

# Factors Associated With Student Performance in Higher Education System

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**Abstract**—This study aims to have better understanding factors influencing student performance in online learning during COVID-19 situation. Some factors influencing student satisfaction such as internet facilities, platform and student motivation that eventually affect student performance. This research took 230 students as respondents. The survey questionnaire was used to obtain data and analysed using structural equation modelling. From this research, the impact of internet facilities on student satisfaction is positive insignificant, platform is negatively affect student satisfaction, student motivation gives positive significant impact on student satisfaction, and then student satisfaction affects positively and significantly on student performance. Findings suggest the higher education needs to improve the internet facilities and platform if the intention is to enhance students' satisfaction, especially considering the impact of students' motivation. Students' performance should be considered in the design of online education to increase the achievement of academic performance. For further research can be undertaken in various organizations.

**Keywords**—Internet Facilities; Platform; Student Motivation; Student Performance; Student Satisfaction

## INTRODUCTION

With the challenge facing universities internationally especially in post pandemic covid-19, universities meet the obligation to remain transferring education as the curtailment may be reextended. Educational institutions tried to keep the basic operational going while establishing in more strategic and effective system for the future to respond to disruptive crisis. Indeed, major universities have formulized a center of online learning in an attempt to assist teaching resources and to apply an ideal practice for teaching delivery. As consequence, teaching quality by using online method will be, arguably, depending upon its internet facilities, platform [1], [2] which enable student motivation [3] that lead to

student satisfaction and ultimately affect student performance [2].

It is, however, not all universities appear conducting online learning system using internet facilities and its platform to ensure the learning process can be delivered to students [1]. Although internet facilities have already been admitted as an effective medium of delivering quality education and guarantee optimum academic performance, most university in particular in remote area are still at a earliest stage of adopting this technologies [4]. Even tough the main goal of universities is to delivery outstanding valuable lesson system to improve student satisfaction, it is unfortunately little research has emphasized placed on how internet facilities, platform and student motivation affect the performance of the students [1], [2], [3], [4]. Therefore, the goal of this paper is to seek determine determinants affecting student performance at universities.

## LITERATURE REVIEW

### a. Internet Facilities

As stated by [5] e-learning has become the umbrella of any internet things to provide learning lesson to students that refers to the ability of computer to developed itself in an automatic way. Further, having internet facilities as part of e-learning is about facilitating to skills and knowledge's transmission by applying a variety of electronically supported the e-learning process. Internet facilities which are part of the online learning process is defined by [6] is shifting

an academic institute into a home institute with virtual interaction, simulation and collaboration enables students to create learning experiences.

*b. Platform*

Generally, Internet-based platform firms can be classified into software platforms, advertising-supported media, exchanges platforms or payment systems [7]. Additionally, [7] stated platforms as the interfaces that serve to mediate learning process between students and lectures. In line with [7] internet platform is part of Internet of Things (IoT) that aims to construct an ambient environment in which things are communicated through the internet infrastructure, seamlessly [8]

*c. Student Motivation*

Motivation is the process of goal-oriented behaviors [9]. Motivation to learn is internal and external boost of learning students for changing their behavior. It has a important impact on learning students' success [10]. Motivation is interpreted as 'a theoretical construct to describe the goal-directed behaviour [11].

*d. Student Satisfaction*

Student satisfaction is students' evaluation of the products or services utilized and if their expectations

or needs were met or not [12]. [13] define student satisfaction as the distinction between what students' expect of from a higher education institution and what they get. [14] indicated that this term is a short-term attitude that come from the assessment of their experience with the education service they got . According to [15], student satisfaction is students' perception or attitude toward the learning activities. According to [16], student satisfaction is a dimension of the quality of an educational program.

*e. Student Performance*

According to [17], student academic performance is the educational goals to be achieved by a student, teacher or institution . It can be measured through exams or continuous evaluations and the goal may dissimilar from one individual or institution to another. [18] stated that student performance is also crucial element in the evaluation of online learning environments. While [19] concluded student performance as an outcome that seizes the quality of students' academic work such as course mark or GPA.

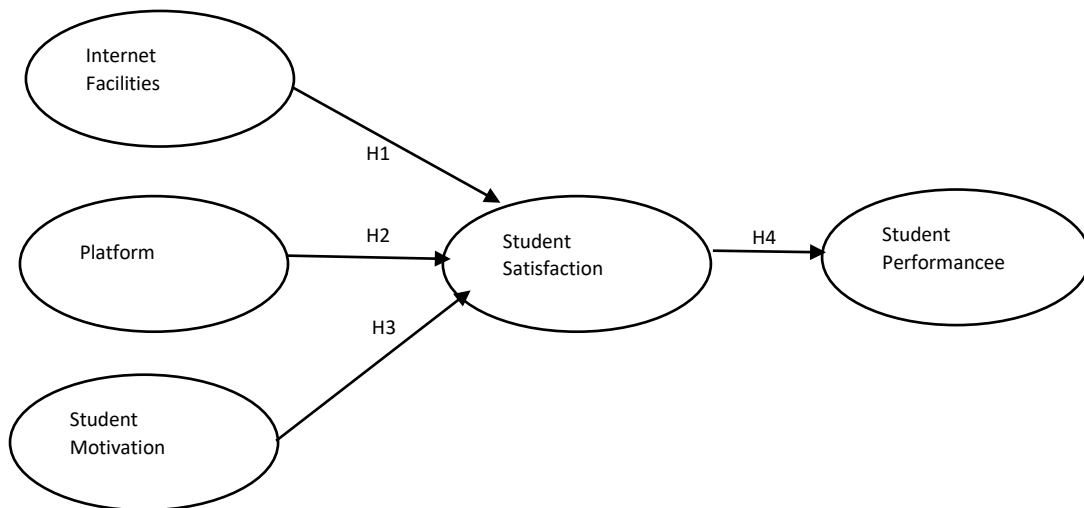


Figure 1 : Conceptual Framework

*f. Hypothesis Development*

According to [20] utilization of the Internet for getting information positively impacts the comprehension and learning of students. Moreover, using a variety of internet facilities can supply a highly interactive learning environment and has potential for helping students' cognitive, psychological and academic development [21] and, as a result, it is expected to achieve student satisfaction [1].

*H1: There is an affect of internet facilities to student satisfaction*

Responding to significant demand, many online learning platforms serve free access to their services and are used for online materials [22]. [23] affirms that using diverse variety of platforms and e-tools support student learning in conjunction with face-to-face classes to promote active and peer learning amongst learners will eventually affect student satisfaction. Additionally, by having such platforms are seen to incorporating many programs into the learning environment is to fix educational quality and success. Consequently it is likely affecting student satisfaction [1].

*H2: There is an affect of platform to student satisfaction*

Quality teaching has become a more important aspect of utilization internet of things [3]. Furthermore, as stated by [3] quality teaching includes looking for the design of the education program to upgrade learning and rewarding knowledge. This quality teaching propose that students' use of learning strategies may be associated with the level to which students apply a mastery or performance goal orientation in the classroom. This implies that student understand and encrypt the information on the basis of their own perceptions [24]) may result in modifying the nature of students' experience in the classroom and it may set an important way of repointing their achievement student satisfaction [3].

*H3: There is an affect of student motivation to student satisfaction*

[25] points out that students' performance is significantly connected with satisfaction with the

academic environment and the facilities such as internet and its platforms that are easy to apply to foster the learning process. As [15] says the students are cheerful with their studies or adopts a combative learning experience. This has been added by [1] who say the positive learning experience stems from online learning system will also have an effect on student performance.

*H4: There is an affect of student satisfaction to student performance*

## RESEARCH METHODOLOGY

*a. Methods*

Quantitative approach and survey methodology were employed to collect data. The questionnaire was distributed to the students of bachelor level degree program of Faculty of Economic and Business, Universitas Trisakti through google form. This study used convenience sampling. 230 questionnaires were collected and all of them were usable.

*b. Measures*

The questionnaire consists of 28 items for measuring the research variables : 22 items of questionnaires about internet facilities, platform, student motivation and student satisfaction adopted from [1] Basuony et al. (2021), while for measuring student performance adopted from [2] Dzugbenuku et al. (2020). Respondents should give their answer choice for each of statement using a five-point Likert scale (1 = strongly disagree and 5 = strongly agree).

*c. Validity and Reliability*

All items of questionnaires were valid, since their factor loading were more than 0.35. We know that loading factor for sample size 250 = 0.35 [26].

Cronbach's Alpha is used for testing reliability. The Cronbach's Alpha values were 0.825 (internet facilities), 0.600 (platform), 0.893 (student motivation), 0.827 (student satisfaction), and 0.909 (student performance). These values exhibited all constructs are reliable [26]

Table I : Factor Loading of Indicators

Variable	Indicator	Factor Loading
Internet Facilities	IF1 : There is internet access in my locality to enable me to learn on my phone or laptop	0.899
	IF2 : The internet connection and speed in my locality enables to learn on my phone or laptop	0.888
	IF3 : I have adequate online learning resources in the house to aid my learning	0.798
Platform	P1 : There are sufficient IT facilities and platforms provided by my college such as e-mail, blackboard and LMS	0.833
	P2 : I have adequate computer skills to be able to access other online learning platforms	0.833
Student Motivation	SM1 : The recorded videos motivates me to study	0.591
	SM2 : The instructor in online courses stimulated students to exert intellectual effort beyond that required by face-to-face classes	0.645
	SM3 : I had positive and constructive interactions with the instructor frequently	0.696
	SM4 : The positive and constructive interactions between the instructor and students in online classes helped me improve the quality of learning outcomes	0.763
	SM5 : The assignment quizzes grades or the reward and bonus are consistent with the effort I put in the online assignment	0.715
	SM6 : The instructors provided adequate feedback for online classes	0.812
	SM7 : The instructors provided timely feedback for online classes	0.764
	SM8 : The instructors in online classes provided timely helpful feedback on assignments, exams or projects	0.792
	SM9 : The online class materials really challenged me so that I can learn new things	0.729
	SM10 : I did all that I can to make my online assignments turn out perfectly	0.758
	SM11 : I worked hard to get a good grade even when I did not like an online class	0.476
	SM12 : I like to be one of the most recognized students in an online class	0.438
Student Satisfaction	SS1 : The academic quality of online classes is on par with face-to-face classes I have taken	0.778
	SS2 : I have learned as much from online classes as I might have from a face-to-face version of the courses I have taken	0.787
	SS3 : I would recommend online course instructors to other students	0.648
	SS4 : I would recommend online classes to other students	0.839
	SS5 : I am satisfied with the overall online course experience	0.790
Student Performance	SP1 : Online learning allows me to accomplish specific academic tasks more quickly	0.741
	SP2 : Online learning allows me to enhance my productivity as a student	0.871
	SP3 : Online learning allows me to learn more about my subject area	0.854
	SP4 : Online learning allows me to promote my ideas to colleagues and friends	0.888
	SP5 : Online learning enhances my image among my colleagues and friends	0.827
	SP6 : Online learning provides new opportunities	0.800

## RESEARCH FINDINGS

Of 230 respondents participated in this survey : 62.2% are female; 65.7% between 19-21 years old; 53.0% are taking semester 1 – 4; 60.0% of them are registered as

regular class students; 55.2% are come from public senior high schools; and 73,5% have GPA maximal 2.00 (with scale from 0.00 – 4.00).

*a. Descriptive Statistics*

By using SPSS 22, total mean of internet facilities = 3.9739. Students perceive the internet access and speed in their locality is already sufficient to support their online learning. They also have enough resources for their online classes.

Variable platform has total mean 3.8304. Respondents state that IT facilities and platforms provided by faculty are adequate enough and they have enough skills to get easy access for their online learning platforms. Meanwhile, total mean of

student motivation = 3.8413. It means that they perceive already have high enough motivation. Their motivation is more caused by their self-motivation, rather

than extrinsic motivation. Some of them don't like online class, but they work very hard to get a good grade. Variable student satisfaction has total mean 3.5235. It indicates that they feel enough satisfied with online learning, even so they will recommends their lecturer to other students. Lastly, student performance has total mean 3.5541. This exhibits that their academic performance is good enough. They perceive that online learning provides them new opportunities to enhance their productivity as a student.

*b. Hypothesis Testing*

To test the study hypothesis, structural equation modelling was used. From goodness of fit testing, it is known that research model is feasible to use and hypothesis testing can be continued.

Tabel II. Goodness-of-Fit Testing

Types of Goodnes of Fit	Goodness of Fit Measure	Level of Acceptance (Hair et al., 2010)	Calculating Measure	Acceptable
Absolute Fit Measure	Chi-square	Small chi-square	774.212	Poor fit
	p-value	p-value ≥ 0.05	0.000	Poor fit
	RMSEA	< 0.10	0.074	Good fit
Incremental Fit Measure	RMR	< 0.10	0.047	Good fit
	NFI	> 0.90 or close to 1	0.803	Marginal fit
	TLI	> 0.90 or close to 1	0.866	Marginal fit
	CFI	> 0.90 or close to 1	0.878	Marginal fit
Parsimonius Fit Measure	IFI	> 0.90 or close to 1	0.880	Marginal fit
	Normed Chi-square	Lower limit : 1.0; Upper limit : 2.0/3.0 or 5.0	2.257	Good fit

Source : Questionnaire processed by AMOS 22.0

Table III shows four hypothesis testing :

Table III Hypothesis Testing

Hypothesis	Coefficient	p-value	Decision
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H1:IF→SS	0.166	0.193	Not supported
H2 : P → SS	-0.052	0.704	Not supported
H3 : SM → SS	0.936	0.000	Supported
H4 : SS → SP	0.817	0.000	Supported

Source : Data processing result (AMOS 22.0)

As seen at Table III, the effect of internet facilities on student satisfaction and platform on student satisfaction are insignificant. Indeed, this finding is platform negatively influences student satisfaction. The effect of student motivation on student satisfaction and student satisfaction on student performance are positive and significant.

## DISCUSSIONS

The current study examined the influence of each variable (internet facilities, platform, and student motivation) on student satisfaction and also the impact of student satisfaction on student performance. The study results proved that only two hypothesis proposed are supported.

For the first hypothesis, internet facilities positively affects student satisfaction, but the effect is not significant. This finding is inconsistent with [1] who found the positive and significant correlation between internet facilities and student satisfaction. [27] also found that student satisfaction was directly influenced by wireless internet. [28] also found that level of student satisfaction were also very much influenced by internet. It can be said that student preferences are in favor of directly having on site class session.

The research finding of the next hypothesis about impact of platform on student satisfaction is negative and insignificant. This finding is partly in line with [1] who investigated negative significant linkage between platform and student satisfaction. Different from [29] who revealed that the students are satisfied with online platform to use. This study is also inconsistent with [30], where they found that the choice and use of learning platforms significantly influence the degree of college student satisfaction. It is, therefore, students do not have option to use any platform because they prefer having direct discussion with their lecturers. Consequently, any platforms that are used will be depending on each student preferences.

Third hypothesis examines the impact of student motivation on student performance. From analysis method, H3 is supported. This finding is consistent with [1] that also found the positive significant connection between student motivation and student satisfaction. [31]

also *disclosed that students' self-motivation has a significant relationship with online learning students' satisfaction*. This finding is not in line with [32] that indicated student learning motivation and their satisfaction have partially significant positive correlation. On the contrary, [33] verified that satisfaction is positively related to the motivation of students. Besides that [34] also proved that student satisfaction positively and significantly influence students' motivation to learn.

Final hypothesis examine the effect of student satisfaction on student performance are supported. This finding is in line with study done by [35]. They also found that there is strong relationship between satisfaction of students and academic performance. [36] also reported the factitive impact of student satisfaction on their performance in blended learning curricula. Moreover, according to [37], students with high GPA have shown a higher level satisfaction. Furthermore, [38] also discovered student's satisfaction positively impact students' performance.

## CONCLUSION

This research was conducted for bachelor degree in Faculty of Economics and Business, Universitas Trisakti to analyze the effect of internet facilities, platform and student motivation on student satisfaction and then explore the impact of student satisfaction on student performance. The findings indicate positive insignificant effect of internet facilities on student satisfaction, negative insignificant influence of platform on student satisfaction, positive significant impact of student motivation on student satisfaction and then student satisfaction on student performance.

### *a. Practical Implications*

The results presented in this study will assist management to capture the importance of internet facilities and its platform to enhance student satisfaction to further expand better quality educational system. A possible strategy is expected to increase a hopefully, will support student satisfaction so it will affect their academic performance.

### *b. Limitations and Recommendations for Future Research*

Several limitations are : first, convenience sampling limits the generalizability of the results. Second, the number of research variables in this study are only

limited to internet facilities, platform, student motivation, student satisfaction and student performance. Third, relatively small number of samples since the sample size was only 230.

Future studies are recommended with a sample covering all degree programs in FEB or all faculties Universitas Trisakti has. For further study could also test the role of student satisfaction as mediating variable.

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