

CHAPTER III

RESEARCH METHODS

3.1 Characteristics of Respondents

To guide a researcher in designing, carrying out, and interpreting a study, a research paradigm is needed. Rehman and Alharthi (2016) defined a research paradigm as a theoretical framework and fundamental belief system that makes assumptions regarding ontology, epistemology, methodology, and methods. Ontology links to the assumptions regarding reality, its existence, and what is knowable about it. Epistemology refers to the nature of knowledge and how it can be acquired, verified, and shared with other people. Methodology refers to the research procedures. It helps researchers determine what kinds of data are required for a study and which kinds of data collecting are most appropriate for achieving their goals. In the meanwhile, methods are specific techniques for gathering and evaluating data, such as questionnaires and open interviews.

The research paradigm becomes the theoretical foundation that guides the entire investigation process. This framework directs all aspects of research planning, including goals, questions, tools for measurement, and techniques for measuring (Ulz, 2023). By providing a systematic approach to researching a topic, a well-defined research paradigm can improve the overall coherence and precision of study.

There are three dominant research paradigms applied in educational research as below:

(1) Positivism

According to positivism, reality exists along with people. Positivists recognize that events in nature have causal interaction, and furthermore, once these relationships are established, events can be anticipated for the future (Rehman and Alharthi, 2016). It makes use of objective assumptions to determine the nature and functioning of things (Guba and Lincoln, 1994). Since reality is context-free, different researchers studying the same phenomena in different places and at different periods might come to the same conclusions. The objective of positivists' research is to explain the phenomena that happened and share the understanding to others (Creswell, 2014).

Positivists use scientific research methodologies and experiments to investigate study findings. This paradigm of research uses deductive reasoning, in which the researcher first identifies patterns before starting the data gathering procedure. First, theoretical hypotheses are formed. Then, numerical data evidence is gathered through questionnaires and examined. Aside from that, the operational definitions and mathematical equations are provided, as well as computations to reach results. Lastly, an explanatory theory to clarify the impact of the independent variable on the dependent variable is formed (Kivunja, 2017). A study based on the paradigm of positivism is commonly used in quantitative research, a research approach that is employed to investigate specific populations or samples using random sampling methods, research tools, and statistical analysis to verify pre-existing hypotheses.

(2) Interpretivism

The assumption that reality exists independently is rejected by interpretivism. Truth and reality, according to interpretivists, are made rather than found. This paradigm accepts that multiple researchers may bring multiple perspectives to the same event (Rehman and Alharthi, 2016)

Researchers gather data subjectively from their point of view by conducting 'observations' from the researcher's point of view. Interpretivists primarily gather qualitative data from people throughout time (Kivunja, 2017) through interviews, observations, archives, personal notes, research papers, and so on. This information is verbal in nature and is often captured in audio/video format for further processing. The data analysis technique is inductive, which means that The researcher seeks to identify patterns within the data that can be deconstructed into broader concepts, with the aim of clarifying a phenomenon and constructing a hypothesis.

(3) Critical Paradigm

Critical theory makes the assumption that there is a reality, but it has been shaped into a social system by culture, politics, ethnicity, gender, and religion. Hence, the theory is subjective because the researcher has an impact on the research object (Rehman and Alharthi, 2017). In order to confront social oppression and advance social justice, the critical paradigm focuses on these concerns to solve political, social, and political issues as well as economic challenges and political transformation (Kivunja, 2017). For these reasons, this paradigm is known as the transformative paradigm.

According to Guba and Lincoln (1994), researchers interact with subjects in discussion to bring about changes in their perspectives of a social system. This approach can be achieved through the utilisation of critical discourse analysis, action research, ideology criticism, and other similar methodologies. Primarily qualitative data might be gained, though quantitative data is not excluded.

The study conducted by the author, observed the actual phenomena which is happening, that is the usage of m-LMS as the implementation of *Kurikulum Merdeka* in Indonesia. This research obtained the data primarily through the survey, which was online questionnaires given to a sample of individuals to gain their perspective from the topic by using Likert scale. To support the objectivity of the research, the reliability and validity of the data instruments were assessed. After being proven reliable and valid, the questionnaire was ready to be used to carry out the main test. The data from the questionnaires are used to test the hypotheses that have been made. The study fulfilled the requirements of a quantitative research and therefore it was grounded on a positivist research paradigm. However, this study also conducted an interview to obtain the confirmation of the research result from the respondents.

3.2 Research Object and Subject

3.2.1 Research Object

Research object explains the problem or phenomena which is targeted to be analyzed. In this research, the object was factors influencing the level of acceptance

of m-LMS. The context of *Kurikulum Merdeka* implementation was observed. Furthermore, the study applied the UTAUT model as its theoretical basis.

3.2.2 Research Subject

Research subject refers to people, place, or matters that are going to be analyzed. The subject of this research was the Senior High School students that experience the use of m-LMS and whose schools are applying *Kurikulum Merdeka*. Specifically, the research subjects were coming from schools in Tangerang, either Satuan Pendidikan Kerjasama (SPK) schools or national schools.

3.3 Population and Sample

The population and sampling are essential to explain the group from whom data was obtained. This subchapter gives a thorough overview of population and sampling, outlining their importance and methodological concerns pertaining to the fundamental components of this study. It is also crucial for a researcher to have a deep comprehension of the participants' traits, such as their responses to particular situations and diverse settings. This underscores the importance of the researcher's ability to discern the participants' nuances, which is vital in choosing and utilizing the most appropriate research methodology (Birks et al., 2017).

3.3.1 Population

A population is an area of generalization that encompasses subjects or objects with specific traits or attributes that the researcher intends to investigate and subsequently draw conclusions from (Sugiyono, 2015). This research is

exposing the population gap. While most of the previous studies were done to higher education students, in this research, the researcher targeted the Senior High School students. Therefore, all students in Senior High School were included in the study's target population.

3.3.2 Sample

A sample is a subset of the population that possesses similar characteristics to the larger population and is selected using specific procedures to represent the population. In cases where the population is extensive and due to the time, cost, and research personnel which are limited, the researcher can opt to investigate a representative sample of the population rather than the full population. A carefully selected sample can draw conclusions for the entire population in the future (Barreiro and Albandoz, 2001).

This study took random Senior High School students with experience in using m-LMS from seven schools in Tangerang as the samples. Furthermore, these schools are schools that are applying *Kurikulum Merdeka* as their educational framework.

This study utilized the following segmentations:

- (1) For the demographic segmentation, male and female students in grade 10, grade 11, and grade 12 were chosen in this research.
- (2) For the geographic segmentation, students from the schools in Tangerang, specifically from seven schools, namely St. John's Catholic School BSD, St. John's School Gading Serpong, Sinarmas World Academy, Global Jaya,

PGRI 22, Francis School, and Stella Maris were participated in this research.

- (3) For psychographic segmentation, students whose schools are applying *Kurikulum Merdeka* and have ever used or are using m-LMS for their studies were chosen in this research.

3.3.3 Sampling Method

This study utilized non-probability sampling, which means not all individuals in the population have an equitable chance of being chosen for the sample. Nonprobability samples were chosen according to the researcher's assessment to meet specific targets for the current study. Thus, determining the population units included in the sample is done subjectively (Henry, 1990). Nonprobability sampling is commonly referred to as purposeful sampling due to this rationale. Specifically, purposive sampling was utilized, where the sample was chosen based on specific criteria due to its unique features (Kumar, 2019). The targeted samples in this research were the Senior High School students who have experience in using m-LMS. Furthermore, these students are taken from schools that are applying *Kurikulum Merdeka*.

Hair et al. (2017) employed power tables in the investigation to compute appropriate sample sizes. The tables provided information regarding the minimum samples required to achieve minimum R² values of 0.10, 0.25, 0.50, and 0.75 for any of the endogenous constructs in the structural model, at significance levels of 1%, 5%, and 10%, with a statistical power of 80%. These tables also included the

complexity of a PLS path model, as indicated by the maximum arrows pointing to a construct. This study's conceptual framework stated that in total, there were nine arrows pointing at a variable. With a 80% statistical power, a 5% probability of error, and a minimum R2 of 0.10 (Mehmetoglu and Venturini, 2020; Cohen, 1992), at least 181 students were used as samples. However, this study had 36 respondents for the pre-test analysis and 420 respondents for the main test.

Exhibit 1.7 Sample Size Recommendation a in PLS-SEM for a Statistical Power of 80%

Maximum Number of Arrows Pointing at a Construct	Significance Level											
	1%				5%				10%			
	Minimum R ²				Minimum R ²				Minimum R ²			
	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75	0.10	0.25	0.50	0.75
2	158	75	47	38	110	52	33	26	88	41	26	21
3	176	84	53	42	124	59	38	30	100	48	30	25
4	191	91	58	46	137	65	42	33	111	53	34	27
5	205	98	62	50	147	70	45	36	120	58	37	30
6	217	103	66	53	157	75	48	39	128	62	40	32
7	228	109	69	56	166	80	51	41	136	66	42	35
8	238	114	73	59	174	84	54	44	143	69	45	37
9	247	119	76	62	181	88	57	46	150	73	47	39
10	256	123	79	64	189	91	59	48	156	76	49	41

Source: Cohen, J. A power primer. *Psychological Bulletin*, 112, 155–159.

Figure 3.1. : Sample size Recommendation

3.4 Operational Variable

This section indicates how the variables are identified. Operationalization of the variables in the research will provide a specific and concise description of the complex variables needed to evaluate the hypothesis by applying the current method. (Sugiyono, 2015).

3.4.1 Independent Variable

The independent variable is a variable that acts as stimuli and has an impact

on other variables, leading to changes in them. Hair et al. (2017) explained this variable as exogenous latent variable. Refer to the study's conceptual framework, has two independent variables, namely Perceived Enjoyment (PJ) and Facilitating Conditions (FC). However, PJ is the independent factor towards Performance Expectancy (PE), Effort Expectancy (EE), and Social Influence (SI); PE, EE, and SI are the independent variables toward Behavioral Intention (BI); and lastly, BI and FC are the independent variables toward Actual Use (AU)

3.4.2 Dependent Variable

The dependent variable is the variable that is influenced or produced as a consequence of changes in the independent variable. Hair et al. (2017) called this variable as endogenous latent variable. Refer to the study's conceptual framework, Actual Use (AU) acted as dependent variables in this research.

3.4.3 Mediating Variable

A mediator variable is a variable that affects the relationship between the dependent and independent variables. In this study, Performance Expectancy (PE), Effort Expectancy (EE), and Social Influence (SI) performed as mediating variables between Perceived Enjoyment (PJ) and Behavioral Intention (BI). Moreover, Behavioral Intention (BI) performed as mediating variable between PE, EE, SI, and PJ toward Actual Use (AU).

3.4.4 Control variable

A control variable is a variable that can be controlled or kept constant in

order to ensure that external influences, which are not being examined, do not affect the correlation between the independent variable and the dependent variable. Researchers frequently utilize control variables in comparative study (Al, 2018). Gender-related controls are commonly employed as statistical controls across several research fields (Bernerth and Aquinis, 2015). Therefore this research used gender and type of schools as the control variables. This study investigated whether gender and school type give different influence on the actual use of m-LMS.

3.4.5 Measurement Scale

This research primarily collected data for further analysis via online questionnaire. To assess the degree of agreement or disagreement of each participant with the statements in the questionnaire, this study employed a Likert scale as the measurement scale. The Likert scale that was used is a 1-5 interval scale. Revilla et al. (2013) revealed that quality declined with increasing category count on the A-D (Agreement-Disagreement) scale. The 5-point scale yielded higher-quality data in terms of measurement quality. Consequently, they advised using a 5-point scale rather than a 7-point scale. The Likert scale used in this research are described as the following:

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither Agree nor Disagree
- (4) Agree
- (5) Strongly Agree

For obtaining representative and unbiased data, the questionnaire used must first be ascertained whether it is capable of being used to produce good data or not (goodness of data). For this reason, checking the validity and reliability of the indicators of the variables studied needs to be done. Instruments that pass the validity and reliability tests mean that the research instruments are of good quality, meaning that the data produced is also good and accurate and in accordance with the facts in the field so that valid conclusions can be drawn.

3.4.6 Table Detail Operational Research Variables

To define variables and each indicators used in the research, the following table of variable operationalization was used:

Table 3.1.: Variable Operationalization

No	Variable	Definition	Code	Indicators	Measurement Scale
1.	Performance Expectancy (PE)	The extent to which a person feels that the system will improve their performance (Venkatesh et. al., 2003).	PE1 PE2 PE3 PE4 PE5 PE6	1. Usefulness 2. Accessibility 3. Understanding of material 4. Task accomplishment 5. Learning productivity 6. Academic scores improvement	Likert Scale (1-5)
2.	Effort Expectancy (EE)	The extent to which your system is easy to use (Venkatesh et. al., 2003).	EE1 EE2 EE3 EE4 EE5	1. Easy to learn 2. Easy to understand 3. Easy to run 4. Easy to master 5. Easy to integrate with the study	Likert Scale (1-5)

3.	Perceived Enjoyment	The level of satisfaction and delight consumers perceive to have when utilizing a particular technology system (Moon and Kim, 2001)	PJ1 PJ2 PJ3 PJ4 PJ5 PJ6	1. Enjoyment 2. Affection for access 3. Enhanced interest in learning 4. Satisfaction 5. Excitement 6. Preference	Likert Scale (1-5)
4.	Social Influence (SI)	The extent to which a person believes that others support them in utilizing the system (Venkatesh et. al., 2003)	SI1 SI2 SI3 SI4	1. Influence from friends 2. Influence from teachers 3. Influence from important people 4. Influence from school	Likert Scale (1-5)
5.	Facilitating Conditions (FC)	The extent to which the infrastructures, software, and hardware assets enable the system's use (Venkatesh et. al., 2003).	FC1 FC2 FC3 FC4	1. Personal resources 2. Compatibility 3. School's technical support 4. Availability of help	Likert Scale (1-5)
5.	Behavioral Intention to Use (BI)	The user plans to make use of m-LMS.	BI1 BI2 BI3 BI4	1. Intend for daily use 2. Intend for future use 3. Intend for frequently usage 4. Recommendation to others	Likert Scale (1-5)
6.	Actual Use (AU)	User usage of m-LMS is actual.	AU1 AU2 AU3 AU4	1. Material accessing usage 2. Assignment submission usage 3. Tracking usage 4. Preference for daily use	Likert Scale (1-5)

3.5 Data Collection Technique

This study employed a quantitative method. The quantitative study was done through survey via Google Form and respondents' interview was conducted to confirm the research result. Therefore, the data survey and data interview

obtained from the respondents became the primary data in this study, while the other sources such as from textbook, news, and websites, became the secondary data.

3.5.1 Primary Data

Primary data refers to the information that researchers get directly from original sources (Rabianski, 2003). In this study, primary data directly obtained from the respondents, namely online surveys toward high school students whose school is in Tangerang, applying *Kurikulum Merdeka*, and using m-LMS. To begin with, the questionnaire items used for the survey were assessed by a panel of five academic members with competence in research methodology, as well as five Senior High School students who possess knowledge regarding m-LMS, in order to validate the items. Then, a pre-test was conducted before the main test. There were 36 participating respondents. The items in the questionnaires are then being tested for its validity and reliability. The result showed that all items of the questions are valid and reliable. Thus, all items in the questionnaire are used for the main test.

The first step to get data for the main test was by doing screening sections. The author contacted the principal or vice principal of several schools located in Tangerang and did screening by figuring out whether the school is applying *Kurikulum Merdeka* and using m-LMS for its educational process. When the two criteria were met, the schools were asked for their availability to contribute in the survey.

Once the approval was given, the survey was distributed with the assistance from the principal or vice principal in overseeing the distribution of the questionnaires. Teachers in the respective schools were invigilating the survey to provide support for any queries about the questionnaires. As a result, 420 students from seven schools provided data for this study. Those schools are Saint John's Catholic School, Sinarmas World Academy, Global Jaya School, Saint John's School Gading Serpong, Stella Maris, Francis School, and PGRI 22.

Every student who took part in the online survey has experience in using a mobile device to access LMS. Every participant gave informed consent and all subjects were made aware of the purpose of the study. All participants' responses were used only for the research purpose and the findings later on will be reported to each participating school for their insights.

The questionnaire given consists of demography questions-asking for the respondents' name of school, grade level, gender, frequency in using mobile devices for studying-and 33 items of questions about the factors affecting the m-LMS' acceptance. Attached is the questionnaire used in the main test. These questionnaires were modified from several prior studies, such as from Almaiah et al. (2019), Almaiah (2021), Chao (2019), Kaliisa (2017), Sidik (2020), and Venkatesh (2003), and Venkatesh (2010).

Table 3.2.: Questionnaires

No.	Variable	Indicator	Item of Questionnaire
1.	Performance Expectancy (PE)	PE1 PE2 PE3 PE4 PE5 PE6	1. I find m-LMS useful for my study needs. 2. I find m-LMS can help me to access the material easily. 3. I find m-LMS can help me to understand the material well. 4. I find m-LMS can help mt to accomplish my tasks quickly 5. I find m-LMS can increase my learning productivity 6. I find m-LMS can help me increase my academic scores.
2.	Effort Expectancy (EE)	EE1 EE2 EE3 EE4 EE5	7. I find the features in m-LMS are easy to learn. 8. I find the features in m-LMS are easy to understand. 9. I find the features in m-LMS are easy to run. 10. I find the features in m-LMS are easy to master. 11. I find it easy to integrate my studies with m-LMS.
3.	Perceived Enjoyment (PJ)	PJ1 PJ2 PJ3 PJ4 PJ5 PJ6	12. I find using m-LMS is enjoyable . 13. I love accessing material and assignments through m-LMS 14. I find m-LMS makes learning activities more interesting. 15. I find myself satisfied using m-LMS since I can access the material and assignment freely, whenever and wherever. 16. I find myself excited in accessing material and assignments through m-LMS. 17. I prefer to interact with teachers and friends through m-LMS rather than direct interaction (face-to-face).
4.	Social Influence (SI)	SI1 SI2 SI3 SI4	18. My classmates use m-LMS and therefore I also use m-LMS. 19. My teachers advised me to use m-LMS. 20. People whose opinion I value thinks that I should use m-LMS. 21. The school encourages me to use m-LMS.

5.	Facilitating Conditions (FC)	FC1 FC2 FC3 FC4	22. I have resources to access m-LMS (such as: smartphones, laptop, internet). 23. The m-LMS is compatible with other technology that I use. 24. The school gives technical support (such as wifi, account, etc) to use m-LMS. 25. I can get help from others whenever I have technical problems with m-LMS.
6.	Behavioral Intention (BI)	BI1 BI2 BI3 BI4	26. I intend to use m-LMS for my daily studies. 27. I intend to use m-LMS in the future. 28. I intend to use m-LMS more frequently. 29. I will recommend the mobile learning application to others.
7.	Actual Use (AU)	AU1 AU2 AU3 AU4	30. I use m-LMS to download the material. 31. I use m-LMS to submit my assignment. 32. I use m-LMS to track my agenda and missing assignments. 33. I prefer using m-LMS to support my daily studies.

Aside from that, an interview with respondents was also conducted to get a more detail information to confirm the findings of the study.

3.5.2 Secondary Data

Secondary data refers to information obtained from secondary sources, which might include published or unpublished research that relies on primary sources. In exploratory research, secondary data are mostly utilized to suggest correlations in scenarios with minimal underlying theory (Hair et al., 2017). The secondary data for this study was derived from previously collected sources through literature review such as prior research, textbooks, news, existing statistical data, and so on.

3.6 Data Analysis Technique

Data analysis is a systematic application of statistical methods to interpret, compress, and scrutinize data in order to derive valuable information that can serve as a foundation for problem-solving and decision-making. In this study, data from survey will be analyzed quantitatively, namely by using numerical data that is processed with the help of statistics. The data analysis in this study consisted of the descriptive analysis, the measurement model analysis, and the structural model analysis.

3.6.1 Descriptive Analysis

In scientific research in general and educational research in particular, descriptive analysis is crucial. The questions of who, what, where, when, and to what extent are answered by descriptive analysis (Loeb et al., 2017). It aims to describe data rather than make conclusions from a sample of the full population, such as to describe the state of the sample that represents the population for its demographic, characteristics, or other concept related to the variables. Descriptive analysis can often show that a person understands cause and effect and the mechanisms underlying causal relationships. Descriptive analysis can often show that a person understands cause and effect as well as the mechanisms underlying causal relationships. Therefore, understanding data with descriptive analysis can be the basis for more in-depth statistical research.

Respondent profiles and characteristics offer a thorough description of all those taking part in the research. It shows the condition of the sample in the form

of a frequency distribution, related to demographic data-such as gender, educational background, occupation-geographic details, and other relevant data. their behavior in using mobile devices for studying

Through respondent profiles, a researcher can learn more about the structure of their sample, spot the patterns and gain insights for their research. This study collects the respondents profile for their gender, grade level, name of school, and type of school (SPK school or national school), as well as their behavior in using mobile devices for studying.

3.6.2 Measurement Model Analysis

The main method of data collection employed in this study was the distribution of structured questionnaires. The survey measures Senior High School students' perceptions of performance expectations, effort expectations, perceived enjoyment, social influence, facilitating conditions, behavioral intention, and actual use of m-LMS. It was created based on the UTAUT model and consists of items on a 1–5 Likert scale.

In order to obtain representative and unbiased data, the questionnaire used must first be ascertained whether it is capable of being used to produce good data or not (goodness of data). For this reason, examining the validity and reliability of the indicators of the variables studied must be done. Instruments that pass the validity and reliability tests mean that the research instruments are of good quality, meaning that the data produced is also good and accurate and in accordance with the facts in the field so that valid conclusions can be drawn.

3.6.2.1 Validity Test

A validity test is one that is performed to assess the accuracy of a measuring instrument in performing its measuring function. A valid instrument means that the instrument actually measures what it is designed to measure. To test the validity of the indicators used in the questionnaire, the author used PLS-SEM in SmartPLS4. The validity test was conducted by examining the outer loading value and Average Variance Extracted (AVE). According to Hair et al. (2011), the cut of for the validity test is as below:

(1) By seeing the value of outer loading

- If the outer loading value < 0.6 , then the instrument is invalid
- If the outer loading value > 0.6 , then the instrument is valid.

(2) By seeing the value of AVE

- If the value of AVE < 0.5 , the the instrument is invalid
- If the value of AVE > 0.5 the instrument is valid.

The pre-test questionnaires were distributed to 40 participants through Google Form. However, only 36 participants gave responses. Here is the result of the pre-test's validity test for each variable's indicator within this research:

Table 3.3.: Validity Test for the pre-test

Variable	Indicators	Outer Loading Value	AVE value	Result
		> 0.60	> 0.50	
Performance Expectancy	PE1	0.627	0.521	Valid
	PE2	0.870		
	PE3	0.796		
	PE4	0.661		

	PE5	0.653	
	PE6	0.694	
Effort Expectancy	EE1	0.776	Valid 0.714
	EE2	0.901	
	EE3	0.895	
	EE4	0.864	
	EE5	0.780	
Perceived Enjoyment	PJ1	0.797	Valid 0.515
	PJ2	0.776	
	PJ3	0.630	
	PJ4	0.755	
	PJ5	0.772	
	PJ6	0.537	
Social Influence	S11	0.636	Valid 0.527
	SI2	0.711	
	SI3	0.745	
	SI4	0.716	
Facilitating Condition	FC1	0.879	Valid 0.670
	FC2	0.883	
	FC3	0.882	
	FC4	0.592	
Behavioral Intention	BI1	0.870	Valid 0.672
	BI2	0.806	
	BI3	0.894	
	BI4	0.695	
Actual Use	AU1	0.754	Valid 0.641
	AU2	0.857	
	AU3	0.769	
	AU4	0.820	

3.6.2.2 Reliability Test

A reliability test is performed to evaluate the degree to which measurement findings may be believed. If the same topic is measured multiple times and the findings stay consistent, the instrument is considered to be reliable. This demonstrates the instrument's consistency.

This research conducts the reliability test by using Cronbach's Alpha. The limit of the dependability value in this study is geared to Cronbach's Alpha of 0.6 (Hair et al., 2011).

- If the Cronbach's Alpha > 0.6 , then the instrument is reliable
- If the Cronbach's Alpha < 0.6 , then the instrument is unreliable

Here is the pre-test's reliability test for this research:

Table 3.4.: Reliability Test for the Pre-Test

Variable	Cronbach's alpha	Result
Performance Expectancy (PE)	0.814	Reliable
Effort Expectancy (EE)	0.899	Reliable
Perceived Enjoyment (PJ)	0.810	Reliable
Social Influence (SI)	0.702	Reliable
Facilitating Conditions (FC)	0.828	Reliable
Behavioral Intention (BI)	0.834	Reliable
Actual Use (AU)	0.812	Reliable

Source: Author, 2023

The table above showed that the Cronbach's Alpha value for all the research variables is higher than 0.6, which means all of the indicators used are reliable and therefore are appropriate for further investigation. The highest Cronbach's Alpha value is 0.899 for Effort expectancy and the lowest value is 0.702 for Social Influence.

The results in validity test and reliability test showed that the instruments used in the pre-test were all valid and reliable. Thus, the instruments can be used as the indicators for the main-test.

3.6.3 Structural Model Analysis (Hypothesis Testing)

Hypothesis testing examines the hypothesized linkages in the structural model to assess whether significance was found or not. To analyze the structural model, this research used Structural Equation Model (SEM), specifically Partial Least Squares-Structural Equation Modeling (PLS-SEM).

PLS-SEM is one of the statistical techniques to examine the structural connections between dependent variables and independent variables. PLS-SEM is frequently utilized in numerous studies due to the reasons that its graphic interface is user-friendly (Memon et al., 2021). Aside from that, this method allows the researchers to estimate complex models with the use of numerous constructs, indicator variables, and structural pathways, without making distributional assumptions about the data. More significantly, though, PLS-SEM places a strong emphasis on prediction when estimating statistical models, the framework of which is intended to offer causal justifications (Hair et al., 2019). For this study, PLS-SEM is chosen as the PLS approach is especially suitable for SEM applications that try to predict or create theories, such as those that focus on finding crucial success drivers, because of its flexibility and relatively high statistical power (Hair et al., 2011)

The data was analyzed by using PLS-SEM, which is run on SmartPLS version 4. The outcomes from SmartPLS are presented in neat tables and, in some cases, as insightful visualizations. Additionally, reports and results can be exported into HTML, R, and Excel formats, stored for later use, or shared with colleagues. (Memon et al., 2021). According to Latan and Ramli (2013), reporting the PLS-

SEM evaluation in a two-phase manner is preferable. It first concentrates on the results from the outer model, or measuring model, and then on the inner model, or structural model. This study will first analyze the descriptive statistics for the data collected, then followed by the inner model analysis and outer model analysis.

Here are some tests conducted for analyzing the main-test data by using PLS-SEM in SmartPLS version 4:

(1) R-square Analysis

R-square is a useful tool for quantifying the analysis of the inner model and identifying the direct or indirect impacts of one variable on the other variables. Hair et al. (2011) suggested three levels of R² to analyze the R-square: 0.75 for large value, 0.50 for moderate value, and 0.25 for weak value.

(2) f-square Analysis

The purpose of f-square measurement is to assess the significance of the change in the dependent variable when a particular independent variable is removed from the model. According to Cohen (1988), which Hair et al. (2017) quoted, the effect values for f-square analysis are 0.02 (for weak value), 0.15 (for moderate value), and 0.35 (for large value).

(3) Significance Test.

This test was performed to establish the significance of one variable's influence on other variables, which may be used to decide whether the hypothesis is accepted or rejected. This test is performed by examining the parameter t-value.

When the t-value exceeds the critical value, then the coefficient is considered statistically significant at a specific level of error probability. The two-

tailed significance test is employed to test significant metrics. The critical values for significance levels of 10%, 5%, and 1% are 1.65, 1.96, and 2.57, respectively. If the research entails an experiment, the designated significance level is assumed to be 1%. Typically, the exploratory study commonly employs a significance level of 10%. The confidence interval of the route model indicates the reliability of the predicted coefficient. It helps determine a set of possible values for a parameter based on the sample size variation (Hair et al., 2017).

The significance test was also done by seeing the p-value. With the 5% significance level, if p-value is more than 0.05 then the validity was rejected, but if the p-value is more than 0.05, the data is valid.

