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## DETERMINATION OF STUDENT'S DIGITAL LITERACY INDEX ON ACHIEVEMENT MOTIVATION AND LEARNING ACHIEVEMENT AT UNIVERSITAS PENDIDIKAN GANESHA (UNDIKSHA),BALI

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DETERMINATION OF STUDENT'S DIGITAL LITERACY INDEX ON ACHIEVEMENT  
MOTIVATION AND LEARNING ACHIEVEMENT AT UNIVERSITAS PENDIDIKAN  
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**Abstract**

Digital literacy in the field of education, especially higher education, provides consequences for students to be able to use reason and their ability to sort and choose various information in order to make good use of information, which is useful in pursuing their academic careers. Digital literacy demands the skills and abilities of students to utilize existing information technology tools. There is an unfavorable reality, namely the level of utilization of electronic collections in the Undiksha library, as well as from other sources, so it is interesting to conduct research on the digital literacy index of students which is allegedly related to student achievement motivation, and learning achievement or student learning outcomes undiksha

In this study it was found that the digital literacy index is still not good and the relationship between the digital literacy index and student achievement is in a less strong situation. There is no determination between achievement motivation and student achievement. Achievement motivation does not always affect achievement, depending on the context of the correlation. There are times when motivation does not affect achievement when the conditions are not conducive to competition, one of which is during the covid-19 pandemic, and learning is done online. This is due to infrastructure limitations such as a limited signal network and the limitations of adequate equipment to support the learning process which have a major impact on student achievement motivation.

The results of this study indicate that a poor digital literacy index has a negative effect on achievement motivation so that it is not able to boost student achievement. The low achievement motivation of students is influenced by the low level of digital literacy of students so that it cannot improve student achievement

Key word: Digital Literacy Index, Achievement Motivation, Learning Achievement

## 1. Background

The implementation of education is currently very much influenced by the existence of digital disruption, many learning processes that include the use of digital equipment in the presentation of material and in the evaluation of learning outcomes. Especially during the COVID-19 virus pandemic, the learning process is very dependent on digital technology that is currently available. Schools and colleges are used to using remote meeting applications such as google meet, google class room, zoom and so on. The use of digital technology in the learning process in the field of education will give birth to digital literacy skills from students

It can be interpreted that digital literacy is a person's ability to utilize digital technology supported by competencies in the form of knowledge, skills and attitudes so that they can choose, use information and create something useful for individual life and social life. Increasing digital literacy for students is highly expected in the learning process, providing access to information facilities by education providers is very relevant to face the current era of digital disruption.

Digital literacy in the field of education, especially higher education, provides consequences for students to be able to use their reasoning and ability to sort and select such diverse and abundant information in order to make good use of it that is useful in pursuing their academic careers. It does not rule out the possibility of an impact on the reluctance of students to make assignments to the maximum and only copy and paste other people's assignments obtained from browsing the internet.

Digital literacy in the field of education, especially higher education, provides consequences for students to be able to use their reasoning and ability to sort and select such diverse and abundant information in order to make good use of it that is useful in pursuing their academic careers. but it can also have a negative impact, namely it can trigger students to be lazy to make assignments to the maximum and only copy and paste other people's assignments obtained from browsing the internet. Digital literacy requires students' skills and abilities to take advantage of current information technology tools, Daniel Ginting (2021) which states that digital media literacy is the ability to access (access), analyze (analyze), evaluate (evaluate), create (create). and participate in various forms of digital media

The success of digital literacy is largely determined by the digital literacy index that students have, based on field observations at Ganesha University of Education in organizing digital literacy providing freedom for students to access information in attending lectures, assignments can take examples on the internet including searching for supporting literature for lectures. Taking on e-resources available on the internet such as e-books and e-journals, the Campus provides free-wifi facilities for smooth digital literacy. including providing devices to access information such as computers provided by libraries

The Undiksha library provides room facilities and computer equipment to be able to provide digital literacy services to students, including the provision of e-book collections and e-journals. However, from observations while access to e-books provided by libraries has not been widely used, this can be seen from the statistics on the utilization of e-book collections and utilization of e-journals which are still less encouraging, from statistics showing the average daily utilization of electronic collections is around 20 people per day (undiksha library statistics) in addition to the preliminary survey data through questionnaires distributed to 200 undiksha students stated that 76% of students did not know about the undiksha library web and 64% of students had not used the e-book and e-journal facilities provided by undiksha and only 23% use the e-resources of the National Library of Indonesia, both e-books and e-journals. Therefore, the digital literacy index of Undiksha students needs to be evaluated so that the effectiveness and weaknesses

of implementing digital literacy can be better known, which is then linked to student achievement motivation and student learning achievement.

Student achievement motivation is a student's personal awareness that will move him to take action in order to achieve success in following the learning process, and gain an advantage in the competition. Students can achieve good achievements if they have high awareness that encourages themselves to achieve what has been planned. In the current development of digital technology, it is hoped that the digital literacy index of the community, especially students, will be able to increase student achievement motivation which leads to good achievement as well.

By knowing the condition of the student's digital literacy index and its effect on achievement motivation and learning achievement, it can be used as a reference in taking steps or policies in providing digital information resource services to students. Seeing these conditions, it is necessary to measure the determination of the digital literacy index in the student learning process, especially on achievement motivation and student learning achievement, so that weaknesses or deficiencies in the application of digital literacy in Undiksha students can be identified. Based on this background, the following problems can be stated. :

1. How is the Digital Literacy Index Determination on the achievement motivation of Undiksha students?
2. How is the Determination of Achievement Motivation on Undiksha student learning achievement?
3. How is the Digital Literacy Index Determination of Undiksha student learning achievement
4. How is the determination of the digital literacy index on learning achievement controlled by student achievement motivation?

## **2. Theoretical Foundation**

### **2.1. Digital Literacy Index**

The definition of the index is intended as a level or condition to show a phenomenon within a certain period of time, which is currently prevailing in the community, in this case digital literacy. While the word literacy comes from English, namely literacy which means the ability to read and write. According to UNESCO, literacy is the ability to identify, understand, interpret, create, communicate, calculate and use printed and written materials related to various contexts. In the Indonesian Language Dictionary (KBBI) it is stated that literacy is the ability to read, write, and an individual's ability to process information. Digital stated in the KBBI is defined as anything related to numbers in a certain numbering system. Digital stated in the KBBI is defined as anything related to numbers in a certain numbering system. Thus the meaning of digital literacy is the ability to read, write, process information in a digital system or certain numbering with numbers. Haque in Feri Sulianta (2020) argues, digital literacy is the skill of creating and sharing (sharing) in opportunities that often arise and are different, combine, communicate what is understood about when and how to access information technology tools in order to achieve a goal. Bawden in the Ministry of Education and Culture (2017) states that digital literacy comes from the computer literacy and information literacy sections, so it is related to the ability to access, understand and expand information.

It can be concluded that the definition of digital literacy index is a measure of the level of competence possessed by a person to utilize digital technology in obtaining, managing and creating information that is useful for individual and social life.

Based on Hague's opinion in Nationalita (2020), several dimensions and indicators of digital literacy include the following:

Table 1.1

## Digital Literacy Index Dimensions and Indicators

concept	Dimension	Indicator
Component Literacy Digital, Hague (2020:21)	1.Functional skill Beyond	ICT Skill
	2.Creativity	1. Product creation or output in various formats and models with take advantage of digital technology 2. The ability to think creatively and imaginative in planning, content, explore ideas
	3.Collaboration	1. Ability to participate in digital space 2. Able to explain and negotiate people's ideas other
	4.Communication	1. able to communicate through digital technology media 2. able to understand and understand Audience.
	5.Ability to Find and Select Information	Ability to search and investigate information
	6.Critical Thinking and Evaluation	Able to contribute, analyze, sharpen thinking skills critical moment dealing with information
	7.Cultural and social Understanding	understanding context socio-cultural
	8.E-Safety	Ensure safety when users explore, create, collaborate, with digital technology.

Source: Nationalita Kharisma, Journal of Communication Science vol 18 No 1 page 41(2020)

## 2.2. Student Achievement Motivation

The origin of the word motivation is motive which has the meaning of effort that encourages someone to do something, motive can be said to be the driving force of individuals to carry out certain activities in order to achieve a goal. So that motivation means the driving force for everyone to take actions or activities to achieve certain goals. According to Sudirman (2001) Motivation can also have an understanding as a series of efforts to provide certain conditions, so that someone wants and wants to do something. Thus this motivation can be stimulated by external factors but the motivation grows within a person

Achievement motivation is the motivation that drives a person to achieve success and aims to succeed in competition with several measures of success, namely by comparing previous achievements with the achievements of others. Achievement motivation is a personal awareness that will move someone to take action to achieve success. Students in following the learning process can achieve good achievements if they have high awareness that encourages themselves to achieve what has been planned. This high achievement can be achieved by students by absorbing and processing information from their environment.

Thus, from various opinions about achievement motivation, it can be concluded that there are five dimensions that can support students' achievement motivation variables and can be developed into dimensions or aspects including the following; 1) Students' active efforts to achieve success. intended as individual behavior that leads to achievement activities; 2) Have the confidence to succeed. means an attitude of sensitivity to signs associated with increased achievement; 3) innovative. contains an element of desire to find better or more efficient ways to achieve success, including the desire to compete and face challenges; 4) full responsibility means having the responsibility to complete the task, confident and tough at work; 5) have the ability to anticipate failure. means having awareness of the threat of failure. Then each of these dimensions is developed in indicators which are described in detail, among others, as in the following table:

Table 1.2 Dimensions and Indicators of Undiksha student achievement motivation

Concept	Dimension	Indicator
Achievement Motivation	1. students' active efforts to achieve higher	physical activity success;
		student persistence in learning
	2. have confidence to succeed	sensitive to signs of increased achievement,
		directed to the future
	3.inovatif	use time more efficiently
		feedback needs,
	4.Take full responsibility	desire to compete
		personally responsible
	5. have the ability to anticipate failure	concentrate on a task
		vigilance and conscientiousness or prudence.

### 2.3. Learning Achievement

Student learning achievement is the result of learning achieved by students during the lecture process, student achievement is a description of student abilities obtained from the results of the assessment of student learning processes in achieving teaching goals. Meanwhile, according to Hamalik, learning achievement is a change in attitudes and behavior after receiving lessons or after learning something To determine the success of a learning process followed by students, an evaluation action is needed whose measurement results are stated in the final score that reflects the learning achievement of each individual who follows the learning process. According to Nurkencana, stating that measurement is the process of determining the area or magnitude of something. In measuring learning outcomes, students are faced with tasks or questions that must be answered. The measurement results are still in the form of raw scores which have not been able to provide information about students' abilities. In order to provide the expected information about students' abilities, an assessment of the entire teaching and learning process will reflect many things achieved during the learning process. For example the achievement of cognitive, affective and psychomotor aspects.

According to Arikunto the score is a very important thing, this is because the score is a reflection of the success of learning. He further explained that in general the score has 4 (four) functions including a) instructional function, b) informative function, c) guidance function and d) administrative function. Learning achievement is indicated by a score that shows the results of the evaluation, which describes the knowledge and skills of students. To be able to obtain a score, a test tool is used in the subjects that have been followed first, and the results of this test indicate the high and low levels of achievement achieved by students. From the description above, it can be concluded that to measure the achievement obtained by students, in this study used scores in the form of values obtained from the achievement of the student's cumulative achievement index (GPA).

#### 2.4. Framework of thinking

The constellation/relationship between variables in this study can be described in the following diagram:

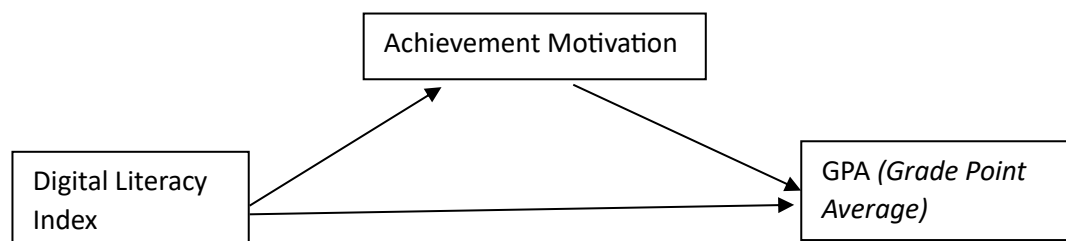


Figure 2.1. Constellation/Relationship Between Variables

From the framework of thinking above, the relationship between variables can be explained as follows:

1. The relationship between digital literacy index and achievement motivation. Ease of accessing information by utilizing digital technology for students in general will have an impact on meeting students' needs for information sources in pursuing their academic careers in higher education. so that it will also affect the desire of students to excel. A good digital literacy index from students is allegedly able to have an influence on the achievement motivation of students
2. The relationship between achievement motivation and GPA. Good achievement motivation among students is allegedly also influencing learning outcomes considering that students' desire to excel will be followed by active efforts from these students to get good learning outcomes. The measure of success in student learning achievement is the acquisition of a good achievement index (GPA).
3. The relationship between digital literacy index and learning achievement (GPA). A good digital literacy index for students allows students to obtain adequate information related to lectures. Thus, there is an assumption that students' digital literacy index will affect students' ability to complete assignments and answer questions. so that it can affect the final grade (GPA) obtained

### 3. Research Method

#### 3.1. Place and time of research

This research was carried out at the Undiksha Library which is located at Udayana street no 11 Singaraja, Bali. while the research time is every working day, according to library service hours from Friday 1 July 2022 to Friday 31 August 2022 at 08.00 WIB until 17.00. wita.

#### 3.2. Population and Research Sample

The population in this study were Undiksha students who were already members of the library, with the assumption that students who were already members of the library had visited and used library facilities. The sampling technique was done by purposive random sampling. Based on the opinion of Krecjek and Morgan (in Fernandez, 1988) suggest to take a sample from a population as shown in the following table:

Table 3.1 Population and Research Sample according to Morgan

N = Population	S = Sample
8000	367

From the calculation with a population of 8000, the sample is 367. Then by obtaining the number of students as many as 7,862 as the population in this study, after consulting with Morgan's table, it was decided that the sample taken could be rounded up to 360 students. This study uses a quantitative approach, the population element selected as a sample can be caused by chance. In addition, the sampling technique is using a sample selected with the consideration of the researcher (purposive sampling), a person is taken as a sample because it is confirmed that the person has the information needed for research.

### 3.3. Research Approach

This research is a quantitative research, namely research that emphasizes analysis on numerical data (numbers) which is processed by statistical methods. In principle, this research uses an ex-post facto approach (ex-post facto research) which explains the digital literacy index of students with achievement motivation and student achievement (GPA) at Unduksha. Ex-post facto research examines causal relationships that are not manipulated or treated (designed and implemented) by the researcher.

Methodologically, the research carried out includes explanatory quantitative evaluative research, which is aimed at the digital literacy index of students related to achievement motivation and learning achievement (GPA). This study analyzes the digital literacy index of students by analyzing the role of each factor or indicator. Quantitatively, the evaluation process is carried out by emphasizing the aspects of objectivity, reliability, and validity of measurements which are focused on data in the form of numbers. For this reason, data collection was carried out with an instrument in the form of a questionnaire with a Likert scale. The data obtained will be quantified to facilitate the statistical calculation process. This study uses SEM (Structural Equation Modeling) which is based on evaluating the interdependence relationship between variables using first order and second order confirmatory analysis techniques.

### 3.4. Research Variables and Research Instruments

#### 3.4.1. Research variable

The variables in this study can be classified into:

- 1) Exogenous variables, namely variables that are not predicted by other variables in the model. Exogenous variables are also known as independent variables. In this study the exogenous variables are: Digital Literacy Index (X) which consists of ; (X1) Functional skill Beyond (X2) Creativity (X3) Collaboration(X4) Communication, (X5) Ability to Find and Select Information (X6) Critical Thinking and Evaluation, (X7).Cultural and social Understanding,(X8) .E -Safety



- 2) Endogenous variables, namely variables that are predicted by one or several other variables in the model. Endogenous variables are also known as dependent variables. In this study the endogenous variables are:
- a. Achievement motivation (Y) consists of; (Y1) students' active efforts to achieve success, (Y2) Have confidence to succeed, (Y3) are innovative, (Y4) are fully responsible, (Y5) have the ability to anticipate failure.
  - b. Learning Achievement (GPA), which is obtained from the GPA of Undiksha students

### 3.5. Data analysis technique

In this study, processing primary data obtained from research respondents using SEM (Structural Equation Models) to determine the relationship between latent variables. Latent variables are abstract concepts, for example: behavior, attitudes, feelings, and motivations of people. This latent variable can only be observed indirectly and imperfectly through its effect on the observed variables. SEM has 2 types of latent variables, namely exogenous and endogenous. SEM distinguishes these two types of variables based on their participation as dependent variables in the equation in the model. Exogenous variables always appear as independent variables in all equations in the model. While the endogenous variable is the dependent variable. In general, the SEM procedure contains the following steps

#### 1. Model specifications

At this stage, an initial structural equation model is formed, before being estimated. This initial model is formulated based on theory and the relationship between research variables

#### 2. Identification

At this stage, an assessment is carried out on the possibility of obtaining a unique value for each parameter in the model and the possibility that the simultaneous equation has no solution.

#### 3. Estimate

At this stage, it is related to model estimation to generate parameter values using one of the available estimation methods. Determination of the estimation method used is often based on the characteristics of the variables being analyzed.

#### 4. Compatibility/Compatibility Test

This stage is related to the step of testing the suitability between the model and the data. Several criteria for the measure of fit or Goodness Of Fit (GOF) can be used to perform this step.

#### 5. Modify Model

This model modification stage is related to the determination of the model based on the results of the previous stage's suitability test.

## 4. Results and Discussion

### 4.1. Description of Research Variable Data

One of the data collection techniques in this study was using a questionnaire distributed to all respondents, namely students who were using the Undiksha Library. This questionnaire consists of various

statements made based on the 14 indicators studied. From the results of the study, it can be seen that the respondents' answers to these statements are presented in Table 4.1

Tabel 4.1 Deskripsi Data Variabel Penelitian (n =360)

Konstruc /Variabel	Indicator	Sym bol	1	2	3	4	5	Total Score	Average Score
Digital Literacy Index	Functional skill Beyond	X1	2	9	52	898	476	6157	4,27
	Creativity	X2	19	86	277	683	375	5629	3,91
	Collaboration	X3	24	44	145	812	415	5870	4,07
	Communication	X4	12	72	241	782	333	5672	3,94
	Ability to Find and Select Information	X5	5	44	243	820	328	5742	3,97
	Critical Thinking and Evaluation	X6	0	25	233	892	290	5767	4.01
	Cultural and social Understanding	X7	65	167	331	603	274	5174	3,59
	Safety	X8	23	84	309	752	272	5480	3,81
Average score Literacy Digital Index									3,95
Achievent Motivation	students' active efforts to achieve higher	Y1	311	734	283	85	26	5536	3,85
	have confidence to succeed	Y2	325	657	368	64	26	5511	3,83
	Inovatif	Y3	286	848	236	51	19	5651	3,92
	Take full responsibility	Y4	381	680	140	176	59	5456	3,79
	have the ability to anticipate failure	Y5	402	744	203	79	12	5765	4.01
Average score achievement Motivation									3,88

The explanation of Table 4.1 is as follows.

1. The indicator that has the highest average score on the digital literacy index construct is the Functional skill beyond indicator, which is 4.27. Indicators that have an average score lower than the overall average score are the cultural and social understanding indicator of 3.59 and the safety indicator of 3.81
2. The indicator that has the highest average score on the construct of achievement motivation is the indicator of having the ability to anticipate failure, which is 4.01. Indicators that have an average score lower than the average score as a whole are the Fully Responsible indicator, which is 3.78, there is an active student effort to achieve success, which is 3.85 and the indicator Has confidence to succeed, which is 3, 83.

3. The student achievement variable is taken from the student's GPA in even semesters, where the range of the lowest to the highest GPA is 2.9 while the highest GPA is 3.96.

#### 4.2 Description of Research Findings

The average score of the digital literacy index variable shows the number 3.95 which provides an overview of the digital literacy index of Undiksha students which is still not encouraging, only the Functional skill beyond indicator which shows a number that meets expectations, which is 4.27. This shows that students' digital literacy is at the level of ability or skill in utilizing available digital devices. Meanwhile, the other indicators have not received good attention, especially the cultural and social understanding indicators, which are 3.59, and the safety indicators are 3.81.

The achievement motivation of students in terms of the digital literacy index has also not shown a satisfactory situation, this is indicated by the average score of student achievement motivation of 3.88 which indicates a number lower than the average score of the student digital literacy index. There are various factors that can affect the decrease in student achievement motivation, one of the factors is the learning process during the covid 19 pandemic which may reduce students' interest in competing to be superior among their friends.

The student GPA of 360 people used as the sample shows an average of 3.48 which means the level of achievement of the student achievement index score is quite good but still needs improvement, this requires the participation of all parties to be able to synergize in increasing the student achievement index (GPA). Overall

#### 4.3. Model Measurement

Model measurement is a modeling process in research

which aims to investigate the unidimensionality of the indicators that explain a factor or a latent variable. There are two basic tests, namely:

##### 1. Model suitability test

Parameters (regression coefficient, variance and covariance) in the SEM operation will be estimated to produce an estimated population covariance matrix. parameter estimation will produce an estimated covariance matrix that is close to the sample covariance matrix. The closeness was evaluated first by chi-square test and fit index. Therefore, the suitability and adequacy test of the model will be carried out by developing the null hypothesis ( $H_0$ ). The basis for making the decision is: If  $p \geq 0.05$  then there is no difference between the estimated population covariance matrix and the sample covariance matrix. If  $p \leq 0.05$  then there is a difference between the estimated population covariance matrix and the sample covariance matrix. The following presents the results of data processing with AMOS on each variable.

##### a. digital literacy index

The digital literacy index is one of the factors in determining student achievement motivation and is also allegedly able to affect student achievement. The unidimensionality of these dimensions was tested through confirmatory factor analysis, the results of which are as presented in Figure 4.1.

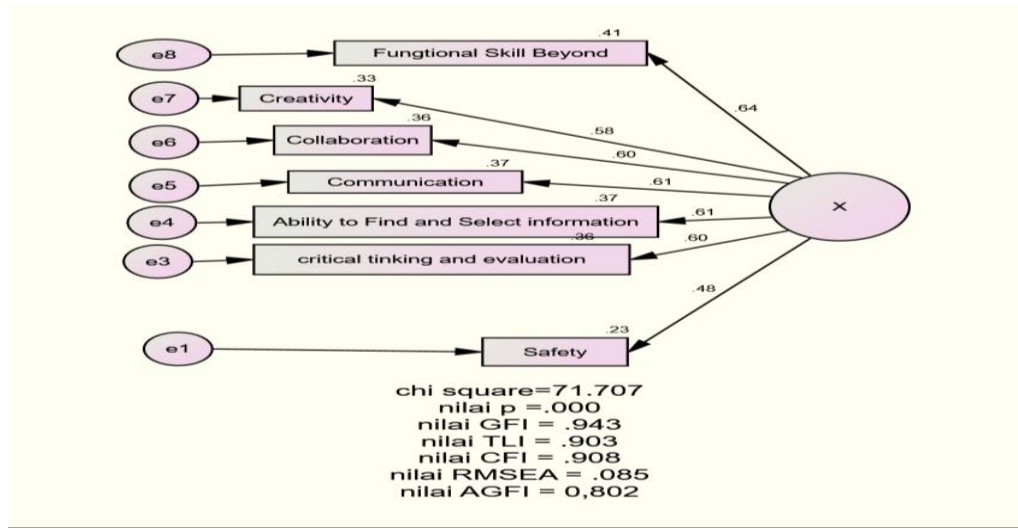


Figure 4.1. Measurement model of digital literacy index

The results of the model hypothesis testing above show that the suitability test of this model produces a good level of acceptance, as seen from the significance level of chi square = 71,707 p value = 0.000 GFI, AGFI, TLI, CLI, and RMSEA indexes are in the range of expected values. Therefore, the hypothesis which states that these indicators are the underlying dimensions of a construct called digital literacy is acceptable..

a. Achievement motivation

Achievement motivation is one of the factors in determining achievement (GPA) in relation to students' digital literacy ideas. Unidimensionality of these dimensions is tested through confirmatory factor analysis, the results of which are as presented in Figure 4.2.

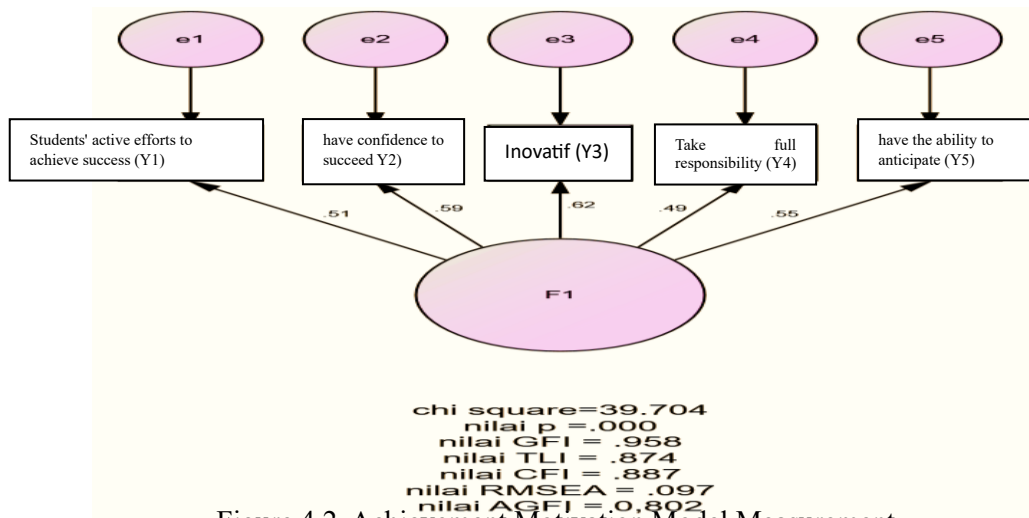


Figure 4.2. Achievement Motivation Model Measurement

The results of the model hypothesis testing above show that the suitability test of this model produces a good level of acceptance, as seen from the significance level of chi square = 39,704 p value = 0.000 GFI,

AGFI, TLI, CLI, and RMSEA indexes are in the range of expected values. Therefore, the hypothesis which states that these indicators are the underlying dimensions of a construct called achievement motivation is acceptable. According to Sharma Ferdinand (2000) in Arif Kamar Bafadal states that the weakest loading factor that can be accepted is 0.40.

### 1. Model Test

Model testing or Confirmatory Factor Analysis (CFA) is carried out to confirm or test the model, namely a measurement model whose formulation comes from theory. CFA can be said to have two focus studies, namely: (1) whether the indicators conceptualized as unidimensionally valid (2) what are the dominant indicators forming the construct studied. The model analyzed can be seen in Figure 4.3.

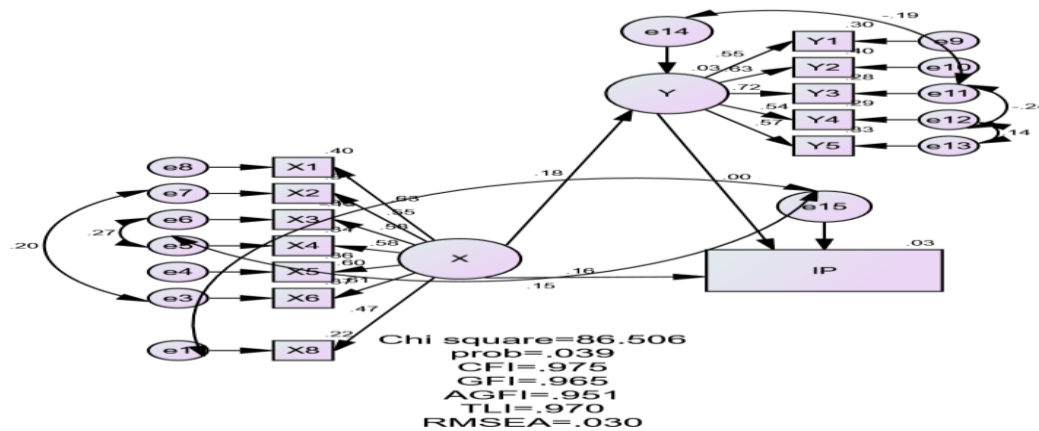


Figure 4.3 Modification of the relationship model between variables

After modifications have been made based on AMOS recommendations, the diagram above provides summary information on the GOF (Goodness-of-fit) test results on the research model, presented in the following table 4,3

Tabel 4.3. *Goodness-of-fit model*

<i>Goodness-Of-Fit (GOF)</i>	<i>Analysis Results</i>	<i>Cut Off Value</i>	<i>Model Evaluation</i>
<i>Chi-square</i>	$\chi^2 = 86.50$ p= 0,039	Probabilitas $\leq 0,05$	Good
<i>TLI</i>	0,970	<i>TLI</i> > 0,90	Good
<i>GFI</i>	0,965	<i>GFI</i> > 0,90	Good
<i>AGFI</i>	0,951	<i>AGFI</i> > 0,00	Good
<i>CFI</i>	0,970	<i>CFI</i> > 0,90	Good
<i>RMSEA</i>	0,030	<i>RMSEA</i> $\leq 0,08$	Good

Based on table 4.3. shows the GOF criteria are met, it is concluded that the model is fit with the data.

## 2. Causality Test

The causality test aims to determine the causal relationship between exogenous variables and endogenous variables in a study, in this study using the p value (probability) which is to examine the effect of an exogenous variable on an endogenous variable or the effect of an endogenous variable on other endogenous variables. In other words, if you want to test the significance of the influence of a variable on another influenced variable, it can be indicated by the symbol H0 which means the variable that affects, does not have a significant effect on the variable that is affected and H1 which means the variable that affects, has a significant effect on the variable that is affected. The basis for making decisions are; If the p value > 0.05 then H0 is not rejected, but if the p value is < 0.05 then H0 is rejected. To find out the p value (probability), it can be seen from the table as follows:

Table 4.4. p Value ( *Probability* )

influence		C.R.	P
X ----→	Y	2,771	0,006
X ----→	IPK	2,583	0,010
Y ----→	IPK	0,006	0,995

Table. 4.5. Estimate Standard Value

correlation		<i>Estimate.</i>
X -----	Y	0,182
X -----	IPK	0,158
Y -----	IPK	0,000

Table 4.5. shows the standard value of the estimate, this explains how closely the relationship or correlation between variables is, by following the provisions of a minimum limit of 0.5, meaning that if the estimate number shows a correlation number > 0.5 then there is a close relationship between the variables and vice versa

Based on the results of the analysis in table 4.4. can be decided as follows:

1. In the X and Y variables, the p value = 0.006 means that the X variable is significantly different from the Y variable so that H0 is rejected and H1 is accepted, which means that the X variable has a positive and significant effect on the Y variable.
2. In variables X and GPA, the value of p = 0.010 means that the variable X is significantly different from the GPA variable so that H0 is rejected, H1 is accepted, which means that the variable X has a positive and significant effect on the GPA variable.
3. In the variables Y and GPA, the value of p = 0.995 means that the Y variable is not significantly different from the GPA variable, so that H0 is not rejected. H1 is not accepted, which means that the Y variable has no positive and insignificant effect on the GPA variable.

4. In variables X and GPA mediated by Y are; variable X is significantly different from variable Y, variable Y is not significantly different from variable GPA, while variable X is significantly different from GPA, then variable X has a positive effect on variable Y, variable X has a positive effect on variable GPA, and variable Y has no positive effect on variable GPA. Thus, the Y variable cannot partially mediate X's determination of the GPA.

Thus the structural equation is:

$$Y = 0.006 * X + e$$

$$GPA = 0.010 * X + e$$

$$GPA = 0.006 * X + 0.995 * Y + e$$

#### 4.4. Discussion

##### 4.4.1. Determination of the digital literacy index on the achievement motivation of undiksha students

The results of data analysis showed that the digital literacy index was significantly different from achievement motivation because it obtained a p value of 0.006. Meanwhile, the standard value of the correlation estimate was 0.182 which indicates a lack of correlation because it is below 0.5. Thus it can be said that there is a determination of the digital literacy index on student achievement motivation where there is a significant but not so strong relationship. This happens considering that the digital literacy index of Undiksha students still needs to be improved so that the relationship with achievement motivation is still not so strong. The digital literacy index which consists of Functional skills Beyond, creativity, collaboration, Communication, Ability to Find and Select Information, Critical Thinking and Evaluation, Cultural and social Understanding, and E-Safety has a position that is interrelated with student achievement motivation. The better the student's digital literacy index, the better the achievement motivation. This is because digital literacy is the result of today's digital disruption to individuals which has a strong impact on student achievement motivation.

It can be said that the student digital literacy index plays an important role as student support in the actualization process of student achievement motivation in learning. Student digital literacy index can increase student achievement motivation. If students want to have a strong achievement motivation, the student's digital achievement index must be increased, one of the efforts to improve students' digital literacy is to increase the role of libraries in providing digital-based services. Libraries must transform to develop digital-based services to support the learning process so as to increase student achievement motivation. such as the provision of remote access control that can be accessed through the website, open public access to various library collections, and the convenience of various online library services which of course must be supported by the competence of the librarian.

The same thing was reported in Lolytasari's research which discussed the existence and innovation of libraries in online learning during the Covid-19 pandemic. The transformation of library management to digital must be prioritized, so that libraries can still exist in the midst of a pandemic. Library support in teaching and learning activities is very important, especially in meeting the information needs of the academic community in a university. The results of the interview revealed that the limitations and online learning carried out by medical students made libraries try to make new innovations in supporting the teaching and learning process during the adaptation period of new habits during the Covid-19 pandemic. From these findings, several new innovations were produced in the form of providing remote access control that can be accessed through cataloging and open public access websites for various library collections and

the convenience of various online library services. In addition, subject matter specialist librarians are needed to mediate between the information in the library and the academic community.

The results of Luqman A.A's research, Cecilia O.O reported that the need for information arises when an individual finds himself in a problem situation, when he is no longer able to manage with the knowledge he has. Library customers repeatedly find themselves in situations where information is needed, sought and collected, organized, retrieved, processed, evaluated, and used. The study was conducted on students from Federal University Otuoke. The findings showed that library visitors were more interested in information related to teaching and learning activities and research. One of the main obstacles faced by customers when seeking information includes lack of resource sharing facilities and equipment, lack of/inadequate ICT skills.

It can also be said that in an effort to increase student achievement motivation, one of the factors that needs to be considered is the digital literacy index owned by students, in the sense that a good digital literacy index can increase student achievement motivation. Libraries as learning support facilities must be able to appear in providing education in increasing digital literacy while also being able to provide guidance in using digital devices including software.

#### 4.4.2. Determination of the Digital Literacy Index on Undiksha Student Achieve

The results of data analysis showed that the digital literacy index was significantly different from student achievement, because the p value = 0.010 was obtained. As for the standard value of the correlation estimate of 0.158 which indicates a weak correlation level because it is below 0.5. Thus, it can be said that there is a determination of the digital literacy index on student achievement where there is a significant relationship between the two with a correlation or relationship that is not so strong. Digital literacy index can significantly affect learning outcomes or learning achievement as measured by the achievement of the cumulative achievement index (GPA) of students. The better the level of digital literacy, the better the achievement of student learning outcomes.

In this study, the relationship between the digital literacy index and student achievement is at a less strong number, this happens considering that the digital literacy index of Undiksha students currently still needs to be improved, so that they can obtain better learning outcomes. Efforts to increase the digital literacy index really need to be done, one of the instruments is to improve the quality of digital services from libraries, including improving user services for information resources served by libraries. This is in accordance with the opinion of Dr. Mayank Trivedi who stated that digital library collections contain permanent documents, the digital environment will allow faster handling of information services. Digital libraries are based on digital technology, the assumption that digital libraries will only contain digital materials may be wrong. Digital libraries are often used by self-employed individuals so that the physical boundaries of data have been removed. Digital Libraries support communication and collaboration in information retrieval in addition to compression of data storage enabling the publication and storage of more digital information. Information and communication technologies facilitate the storage, retrieval, use and exchange of digital resources. The functions of the Digital Library are, among others:

1. Access to massive amounts of information to users wherever they are and whenever they need it.
2. Easy access to key information sources.
3. Support multimedia content along with text
4. Network accessibility on Intranet and Internet



5. Better user service
6. Hypertext links for navigation
7. Storage architecture on the server

#### **4.4.3. Determination of Student Achievement Motivation on Undiksha Student Achievement**

The results of data analysis showed that Achievement Motivation was not significantly different from student achievement because it obtained a p value of 0.995. Meanwhile, the standard value of the correlation estimate was 0.000 which indicates a weak correlation level because it is above 0.5. Thus it can be said that there is no determination of achievement motivation with student achievement. One of the factors that caused this condition to occur was due to the effects of the Covid-19 Pandemic which caused students to rarely be able to meet, work in groups, or complete exams. The commitment to compete and be superior among their friends has decreased so that the achievement motivation of students also decreases which results in not being able to affect the achievements of the students themselves. While the level of linkage is also very weak with a value of 0.000 indicating the level of linkage is not strong, of course there are several other factors that affect student achievement.

Student achievement is influenced by various factors, in this study achievement motivation does not significantly affect student achievement. This is contrary to research from Rahmawati, Kartika.HT, Supawi P which found that: (1) if a student has a high interest in learning, then the student will have a high learning achievement. Likewise, if students have low learning abilities, student achievement will be less. (2) With motivation, students will study harder, be tenacious, diligent and have total concentration in the learning process. That is, the higher the achievement motivation, the higher the student's learning achievement. The achievement motivation is positively correlated with learning achievement, either individually or collectively. (3) Learning that is in accordance with the interests and learning styles of students will increase students' understanding of the selected material or information and create conducive and enjoyable learning for teachers and students. (4) Independence plays an important role in learning, students can control themselves various ways of learning that need to be taken to achieve learning achievement results in accordance with their wishes.

From the comparison of the results of this study, it can be assumed that achievement motivation does not always affect achievement, depending on the context of the correlation, there are times when motivation does not affect achievement when conditions are not conducive to competition during the COVID-19 pandemic and learning is done online. This happens considering the limitations of infrastructure such as a limited signal network and the limitations of adequate equipment to support the learning process which have a major impact on student achievement motivation.

#### **4.4.4. Determination of the Digital Literacy Index on Learning Achievement Controlled by Student Achievement Motivation**

In the digital literacy and achievement index (GPA) variables mediated by student achievement motivation are; the digital literacy index variable is significantly different from the achievement motivation variable, the achievement motivation variable is not significantly different from the achievement variable (GPA), while the digital literacy index variable is significantly different from achievement (GPA), then the digital literacy index variable has a positive effect on the achievement motivation variable, the variable the digital literacy index has a positive effect on the achievement variable (GPA), and the achievement motivation variable has no positive effect on the achievement variable (GPA). Thus the achievement

motivation variable cannot partially mediate the determination of the digital literacy index on achievement (GPA).

The results of this study indicate that with a digital literacy index that is not good, achievement motivation is not able to boost student achievement. Or in other words, low achievement motivation is influenced by the low level of digital literacy of students, so it cannot improve student achievement. The COVID-19 pandemic period is a very relevant factor affecting the low level of digital literacy and student achievement motivation. The role of libraries in increasing the digital literacy index by providing adequate information for students is very much needed. The innovation of librarians in providing library services, especially utilizing the available social media platforms, is highly expected, so as to encourage the desire of students to take advantage of the information services provided by the library.

This is in accordance with the findings of research by Akinola, Zubairu, Saheed at Adeleke University Ede, Osun State, Nigeria. who revealed that the use of social media is very relevant and important for the delivery of library services. Encourage the use of social media facilities among library staff to have sufficient knowledge in using one of the social media facilities for the delivery of information services. while university management should strive to encourage on-the-job training in this area for library staff as this will increase the level of relevance, awareness and encourage the use of social media facilities among university library staff and the university community at large.

## 5. Conclusion

- a. In this study, the relationship between the digital literacy index and student achievement is at a less strong number, this happens considering that the digital literacy index of Undiksha students currently still needs to be improved so that they can obtain better learning outcomes. Efforts to increase the digital literacy index really need to be done, one of the instruments is to improve the quality of digital services from libraries, including improving user services for information resources served by libraries.
- b. There is no determination of achievement motivation with student achievement. One of the factors that caused this condition to occur was due to the effects of the Covid-19 Pandemic which caused students to rarely be able to meet, work in groups and complete exams. The commitment to compete and be superior among their friends has decreased so that the achievement motivation of students also decreases which results in not being able to affect the achievements of the students themselves.
- c. Achievement motivation does not always affect achievement, depending on the context of the correlation, there are times when motivation does not affect achievement, when conditions are not conducive to competition, one of which is when there is a covid-19 pandemic and learning is done online. This happens considering the limitations of infrastructure such as a limited signal network and the limitations of adequate equipment to support the learning process which have a major impact on student achievement motivation.
- d. The results of this study indicate that with a digital literacy index that is not good, achievement motivation is not able to boost student achievement. Or in other words, the low achievement motivation of students is influenced by the low level of digital literacy of students so that it cannot improve student achievement. The COVID-19 pandemic period is a very relevant factor affecting the low level of digital literacy and student achievement motivation

## 6. Suggestion

- a. Increasing the digital literacy index of students needs attention from all parties through the provision of quality digital-based facilities and services
- b. One of the relevant learning service providers is the library so that the improvement of digital services from the library is very necessary.
- c. The need for more massive socialization of the use of digital technology to students so that they can use and utilize the available digital facilities to support the student learning process, so as to be able to increase the digital literacy index of students and the achievement motivation of students which will have an impact on student learning outcomes in improving the quality output of graduates.

## Refrence

Akinola,Zubairu,Saheed, 2022."Use Of Social Media For Information Service Deelivery In Nigerian Academic Library".Library Philosophy and Practice (e-journal). 7300. <https://digitalcommons.unl.edu/libphilprac/7300>

Anni, TC.,1994. *Psikologi Belajar*. Semarang: UPT UNNES Press

Arif SS, dkk, 1986. *Media Pendidikan, pengertian, Pengembangan, dan Pemanfaatannya*. Jakarta: Rajawali

Arikunto, S, 2012. *Dasar-dasar Evaluasi Pendidikan*. Jakarta : Bumi Kasara.

Djaali & Pudji,M, 2008, *Pengukuran Dalam Bidang Pendidikan. dalam Lestariningsih: Uji Validitas dan Reliabilitas*, diakses Tgl. 23 Maret 2017 < [https:// p4mristkipp.wordpress.com /2011/05/10/uji-validitas-dan-reliabilitas/](https://p4mristkipp.wordpress.com/2011/05/10/uji-validitas-dan-reliabilitas/)>

Departemen Pendidikan Dan Kebudayaan, 1998. *Kamus Besar Bahasa Indonesia*, Jakarta: Balai Pustaka,

Devri,S, 2021. Peran Literasi Digital di Masa Pandemi [TribunJateng.com](https://tribunjateng.com) dengan judul Pentingnya Literasi Digital bagi Guru dan Siswa di Era Pandemi, <https://jateng.tribunnews.com/2022/02/10/pentingnya-literasi-digital-bagi-guru-dan-siswa-di-era-pandemi>

Ginting, D, 2021. *Literasi Digital Dalam Dunia Pendidikan di Abad ke 21*, Malang: Media Nusa Creative

Gregory, RJ, 2000. *Psychological Testing: History, Principles and Applications*. Boston : Allyn and Bacon

Hague, C & Payto, S, 2017. *Digital Literacy Across the Curriculum*. Bristol: Future Lab. Diakses melalui <https://www.nfer.ac.uk/publications/FUTL6> diakses 12 Desember 2017

Hakim , HAB, 2017. *Aplikasi Teknologi Informasi Di Perpustakaan Sekolah: Dari Otomasi Sampai Literasi Informasi*, Yogyakarta: Lembaga Ladang Kata

- Lolytasari, 2022, "The Existence and Innovation Of Library In Supporting Online Learning At New Normal Covid-19" Syarif Hidayatullah Islamic University (UIN) of Jakarta, University of Nebraska – Lincoln University of Nebraska – Lincoln Library Philosophy and Practice (e-journal) <http://digitalcommons.unl.edu/libphilprac/7170>, Summer 9-24-2022
- Luqman A.A, Cecilia O.O, 2022. "Library Resources Accessibility And ICT Adeptness: Case Study Of Federal University Otuoke Library". *Publication: Library Philosophy and Practice (e-journal)*
- Mayank T, 2010. Digital Libraries: Functionality, Usability, and Accessibility," [Library Philosophy and Practice \(e-journal\)](#)
- McClelland, 1983. *Ekonomi*, diakses tgl 12 April 2017 (<http://www.galeripustaka.com>)  
*Psychology of Classroom Learning: An Encyclopedia*. Vol. 1. Detroit: Macmillan Reference USA, 2009. (<http://e-resources.perpusnas.go.id:2133/ps/i.do?p=GV>)
- Nasionalita Kharisma, 2020. *Jurnal Ilmu Komunikasi* vol 18 No 1
- Nurkencana, W dan Sunartana, 1986. *Evaluasi Pendidikan*. Surabaya: Usaha Nasional,
- Nashar, H, 2004. *Peranan Motivasi & Kemampuan Awal*. Jakarta: Delia Press.
- Rahmawati, Kartika.HT, Supawi P, 2021. Learning Interest, Achievement Motivation, Learning Style, And Self Reliance Of Learning Effect on Student Achievement at SMP Batik Surakarta". *International Journal of Economics, Business and Accounting Research (IJEBAR) Peer Reviewed – International Journal* Vol-5, Issue-3, 2021 E-ISSN: 2614-1280 P-ISSN 2622-4771 <https://jurnal.stie-aas.ac.id/index.php/IJEBAR>
- Sudirman, AN, 2001. *Interaksi dan Motivasi Berprestasi Mengajar*, ed 1. cet 8, Jakarta : PT Radja Grafindo Persada,
- Sudjana, 2005. *Metode Statistika*. Bandung: Tarsito
- Sukmadinata, NS, 2010. *Metode Penelitian Pendidikan*. Bandung: Remaja Rosdakarya.
- Sunyoto, D, 2013. *Metode dan Instrumen Penelitian Ekonomi dan Bisnis*. Yogyakarta: CAPs,
- Uno, HB, 2008. *Teori Motivasi dan Pengukurannya*. Jakarta: PT. Bumi Aksara.
- Uno, HB, 2009, *Teori Motivasi dan Pengukurannya Analisis di Bidang Pendidikan*, Jakarta: PT Bumi Aksara.
- Wijanto, SH, 2008, *Structural Equation Modeling*, Yogyakarta: Graha Ilmu
- Yaumi, M, 2013. *Prinsip-prinsip Desain Pembelajaran*. Jakarta : Kencana,

