accepted
9. The results of this study found that empirically the performance of lecturers had a significant effect on learning achievement through the learning motivation of UMI students, so that the hypothesis in this study was accepted
10. The results of this study found that empirically learning motivation had a significant effect on the learning achievement of UMI students, so that the hypothesis in this study was accepted.

VI. SUGGESTION

1. The use of smartphones in the Teaching and Learning process must be considered and directed to make it easier for students to complete the learning process itself, especially at UMI and elsewhere
2. Campus facilities must continue to be improved as a support in Teaching and Learning process, as an effort to increase student motivation, especially at UMI and elsewhere.
3. Lecturer performance in Teaching and Learning process can increase student's motivation and therefore lecturer performance must be maintained and will be better if it is improved mainly at UMI and elsewhere.
4. In an effort to improve student achievement, the use of smartphones should be intensified in teaching and learning processes, especially at UMI and elsewhere.
5. Adequate campus facilities that support the teaching and learning process must be developed continuously as a support the learning achievements at UMI and elsewhere.
6. The performance and enthusiasm of lecturers in Teaching and Learning Process must continue to be improved in an effort to improve student achievement.
7. It is necessary to improve students' understanding of the use of smartphones which are expected to facilitate student in Teaching and Learning Processes so that good motivation arises which will support good achievements, especially at UMI and elsewhere.
8. It is necessary to improve campus facilities as one of the factors that can increase the motivation of students in Teaching and Learning Process to achieve better learning achievement, especially at UMI and elsewhere.
9. In increasing learning motivation to achieve good performance, lecturers must strive to be consistent in the Teaching and Learning Process and even the willingness to improve their performance at UMI and elsewhere.
10. Efforts to increase motivation to achieve learning achievement need a deep understanding of the application of smartphones in the Teaching and Learning Process, adequate campus facilities and the performance of high-quality lecturers at UMI and elsewhere.

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