Identification of ITS Student's Behavioral Intention in Using Campus Web-Based Services Through UTAUT Approach: Case Study my.its.ac.id

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ABSTRACT

There are things that are interesting to research regarding the provision of web-based services to institutions such as campus namely the Institute of Technology Sepuluh Nopember (ITS) as an option in contrast to serving understudies during Coronavirus. Through the UTAUT approach this research will describe the behavioral intention of ITS students in using web-based services my.its.ac.id as measured by variables of performance expectancy, effort expectancy, social influence, and facilitating conditions. To achieve the research objectives PLS-SEM is used. Information assortment was directed utilizing an online survey dispersed to 279 ITS Students spread across faculties and levels. The consequences of the PLS-SEM examination found that performance expectancy, social impact, and facilitating conditions affected the conduct expected of ITS understudies utilizing the my.its.ac.id, which depended on them utilizing the assistance since it could help exercises during school. Furthermore, the impact of lectures, companions, and abilities in utilizing administrations likewise has an impact. It was likewise tracked down that the moderating effect of age on facilitating conditions on behavioral intention was also found. The findings in this study can provide recommendations for my.its.ac.id managers in developing future services, such as adding services based on student needs, adjusting the appearance of features on each device, and being more concerned about accessibility.

Keywords: Behavioral Intention, Institute of Technology Sepuluh Nopember, UTAUT, Web-Based Services.

1. INTRODUCTION

Web-based services provide assistance during the pandemic Covid-19 globally affects several fields, including the education field [1]. Since mid-walk 2020 the government has asked to do exercises at home for understudies [2]. So that there is urgency online learning required by the government. Not just web-based services are ready by each school during the pandemic, however presently that schools are focusing on offering productive online administrations to give information and learning [3].

The potential to develop web-based services in the world of education is seen in universities. This can be seen from the penetration of internet users, dominated by those who are in college [1]. The university selected in this study is the Institute Technology of Sepuluh Nopember (ITS). ITS is ranked 4th in Indonesia which has the best website quality [4]. This shows that ITS is capable of providing web-based services.

ITS itself has a web-based services called my.its.ac.id. The Student feature does not only provide academic services but also non-academic services. on non-academic services, there is myITS Courier, myITS Survey, myITS Vote, Internet Access, and Webinar Booking [5]. Of the many services available on my.its.ac.id web-based services, become a challenge for ITS to see the relevance of ITS students in using these services.

Therefore, it is necessary to approach UTAUT developed by [6] to ensure the services available are needed and used by students. This research wants to know the behavioral intention of ITS students in adopting all available services where potentially have their own reasons for using them. Previous studies in the field of education focused on the acceptance of technology for activities that can support students when schooling is

acceptable, including the development of web-based services or software to improve performance while attending school [7], [9].

Accordingly, this examination means to look at the components that can impact the behavioral intention of ITS understudies to utilize my.its.ac.id as web-based services and estimated from the first UTAUT develop, namely performance expectancy, effort expectancy, social influence, and facilitating conditions as and next by checking of the overall moderating variables of the main UTAUT construct.

This research is interesting to study because the researcher wants to reveal the reasons why ITS students use non-academic services at my.its.ac.id which can change students' perspectives on the campus website which was previously only used to meet academic needs.

2. THEORETICAL BACKGROUND: UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)

UTAUT construct can be seen in fig. 1, developed by [6] clarify exhaustively the elements that influence singular acknowledgment of data information technology and is an immediate determinant of behavioral intention. UTAUT consists of four variables fig. 1. Moreover, there are likewise four moderators for example age, gender, experience, and voluntariness of use, to direct the moderating effect of the development displayed in the estimation behavioral intention. UTAUT is widely used in the field of higher education to develop web-based services or software that can support lecture activities [7], [9] technology-based learning tools [8], [10].

Thus, UTAUT proved successful in determining the acceptance of technology in the field of education. so this study also uses UTAUT in order to provide a guide to determine behavioral intention in using web-based services on my.its.ac.id. In order to be able to find out the relevance of using the services on my.its.ac.id and ensure that the services provided are not in vain.
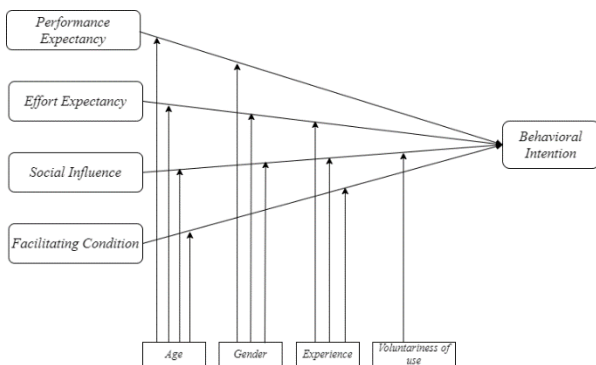

Figure 1 UTAUT Construct

2.1. Behavioral Intention (BI)

Behavioral intention is characterized as "an individual's behavioral likelihood that the person will play out the proposed conduct" [6]. Behavioral intention is the behavior of consumers who believe in and are loyal to the company's products or services so willing to recommend to others because these consumers feel that they have experienced the perceived benefits of the service [11]. From several opinions about behavioral intention implies that the behavioral intention variable is a indicator of how a person is willing to adopt and believe in a product offered.

2.2. Performance Expectancy (PE)

Performance expectancy is characterized as "how much an individual accepts that utilizing the new systems will help the person in question to accomplish gains in work execution" [6]. Research conducted by [8] on behavioral intention students to use animation and storytelling which is the new acceptance of the education system shows that performance expectancy is the most broadly perceived determinant of an understudy's behavioral intention to use advancement in the preparation structure. In addition, [12] on the electronic document management system (EDMS) likewise showed the very outcome that the expectation to utilize EDMS was overwhelmed by performance expectancy. Steady with the writing, this examination accordingly sets that:

H1. PE has a significant effect on the BI of ITS students in using web-based services on my.its.ac.id.

2.3. Effort Expectancy (EE)

In the event that the utilization of innovation data has a simple degree of utilization it will trigger sentiments that develop from inside every person that a framework has benefits and will prompt a degree of solace to utilize [13]. The effect of effort expectancy anticipation on the use of development has similarly been shown in the investigation of [10] on the acknowledgment of and the utilization of intuitive whiteboard innovation for teachers in Turkey shows efforts expectancy positively affects behavioral intention to utilize the board interactive writing. Steady with the writing, this examination accordingly sets that:

H2. EE has a significant effect on the BI of ITS students in using web-based services on my.its.ac.id.

2.4. Social Influence (SI)

Social influence is described as how much individuals feel that people he considers basic to trust to use the new structure [6]. The research of [14] about the willingness to accept mobility as a service (MaaS) shows social influence gives a greater path coefficient to behavioral intention. In addition, research [15] on technology acceptance evidence-based medicine (EBM) on resident

doctors showed that social influence affects the acceptance of the technology. Steady with the writing, this examination accordingly sets that:

H3. SI has a significant effect on the BI of ITS students in using web-based services on my.its.ac.id.

2.5. Facilitating Conditions (FC)

Broadly speaking, consumers who are at the level lower facilitating condition will affect their intentions in use technology, where their intentions tend to be lower [6]. In the field of education, facilitating conditions are considered as the required accessibility if the required infrastructure is met.

Currently, the university is encouraging students to use technology that is provided by the campus taking into account several facilitating conditions students must have, such as computers, knowledge, individual skills, an environment that arouses and supports students' willingness to using technology [7]. The connection between facilitating conditions and behavioral intention is also applied to research [8]. The consequences of the examination show that facilitating conditions impact behavioral intention. Steady with the writing, this examination accordingly sets that:

H4. FC has a significant effect on the BI of ITS students in using web-based services on my.its.ac.id.

2.6. Moderating Variables

This study uses a moderating variable to find out whether the variable can direct the connection between variables independent with dependent. According to [6] there are four moderate variables. Fourth the moderate variable was used in this study. Variable selection independent moderated on each moderate variable adjusted to the model research [6].

2.6.1. Age

The Age difference is thought to affect innovation reception conduct data [6]. Individuals, everything being equal, will show various mentalities, discernments, and practices while tolerating innovation's new data. From this clarification, it is realized that age affects different things. People, everything being equal, will show various perspectives, discernments, and practices while tolerating innovation's new data. From this clarification, it is realized that age affects different things.

2.6.2. Gender

Gender orientation frequently decides the distinction in the state of affairs saw. Men are investigated and alarmed when they get something, give decisions and affirm data, while ladies depend more on affiliations and

correspondence with others when examining information advancements [16].

2.6.3. Experience

The study of [6], found that technology that requires little exertion is liked by clients with experience is low and such people are bound to be impacted by assessments of individuals in their group of friends. [13] also found the level of experience in using technology also facilitated by accommodating conditions.

2.6.4. Voluntariness of Use

Voluntariness of use is an act of decision resulting from one's own will. So according to research by [6] voluntariness of use moderates social influence on behavioral intention.

3. STUDY DESIGN

3.1. Sampling and Population

This investigation is quantitative exploration and the plan of this examination is a conclusive descriptive-multiple cross-sectional, then the sampling technique used is purposive sampling. And as many as 279 ITS students spread across all faculties and levels have become the subject of this research. From the 279 ITS students, there are 255 respondents who passed the screening test and outliers test. This amount is still sufficient for the sample size because according to [17], the appropriate sample size is at least 100.

3.2. Questionnaire development

There are 4 parts of the questionnaire in this study. The first is a screening question. The second is related to the respondent's profile. The third is a question for the PLS-SEM analysis which contains 23 measurement items. The 23 measurement items were adopted from the research [7]. To measure the 23 items things utilizing a Likert scale where (1) unequivocally differ and (5) firmly concur. The questionnaires were distributed online and filled indirectly by the respondents (self-administered questionnaire) using Google Forms.

3.3. Statistical Technique

To perform a descriptive analysis using IBM SPSS 21, then to test the hypothesis using the SmartPLS software.

Table 1. Socio-demographic of respondents

Profile	Frequency	Percentage (%)
Age		

<17-21	172	64,2
22-28	92	34,3
29-35	2	0,7
36-41	2	0,7
>41	0	0
Total	**268**	**100%**
Gender		
Male	110	41
Female	158	59
Total	**268**	**100%**
Experience		
> 2 times a day	144	53,7
1 times a day	40	14,9
> 2 times a week	48	17,9
1 times a week	26	9,7
Seldom	10	3,7
Total	**268**	**100%**
Voluntariness of Use		
Needed all the time	52	19,4
Easy access	11	4,1
Useful for college activities	122	45,5
Doesn't take up a lot of internet quota	1	0,4
There is an obligation to access the service	82	30,6
Total	**268**	**100%**

Table 2. Reliability and Factors Loadings

Latent Variables	Indicators	*Outer Loadings*	CA	CR	AVE
Cut-off Value		≥ 0,7	≥ 0,7	≥ 0,7	≥ 0,5
Performance Expectancy	PE1	0,634			
	PE2	0,738			
	PE3	0,804			
	PE4	0,731	0,846	0,884	0,524
	PE5	0,664			
	PE6	0,803			
	PE7	0,673			
Effort Expectancy	EE1	0,828			
	EE2	0,774	0,814	0,877	0,642
	EE3	0,821			
	EE4	0,780			
Social Influence	SI1	0,886			
	SI2	0,824	0,834	0,901	0,752
	SI3	0,889			
Facilitating Condition	FC1	0,652			
	FC2	0,784			
	FC3	0,811	0,766	0,842	0,520
	FC4	0,567			
	FC5	0,763			
Behavioral Intention	BI1	0,882			
	BI2	0,819	0,781	0,872	0,696
	BI3	0,798			

Notes: CA= Cronbach's alpha; CR=Composite reliability; AVE = Average variance extracted

4. DATA ANALYSIS AND RESULTS

From Table 1, socio-demographic characteristics, it can be seen that respondents are dominated by the age range <17-21 with a percentage of 64.2%, then dominated by the female with a percentage of 59%, the experience of using the service is very frequent, namely more than twice a day with a percentage of 53.7. And the level of voluntariness of use the service is said to be not too voluntary because they use the service for the purpose of college activities with a percentage of 45.5%.

4.1. Partial Least Square

To analyze data using the PLS-SEM method with software SmartPLS. And using two measurements, to be specific the estimation model and the underlying model.

4.1.1. Estimation Model

First, the estimation model is seen from the internal consistency which sees the value of Cronbach's alpha and the composite reliability value which has a cut-off value ≥ of 0.7 [18]. Cronbach's alpha and composite reliability values in Table 2 have met the cut-off value, which is ≥ 0.7. So that it can be said that the data on the questionnaire is reliable.

Next, measure convergent validity by looking at the average variance extracted (AVE) value which has a cut-off value ≥ of 0.5 [18]. The AVE value obtained has also met the cut-off value criteria, so that the data on the questionnaire is said to be valid and can be used for research.

4.1.2. Underlying Model

R^2 value in this study is 64.5 percent which indicates the accuracy of this research model is moderate [19]. The significance of a relationship between variables occurs when the *t*-value of each indikator is > 1.96 [20]. In addition to looking at the value of *t*-values, it can likewise be seen from the worth of *p*-values. Assuming the *p*-values of 0.05, it tends to be inferred that the theory is acknowledged. Assuming *p*-values of 0.05, it tends to be reasoned that the theory was dismissed [19].

H1 PE has a significant effect on BI of ITS students using web-based services on my.its.ac.id. From Table 3 it is discovered that performance expecancy is an indicator that determines behavioral intention ($\beta_1 = 0.303$, *t*-values= 0.303, *p*-values = 0,000). Then on H2 EE has no significant effect on BI of ITS students using web-based services on my.its.ac.id (β_2= 0.067, *t*-values= 1.013, *p*-values = 0,311) so that the H2 hypothesis is rejected. Furthermore, from the results of the PLS analysis on H3 SI has a significant effect on BI of ITS

students using web-based services on my.its.ac.id (β_3= 0.179, *t*-values= 3.391, *p*-values = 0,001). And lastly H4 which also shows FC has a significant effect on BI of ITS students using web-based services on my.its.ac.id (β_4= 0.421, *t*-values= 6.537, *p*-values = 0,000).

4.1.3. Effect of Moderating Variables on Latent Variables

In case there is an impact of the directing variable on the dormant variable shows that there are different elements (moderate elements) to fortify conduct ITS understudies use web-based services my.its.ac.id.

From the results of the effect of the moderating effect Table 4, only found that the moderating variable of age had a significant effect on the supporting facilitating condition variable on the behavioral intention variable because (*t*-values= 2.274, *p*-values = 0,023). while for other moderating effects it is not significant because it does not meet the limits of *t*-values and *p*-values).

Table 3. Hypothesis Results

Variables	Path Coefficients	*t*-values	*p*-values	Results
PE → BI	0.303	4.674	0.000	Accepted
EE → BI	0.067	1.013	0.311	Rejected
SI → BI	0.179	3.391	0.001	Accepted
FC → BI	0.421	6.537	0.000	Accepted

Notes: *t-values* > 1,96; *p-values* < 0.05

Table 4. Moderation Effect Results

Variables	Path Coefficients	*t*-values	*p*-values	Results
Age → PE-BI	-0.015	0.181	0.857	Rejected
Age → EE-BI	0.108	1.417	0.157	Rejected
Age → SI-BI	-0.074	0.988	0.323	Rejected
Age → FC-BI	-0.188	2.274	0.023	Accepted
Gender →PE-BI	0.078	1.131	0.259	Rejected
Gender →EE-BI	-0.094	1.611	0.107	Rejected
Gender →SI-BI	0.053	0.835	0.404	Rejected
Experience → EE-BI	-0.063	1.146	0.252	Rejected
Experience → SI-BI	0.096	1.489	0.137	Rejected
Experience →FC-BI	0.083	1.183	0.237	Rejected
Voluntariness of Use → SI-BI	-0.018	0.282	0.778	Rejected

Notes: *t-values* > 1,96; *p-values* < 0.05

5. DISCUSSIONS

From the consequences of the PLS examination, shows that PE includes trust in the benefits felt by students with campus web-based services, such as being able to carry out lecture activities well and quickly, as well as performance during study can increase [7], [21]. From the results of the hypothesis test, it reflects that the behavior of ITS students uses web-based services my.its.ac.id because they believe that using the services that are already available at my.its.ac.id is useful for their lectures while at ITS [21].

Then on H2 effort expectancy was rejected, this is presumably because ITS students feel that using my.its.ac.id web-based services is not easy which can be caused by accessibility, lack of information related to how to use it, and difficulties in using it. This allegation arose because in the research of [7] the behavior of students at a Pakistani university using campus web-based services because it is easy to access and use them.

On the results H3 analysis of the behavioral intention of ITS students using campus web-based services, it is also significantly influenced by social influences, namely lecturers, campus staff, and friends, this is in line with research [7]. In H4 shows, the behavioral intention of students to use campus web-based services is also significantly affected due to the working with facilitating condition, for example, the accessibility of understudies who have the fundamental assets, like PCs, web access, online help required, information, and abilities required. possessed by every understudy makes them will, in general, utilize grounds online administrations. These elements can likewise expand the degree of client solace [7].

In the results of the analysis of the moderating effects, it was found only that the moderating variable of age could increase the influence of the facilitating conditions (FC) variable on the behavioral intention (BI) variable. Helping to facilitate conditions that can be used at all ages such as providing ServiceDesk can significantly increase the adoption of a system [10], [22]. Meanwhile, the moderating effect of gender, experience, and voluntariness of use cannot increase the effect of latent variables. This means that ITS students to use my.its.ac.id web-based services have no differences in terms of the perceived benefits when using the service, the level of ease of accessing services, and the social influence of using the service. So it can be concluded that there is no moderating effect.

6. CONCLUSIONS

In light of the consequences of the PLS-SEM investigation, it is realized that the behavioral intention of ITS students in using web-based services at my.its.ac.id is influenced by PE, SI, and FC. Furthermore, it was discovered that EE didn't have an immediate positive relationship and had no huge impact on the use of services on my.its.ac.id by ITS students. Effort expectancy has no effect because the accessibility

of each service on my.its.ac.id is still difficult due to the lack of information on how to use each service, which causes students to not be able to use the services on my.its.ac.id.

The findings of the effect of the moderating effect found that age significantly increased the facilitating conditions on behavioral intention but was not positively related. So it is necessary to facilitate conditions that can be used by all ages, such as providing ServiceDesk by live chat and increasing the wi-fi network on campus so that it can increase motivation to use services on my.its.ac.id by ITS students.

Recommendations for managerial implications from research findings, my.its.ac.id managers need to do development of services that are really needed by students to support other lecturing activities such as services for talent interests and language centers. Then urges lecturers that their students use the services on my.its.ac.id, and can adjust the appearance of my.its.ac.id on each device such as the appearance of a cellphone and laptops so that my.its.ac.id display on every device is ideal. In addition, my.its.ac.id can also be concerned with the ease of accessing and using the service so that ITS students can use it easily.

AUTHORS' CONTRIBUTIONS

The author confirms the contributions to the examination as follows: study idea and model: Adinda S. Billa, Satria F. Persada; data collection: Adinda S. Billa; analysis and interpretation of results: Adinda S. Billa, Satria F. Persada, and Bahalwan Apriyansyah; drafting and revision: Adinda S. Billa. All authors explored the outcomes and consented to the last form of the original copy.

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REFERENCES

[1]   Asosiasi Penyelenggara Jasa Internet Indonesia, "Laporan Survei Internet APJII 2019 – 2020," *Asos. Penyelenggara Jasa Internet Indones.*, vol. 2020, pp. 1–146, 2020, [Online]. Available: https://apjii.or.id/survei.

[2]   K. Anindita, "Manfaat Aplikasi Berbasis Web untuk Bisnis di Tengah Wabah Covid-19," 2020. https://www.hashmicro.com/id/blog/manfaat-aplikasi-berbasis-web/.

[3]   M. Rafiq and K. Ameen, "Use of digital media and demand for digitized contents in higher education sector of Pakistan," *Int. Inf. Libr. Rev.*, vol. 44, no. 3, pp. 116–122, 2012.

[4]   Webometrics.info, "Ranking Web of Universities," 2021. https://www.webometrics.info/en/Asia/Indonesia .

[5]   My.its.ac.id, "myits," 2021. my.its.ac.id.

[6]   V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User acceptance of information technology: Toward a unified view," *MIS Q.*, pp. 425–478, 2003.

[7]   M. Arif, K. Ameen, and M. Rafiq, "Factors affecting student use of Web-based services: Application of UTAUT in the Pakistani context," *Electron. Libr.*, vol. 36, no. 3, pp. 518–534, 2018, doi: 10.1108/EL-06-2016-0129.

[8]   N. M. Suki and N. M. Suki, "Determining students' behavioural intention to use animation and storytelling applying the UTAUT model: The moderating roles of gender and experience level," *Int. J. Manag. Educ.*, vol. 15, no. 3, pp. 528–538, 2017, doi: 10.1016/j.ijme.2017.10.002.

[9]   S. Chauhan and M. Jaiswal, "Determinants of acceptance of ERP software training in business schools: Empirical investigation using UTAUT model," *Int. J. Manag. Educ.*, vol. 14, no. 3, pp. 248–262, 2016, doi: 10.1016/j.ijme.2016.05.005.

[10]   B. Tosuntaş, E. Karadaɪ, and S. Orhan, "The factors affecting acceptance and use of interactive whiteboard within the scope of FATIH project: A structural equation model based on the Unified Theory of acceptance and use of technology," *Comput. Educ.*, vol. 81, pp. 169–178, 2015, doi: 10.1016/j.compedu.2014.10.009.

[11]   Y. Namkung and S. Jang, "Does food quality really matter in restaurants? Its impact on customer satisfaction and behavioral intentions," *J. Hosp. Tour. Res.*, vol. 31, no. 3, pp. 387–409, 2007.

[12]   A. Ayaz and M. Yanartaş, "An analysis on the unified theory of acceptance and use of technology theory (UTAUT): Acceptance of electronic document management system (EDMS)," *Comput. Hum. Behav. Reports*, vol. 2, no. September, p. 100032, 2020, doi: 10.1016/j.chbr.2020.100032.

[13]   V. Venkatesh and F. D. Davis, "A theoretical extension of the technology acceptance model: Four longitudinal field studies," *Manage. Sci.*,

vol. 46, no. 2, pp. 186–204, 2000.

[14] J. Ye, J. Zheng, and F. Yi, "A study on users' willingness to accept mobility as a service based on UTAUT model," *Technol. Forecast. Soc. Change*, vol. 157, no. May, p. 120066, 2020, doi: 10.1016/j.techfore.2020.120066.

[15] A. Kalavani, M. Kazerani, and M. Shekofteh, "Acceptance of evidence based medicine (EBM) databases by Iranian medical residents using unified theory of acceptance and use of technology (UTAUT)," *Heal. Policy Technol.*, vol. 7, no. 3, pp. 287–292, 2018, doi: 10.1016/j.hlpt.2018.06.005.

[16] M. F. Belenky, B. M. Clinchy, N. R. Goldberger, and J. M. Tarule, *Women's ways of knowing: The development of self, voice, and mind*, vol. 15. Basic books New York, 1986.

[17] S. Sugiyono, "Metode penelitian kuantitatif dan kualitatif dan R&D." Alfabeta Bandung, 2010.

[18] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," *Eur. Bus. Rev.*, 2019.

[19] J. Hair, C. L. Hollingsworth, A. B. Randolph, and A. Y. L. Chong, "An updated and expanded assessment of PLS-SEM in information systems research," *Ind. Manag. Data Syst.*, 2017.

[20] J. Henseler, C. M. Ringle, and R. R. Sinkovics, "The use of partial least squares path modeling in international marketing," in *New challenges to international marketing*, Emerald Group Publishing Limited, 2009.

[21] A. A. Taiwo and A. G. Downe, "The theory of user acceptance and use of technology (UTAUT): A meta-analytic review of empirical findings.," *J. Theor. Appl. Inf. Technol.*, vol. 49, no. 1, 2013.

[22] R. E. Bawack and J. R. K. Kamdjoug, "Adequacy of UTAUT in clinician adoption of health information systems in developing countries: The case of Cameroon," *Int. J. Med. Inform.*, vol. 109, pp. 15–22, 2018.