

ANALYSIS OF STUDENT SATISFACTION AND ACHIEVEMENT WITH LEARNING MANAGEMENT SYSTEM

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Abstract: The covid-19 pandemic has a major impact on various sector, including the education sector. The education system has undergone a major change. The Covid-19 pandemic has caused restrictions on mobility which resulted in limited interaction between humans. In the world of education, face to face learning systems are considered high risk, so it's limited. One of the ways to innovate in education is through the Learning Management System (LMS). This system has the advantage of accessing learning anywhere and anytime. The purpose of this study was to investigate student to achieve and satisfaction from the LMS. The Independent variables is Student Adoption Intention. The intervening variable is Student Perceived Benefits. The dependent variable is Student Achievement and Student Satisfaction. Methodology used primary data with a questionnaire from 100 students from various Universities in the Surakarta and used a purposive sampling technique. Main result show that LMS has an important role in learning transformation amid the obstacles to the Covid-19 pandemic. LMS can also improve student achievement and student satisfaction. Conclusion, this finding has implications for universities to implement LMS in their programs.

Keywords: Learning Management System (LMS), Student Adoption Intention, Student Perceived Benefit, Student Satisfaction, Student Achievement

1. Introduction

The Covid – 19 pandemic has occurred all countries in the world, including Indonesia. Pandemic has a major impact on various industrial sectors. The Government Policy of Indonesia during pandemic focused in tri sector. There are health, SMEs, and Banking sector (Medcom; 2020). Although education sector does not include government focus. But very important to growth of the Country. So that education sector must continue tp pay attention with Learning Management System (LMS) one of the media.

LMS is software designed to create, distribute, and manage the delivery of online learning content. It can be the form of interesting articles, e-books, animations, sounds and videos that can be studied and accessed from anywhere and anytime. Students are expected able to adapt more quickly and get perceived benefit of distance education. The hope to students will continue to get facilities and satisfaction to improve learning achievements.

The research from Dubey, Pushkar & Kailash Kumar Sahu (2021) resulted in students' perceived benefits and student adoption intention in Technology Enhanced Learning (TEL) had a significant and positive effect on their satisfaction. Research from You, Ji won (2016) resulted in regular studies as the strongest predictor of student achievement followed by late

delivery, session and evidence of reading specific information. So, this research was conducted using the variables perceived benefits of students, adoption intentions on student satisfaction and student achievement.

This research aims as follows:

- a. Providing quality education with technology to create global competitiveness in student.
- b. Knowing the effect student perceived benefit and student adoption intention with LMS toward student satisfaction and student achievement.
- c. Knowing the effect from student perceived benefit with LMS.
- d. Knowing the effect of relation on student adoption intention and student perceived benefit toward student satisfaction and student achievement as users of LMS.

2. Literature Review

a. *Student' Adoption Intention*

Approach of Intention of adoption from individual to certain behaviors (Belknap, Becker, Geer, Hughes & Strauss, 1962). According to (Fishbein & Ajzen, 1975), and intention with subjective possibility in activities (Dubey & Sahu, 2021)

b. *Students' Perceived Benefits*

The benefits of student from Learning Management System (LMS) with supporting studies based of time, effort and cost (Cohen, 1984) stated about related to benefits for student, from of level of lecturers comparing new innovations with existing ones and benefits and cost adopt technology (Rogers, 1995).

c. *Student Satisfaction*

Based Sweeney and Ingram (2001) from student satisfaction with definition as pleasure and success to received from campus environment and learning. There are factors influence student satisfaction are teacher knowledge and performance, positive learning environment, effective communication, interaction in teaching and learning process and prestige value of institution (Wu, Tennyson, & Hsia, 2010)

d. *Student Achievement*

Benefit from LMS and student satisfaction provides possibility character of student behavior changes during the course, interaction student, quiz and exam performance. Several research in LMS show indicator and participation that are highly correlated with student achievement ((Asarta, C.J. & Schmidt, 2013); (Goldstein, P.J. & Katz, 2005); (Michinov, Brunot, Le Bohec, Juhel, & Delaval, 2011); (Rafaeli & Ravid, 1997); (Qu & Johnson, 2005) (You, 2016)).

3. Method

This research is quantitative using multiple regression analysis. The Population is all students collage in Surakarta. The Sampling with purposive sampling technique in a total of 100 respondents. Methods of data collection using a questionnaire in Likert Scale. Based (Sugiyono, 2010), five category in likert scale are 5= very agree, 4= agree. 3= neutral, 2= disagree, 1= very disagree.

This research consisted of Student Adoption Intention (X), Student Satisfaction (Y1), Student Achievement (Y2) and Students' perceived benefits (Z). The following is a figure 1. Research model.

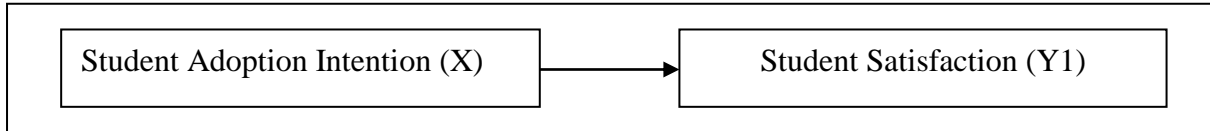


Figure 1. The direct effect of X on Y1

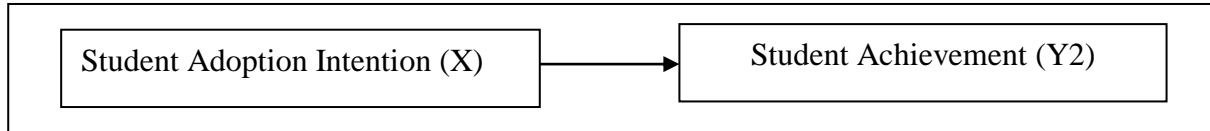


Figure 2. The direct effect of X on Y2

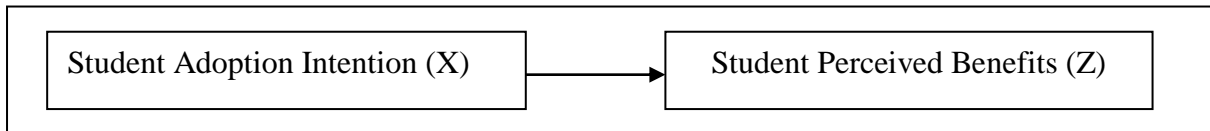


Figure 3. The direct effect of X on Z

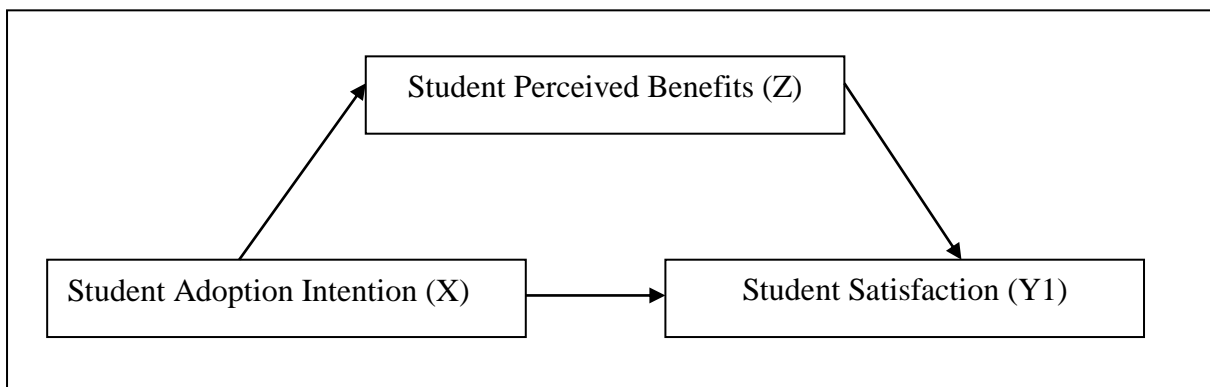


Figure 4. Indirect effect of X on Y through intervening variable (Z)

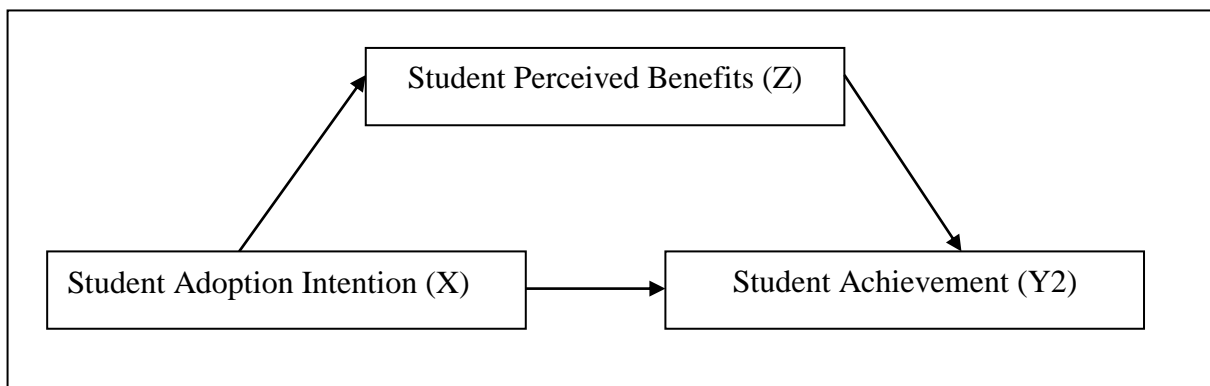


Figure 5. Indirect effect of X on Y2 through intervening variables (Z)

4. Result and Discussion

Research respondents are 100 students. Research respondents from various universities of Surakarta. There are Slamet Riyadi University, UIN Surakarta, UNS, UMS, STIE Surakarta, UNIVET, STIE Wijaya Mulya Surakarta, Polytechnic Akbara Surakarta, Akparta Widya

Nusantara Surakarta, University of Surakarta, and ISI Surakarta. The following is a table of respondents based on their universities.

Table 1. Respondents from University

Name of University	Number of Student Respondents
Slamet Riyadi University	2
UIN Surakarta	29
UNS	9
UMS	5
STIE Surakarta	19
UNIVET	16
STIE Wijaya Mulya Surakarta	1
Polytechnic Akbara Surakarta	3
Akparta Widya Nusantara Surakarta	14
University of Surakarta	1
ISI Surakarta	1
Total Number of Respondents	100

Table 1 above shows that the largest number of respondents came from UIN Surakarta with a total of 29 students. STIE Surakarta a total of 19 students. UNIVET a total of 16 students. Akparta Widya Nusantara with a total of 14 students. UNS numbered 9 students. UMS number of 5 students. Polytechnic Akbara Surakarta with 3 students. Slamet Riyadi University number of 2 students. STIE Wijaya Mulya, University of Surakarta and ISI Surakarta have 1 student. The following a picture 6. Research Respondents.

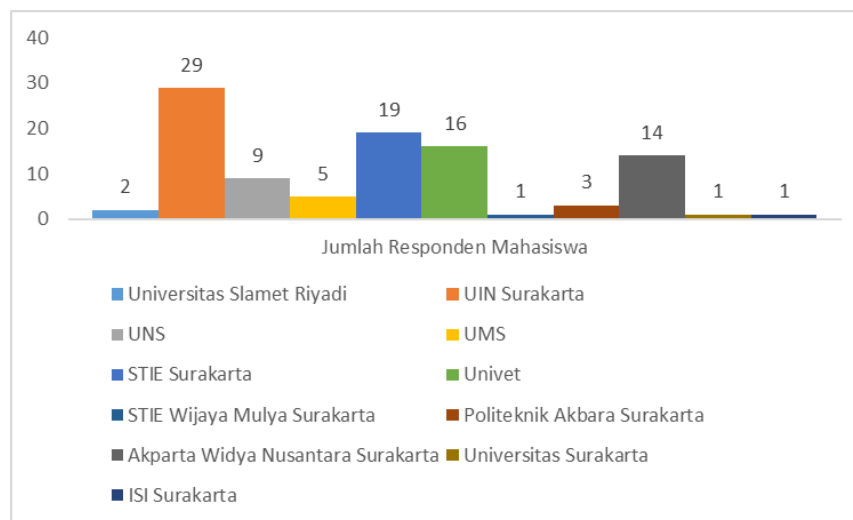


Figure 6. Research Respondents

Correlation

The correlation test in this research was carried out using a spearman. The criteria in determining the degree of relationship in correlation coefficient divided into six (Firdaus, 2011).

1. 0,9 - 1 (positive or negative) indicates a very high degree of relationship.
2. 0,7 - 0,8 (positive or negative) indicates a high degree of relationship
3. 0,5 - 0,6 (positive or negative) indicates a moderate degree of relationship
4. 0,3 – 0,4 (positive or negative) indicates a low degree of relationship
5. 0,1 – 0,2 (positive or negative) indicates a very low degree of relationship

6. 0,0 means that the two variables do not have a linear relationship.

Table 2. Correlation Test Results

		X	Z	Y1	Y2
X	Pearson correlation	1	0,477	0,708	0,406
	Sig. (2-tailed)	-	0,000	0,000	0,000
	N	100	100	100	100
Z	Pearson Correlation	0,477	1	0,494	0,438
	Sig. (2-tailed)	0,000	-	0,000	0,000
	N	100	100	100	100
Y1	Pearson Correlation	0,708	0,494	1	0,597
	Sig. (2-tailed)	0,000	0,000	-	0,000
	N	100	100	100	100
Y2	Pearson Correlation	0,406	0,438	0,597	1
	Sig. (2-tailed)	0,000	0,000	0,000	-
	N	100	100	100	100

Source: Processed data

Table 2 above is a table of correlation test results. The correlation test results show that correlation coefficient value is X with Z (0,477), X with Y1 (0,708), X with Y2 (0,406). This result can be interpreted that student adoption intention and student perceived benefit show a moderate positive relationship. The variable student adoption intention and student satisfaction showed a high positive relationship. The variable student adoption intention and student achievement showed a low positive relationship.

The correlation coefficient value is Z with X (0,477), Z with Y1 (0,494), Z with Y2 (0,438). This results can be interpreted that students perceived benefits and student adoption intention show a moderately positive relationship. The student variables perceived benefits and student satisfaction showed a moderately positive relationship. On the variable students perceived benefits showed a low positive relationship.

Research Instrument Test

Table 3. Validity Test Results

	N	%
Valid	100	100
Total	100	100

Source: Processed data

Table 4. Corrected Item

	Corrected item- Total Correlation
X1	0,653
Z	0,532
Y1	0,763
Y2	0,593

Source: Processed data

Table 3 and 4 above show results of the validity of question items on the four research variables. It is to valid if more than the valid limit of 0,3 (Sugiyono, 2012). The results show that corrected item value total correlation variable X, Z, Y1 and Y2 are greater than 0,3. This means that question items on the four research variables can be said to be valid.

Table 5 shows result of the reliability test. The value of Cronbach's Alpha on four research variables is 0.805. These results indicate that Cronbach's Alpha value is close to 1.00, which means it is reliable. This means that the question items on the four research variables can be said to be reliable for further research.

Table 5. Reliability Test Results

Cronbach's Alpha	N of Items
0,805	4

Source: Processed data

Classic assumption test

This research was carried out by using classical assumption test consisting of normality, autocorrelation, heteroscedasticity and multicollinearity tests. The results of the normality test using the normal P-P Plot graph show that points follow diagonal line, meaning that the data is normally distributed. The results of autocorrelation test using run test showed that the p-value was $0.688 > 0.05$. Thus it can be concluded that there is no autocorrelation problem. The results of heteroscedasticity test using a scatterplot graph show that points do not form a certain pattern, meaning that there is no heteroscedasticity. The results of multicollinearity test using the VIF value showed that the VIF value showed a value of 1.263. According to Gujarati (2006) a VIF value > 10 indicates the presence of multicollinearity symptoms. Thus, it can be concluded that the VIF value is less than 10, so there is no multicollinearity.

Regression Test

Table 6. Regression Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Student Adoption Intention (X) → Student Satisfaction (Y1)	0,732	0,535	0,531	2,027
Student Adoption Intention (X) → Student Achievement (Y2)	0,410	0,168	0,159	2,663
Student Adoption Intention (X) → Student Perceived Benefits (Z)	0,456	0,208	0,200	2,192
Student Adoption Intention (X) Student Perceived Benefits (Z) → Student Satisfaction (Y1)	0,750	0,563	0,554	1,976
Student Adoption Intention (X) Student Perceived Benefits (Z) → Student Achievement (Y2)	0,490	0,240	0,225	2,557

Source: Processed data

The results of regression test between Student Adoption Intention (X) and Student Satisfaction (Y1) obtained an R Square value of 0.535 or 53.5 percent. These results indicate that Student Adoption Intention variable has an effect of 53.5 percent on Student Satisfaction. In the Student Adoption Intention (X) regression test on Student Achievement (Y2), R Square value was 0.168 or 16.8 percent. These results indicate that variable Student Adoption Intention has an effect of 16.8 percent on Student Achievement (Y2). In the regression test between Student Adoption Intention (X) and Student Perceived Benefits (Z), R Square value is 0.208 or 20.8 percent. These results indicate that Student Adoption Intention variable has an effect of 20.8 percent on Student Perceived Benefits. In the regression test between Student Adoption Intention (X) and Student Perceived Benefits (Z) on Student Satisfaction (Y1), it was found that the Adjusted R Square value was 0.554 or 55.4 percent. These results indicate that variable Student Adoption Intention and Student Perceived Benefits have a joint effect of 55.4 percent on student satisfaction. In regression test between Student Adoption Intention (X) and Student Perceived Benefits (Z) on Student Achievement (Y2), it was found that the Adjusted R Square value was 0.225 or 22.5 percent. These results indicate that the variable Student Adoption Intention and Student Perceived Benefits have a joint effect of 22.5 percent on Student Achievement.

Anova Test

Table 7. Anova Test Results

Model	F	Sig.
Student Adoption Intention (X) Student perceived benefits (Z) → Student Satisfaction (Y1)	62,494	0,000
Student Adoption Intention (X) Student perceived benefits (Z) → Student Achievement (Y2)	15,348	0,000

Source: Processed data

In the ANOVA test between Student Adoption Intention (X) Student perceived benefits (Z) to Student Satisfaction (Y1) showed a significance value of 0.000 or less than 0.05. So, it can be concluded that the model made is correct. H4 shows that Student Adoption Intention and Student perceived benefits simultaneously affect Student Satisfaction. In the ANOVA test between Student Adoption Intention (X) Student perceived benefits (Z) to Student Achievement (Y2) showed a significance value of 0.000 less than 0.05. So, it can be concluded that the model made is correct. H5 shows that Adoption Intention and Student perceived benefits simultaneously affect Student Achievement.

Coefficient Test Results

Table 8. Coefficient Test Results

Student Adoption Intention (X) → Student Satisfaction (Y1)				
Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	6,615	1,244	5,319	0,000
Student Adoption Intention	1,099	0,103	10,624	0,000
Student Adoption Intention (X) → Student Achievement (Y2)				
Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	8,194	1,633	5,017	0,000
Student Adoption Intention	0,604	0,136	4,447	0,000
Student Adoption Intention (X) → Student perceived benefits (Z)				
Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	10,556	1,344	7,852	0,000
Student Adoption Intention	0,568	0,112	5,077	0,000
Student Adoption Intention (X) Student perceived benefits (Z) → Student Satisfaction (Y1)				
Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Constant	4,227	1,547	2,732	0,007
Student Adoption Intention	0,971	0,113	8,566	0,000
Student Perceived Benefits	0,226	0,091	2,484	0,015
Student Adoption Intention (X) Student perceived benefits (Z) → Student Achievement (Y2)				
Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
Constant	4,409	2,002	2,202	0,030
Student Adoption Intention	0,401	0,147	2,732	0,007
Student Perceived Benefits	0,359	0,118	3,042	0,003

Source: Processed data

Table of Coefficient Test Results obtained as follows

- a. Intervening Variable Regression Equation Model (Y1)

$$Y1 = 4,227 + 0,971 X + 0,226 Z$$

Description:

X : Student Adoption Intention

Z : Student perceived benefits

Y1 : Student Satisfaction

The regression equation model above shows that if Student Adoption Intention and Student perceived benefits are not included in the model, then Student Satisfaction is 4.227. If there is one additional unit in Student Adoption Intention, it will increase Student Satisfaction by 0.971. If there is an addition of one unit in Student perceived benefits, it will increase Student Satisfaction by 0.226.

Intervening Variable Regression Equation Model (Y2)

$$Y2 = 4,409 + 0,401 X + 0,359 Z$$

Description:

X : Student Adoption Intention

Z : Student perceived benefits

Y2 : Student Achievement

The regression equation model above shows that if Student Adoption Intention and Student perceived benefits are not included in the model, then Student Achievement is 4.409. If there is one additional unit in Student Adoption Intention, it will increase Student Achievement by 0.401. If there is one additional unit in Student perceived benefits, it will increase Student Achievement by 0.359.

b. Hypothesis test results

The results of hypothesis testing were carried out by comparing the significance with 0.05. The significance value shows less than 0.05 then H1, H2, H3 are accepted. This means that it can be seen that:

H1: There is an Influence of Student Adoption Intention (X) on Student Satisfaction (Y1)

H2: There is an Influence of Student Adoption Intention (X) on Student Achievement (Y2)

H3: There is an Influence of Student Adoption Intention (X) on Student Perceived Benefits (Z)

5. Conclusions

Based on the results of analysis and discussion above, it can be concluded that Student Adoption Intention has a positive influence on Student Satisfaction. Student Adoption Intention has a positive influence on Student Achievement. Student Adoption Intention has a positive effect on Student Perceived Benefits. Student Adoption Intention still shows an effect on Student Satisfaction after the Student Perceived Benefits variable is included. Student Adoption Intention still shows an effect on Student Achievement after Student Perceived Benefits variable is included. This shows that learning using Learning Management System (LMS) on students has an effect on and Student Satisfaction and Student Achievement through Student Adoption Intention and Student Perceived Benefits.

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