

Strategic Model Of Learning Implementation Of Mission-Based Mbkm, Academic Leadership, Collaboration, Commitment, And Sustainability With The Influence Of Information Technology In High Schools

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ABSTRACT

This research aims to develop and analyze a strategy model for implementing MBKM learning, namely university mission, academic leadership, collaboration, commitment, and sustainability, as well as the impact of the use of information technology. The research results show that leadership and information technology variables are strategic variables for improving learning strategies. This is because the research results of these variables have a significant influence. Meanwhile, information technology variables are not effective as moderator variables on the relationship between commitment and learning strategies because the research results have a weak and negative influence. Collaboration and commitment variables are appropriate variables for learning strategies. This collaboration variable has a positive and significant influence on learning strategies in the context of this research, meaning that collaboration plays an important role in influencing learning strategies. Commitment is a very important factor in influencing learning strategies. Learning strategy variables have a significant positive influence on sustainability in this case through learning strategies, which have been proven to have a significant positive impact on sustainability however, it is important to continue to carry out further research and development to support sustainability efforts on an ongoing basis. The information technology variable has a significant influence as a moderator on the relationship between learning strategies and sustainability, meaning that the interaction between learning strategies and information technology appears to have a strong and negative influence on sustainability. The key factors are mission, academic leadership, collaboration, commitment, and sustainability, and it can help universities to more effectively adapt and implement MBKM policies to increase autonomy and flexibility in higher education.

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1. Introduction

The model of mbkm learning implementation strategy based on mission, academic leadership, collaboration, commitment, and sustainability with the influence of information technology in higher education" can include several aspects that become the basis or reason for research. The importance of MBKM in Higher Education: Explaining why Model Based Learning (MBKM) is a relevant and important research topic in the context of higher education. Influence of College Mission: Discussing how a college's mission or vision can influence MBKM implementation strategies, given the importance of alignment between mission and curriculum implementation. The Role of Academic Leadership: Why academic leadership is an important factor in developing an effective MBKM implementation strategy, including how leadership can influence the direction and culture of the institution. Collaboration in Higher Education: Explaining the importance of collaboration among stakeholders in higher education, such as lecturers, students, and administrative staff, in developing and implementing MBKM learning strategies. Commitment to Quality Education: Why commitment to quality education is a key factor in successful implementation of MBKM, and how this commitment can be measured and improved. Sustainability and Information Technology: Presents the reasons why sustainability of the MBKM learning strategy needs to be considered, as well as how information technology can improve the effectiveness of MBKM learning. Challenges and Opportunities: Outlines the challenges faced in implementing MBKM learning strategies and the opportunities that can be gained through this approach, especially in improving the quality of education in higher education. [14] In line with the declaration of the Merdeka Belajar Kampus Merdeka (MBKM) program, it has an impact on the obligation for universities to collaborate with other universities (Martini et al. 2021). [12] The results of the research and based on the data obtained, there are five strategies that can be used to complement the MBKM implementation strategies discussed by previous studies. Curriculum Development. [1] Law Number 20 of 2003 that the curriculum consists of a set of plans, regulations regarding content, learning materials and appropriate methods as guidelines in the implementation of the teaching and learning process. One of the SOPs produced in the dissemination of the concept of blended learning, the concept of standard operating procedures from planning, implementation, to evaluation and work instructions for the implementation of the learning model, the results of the study showed that the evaluation, the number of teachers who understood the POB of blended learning increased by 70% and the active participation of students in online classes by 40-50%. [2]. There is the need to improve coordination in communication, especially with parties outside the KKP, strengthen strategies by network managers, and reframe perceptions of actors related to the objectives of the One Marine and Fishery Data so that networking relationships in these activities will grow [5]. [5]. The network is accessible to everyone, but only certain parties can edit it. As you may already know, cryptocurrencies operate on a blockchain which is a decentralized system. There are several consensus mechanisms used by various blockchain networks. These mechanisms include Proof of Work (PoW), Proof of Stake (PoS), Proof of Elapsed Time (PoET), and many more. [6]. The key to this system is that executives and managers must create a specific set of performance goals. [7]. In the end, the affirmation in this study is how to generalize the concept of MBKM vision and mission of higher education institutions to support MBKM learning. The MBKM program stands for Merdeka Belajar - Kampus Merdeka is a program established by the Ministry of Education, Culture, Research and Technology [10]. [9]. Based on the curriculum compiled so that later graduates can have abilities in knowledge, attitudes, and behavior/skills in accordance with the established vision and mission. [11] In the perspective of Islamic education, the vision and mission have their own concentration, namely the balance between the development of science and technology (Science and Technology) with the development of Islamic morals in behavior and behavior. Based on the above background, this research raises the theme of sustainable learning strategies (sustainabiliyi) with the title: "MODEL STRATEGIC IMPLEMENTATION OF MISSION-BASED MBKM LEARNING THAT BECOMES A SPECIALITY IN HIGHER EDUCATION" in Indonesia.

2. Theoretical Frameworks

The literature review covering the aspects formulated through this research aims to develop a model of MBKM (Merdeka Belajar-Kampus Merdeka) learning implementation strategy that focuses on key aspects, including the college mission, academic leadership, collaboration,

commitment, sustainability, and the impact of the influence of information technology in the college environment.

College Mission

Mission is the overarching purpose of the organization. The dimensions and indicators of the college's mission may vary to include some key aspects of the college's mission viz: Quality Education, Research and Innovation, Community Service, Equity and Diversity, Leadership and Governance, International Cooperation, Environmental Sustainability, Excellence and Innovation.

Academic Leader

Academic leadership can be seen from various perspectives and can be influenced by various existing leadership theories.

Collaboration

Collaboration is the process of working together to generate ideas and solve problems together towards a shared vision. [30]. In an interdependent organization, collaboration is key to creative thinking. For example, according to Thrilling & Fadel (2015, p. 55) the criteria or indicators of collaboration are as follows:

1. Demonstrate ability to work effectively and respectfully with diversified teams.
2. Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.
3. Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.

Commitment

[31] Commitment-is-an-agreement-to-do-something-here's-the-complete-explanation. [39] Commitment is defined as the willingness of each partner to make efforts to maintain the relationship (Jie 2012). In cooperation, each partner in the supply chain is bound to have certain requirements that are acceptable to others. [40] Mirani, Moore and Weber (2001) emphasized that the commitment of each party, which is a member of the supply chain, will determine the successful performance of the supply chain. [44] From the definition of commitment, several indicators of employee commitment can be compiled as follows (Encyclopedia Britannica, 1998): staying (working) in the company, not wanting to move, willing to work additional hours, work overtime to complete tasks, maintain company confidentiality, promote, boast about the company to others or the community, obey the rules even without supervision, willing to sacrifice personal goals to achieve company goals, use and or buy products (services) produced by the company.

Learning Strategy

Learning strategies are methods used to improve understanding and learning outcomes. In this case, not everyone can learn easily and quickly. Therefore, it is important to know effective learning strategies to improve efficiency in learning [32]. [33] The 21st century learning paradigm emphasizes the ability to think critically, be able to connect knowledge with the real world, master information communication technology, and collaborate. [34] Dimensions / Indicators of knowledge processes are divided into three namely cognitive, affective and psychomotor (Anderson & Krathwohl, 2001: 67-68) the cognitive domain is divided into six levels namely: (1) *remember*, (2) *understand*, (3) *apply analyze*, (4) *evaluate*, and (5) *create*.

Sustainability

[31] The concept of *sustainability* refers to the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. [**Sustainability is an** English word that can be freely translated as sustainability. This term is widely used by environmentalists to explain the idea that the natural resources we have are actually limited because there are some non-renewable resources, so their use must be considered so that these resources do not run out quickly and the benefits can be enjoyed continuously.

Information Technology

[28] Information Technology (IT), also known as Information technology (IT) in English, is a general term for any technology that assists humans in creating, transforming, storing, communicating and/or disseminating information. IT brings together computing and high-speed communications for data, voice and video. [41] Information Technology indicators are as follows: 1) Hardware 2) Software (Software) 3) Database (Network and communication facilities) 4) Network (Database) 5) People.

Digital

[A digital system is something that represents information by using digits. Each digit represents a small amount of information because each digit comes from a small set of choices. A digit can be decimal (one of the ten choices from 0 through 9), as in the display of a digital clock. In other words, a digital system is something that represents information using numbers. Each digit represents a small amount of information because each digit is derived from a small number of choices. A digit can be a decimal (one of ten choices from 0 to 9), as in the display of a digital clock.

Innovation

According to Luecke (2003: 2), innovation is a process to realize, combine, or mature a knowledge/idea, which is then adjusted to get new value for a product, process, or service. Innovation according to Zimmerer in Suryana (2014: 11), is defined as the ability to apply creativity in order to solve problems and opportunities to improve or enrich people's lives (innovation is the ability to apply creativity solutions to those problems and opportunities to enhance or to enrich people live).

Mission

Mission is the overarching goal or reason for the company. The mission can be accomplished by stating what the company should do and deepened by answering the question of why the company should do the mission.

Smartphones.

A smartphone is a portable computer device that combines mobile telephone functions and computing functions into one unit (a smart phone is a portable computer device that combines mobile telephone functions and computing functions into one unit). [29] KPI (Key Performance Indicator) is a measure of the success of an organization's strategic goals and objectives.

Research hypothesis:

H1 : Academic Leadership has a positive effect on Learning Strategies

H2 : Collaboration has a positive effect on learning strategy

H3 : Commitment has a positive effect on learning strategy

H4 : Learning strategies have a positive effect on continuous learning (sustainability)

H5 : Information Technology is able to moderate academic leadership on Strategy learning

H6 : Information Technology is able to moderate Collaboration on Strategy learning

H7 : Information technology is able to moderate commitment to learning strategies

H8 : Information Technology is able to moderate learning strategies on sustainability learning

H9 : Efforts to innovate derivative digital learning models in the form of smartphone

applications will be improving information coverage and quality of mission-based learning and the uniqueness of the university.

H10 : Information Technology is a means of strengthening learning strategies in a holistic manner continuous learning

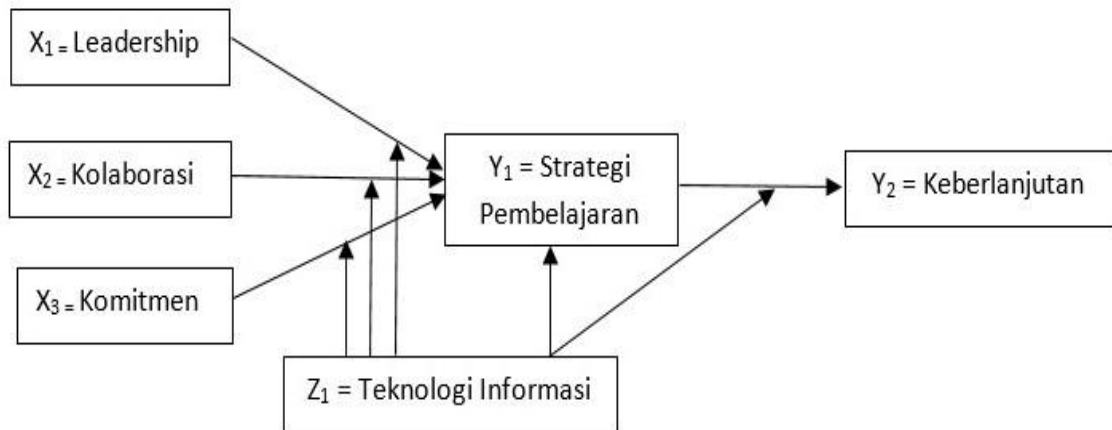


Fig. 1. Research framework

Description:

Academic Leadership (X1), Collaboration (X2), Commitment (X3), Learning Strategy (Y1), Sustainability (Y2), and Information Technology (Z)

3. Method

3.1. GY Research Design

The research design used is a quantitative associative design that aims to describe the relationship between two or more variables to be tested. In this study, the first independent variable (X1) is Leadership academic, the second (X2) is Collaboration and the third (X3) is Commitment. Independence is used as a moderator variable (Z) is Information Technology and the first dependent variable (Y1) is Learning Strategy and (Y2) is Sustainability. The data obtained were then statistically analyzed using the Structural Equation Model /SEM- Smart PLS /Partial Least Square software with the AMOS package.

3.2. Research procedure

In the research process, the first step is to prepare a research proposal. After the research proposal is made, then the next step is to search for literature according to the topic to be researched. From the literature found, then compile the measuring instruments and instruments needed in the study, as well as research support tools. After data collection, proceed with data analysis and data interpretation. After the data has been analyzed, the next step is the preparation of articles for publication and research reports. The procedure in this study can be seen in Figure 3.

Sudah	• Latar Belakang Permasalahan dan Rumusan Masalah
Sudah	• Landasan Teori Kinerja Individual, Persepsi Dukungan Organisasi dan Keterikatan Kerja • Perumusan Hipotesis
Sudah	• Metode Penelitian (Karakteristik populasi, jumlah sampel dan teknik pengambilan sampel)
Belum	• Pengujian Instrumen (Pengujian reliabilitas dan validitas konstruk instrumen)
Belum	• Pengumpulan Data (Pengambilan data di lapangan) dan Pengolahan data
Belum	• Analisis dan Interpretasi Hasil Olah Data
Belum	• Kesimpulan Penelitian • Saran dan Pengembangan Penelitian
Belum	• Pembuatan Laporan dan Penulisan Artikel Publikasi

Data Source

Primary data in this study were obtained through surveys using questionnaires / questionnaires offline / *googleform* to students, lecturers, MBKM managers and quality assurance institutions (LPM) thus primary data will be obtained. Higher education secondary data obtained through library research sourced from: - State and private universities in South

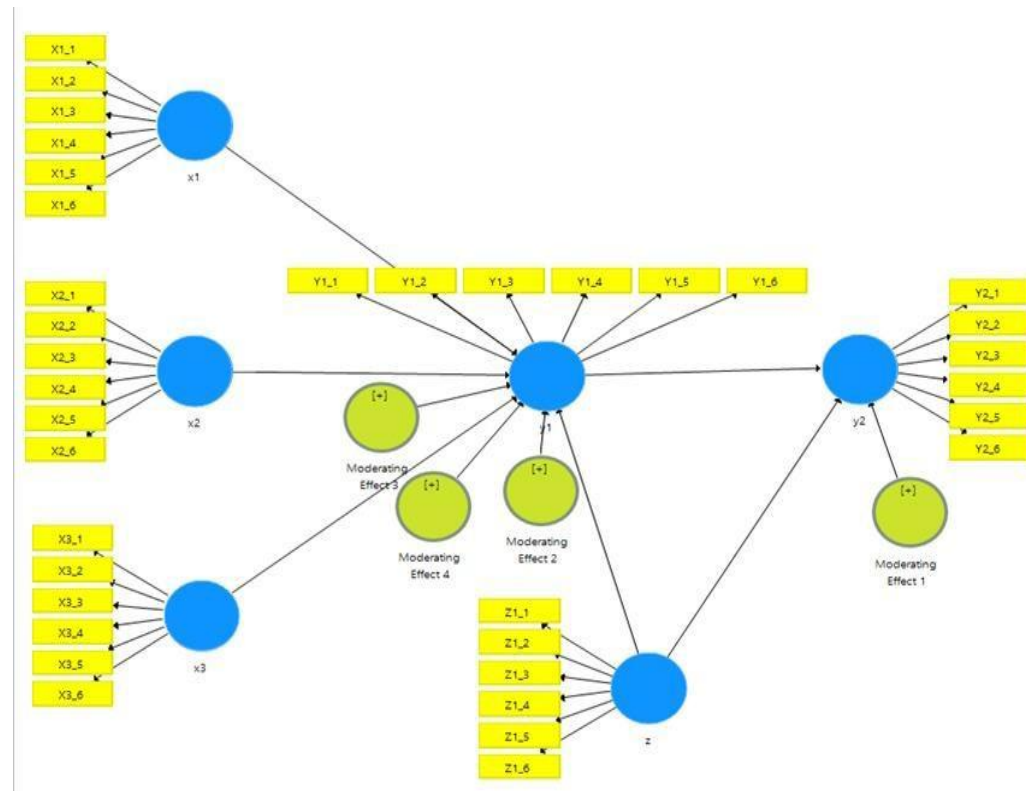
Sumatra, - Ministry of Education and Culture / LLDIKTI Region II South Sumatra, - APTISI Lampung Association, and - Journal Articles, Proceedings Articles, books and other relevant sources

3.3. Population and Sample

The population in this study were all students, lecturers, staff, MBKM managers and quality assurance institutions (LPM) at PTS and PTN that have implemented the MBKM program, which amounted to 1620 and lecturers and staff totaling 180 people. The sample is part and number and characteristics possessed by the population, so that it is expected to represent the population. Data collected using *googleform* were 175 respondents. While the data collected from the survey results with interviews in the Higher Education Environment and LLDikti willayah II and APTISI Lampung were 25 respondents.

3.4. Data Analysis Technique

The relationship between the independent variables and the dependent variables may be influenced by other variables, one of which is the moderating variable. [This moderating variable can strengthen or weaken the relationship between the independent variable and the dependent variable. There are several tests to test the effect of this moderating variable, including: (1) **Moderated Regression Analysis (MRA)**; and (2) **Structural Equation Model (SEM)** from the PLS package. In this study, the data analysis technique used was The Structural Equation Modeling (SEM) from AMOS package for model development and hypothesis testing. SEM is used to identify the dimensions of the construct under study and measure the influence or degree of relationship between factors that have been identified based on indicators on each variable. The symbol for the moderating variable does not have to be Z. The research model developed with SEM PLS analysis is described as follows:



4. RESULT AND DISCUSSION

3.5. PLS Data Processing

Testing in the study was carried out with a Structural Equation Model (SEM) approach based on Partial Least Square (PLS) to examine the formative construction in the research model (Ali *et al.*, 2018). PLS-SEM is used to test the research model created by the researcher by adjusting several predictors, variable criteria and latent variable constructs that cannot be observed. For model errors in the measurement of observed variables, the mediation relationship test is carried out to obtain optimal statistical output that maximizes the explanation of the variance mediation effect and avoids inconsistent and biased parameter estimates (Seric & Ozretic, 2019). Meanwhile, moderation in one model can be tested next (Nitzl, 2016).

3.6. Evaluation of Measurement Model (*outler model*)

Tests carried out using Smart-PLS 3, to test the measurement model, namely testing the validity and reliability of the construct of each indicator. The validity testing procedure is *convergent validity*, namely by correlating the item value with the *construct score* which then produces a loading factor value on the latent variable with its indicators. The loading factor value is said to be high if the component or indicator correlates more than 0.70. However, for early stage research from development it is said to be valid to have a loading factor between 0.4 to 0.7 which is considered sufficient (Hair *et al.*, 2016). The *discriminant validity* test, namely the factor *crossloading* value which is useful whether the construct has adequate discriminant by comparing the resulting construct value must be greater than the value of other constructs in the form of an *average variance extracted* (AVE) of 0.5. Measuring the level of reliability of the research variables used Cronbachs alpha and composite reliability. Measurement items are said to be reliable if they have a Cronbach's $\alpha > 0.7$ value, which has a high reliability value (Henseler *et al.*, 2019).

3.7. Evaluation of Measurement Model (*inner model*)

Model analysis is carried out to test the relationship between latent constructs called inner model analysis (Purba *et al.*, 2021). Inner model analysis is to see the correlation between the measured constructs which is the t test of partial least square itself. The inner model can be measured through

the R-Square model which shows how much influence between variables in the model with the criteria for limiting the *R square* value in three classifications, namely 0 to 0.10 as *weak*; 0.11 to 0.30 as *moderate*; 0.30 to 50 as *moderate* and > 0.50 as *strong explanatory power* (Hair & Alamer, 2022). To determine the goodness of the model with the interpretation of the *f square* value, namely 0.02 has a small effect; 0.15 has a moderate effect and 0.35 has a large effect at the structural level (Sharma *et al.*, 2020). Next, *prediction relevance (Q square)* or known as *Stone-Geisser's*. This test is conducted to determine the predictive capability of how good the resulting value is. If the value obtained is 0.02 as small, 0.15 as medium and 0.35 as large (Hair *et al.*, 2020). Hypothesis testing through the estimated path coefficient which is the estimated value for the path relationship in the structural model obtained by the bootstrapping procedure can be seen from the t-statistic value and the probability value using the statistical value, so for α 5% the t-statistic value used is 1.96 or greater than 1.65 for α 10% for each path relationship (Meak *et al.*, 2023).

Discussion

Respondent characteristics test

Table 1. Respondent Characteristic Test Results

Respondent Characteristics	Group	Total	Percentage (%)
Age	15-24 years old	135	60.3
	25-34 years old	11	4.9
	35-44 years old	20	8.9
	45-44 years old	34	15.2
	55-64 years	12	5.4
	65> years	12	5.4
Gender	Male	113	50.4
	Female	111	49.6
College Origin	Darmajaya	110	49.1
	Uin Raden Intan	65	29.0
	University of Lampung	1	0.4
	Umitra	5	2.2
	Stkip PGRI	3	1.3
	Saburai	2	0.9
	Igm University	2	0.9
	One Nusa	2	0.9
	Um Palembang	2	0.9
	Dempo Valley University	5	2.2
	Stimlash	1	0.4
	Malahayati University	1	0.4
	Tamansiswa University	1	0.4
	University of Bandar Lampung	1	0.4
	Stie Gentiaras	1	0.4
	Institut Maritim prasetiya Mandiri	1	0.4
	Stie Bangkinang	1	0.4
	Politeknik Negeri Sriwijaya	1	0.4
	Bakti Nusantara Institute	3	1.3
	Stie Trisna Negara	2	0.9
	Binadarma University Palembang	1	0.4
	University of Tulang Bawang Lampung	1	0.4
Unand	1	0.4	
Hasanuddin University	2	0.9	
Unikom	2	0.9	
Hayam Wuruk Perbanas University	1	0.4	
Universitas Kader Bangsa	1	0.4	
Musi Charitas Catholic University	1	0.4	
Lampung Nusantara College of Technology	1	0.4	
Trunojoyo University Madura	1	0.4	
Bunda Delima Nursing Academy Bandar	1	0.4	

Lampung			
Faculty	Universitas Persada Indonesia YAI	1	0.4
	Computer Science	17	7.6
	Faculty of Economics	193	86.2
	Fkip	5	2.2
	Legal design and Tourism	2	0.9
	Fisip	1	0.4
	D3 Health	2	0.9
	Industrial Engineering	2	0.9
	Pharmacy	1	0.4
	Science and Technology	1	0.4
Major	Information System	11	4.9
	Informatics Engineering	5	2.2
	Computer System	1	0.4
	Management	118	52.7
	Accounting	9	4.0
	Sharia Economics	64	28.6
	Agrotechnology	1	0.4
	English	3	1.3
	Indonesian Language and Literature Education	1	0.4
	Tourism Study Program TP	1	0.4
	Communication Science	1	0.4
	MMT	2	0.9
	Nursing	1	0.4
	Pharmaceutical Chemistry	1	.4
	D3 Medical Laboratory Technology	1	0.4
Industrial Engineering	1	0.4	
PTI	2	0.9	

Source: Data processed, 2023

The characteristics of respondents based on age in this study were dominated by respondents aged 15-24 years, with a frequency of 135 people or 60.3%. The second position for respondents aged 45-44 years has a frequency of 34 people or 15.2%. Third, respondents aged 35-44 years have a frequency of 20 people or 8.9%, respondents aged 55-64 years have a frequency of 12 people or 5.4% with a total of 224 respondents who filled out the questionnaire and a percentage of 100.0%. The results of data processing on the characteristics of respondents resulted in male gender as many as 113 people or 50.4% a female as many as 111 people or 49.6%. The characteristics of respondents based one gender are dominated by male respondents from the total number of respondents who filled out the questionnaire, totaling 224 people with a total percentage of 100%.

Evaluation of Measurement Model (*outlier model*)

Table 2. Results of Convergent Validity and Reliability Tests

	<i>Variable/Indicator</i>	Loading Factor	Composite Reliability	AVE
	Leadership		0,936	0,710
X1.1	Research experience and Keynote Speaker	0,782		
X1.2	Publication of Scientific Articles in Reputable International Journals	0,889		
X1.3	Book Writing Experience and IP (Intellectual Property) Acquisition	0,842		
X1.4	Implemented innovations and awards	0,843		
X1.5	Mentor contribution in the field of learning	0,859		

X1.6	Achievements as a Higher Education Leader	0,840		
Collaboration			0,932	0,697
X2.1	Positive Interdependence	0,852		
X2.2	Positive Interdependence	0,838		
X2.3	Interaction Through Facial Gaze	0,750		
X2.4	Application of Collaboration Skills	0,880		
X2.5	Respect	0,842	0,842	
X2.6	Willingness	0,840	0,840	
Commitment			0,936	0,708
X3.1	Staying (working) at the company, not wanting to move out	0,848		
X3.2	Willing to work extra hours, overtime to complete tasks	0,824		
X3.3	Promote, boast about the company to others or the community	0,845		
X3.4	Obeys the rules even without supervision	0,810		
X3.5	Willing to sacrifice personal goals or interests to achieve company goals	0,859		
X3.6	Provide suggestions for improvement	0,862		
Learning Strategies			0,946	0,756
Y1.1	Remember	0,876		
Y1.2	Understand	0,898		
Y1.3	Apply	0,911		
Y1.4	Analyze	0,882		
Y1.5	Evaluate	0,871		
Y1.6	Create	0,772		
Sustainability			0,955	0,781
Y2.1	Governance	0,862		
Y2.2	Operations-environmental	0,899		
Y2.3	Operations-financial	0,894		
Y2.4	Education dimension	0,859		
Y2.5	Research	0,895		
Y2.6	Engagement-campus	0,893		
Information Technology			0,943	0,733
Z1	Hardware	0,837		
Z2	Software	0,879		
Z3	Database (Network and Communication)	0,871		
Z4	Network (Database)	0,850		
Z5	People	0,871		
Z6	Internet technology	0,829		

Characteristics: CR > 0.70 and AVE > 0.50

The AVE value obtained is greater than 0.50 in the Leadership variable of 0.710; place Collaboration variable of 0.697; Commitment variable of 0.708; Learning Strategy variable of 0.757; Sustainability variable of 0.781; and Information Technology variable of 0.733. Based on the AVE value > 0.50, it results in all indicators obtaining convergent validity. The results of data processing can be seen in appendix 5.

The reliability test results show the CR value > 0.7 on all variables, so the results meet the reliability with the *construct reliability* (CR) value for the Leadership variable of 0.936; Collaboration variable of 0.932; Commitment variable of 0.936; Learning Strategy variable of 0.949; Sustainability variable of 0.955; and Information Technology variable of 0.943. The results of data processing can be seen in appendix 6.

Table 3. Discriminant Validity Test

	H5	H6	H7	H8	Sustainability	Collaboration	Commitment	Leadership	Learning Strategy
H5									
H6	0,970								
H7	0,898	0,957							
H8	0,913	0,959	0,984						
Sustainability	0,502	0,547	0,561	0,579					
Collaboration	0,527	0,548	0,501	0,518	0,860				
Commitment	0,438	0,470	0,513	0,512	0,881	0,881			
Leadership	0,522	0,505	0,446	0,458	0,778	0,947	0,752		
Learning Strategy	0,448	0,484	0,510	0,535	0,917	0,912	0,964	0,808	
Information Technology	0,474	0,498	0,520	0,527	0,875	0,851	0,900	0,738	0,870

Ket: $\alpha > 0.5$

The discriminant validity test was conducted to explain the relationship between variables and the results indicated that all variables have met the requirements, namely the correlation between the same variables has a higher value than the correlation between different variables with values of 0.579; 0.860; 0.881; 0.752; 0.808; and 0.870.

Evaluation of Measurement Model (inner model)

Variance Analysis (R^2) or Determination Test, which is to determine the effect of exogenous variables on endogenous variables, seen from the coefficient of determination, can be shown in the table below:

Table 4. R-Square values

variables	R-Square
Sustainability	0,800
Learning Strategy	0,853

Ket: $\alpha > 0.5$

The r-squared value shown by leadership, collaboration and commitment is able to explain the variability of the learning strategy construct by 85.3%, and the remaining 14.7% is explained by other constructs outside those studied in this study. Meanwhile, learning strategies and information technology are able to explain the variability of the sustainability construct by 80% and the remaining 20% is explained by other constructs outside those studied in this study. The results of data processing can be seen in appendix 7.

Hypothesis testing is carried out based on the results of testing the Inner Model (structural model) which includes the r-square output of parameter coefficients and t-statistics. To see whether a hypothesis can be accepted or rejected, among others, by paying attention to the significance value between constructs, t-statistics, and p-values. Hypothesis testing in this study was carried out with the help of SmartPLS (Partial Least Square) 3.0 software. These values can be seen from the bootstrapping results. The rules of thumb used in this study are $t\text{-statistics} > 1.96$ with a significance level p-value of 0.05 (5%) and a positive beta coefficient. The hypothesis testing value of this study can be shown in Table 4.6 and for the results of this research model can be illustrated as shown in Figure 2:

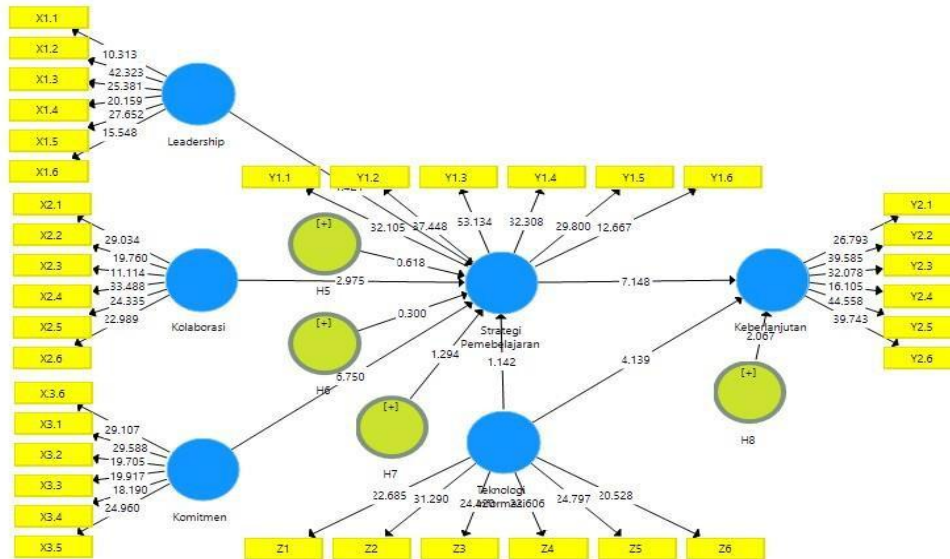


Fig. 2. Research Model

Results Table

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
H5 -> Learning Strategy	0.050	0.063	0.086	0,403	0,390
H6 -> Learning Strategy	0.037	0.009	0,092	0,195	0,541
H7 -> Learning Strategy	-0.092	-0.080	0.070	1.317	0,132
H8 -> Sustainability	-0.049	-0.053	0.025	1.951	0.052
Collaboration -> Learning Strategy	0,196	0,197	0.092	3.072	0.002
Commitment -> Learning Strategy	0,344	0,342	0.063	7.879	0.000
Leadership -> Learning Strategy	0,079	0,074	0.079	1.441	0,105
Learning Strategy -> Sustainability	0,378	0,378	0.069	7.945	0.000
Information Technology ->	0,222	0,224	0.070	4.574	0.000
Information Technology ->	0.092	0.095	0.075	1.225	0,154

Ket: $\alpha > 0.5$

Results of Path Coefficients

The results for the first hypothesis show that the beta coefficient value leadership on learning strategies is 0.079 and the t-statistic is 1.441. From these results it is stated that the t-statistic is significant. Because < 1.96 with $p\text{-value} > 0.05$ so that the first hypothesis is rejected. This proves that leadership is not proven to have a positive influence on learning strategies. The results of testing the second hypothesis show the beta coefficient value collaboration on learning strategies is 0.196 and the t-statistic is 3.072. From these results it is stated that the t-statistic is significant. Because 1.96 with $p\text{-value} < 0.05$ so that the second hypothesis is accepted. This proves that collaboration is proven to have a positive influence on learning strategies. The results of testing the third hypothesis show the beta coefficient value commitment to learning strategies is 0.344 and the t-statistic is 7.879. From these results it is stated that the t-statistic is significant. Because

1.96 with p-value 0.05 so that the third hypothesis is accepted. This proves that commitment is proven to have a positive influence on learning strategies. The results of testing the fourth hypothesis show the beta coefficient value learning strategy on sustainability of 0.378 and t-statistic of 7.945. From these results it is stated that the t-statistic is significant. Because 1.96 with p-value 0.05 so that the fourth hypothesis is accepted. This proves that learning strategy is proven to have a positive influence on sustainability.

The results of testing the fifth hypothesis show the beta coefficient value information technology moderates leadership on learning strategies by 0.050 and the t-statistic is 0.403. From these results it is stated that the t-statistic is not. because < 1.96 with a p-value > 0.05 so that the fifth hypothesis is rejected. This proves that information technology moderates leadership on learning strategies is not proven and has a weak and positive influence.

The results of testing the sixth hypothesis show the beta coefficient value information technology moderates collaboration on learning strategies by 0.037 and the t-statistic is 0.195. From these results it is stated that the t-statistic is significant. because < 1.96 with a p-value < 0.05 so that the sixth hypothesis is accepted. This proves that information technology moderates collaboration on learning strategies is proven and has a strong and positive influence.

The results of testing the seventh hypothesis show the beta coefficient value information technology moderates commitment to learning strategies by -0.092 and the t-statistic is 1.317. From these results it is stated that the t-statistic is not significant. because < 1.96 with a p-value > 0.05 so that the seventh hypothesis is rejected. This proves that information technology moderates commitment to learning strategies is not proven and has a weak and negative effect.

The results of testing the eighth hypothesis show the beta coefficient value information technology moderates the learning strategy on sustainability by -0.049 and the t-statistic is 1.951. From these results it is stated that the t-statistic is not significant. Because < 1.96 with a p-value < 0.05 so that the eighth hypothesis is accepted. This proves that information technology moderates learning strategies on sustainability and has a strong and negative influence.

The results of testing the ninth hypothesis show the beta coefficient value of information technology on learning strategies is 0.092 and the t-statistic is 1.225. From these results it is stated that the t-statistic is not significant. because < 1.96 with a p-value > 0.05 so that the eighth hypothesis is rejected. This proves that information technology on learning strategies is not proven and does not have a positive influence.

The results of testing the tenth hypothesis show a beta coefficient value of information technology on sustainability is 0.222 and the t-statistic is 4.574. From these results it is stated that the t-statistic is significant. because > 1.96 with a p-value > 0.05 so that the eighth hypothesis is accepted. This proves that information technology on sustainability is proven and has a positive influence.

Analysis of research output discussion

1) Academic Leadership Positively Affects Learning Strategies.

The analysis of the discussion of the results for the first hypothesis shows that the beta coefficient value of leadership on learning strategies is 0.079 and the t-statistic is 1.441.

In this analysis, the researcher concluded that the beta coefficient value for leadership was 0.079, and the t-statistic was 1.441. From the results stating that leadership is not proven to have a positive influence on learning strategies. Description or explanation of the analysis of the results of this research: Beta coefficient value: The beta coefficient value is 0.079, which indicates the relationship between leadership and learning strategies. A positive value indicates a positive relationship, but the value of 0.079 may be considered low, casting doubt on the strength of this relationship. T-statistic: The t-statistic of 1.441 is a measure of statistical significance for the relationship between leadership and learning strategies. It states that this t-statistic is considered significant, but the value is less than 1.96, which may indicate that the effect is not strong or may not be practically significant. P-value: mentioned that the p-value is greater than 0.05, which indicates that the result is not statistically significant. This is in line with the conclusion that the first hypothesis is rejected. With this result, it is concluded that leadership is not proven to have a significant positive influence on learning

strategies. However, it should be noted that this result may not strictly indicate that there is no relationship at all.

2) *Collaboration Positively Affects Learning Strategies.*

Based on the results of testing the second hypothesis, where the beta coefficient value of collaboration on learning strategies is 0.196 and the t-statistic is 3.072 with a p-value smaller than 0.05. These results indicate that there is a significant positive influence between collaboration and learning strategies. Collaboration has a positive and significant influence on learning strategies in the context of this study. The conclusion shows that collaboration plays an important role in influencing learning strategies, and the implications are: (1) The importance of collaboration; (2) The development of collaboration; and (3) Further studies. Further studies can also identify specific factors that influence the level of collaboration in the learning context.

3) *3. Commitment Positively Affects Learning Strategy.*

Based on the results of testing the third hypothesis, where the beta coefficient value of commitment to learning strategies is 0.344 and the t-statistic is 7.879 with a p-value smaller than 0.05. The third hypothesis shows that there is a highly significant positive influence between commitment and learning strategies. This conclusion suggests that commitment is a very important factor in influencing learning strategies. The conclusion of this study underscores the important role of commitment in achieving a successful learning strategy.

4) *Learning Strategies Positively Affect Learning Sustainability.*

Based on the results of testing the fourth hypothesis which shows a beta coefficient value of 0.378 and a t-statistic of 7.945 with a p-value of less than 0.05. Learning strategies have a significant positive influence on sustainability. In this case, learning strategies have been shown to have a significant positive impact on sustainability, but it is important to continue to conduct further research and development to support sustainability efforts on an ongoing basis.

5) *Information Technology Moderates Academic Leadership on Learning Strategy.*

Based on the results of testing the fifth hypothesis which shows the beta coefficient value of information technology as a moderator on the relationship between leadership and learning strategies of 0.050 and a t-statistic of 0.403 with a p-value greater than 0.05, it can be concluded: The fifth hypothesis is rejected, because the t-statistic (0.403) is smaller than the critical value (1.96) and the p-value is greater than 0.05. These results indicate that in the context of this study, information technology does not have a significant effect as a moderator on the relationship between leadership and learning strategy. This suggests that the interaction between leadership and information technology may have a weak and positive influence or even no influence at all.

6) *Information Technology Moderates Collaboration on Learning Strategies.*

Based on the results of testing the sixth hypothesis which shows the beta coefficient value of information technology as a moderator on the relationship between collaboration and learning strategies of 0.037 and a t-statistic of 0.195 with a p-value of less than 0.05, it can be concluded: The sixth hypothesis is accepted, because the t-statistic (0.195) is smaller than the critical value (1.96) and the p-value is less than 0.05. These results indicate that in the context of this study, information technology has a significant influence as a moderator on the relationship between collaboration and learning strategies. This suggests that the interaction between collaboration and information technology has a strong and positive influence on learning strategies.

7) *Information Technology Moderates Commitment to Learning Strategy.*

Based on the results of testing the seventh hypothesis which shows the beta coefficient value of information technology as a moderator on the relationship between commitment and learning strategy of -0.092 and a t-statistic of 1.317 with a p-value greater than 0.05, several conclusions can be drawn: The seventh hypothesis is rejected, because the t-statistic (1.317) is smaller than the critical value (1.96) and the p-value is greater than 0.05. This indicates that information technology does not moderate the relationship between commitment and learning strategies. This result indicates that in the context of this study, information technology has no significant influence as a moderator on the relationship between commitment and learning strategies. In addition, this result also suggests that the interaction between commitment and information technology may have a weak

and negative influence or even no influence at all. Therefore, further focus may need to be moved to other factors that are more relevant in this context.

8) *Information Technology Moderates Learning Strategies on Sustainability Learning.*

Based on the results of testing the eighth hypothesis which shows the beta coefficient value of information technology as a moderator on the relationship between learning strategy and sustainability of -0.049 and a t-statistic of 1.951 with a p-value of less than 0.05, several conclusions can be drawn: The eighth hypothesis is accepted, because the t-statistic (1.951) is greater than the critical value (1.96) and the p-value is less than 0.05. This indicates that information technology moderates the relationship between learning strategies and sustainability. These results suggest that in the context of this study, information technology has a significant influence as a moderator on the relationship between learning strategy and sustainability. However, what is interesting is that the interaction between learning strategies and information technology seems to have a strong and negative influence on sustainability. Therefore, further research needs to be conducted to better understand this interaction and find appropriate solutions to optimize the use of information technology in the context of sustainability.

9) *Derivative Innovation Efforts for Digital Learning Models in the Form of Smartphone Applications Will Increase Information Coverage and Quality of Learning Based on the Mission and Distinctiveness of Higher Education.*

Based on the results of testing the ninth hypothesis which shows the beta coefficient value of information technology on learning strategies is 0.092 and the t-statistic is 1.225 with a p-value greater than 0.05, it can be concluded, the ninth hypothesis is rejected, because the t-statistic (1.225) is smaller than the critical value (1.96) and the p-value is greater than 0.05. This indicates that there is no significant relationship between information technology and learning strategies in the context of this study. This indicates that there is no significant relationship between information technology and learning strategies in the context of this study. This result indicates that information technology has no positive or significant influence on learning strategies in the context under study. In conclusion, the results of this study show that there is no significant relationship between information technology and learning strategies in the context of this study.

10) *Information Technology is a Means of Strengthening Learning Strategies in Continuous Learning.*

Based on the results of testing the tenth hypothesis, where the beta coefficient value of information technology on sustainability is 0.222 and the t-statistic is 4.574 with a p-value smaller than 0.05. The results of this study indicate that there is a significant influence between information technology and sustainability. With a t-statistic greater than 1.96 and a p-value smaller than 0.05, it can be said that the effect is positive and significant. Thus, the conclusion of the tenth hypothesis of this study is to help deepen the understanding of the relationship between information technology and sustainability and provide practical guidance for organizations that want to improve sustainability through the use of information technology.

5. Conclusions

The conclusions of this study indicate that: (1) Commitment has a positive and highly significant influence on learning strategies; (2) Collaboration has a positive and significant effect on both learning strategies and sustainability; (3) Information technology serves as a significant moderator in the relationship between collaboration and learning strategies, as well as between learning strategies and sustainability; (4) The moderating effect of information technology is positive and significant; (5) Conversely, no significant positive effect of leadership on learning strategies was found; (6) Information technology does not serve as a significant moderator in the relationship between leadership and learning strategies, nor between commitment and learning strategies; and (7) There is no significant relationship between information technology and learning strategies in the context of this study, based on the hypothesis testing results.

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