

FACTORS AFFECTING STUDENT'S PERCEPTION  
TOWARDS ONLINE LEARNING DURING COVID 19  
PANDEMIC

BY

CHOO ZHE YAN  
JEFFREY SIAO CHIN KHEN  
ROESHAN A/L SUNTRA MURTHI  
TEH E-HANG  
WONG ZHI FONG

A final year project submitted in partial fulfillment of the  
requirement for the degree of

BACHELOR OF BUSINESS ADMINISTRATION  
(HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE  
DEPARTMENT OF BUSINESS

AUGUST 2021






Copyright @ 2021

ALL RIGHTS RESERVED. No part of this paper may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, graphic, electronic, mechanical, photocopying, recording, scanning, or otherwise, without the prior consent of the authors.

## DECLARATION

We hereby declare that:

- (1) This undergraduate research project is the result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.
- (2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any university, or other institutes of learning.
- (3) Equal contribution has been made by each group member in completing the research project.
- (4) The word count for this research project is 25008.

<b>Name of students:</b>	<b>Student ID:</b>	<b>Signature:</b>
1.Choo Zhe Yan	19ABB01670	
2. Jeffrey Siao Chin Khen	19ABB02799	
3. Roeshan A/L Suntra Murthi	19ABB01556	
4.Teh E-Hang	19ABB02976	
5.Wong Zhi Fong	16ABB02950	

Date: 17/8/2021

## ACKNOWLEDGEMENT

First and foremost, we would like to take this opportunity to offer our gratitude to our university, Universiti Tunku Abdul Rahman (UTAR), for allowing us to use all necessary materials to complete our research project. We realised early on in this study that time management and teamwork were the most key factors in completing our responsibilities. We have learned from our failures and have improved this study endeavour through effective teamwork and time management. We were able to gain much knowledge about education industry in our country.

In addition, we would like to express our gratitude to our supervisor, Ms. Azeyan Binti Awee, for her constant advice, assistance, and motivation from the start of this research project. We admit that without her as our project's support system, we would not be able to complete this research.

On the other hand, we wish to express our gratitude to all respondents who took part in this study. The most valuable thing they gave us was their time in answering and filling out the questionnaires we created. As a result, we would want to express our gratitude to them all for their cooperation and support in helping us finish this study project on time.

Finally, we would want to express our gratitude to each member from our team who has not only contribute and been motivated but has also completed their assignments on time.

Without their dedication and team spirit, there is no way that this project would have been a success.

We learned a lot from each other's contributions as a result, which was an excellent learning curve for us.

## DEDICATION

Dedicated to:

Ms. Azeyan Binti Awee

Ms. Azeyan Binti Awe, our supervisor, provides us with the necessary help and important guidance so that we can get the right way to process this research project smoothly and successfully.

Universiti Tunku Abdul Rahman

For giving us the opportunity to complete this research project in our university career.

Families and friends

When we were doing this research project, they provided us with a lot of inspiration, support, and encouragement to solve all the problems.

Respondents

To the respondents who are willing to spend their precious time for helping us in completing the questionnaires for this research project.

## TABLE OF CONTENTS

	PAGE
Copyright Page.....	II
Declaration.....	III
Acknowledgement .....	IV
Dedication.....	V
Table of Contents.....	VI
List of Tables .....	XIII
List of Figures.....	XV
List of Abbreviations .....	XVI
List of Appendices .....	XVII
Preface.....	XVIII
Abstract.....	XIX
CHAPTER 1: INTRODUCTION .....	1
1.0 Introduction.....	1
1.1 Research Background.....	1
1.2 Problem Statement .....	4
1.3 Research Objective.....	7
1.3.1 General Objective .....	7
1.3.2 Specific Objective.....	8

1.4	Research Question.....	8
1.5	Hypotheses of the Study.....	8
1.6	Significance of the Study .....	9
1.7	Chapter Layout.....	11
1.8	Chapter Summary.....	11
CHAPTER 2: LITERATURE REVIEW .....		13
2.0	Introduction .....	13
2.1	Underlying Theories.....	13
2.1.1	Activity Theory .....	13
2.1.2	Learning Theory.....	15
2.1.3	Online Collaborative Learning .....	16
2.1.4	Theory of Diffusion of Innovations .....	17
2.2	Review of Literature.....	18
2.2.1	Dependent Variable: Student Perception Online Learning.....	18
2.2.2	Independent variable: Self Efficacy.....	20
2.2.3	Independent variable: Technical Conditions .....	20
2.2.4	Independent variable: Student Attitudes .....	22
2.2.5	Independent Variable: Study Method .....	22
2.3	Theoretical Model Framework.....	23
2.3.1	Students Attitudes .....	23
2.3.2	Study Method.....	24

2.3.3	Self-Efficacy .....	26
2.3.4	Technical Condition.....	27
2.4	Proposed Conceptual Framework .....	27
2.5	Hypothesis Development .....	29
2.5.1	Relationship between Students' Attitudes and Student Perception on Online Learning .....	30
2.5.2	Relationship between Student Self-Efficacy and Student Perception on Online Learning .....	30
2.5.3	Relationship between Technical Condition and Student Perception on Online Learning. ....	32
2.5.4	Relationship between Study Methods and Student Perception on Online Learning .....	32
2.6	Chapter Summary.....	33
CHAPTER 3: METHODOLOGY .....		35
3.0	Introduction .....	35
3.1	Research Design.....	35
3.2	Data Collection Method .....	36
3.2.1	Primary Data .....	36
3.2.2	Secondary Data .....	37
3.3	Sampling Design .....	37
3.3.1	Target Population.....	37
3.3.2	Sampling Frame and Sampling Location.....	38

3.3.3	Sampling Elements .....	38
3.3.4	Sampling Technique .....	38
3.3.5	Sampling Size .....	39
3.4	Research Instruments .....	40
3.4.1	Questionnaire Design.....	41
3.4.2	Pilot Test.....	42
3.5	Construct Measurement (Scale and Operational Definitions).....	43
3.5.1	Origin of Construct .....	43
3.5.2	Scale of measurement .....	45
3.6	Data Processing .....	47
3.6.1	Data Checking.....	47
3.6.2	Data Editing .....	47
3.6.3	Data Coding .....	47
3.6.4	Data Transcribing.....	49
3.7	Data Analysis .....	49
3.7.1	Descriptive Analysis .....	49
3.7.2	Reliability Analysis.....	50
3.7.3	Inferential Analysis.....	50
3.8	Chapter Summary.....	52
CHAPTER 4: DATA ANALYSIS .....		53
4.0	Introduction.....	53

4.1	Descriptive Analysis .....	53
4.1.1	Respondent's Demographic Profile .....	54
4.1.1.1	Gender.....	54
4.1.1.2	Ethnic Group.....	55
4.1.1.3	Religion Group .....	56
4.1.1.4	Age.....	57
4.1.1.5	Education Level.....	58
4.1.1.6	Private Public.....	59
4.1.2	Central Tendencies Measurement of Constructs .....	59
4.1.2.1	IV: Students Attitudes.....	60
4.1.2.2	IV: Technical Conditions.....	61
4.1.2.3	IV: Self-Efficacy.....	63
4.1.2.3	IV: Study Method .....	64
4.1.2.4	DV: Student Perception Online Learning.....	66
4.2	Scale Measurement .....	68
4.3	Inferential Analysis .....	69
4.3.1	Pearson's Correlation Coefficient.....	69
4.3.1.1	Student Attitude and Student Perception Online Learning.....	69
4.3.1.2	Technical Condition and Student Perceptions Online Learning.....	70
4.3.1.3	Self-efficacy and Student Perceptions Online Learning.....	71
4.3.1.4	Study Method and Student Perceptions Online Learning.....	72

4.3.2 Multiple Linear Regression Analysis .....	72
4.3.2.1 Student Attitude and Students Perceptions Online Learning.....	75
4.3.2.2 Students' self-efficacy and student perception on online learning	75
4.3.2.3 Technical Conditions and Student Perceptions on Online Learning	76
4.3.2.4 Study Methods and Student Perceptions on Online Learning .....	76
4.4 Conclusion.....	77
<b>CHAPTER 5: DISCCUSION, CONCLUSION &amp; IMPLICATION .....</b>	<b>78</b>
5.0 Introduction .....	78
5.1 Summary of Statistical Analysis .....	78
5.1.1 Summary of Descriptive Analysis .....	78
5.1.1.1 Respondents' Demographic Profile .....	78
5.1.1.2 Summary of Central Tendencies Measurement.....	80
5.1.2 Summary of Scale Measurement .....	80
5.1.2.1 Reliability Test.....	80
5.1.3 Summary of Inferential Analysis.....	81
5.1.3.1 Pearson Correlation Coefficient Analysis .....	81
5.1.3.2 Multiple Regression Test Analysis .....	82
5.2 Discussions of major findings .....	82
5.2.1 Students' attitudes and students' perceptions towards online learning .....	82
5.2.2 Technical conditions and students' perception towards online learning .....	83

5.2.3	Study method and students’ perceptions towards online learning...	84
5.2.4	Self-efficacy and students’ perceptions towards online learning ....	85
5.2.5	Relationship between students’ attitudes, technical conditions, study methods and self-efficacy and students’ perceptions towards online learning .....	86
5.3	Implication of The Study.....	87
5.3.1	Managerial Implication.....	87
5.4	Limitations of The Study.....	88
5.5	Recommendation.....	88
5.6	Chapter summary .....	89
	References.....	90
	Appendices.....	102

## LIST OF TABLES

	PAGE
Table 3.1: Determining Sampling Design	39
Table 3.2: Questionnaire Section A, B and C	41
Table 3.3: Summary of Reliability Test Results for pilot test	42
Table 3.4: Table of Origin of Construct	43
Table 3.5: Example of Data coding for questions in Section A, B, C from our research	48
Table 3.6: Cronbach's Alpha Coefficient Value's	50
Table 3.7: Pearson Correlation Coefficient value	51
Table 4.1: Statistics of Respondents Gender	54
Table 4.2: Statistics of Respondents Ethnic Group	55
Table 4.3: Statistics of Respondents Religion Group	56
Table 4.4: Statistics of Respondents Age	57
Table 4.5: Statistics of Respondents' Education Level	58
Table 4.6: Statistics of Respondents' Private Public	59
Table 4.7: Central Tendencies Measurement of Student Attitudes	60
Table 4.8: Central Tendencies Measurement of Technical Conditions	61
Table 4.9: Central Tendencies Measurement of Self-Efficacy	63
Table 4.10: Central Tendencies Measurement of Study Method	64

Table 4.11: Central Tendencies Measurement of Student Perception Online Learning	66
Table 4.12: Cronbach's Alpha Coefficient Value's	68
Table 4.13: Standard of Pearson Correlation Coefficient Analysis	69
Table 4.14: Correlation between Student Attitude and Student Perception online Learning	69
Table 4.15: Correlation between Technical Conditions and Student Perception online Learning	70
Table 4.16: Correlation between Self-efficacy and Student Perception online Learning	71
Table 4.17: Correlation between Study Method and Student Perception online Learning	72
Table 4:18: Summary of Multiple Linear Regression Model Summary	73
Table 4:19: ANOVA	73
Table 4:20: Multiple Linear Regression Efficient Summary	74
Table 5.1: Summary of Descriptive Analysis	79
Table 5.2: Summary of Central Tendencies Measurement	80
Table 5.3: Summary of Reliability Test	81
Table 5.4: Summary of Pearson Correlation Coefficient Analysis	81
Table 5.5: Summary of Multiple Regression Test Analysis	82

## LIST OF FIGURES

	PAGE
Figure 2.1: Activity theory	14
Figure 2.2: Students attitudes framework	24
Figure 2.3: Study method framework	25
Figure 2.4: Self-efficacy framework	26
Figure 2.5: Technology acceptance model (TAM)	28
Figure 2.6: The Research Framework	37
Figure 4.1: Statistics of Respondents Gender	54
Figure 4.2: Statistics of Respondents Ethnic Group	55
Figure 4.3: Statistics of Respondents Religion Group	56
Figure 4.4: Statistics of Respondents Age	57
Figure 4.5: Statistics of Respondents' Education Level	58
Figure 4.6: Statistics of Respondents' Private Public	59

## LIST OF ABBREVIATIONS

A	Agree
D	Disagree
MOHE	Ministry of Higher Education
N	Neutral
SPSS	Statistical Package for Social Science
SA	Strongly Agree
SD	Strongly Disagree
TAM	Technology Acceptance Model

## LIST OF APPENDICES

	PAGE
Appendix A Questionnaire .....	102
Appendix B Pilot Test.....	111
Appendix C Correlations .....	114
Appendix D Multi Regressions.....	115
Appendix E Reliability IV and DV.....	116
Appendix F Coefficient .....	123

## PREFACE

The aim of this research is to determine factors affecting students' perception on online learning during Covid-19 pandemic. The topic of our research project is "Students Perception on Online Learning During Covid-19 Pandemic". The reason of choosing online learning to conduct our study is because all the members still have school status and because of the covid-19 epidemic, we can learn online and cannot return to campus. At the same time, we have also found that most students also have differences in their learning status due to changes in teaching methods and various external factors.

To achieve the objectives, we have used four independent variables to conduct our research which are students' attitudes, study method, self-efficacy, and technical condition. Inactive students' attitudes, poor study methods, low self-efficacy and technical conditions will lead to low students' perception on online learning, which will adversely affect the quality of students' learning. This research project can better provide more and better perspectives to understand the factors that influence students' perceptions of online learning during the Covid-19 pandemic.

## ABSTRACT

The primary goal of this research study is to survey the students' perception on online learning during the COVID-19 pandemic in Malaysia. We have anticipated a couple of hypothesis to study the relationship between the dependent (students' perception on online learning) and independent variables (students' attitudes, students' self-efficacy, technical conditions, study methods). We have also delivered the related literature reviews and the projected structure for this research.

Through this research, we focus on identifying the significant relationship between the factors that affect the students' perception on online learning and their attitudes. The respondents that we targeted are students from UTAR. We did our part of collecting and analysing the data which resulted in us succeeding in our study. The results show that students' attitudes, students' self-efficacy, technical conditions and study methods are significantly correlated with the students' perception on online learning. To sum up, the university should consider the students' attitudes and the technical conditions for them to have a good perception on online learning.

# **CHAPTER 1: INTRODUCTION**

## **1.0 Introduction**

The purpose of the research is to examine the elements that may influence student perceptions of online learning during the Covid-19 outbreak. This study will also provide a good understanding of how students' attitudes, self-efficacy, technical conditions, and study methods can affect student perception of online learning during the Covid -19 pandemic.

The first chapter's objective is to provide an overview of the study background as well as to describe the research's most crucial feature, the issue statement. After that, the research goal is divided into general and specific objectives. Then, we determine the research question, hypothesis of the study, and significance of the study. The end of this topic is the chapter layout and chapter summary of the research plan.

## **1.1 Research Background**

Many universities and institutions have already been forced to close temporarily due of the COVID-19 pandemic. According to Dhawan (2020), a wide range of regions around the world are affected. People are concerned about their current term, but they are even more concerned about their future term. Face-to-face training has been phased out at many institutions, colleges, and universities. Because social distance is so visible at this point, it will have a negative impact on learning opportunities. The education department is attempting to address this difficult problem. We believe that scenario planning is a must-have for academic institutions because of these qualities. Compassion and collaboration are required in this situation. As a result of the coronavirus, traditional schooling has been turned into online learning.

According to the research Fidalgo (2020), in an online and face-to-face learning study, perception is achieved by restoring and interpreting information about the link between objects, events, and experience in students' perceptions of online learning education. It forecasts the importance of stimulus-response relationships. As a result, the researchers will get awareness of the full stage operation process, allowing us to adapt our activities to the reality in which we live. The students' perceptions can be deemed to be developing as a result of the need to change. As a result, the focus of this research is on students' perceptions of engagement, accessibility, material and homework delivery, and a learning-friendly environment.

Therefore, in the student attitudes about online learning education, the research conducted by Smidt (2014) noted that one of the goals of the current study is to understand the attitude toward online courses by using a student-centred approach, giving priority to the needs of students. Part of this point is to acknowledge that individual differences in students or factors within individuals will play a role in predicting satisfaction. For this reason, numerous studies in the field have found this. For example, learners' computer anxiety is a crucial factor in predicting online learning satisfaction. In the study, computer anxiety is defined as using the computer at work nervous and uncomfortable feeling, and online learning satisfaction is defined as students registered for the overall satisfaction of network courses. This is because the pandemic Covid-19 has caused the students may sit watch the computer all day. Then there are the external elements that influence students' satisfaction with online courses, such as their prior technological experience Inexperience may interact with the presence of technical problems, thereby fuelling dissatisfaction. Students with greater technical skills, for example, are more likely to enrol in an online course than those with less. They also stated that potential technological issues and a lack of technical competence could make lengthy operations appear longer, requiring the student to spend more time completing the online course. 30% of the students feel that complete homework time spent online is not worth it.

Moreover, in the student efficacy in online learning, the research conducted by Jimmie (2020) found that lack of student response in online classes is one of the most difficult aspects of online learning. Because of pandemic Covid-19, the

student must stay home for learning. Students prefer to turn off their cameras and microphones in class, and there is minimal contact between the lecturer and the students, save for the occasional query or answer in the chat room or a "yes" or "no" when asked if they have any questions. Students and educators become decodified because of their lack of participation and involvement in the classroom. The most frustrating aspect of teaching online for a year has been encouraging students to be more "talkative" and responsive in online classes. When pupils refuse to answer questions because the teacher is unable to assess if the student is learning well, problems develop.

Students may only enter the virtual classroom to register their attendance rather than the complete class being taught in some situations. Furthermore, online education will produce a new generation of resourceful, tech-savvy students. The tactics listed above are just a few of the action's educators may take to boost engagement and motivation in online classrooms as they brave the new digital classroom and online learning. Despite the challenges, we must concentrate not only on encouraging, but also on increasing and supporting our students' enjoyment and benefit from the learning process.

Students can study and get information online according to their own needs in terms of time and technology (AbuMansor, 2012). Online learning, like traditional classes, offers interactive technologies that allow people to quickly obtain information or feedback from others. However, not all students participate in online learning (Norwati, 2007); engineering students prefer to learn in a classroom setting. This type of environment, according to Diaz (1999), is linked to one's learning style. When it comes to online learning, students with different learning styles have different attitudes and responsibilities. The purpose of this research is to learn how engineering students perceive online learning and how they feel about it.

Therefore, in the technical condition for online learning Agung (2020) provide the range of online learning as there are two fundamental areas learning and technology. The cognitive process of the study is to obtain knowledge and technology are tools that aid in the fulfilment of the process. When it comes to practise, the said technology can be implemented in a variety of ways, such as using the rhythm of

individualized learning units, having conference participants participate at a different time of asynchronous interaction, or having synchronous interaction established. Educators may be aware of the rapid spread of online learning, but they must also be aware of how students perceive access and responsiveness. These considerations may result in different implementations depends on the location of online learning takes place and the demographics of the students. During the COVID – 19 outbreaks, the Indonesian online learning boom spread not only to small towns, but also to the countryside and rural areas. It is an optimum execution condition that is dependent on the features of each location that offer a broad range of execution options. The Internet is an essential requirement for online learning. This barrier is severe when the education and culture specify learning in schools and higher education at home, especially in rural and higher education. The main problem for students studying online is Internet connectivity. Some areas are still in remote areas without Internet access. In addition, the public power supply is a secondary issue.

In conclusion, the purpose of this study is to analyse the interaction between variables such as student attitudes, technical conditions, self-efficacy, and study methods in order to establish factors influencing students' perceptions of online learning during the covid-19 pandemic in Malaysia. To fully understand, explain, and forecast students' attitudes toward online learning in the Covid-19 pandemic, researchers must look into how online learning affects traditional education and impact students' attitudes toward online learning.

## **1.2 Problem Statement**

One of the recent crises in 2019-20 was the COVID-19 pandemic, which closed all operations from manufacturing, retailing, tourism to hospitality. Moreover, one of them was the Education sector which was entirely closed to all the levels from kinder garden to Ph.D. However, researchers say that there is a possibility where all the sectors can recover from the crisis except education because students are at their learning stages where they still need the knowledge to understand the practicalities of dealing with the world (Hanushek & Woessmann, 2020).

According to Smart and Cappel (2006), online learning has limitations, including asynchronous online learning, which was not practical to deliver information to students. Hence, students mentioned that online learning eliminates classroom interaction between students and lecturers. Thus, the problem of online learning includes self-efficacy, student attitudes of learning. The feeling of students' attitudes primarily results from learning outcomes. Therefore, students may not have the assistance when they need, which may cause poor academic performance as their learning requires engagement (Smart & Cappel,2006).

Statistics say that due to the current crisis of COVID-19, the shutdown of schools impacted more than 1.5 billion students worldwide. and campus (UNESCO, 2020). Thus, the pandemic did not leave any part of the world untouched. Moreover, as the pandemic was lifted in mid-2020, schools began to start their operation, but this time, the class focused on online rather than physical. As a result, most classes were shifted to the digital, and even physical education and learning became online learning. Therefore, the main thought that arises in the researcher's mind is to conduct such research that defines the education industry consequences of the COVID-19 pandemic as a result, the researcher goes into further detail regarding the research on online learning during the COVID-19 pandemic.

The issues researchers observed that some studies focused on the (population). Now, as the outbreak changes the learning pattern from physical to online, it becomes necessary to conduct a study to understand the university's learning patterns, strategies, and decisions by following the new government policies. The education sector is giving knowledge and learning to millions but is still a sort of business that generates revenues from students' fees. However, the education sector was transferred to online modes in most countries and regions (Ferri, Grifoni & Guzzo, 2020). Here the problem of transferring from physical to virtual also needs to be studied, and thus the current research regarding online learning created the need to be more explored.

Another problem the researcher observed was the student's attitude, which was also influenced by the pandemic. Muthuprasad, Aiswarya, Aditya & Jha (2021) found

out that around 70 percent of the students learn better in physical classrooms than online. It means that a sudden dramatic shift from physical to online classes was not acceptable by the students, and there are many reasons. Here we can say that millennial is the generation which faces the issues while their learning stages in schools, colleges, and universities as well. Thus, understanding the changing attitude of students from physical to online creates the need to conduct this research.

If we talk specifically about the context of current research planned to be conducted in Malaysia, according to the law of Education Act, 1996 (Article 550), every child must receive primary education (UNESCO, 2020). The issue arises that the primary stage for every child to get education starts from the school, a physical school where children's mentality started to build regarding the education, and for the kids, it is necessary to investigate its surroundings. A child has the right to start his first school lesson by sitting with their age group students, which motivates their study is far better than online classes.

Moreover, the need arises to conduct this research to study the impact of online learning during the pandemic. A gap in communication while online learning becomes an issue (Dong, Cao & Li, 2020). Thus, such a problem creates the need to conduct this study. Another main issue the researcher observed in the Malaysian context is that though Malaysia has 90.1 percent literacy rate in technology, the illiteracy rate is so low. However, despite this, the Malaysian population faces constraints regarding technology, and online learning also becomes difficult for them (Jalli, 2020). According to a Malaysian report, Malaysia is not well developed compared to other countries because the Malaysian government does not use to make serious decisions regarding the advancement and thus follow the old techniques and even legally do not allow their country population to move towards digitalization (Hall, 2020). This problem triggered the researcher and thus creates a need to conduct this research to understand how Malaysia's students adopted the technological changes and react to online learning. Under this new norm of online learning, parents behave while spending their salaries on electronic gadgets and Wi-Fi connections because there are still some regions of Malaysia where internet network providers do not reach. Along with this, the people category could not purchase headphones, printers, boards, and other stationery while managing the

household expenditure (DOSM, 2019). Thus, this issue creates the need for the researcher to research online learning during the COVID-19 pandemic.

Recent case such as UITM lecturer humiliate a student is going viral on the internet. What happen on this case is technical issue that cause student attitude because the student is coming late for online class due to technical issue, but the lecturer didn't not allow him to explain and thought the student is not responsibility enough to attend class. (Rajaendram, 2022).

Thus, at the beginning of class she mentioned that during her class all students shall be puncture or else will kick you out of class. Furthermore, she shows her superior by saying all lecturer will support her for making this action. Besides that, she told other student to turn off their camera except for the student that came late for class. (Rajaendram, 2022).

What we saw from the case is that the student is late to class because he uses his phone to attend online class instead of a laptop. However, what hurt the student is when the lecturer found out that the student father is unemployed and her mother was gone, she told the student sister to sell her gold bangle so that the student can get a laptop as the lecturer felt that a laptop is necessary to attend class and Rm800 can own a laptop and it won't be an issue therefore the lecturer said what is your problem toward the B40 student. (Ang, 2022).

After so much data support, we can be sure that our independent variables will impact our dependency variables, but the variables are not shown. This is the study gap that we will discover in this research.

## **1.3 Research Objective**

### **1.3.1 General Objective**

Objective of the research is to examine the factors that affect the student perception on online learning during Covid -19 pandemic

### **1.3.2 Specific Objective**

- I. To investigate whether the students' attitudes can affect the student perception on online learning
- II. To investigate whether the students' self-efficacy can affect the student perception on online learning
- III. To investigate whether the technical conditions can affect the student perception on online learning.
- IV. To investigate whether the study method can affect the student perception on online learning

## **1.4 Research Question**

The following research questions had been developed:

- I. Does students' attitudes can affect the student perception on online learning?
- II. Does students' self-efficacy can affect the student perception on online learning
- III. Does technical conditions can affect the student perception on online learning?
- IV. Does study method can affect the student perception on online learning?

## **1.5 Hypotheses of the Study**

The following hypotheses are developed:

H1: There is a significance relationship between students' attitude toward online learning

H2: There is a significance relationship between students' self-efficacy toward online learning

H3: There is a significance relationship between students' technical conditions toward online learning

H4: There is a significance relationship between students' study method toward online learning

## **1.6 Significance of the Study**

Since covid 19 lasted for two years, many education institutions have begun to use online learning This study will look at the factors that influence the Covid -19 pandemic during that time. students' perceptions of online learning. The four factors included students' attitudes, students' self-efficacy, technical conditions, and study method. This proposed study can help the university, student, and future research understand which factor affects the student perception of online learning.

This study is essential for universities to know what factor will affect their student During Covid-19, students' perceptions about the internet changed. When a university understand the factors that influence student perception, it can focus on the issue by improving teaching methods to improve student happiness and feedback on online learning. Because not all students learn in the same way, many instructors are proactively adopting novel teaching tactics to help more students better absorb the substantive knowledge presented in a particular course. Furthermore, not all students have access to a stable internet connection, which will make taking online assessments difficult for them. The student may face an internet problem or hard to upload the answer. The university needs to know if the student-facing any technical problems. Unlike before, the students take the exam in the exam room. It may be unfair if there are students who have a problem. The university also needs to know how students perceive online learning and their view toward online learning; therefore, the university can help students have a better learning process. Furthermore, conducting this research may serve as a guideline

for the university to help students understand their point of view on improving student interest in online learning.

This study will also help future researchers who want to research student perception of online learning. This will provide more information and ideas related to factors affecting student perception of online learning during the Covid -19 pandemic. As online learning and teaching will be a future trend due to the Covid-19 pandemic, many researchers will be attracted to this topic. Hence, future researchers can determine our suggested factor as references in future studies.

For courses or learning components that require face-to-face interaction and can't be replaced with online learning. According to the MOHE, online learning might also take the initiative to design programmes with flexible timetables, such as extending continuous assessment and evaluation activities. This helps MOHE to achieve their goal which is to incorporate technology in education to have a sustainable future in the education sector.

This study is essential for students to know what factor will affect their student perception of online during Covid-19. Before the pandemic of Covid-19, students can go to campus to face-to-face learning and study, and this is due. However, during the Covid-19, many countries started to lockdown, and the campus is not open. Hence the university starts online teaching. As a result, many students are exposed to online classes for the first time and feel uncomfortable with this. Based on this study, students can learn to have good attitudes and self-efficacy toward their online learning. Furthermore, this study could know that the student perception of online learning is vital for the growth of student experience and allows students to understand online learning better while helping them adapt to online learning. Nevertheless, this study can significantly assist universities, students, and future researchers interested in knowing which factor affects the student perception of online learning during the Covid- 19 pandemic.

## **1.7 Chapter Layout**

This research is divided into five chapters, and each chapter covers different information.

### Chapter 1: Introduction

The research background, problem statement, research objectives, research questions, hypotheses of the study, significance of study, chapter layout and chapter summary are all covered in this chapter.

### Chapter 2: Literature Review

This chapter includes an overview of the underlying theory, review of literature, relevant theoretical framework and model, proposed research conceptual framework, and hypotheses development.

### Chapter 3: Research Methodology

This chapter includes an overview of the research design, data collection methods, sampling design, research instrument, measurement scales, data processing, data analysis

### Chapter 4: Research Result

The results of the analysis will be processed using the Statistical Package for the Social Sciences (SPSS) in this chapter.

### Chapter 5: Discussion and Conclusion

This chapter will include a statistical analysis summary, as well as implications, a discussion of the major findings, limitations, and recommendation for the study.

## **1.8 Chapter Summary**

In conclusion a summary of this study is to examine the factors that affect the student perception on online learning during Covid -19 pandemic. Besides, the

problem statement and background of research also discussed. In the following chapters, a literature review and conceptual framework will be conducted.

# **CHAPTER 2: LITERATURE REVIEW**

## **2.0 Introduction**

In this literature review, both the dependent and independent variables definitions will be explored in the following reviews. First, we understand the four independent variables (student attitudes, self-efficacy, technical conditions, and study method), which will link to the dependent variable (student perception online learning). Furthermore, in chapter 2, we will study student perception of online learning by analysing past studies done by other researchers. Hence, this research objective is to study whether our independent variable can link with the dependent variable during covid 19 pandemics. Thus, this content for chapter 2 review of literature consists of 4 primary independent variables and one dependent variable. Thus, we will review the theoretical model relevant to our research and suggest a theoretical framework for our study. Other than that, we will review hypotheses that have been created by other researchers, which will be helpful for us to produce the relationship between each variable in this content. Finally, we will do a chapter summary as our last part to conclude this chapter.

## **2.1 Underlying Theories**

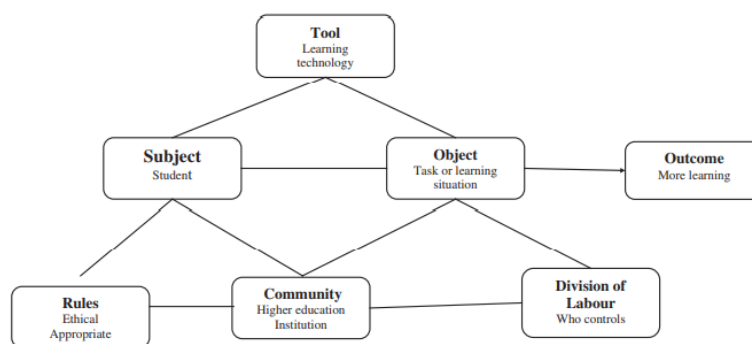
### **2.1.1 Activity Theory**

According to (Portnov-Neeman & Barak,2013) mention that activity theory is a conceptual structure to study student perception on learning. This theory relates to the five elements of object, tool, rule, community, and division of labour. Besides that, this theory is connected to one independent variable, which is student attitudes.

Based on (Portnov-Neeman & Barak, 2013), the researchers found out that this theory had a structure for analysing outcomes of a learning environment and assuming that they are linked with student attitudes. This theory determines the quality of learning depends on the nature of the activity and the student's environment. Students during learning will initial with mediation tools and follow by rule, community, and division of labour without those factors. Therefore, students are not able to improve as a student are not influenced by those factors but are link with student life.

Furthermore, this theory mentioned that mental and physical health would play an essential element in student learning. Thus, learning is essential, so students should seek help from their lecturers or other people because studying should not be individualistic. This theory also mentions that the school system will affect student motivation (Portnov- Neeman & Barak, 2013).

According to (Scanlon & Issroff,2005), mention that activity theory can be applied in universities because of current technology. This theory consists of computer usage in learning. Furthermore, this theory involves providing insights about student involvement in the use of technology in university.



*Figure 2.1. Activity theory. Adapted by Scanlon, E., & Issroff, K. (2005). Activity Theory and Higher Education: Evaluating learning technologies. Journal of Computer Assisted Learning, 21(6), 430–439.*

According to (Scanlon & Issroff, 2005), activity theory is complex because it consists of various features to understand the impact of learning while using technology. In contrast, this theory exists to allow us to understand the learning situation clearly. Hence, one of our independent variables is the study method. Therefore, this theory allows us to know about student education on how to learn efficiently because. Thus, based on (Scanlon & Issroff, 2005) stated that student attitude tends to influence by environment and rules; therefore, we must be flexible in adaptation to change. Hence, this theory provides various influences on success or failure with that concept that led to changes.

This theory allows us to understand student perception better as rules and division of labour shall be consistent. Besides that, this theory mentions that adapting to learning technology allows students to understand better and interact with other students, and tutor better as to come out with excellent online learning required both students and tutors' responsibilities (Scanlon & Issroff, 2005). For example, in one of our independent variables, self-efficacy, students should utilize web resources as a good feature for student problem solving and treat it as a learning setting.

### **2.1.2 Learning Theory**

According to (Picciano, 2017). Learning theory refer as a theory that helps us understand how student learn. Inside this theory consists of three theories that will be used to discuss more: behaviourism, cognitivism, and social constructivism. In addition, this theory will be relevant to our interest in online learning.

Based on (Picciano, 2017). Behaviourism focuses on how students behave while learning and how students respond to changes in their learning. Furthermore, behaviourism can evaluate each student's academic performance as observable.

Thus, cognitivism focus on the student's mind is an essential factor in learning and focuses on making changes based on the environment. According to (Picciano,2017). Furthermore, researchers found that students with cognitive skills such as motivation and creativity tend to have better learning outcomes for online learning. Hence, cognitivism is a vital learning theory that should be studied. Moreover, it covers an exciting knowledge of how students adapt to online software and learning application to update their knowledge, which is crucial for our topic student perception of online learning during covid 19 pandemics where online learning had replaced traditional learning.

Hence, social constructivism refers to an interaction between teacher and student because learning should solve problems, and solutions to the problem can be a way of learning. The teacher and student can discuss together and solve the problem because the teacher has the knowledge for the student to learn, and the student has the responsibility for learning the knowledge and solving the problem, likewise, according to (Picciano, 2017). Learning should be practical where the student must learn and team up with others in doing work. However, during online learning, face-to-face lectures have been replaced by online classes where students rely on technology to solve the problem instead of seeking guidance from a tutor.

### **2.1.3 Online Collaborative Learning**

According to (Picciano,2017). Linda Harasim developed an online collaborative learning theory which focuses on the internet providing a learning environment that evolves student learning environment and builds better cooperation between teacher and student collaboration in solving the problem. Besides that, online collaborative learning is a new learning theory that refers to modern education for more knowledge than traditional education. Thus, online collaborative learning allows the student to have a

new study method on online learning where the assignment is conducted online instead of traditional face-to-face meetings.

#### **2.1.4 Theory of Diffusion of Innovations**

According to (Khan, Vivek, Nabi, Khojah & Tahir, 2021). The theory of diffusion of innovation is relevant for us to study our independent variable technical conditions in university. Hence, this theory mentions student perception of technical conditions that will affect their adoption of online learning (Maeda & Ono, 2019). Adapt to online learning is influenced by the internet as a learning environment and student perception toward the attributes of online learning, a communication platform for students to exchange conversation, and the efforts to have online learning regardless of any situation because this theory refers to as online learning applied in school.

Based on (Zhang, Wen, Li, Fu & Cui, 2010) found out that this theory, five attributes of innovation should be mentioned: relative Advantage, compatibility, complexity, trialability, and observability. Relative Advantage is that students believe that online learning is better than traditional because it is more convenient to access and gain knowledge. However, compatibility in online learning should be linked with the traditional concept in study outcomes and. Thus, complexity refers to some students who do not like online learning because it is hard to understand, but some can cope. Online learning nowadays is necessary and allows the student to gain more knowledge. Hence, trialability allows the student to experience it first, whether it is easy to adopt, so there are chances for improvement. This is related to our topic student's perception of online learning. At last, observability refers to whether online learning is good or bad are visible to others to found out as there will be a discussion after student experience it.

## **2.2 Review of Literature**

### **2.2.1 Dependent Variable: Student Perception Online Learning**

According to (Muthuprasad, Aiswarya, Aditya & Jha, 2021), good online environment content leads to online learning efficacy. As a result, students' perceptions of online learning may influence its effectiveness. Furthermore, because to the covid 19 pandemic, the online method has become increasingly popular, and the university will need to adapt and adjust its traditional material for the online mode. As a result, whether face-to-face or online learning, students will have to adjust to a new experience of online learning and student preference. The utilization of the internet and communication applications to engage in a new learning approach will develop student confidence in using technology for learning. Hence, each student perceives online learning due to different learning environments, internet capacity, poor study absorption.

Besides that, (Khan et al., 2021) found out that student perception toward online learning expectation is crucial for the growth of online learning due to it is essential recently. Most students require adapting online learning mode; therefore, changes will occur in their learning strategies. Engagement between students and lecturers will be put in the text as online learning requires them to connect online instead of traditional face-to-face meetings. Using online communication is crucial for students to send their assignments and conduct meetings with lecturers conveniently. A good engagement will increase student satisfaction and build their motivation to learn, as online learning tends to increase one-way communication and decrease student academic performance through online learning (Khan et al., 2021).

Student perception online learning experience is crucial to discover and solve because current online learning may increase emotional breakdown based on (Khan et al., 2021). Found that students who fear academic failure due to home environment and online learning will lose track. Students' perception should be studied as covid 19 pandemic is unable to control and new learning environment online learning has replaced traditional face-face learning environment. According to (Bestiantono, Agustina & Cheng, 2020) student motivation will decrease during online learning because they will only attend classes online; therefore, student perceptions are essential in solving this issue of internet failure. Not every student has the privilege to have good internet. Therefore, the university should take this issue seriously and help students in learning during online learning.

According to (Ana, Minghat, Purnawarman, Saripudin, Dwiyaniti & Mustakim 2020) stated that student perception of online learning during the covid 19 pandemics is important because learning does not stop, and universities are required to switch traditional face-face lectures with online. Therefore, it will be a challenge for both lecturers and students to adapt. However, students treat online learning as a new challenge to attend class and having a discussion online.

Student perception of online learning depends on how student manages their time to study, even online. According to (Kurniawan & Anggraini, 2021), students' perception of online lectures is high, and students can cope with online learning during the covid 19 pandemics. However, there is a negative side to online learning: the interaction between professor and students makes it difficult for students to understand the class and harder to ask questions. When students do not concentrate during class, it makes it harder to create questions and ask.

Students' perception of online learning includes absorbing knowledge during an online class. However, according to (Azhari & Kurniawati, 2021), students feel bored during online classes and hope lecturers are creative and make the class more interesting. Furthermore, students felt interaction

between students and lecturers during online classes has been reducing compared to a traditional face-to-face class. However, students feel more comfortable doing examinations in online learning compared to a face-to-face class. Hence, the only difficulty students face is at the beginning of online classes, where they must adapt to an unfamiliar environment.

### **2.2.2 Independent variable: Self Efficacy**

According to (Algurashi,2016), self-efficacy defines a people's feelings, thinking, and motivation. Hence, student self-efficacy is essential in online learning due to is a new learning environment to adapt to. Thus, research on self-efficacy can be related to students using technology devices as their primary learning tools to study and using technology can build knowledge in the online learning experience.

Besides that, based on Peechapol, Songkhla, Sujiva, and Luangsodsai (2018), online learning depends on lecturer skill and feedback to influence the student to have self-efficacy to control emotional breakdown with a valuable experience. Furthermore, (Tseng, Kuo & Walsh, 2020) found that self-efficacy is related to student confidence at learning and adaption toward a new learning environment. Therefore, students with high self-efficacy toward their academics are likely to succeed based on their efforts.

### **2.2.3 Independent variable: Technical Conditions**

From the research, Coman, Tiru, Schmitz, Stanciu, and Bularca (2020) Mentioning the differences between traditional and online learning can be a valuable source of knowledge, assessment, and recognition for our high-quality education. Teachers evaluate students in traditional education, and students are also the primary source of information for them. Teachers' knowledge and abilities determine the quality of education, and online

learning tools and systems can be used to assess it. Students can get information from a variety of sources on the website and teacher instructional approach and the utilisation of technology.

Based on Coman et al. (2020) identified eight principles that deliver effective online teaching, such as teacher and student communication to encourage collaborative learning, while receiving feedback, and providing active learning, such as motivating students to accept various learning methods in order to improve their own knowledge, teachers with high expectations should express their expectations to encourage and motivate students by supporting new & improve learning to utilize the use of technology.

A learning management system is regarded as a kind of software. It can be manipulated and contains several services designed to help teachers to manage their lectures and courses. Their creation is to monitor and evaluate students, give students' scores, supervision, and course attendance, or education institutions may require other administrative measures. Furthermore, (Coman et al., 2020) found out that there are two types of Moodle platforms: open-source Moodle and commercial or proprietary Moodle platforms, such as Blackboard. Moodle is a system that allows students, professors, and administrators to build a more personalized yet enhanced learning environment. Moodle is a web-based flexible learning system that facilitates user collaboration. The teacher can post information and resources to this platform and deliver them to students who do not have access to them face to face in the classroom.

Students may share knowledge, discuss challenges, and receive comments. As a result, Moodle, which includes multiple functions such as private messages and higher education institutions, can be an additional method of traditional education and online learning.

#### **2.2.4 Independent variable: Student Attitudes**

According to (Adnan & Anwar, 2020), online learning requires the student to be motivated. Online classes have replaced traditional classes. Therefore, academic activities such as face-to-face engagement with the lecturer and classmates were reduced. Online learning required the student to have time management in attending class online and complete assignments in time. Furthermore, although the online class is convenient for students to rewind lecture class videos for revision, students must manage their study time effectively and not come out with any excuse to be absent from class.

According to Zhu, AU, Grey, and Yates (2006), the environment influences student attitudes toward online learning. Therefore, student attitude is essential to face online learning, whether it is a negative or positive attitude. Furthermore, student attitude toward online learning must be known by themselves when as each student have their preferences whether online learning will give them satisfaction in online learning.

Based on research Zabadi & Al-Alawi, (2016) refer to student attitude on online learning perception that having online class will depend on whether it is an advantage or disadvantage for online learning. However, students with good adaption skills will accept online learning due to their self-discipline and ease in using technology. Besides that, online learning is positive when students can adapt to it.

#### **2.2.5 Independent Variable: Study Method**

Online learning required a platform for students and lecturers to interact. Based on Al-Kumaim et al. (2021), high dependence on solid internet connection will involve technology devices to make it easier for students and lecturers to communicate using audio and video. However, asynchronous online learning allows students to have their own time to

revise when the lecturer is away because the pre-recorded class will be available anytime. Hence, synchronous online learning is a two-way communication actual life meeting that required students to interact. Therefore, asynchronous online learning allows students to recap the knowledge they absorb.

According to Amir et al., (2020), learning has changed since the covid 19 pandemics started. The real-life active lecture has been changing to online lecture. Universities tend to use web-based education tools (Moodle-based learning management system) where students can use the internet to continue their learning activities, meaning students can experience an online learning environment. Students are encouraged to access it and have self-accessed learning through the internet and obtain course materials, work assignments, and others from their lecturer. Hence, various group discussions, lectures, tutorials, assessments were forced to carry on using online communication platforms such as Microsoft teams, google meets, zoom, and their university web-based tools.

## 2.3 Theoretical Model Framework

### 2.3.1 Students Attitudes

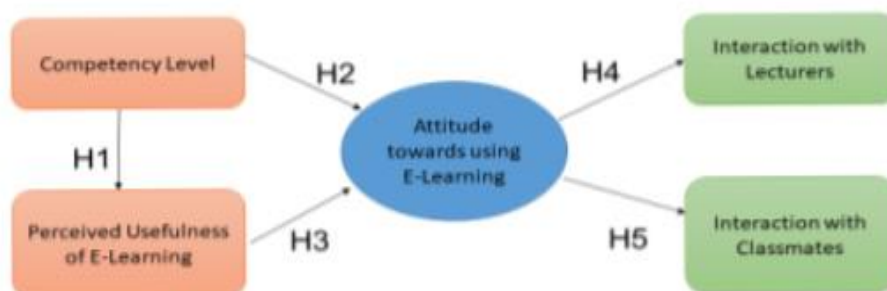
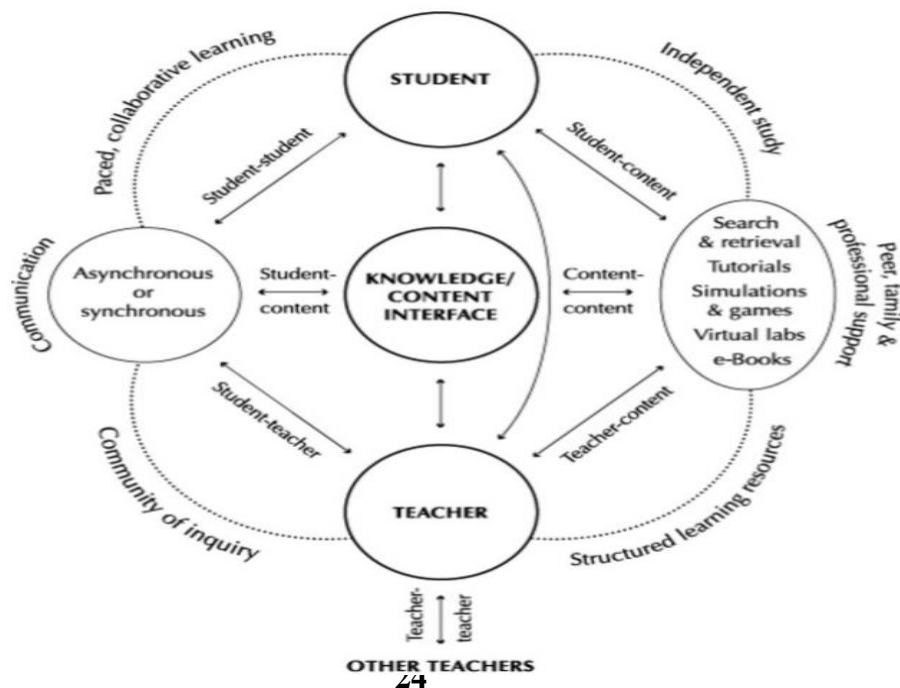


Figure 2.2. Students attitudes framework. Adapted from Kiran, O.D (2018). *ATTITUDE TOWARDS E-LEARNING: THE CASE OF MAURITIAN STUDENTS IN PUBLIC TEIS*, International Journal of Social Sciences ISSN 2454-5899, Volume 4 Issue 3, pp. 628-643.

From the research Kiran (2018), this study intends to analysis the research model as shown in figure. The model that the student to the network learning, ease of use, usefulness, and awareness, as well as the student's attitude to improve self-confidence, appreciating and effectiveness, will actively encourage students to use the Internet learning. Therefore, according to the Kiran (2018). On this basis, we put forward the following hypothesis, H1 is the competent level will significantly affect the students for online learning perceived usefulness. Then, H2 is competent level dramatically affects the students to use online learning attitude. H3 refers to the positive influence of perceived usefulness on students' attitude towards online learning. H4 is online learning attitude significantly influence the students to use online learning willingness to interact with the instructor. H5 is that the attitude of online learning will positively influence students' willingness to use online learning to interact with classmates.

### 2.3.2 Study Method

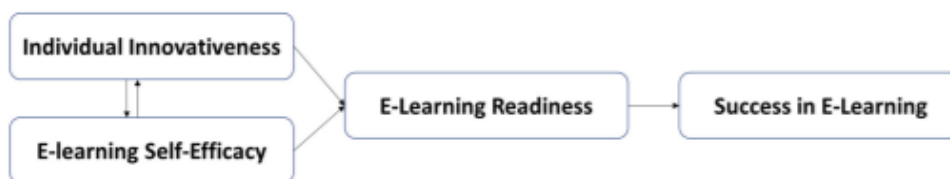


*Figure 2.3. Study method framework. Adapted from Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. Online Learning, 21(3), 166-190.*

Figure shows these two aspects of the teaching process, and from the Angle of remote education shows the beginning of a theory or model. From the research Picciano (2017), Anderson concluded that his model "will help us to deepen the understanding of the complex background of education." He points out that the model should characterize the direction and magnitude of the measured results for each input variable in greater detail. Anderson also commented on the educational potential of the Internet, pointing out that, in addition to the official class rich face-to-face interaction "all the other patterns, based on the theory of online learning or pattern can be included. Anderson is trying to build a network of educational theories. This makes him in trouble, because network education does not provide face-to-face activities, for those who put the network education as a subset of the whole education, this is a problem.

Learners and teachers, as well as their interactions with everyone and content, are two outstanding human actors. Learners can interact with content directly, and it can appear in several formats, particularly on the Web. However, many people choose to do so, they learn a sequence, in under the help of the teacher's guidance and assessment. This interaction can occur within community queries, using web-based synchronous and asynchronous activities. The environment is dynamic, and allowed to learn social skills, collaborative learning content, and the relationship with one of the participants. However, communities limit learners in time and force them to study regularly, or at least in groups. The second is associated with independent learning model (right) shows the structured learning tool. Computer-assisted lessons, exercises, and simulations are common tools in this mode.

### 2.3.3 Self-Efficacy



*Figure 2.4. Self-efficacy framework. Adapted from Gordon M. B. (,2019). Individual innovativeness, self-efficacy and e-learning readiness of students of Yenagoa study centre, National Open University of Nigeria. Journal of Research in Innovative Teaching & Learning Emerald Publishing Limited 2397-7604.*

Therefore, Gordon (2019) said it is necessary to explore the factors influencing individual self-efficacy perceptions and is applied to the construction of direct teaching of an online learning environment. Similarly, the study found that the learner's higher self-perception and a large amount of cognitive effort investment and excellent learning about from the teaching media. This lowers the rate of attrition among online students. On the other hand, a lack of self-efficacy is a tendency of indecision because such people tend to believe that difficult activities are beyond their capacity, and they are also more likely to lose faith in their abilities, even if they know what to do. Furthermore, it is unlikely to achieve positive results. Therefore, the e-learning courses should help the students design to improve and maintain their self-efficacy. From the theoretical basis of this study, literature, there is much evidence to suggest that in other antecedent factors, individual creativity, and self-efficacy for students in the online learning environment to survive and achieve academic goals is essential. Again, as previously stressed, because self-efficacy is task-specific to the environment, some people think that in one area or tasks at an elevated level of self-efficacy may not automatically translate into another area or task.

### 2.3.4 Technical Condition

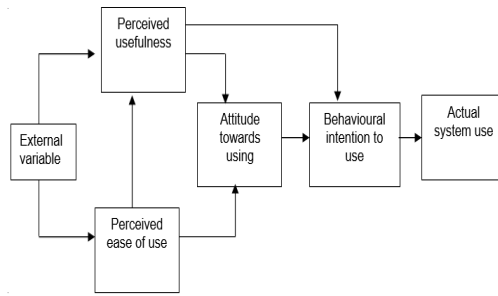
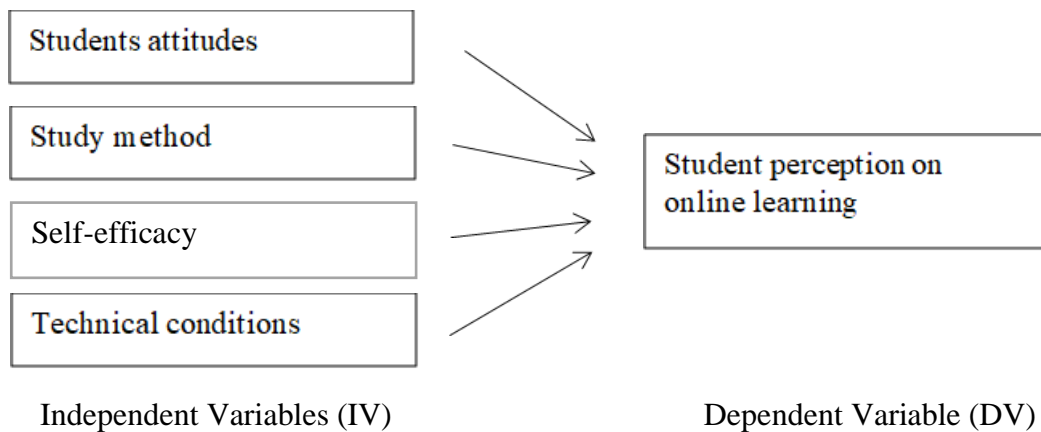


Figure 2.5. Technology acceptance model (TAM). Adapted from Farida U.K. (n.a.). *ELAM: A Model for Acceptance and Use of E-learning by Teachers and Students*.

Farida's (n.a.) technology acceptance model (TAM) is a rational, Davis (1989) offered the adaptation of social psychology theory, specifically for the user to accept information system modelling in the study. As shown, TAM will be considered a major indicator of intention to utilize the technology due to its perceived usefulness and ease of use.

The first is the user's anticipation of the target system, while the second is the user's perception that using the system will improve task performance. TAM discusses how users interact with a variety of end-user computer technologies (such as text editors, spreadsheets, and email) and user groups (such as students, software professionals, and doctors). TAM's predictive abilities vary from culture to culture. The predictive power of western countries (45-70%) is higher than that of eastern countries (10-35%). The perceived usefulness of all cultures is important, with subjective norms in the East more important than in the West (Rose & Enterprise Straub 1998; Enterprise Straub 1994). In the study of Asia and Africa subjective norms fascinating, cultural factors are emphasized to explain it in the decision to use the computer correlation intentions.

## 2.4 Proposed Conceptual Framework



*Figure 2.6. Note. The Research Framework.*

This figure shows the conceptual framework for this study. The relationship between those independent variables (IV) and the dependent variable (DV) has been shown above. This research aims to find out the relationship between different types of studying behavior and external factors that would affect student perception of online learning. Students' attitudes, study methods, self-efficacy, and technical conditions are set as independent variables. We recognize that these studying behavior and external factors are decisive factors that affect student perception of online learning.

From 2019, Covid-19 began to spread unstoppably to all parts of the world. The spread of the epidemic has caused various inconveniences. Many offline activities cannot be carried out smoothly, and people need to keep their distance to reduce the spread of the epidemic (Mulugeta, 2021). The traditional "face-to-face" teaching method has also been transferred to the Internet. Most unknown factors affect students' perception of online teaching.

In our regular certification, different types of studying behavior and external factors will affect student perception of online learning, including independent variables (Students' attitudes, Study method, Self-efficacy, and technical conditions) established by us.

Students' attitudes towards online learning will impact learning efficiency (Elham, Sumaya, Hussam & Rawand, 2020). Online learning attaches great importance to

the concentration of students. Students will be lazy most of the time because the teacher cannot know their situation, which affects their perception.

From this research (Roberto, Gustavo, Ricardo & Thales, 2020), we can find that the study method would affect learning effectiveness and student perception of online learning. Most students would easily be influenced by the lousy study method such as poor sleeping habits, bad diet, etc.

Self-efficacy is a crucial factor that affects students in online learning. Students without Self-efficacy will find it challenging to maintain a high degree of concentration in such a free environment (Vilkas & McCabe, 2014). Similarly, they will like Salomon and face many temptations around them (Bandura, 1982). Therefore, they need to be self-disciplined in an environment with many temptations to achieve effective learning results.

Due to the pandemic impact, many students need to move to online platforms to attend classes. The most direct impact of this sudden situation is technology. Suddenly, the joining of many users will cause the server to freeze or even crash (Plitnichenko, 2020). At the same time, the poor technical situation in some places, such as the unpopularity of the Internet, and the lack of computers, have also become technical problems. These situations will affect student perception, and it is troublesome and expensive to deal with them.

These a range of factors will affect student perception of online learning. Therefore, we need to find out the most influential among them and how to improve simultaneously.

## **2.5 Hypothesis Development**

### **2.5.1 Relationship between Students' Attitudes and Student Perception on Online Learning**

The pupils' motivation was examined in the current study to learn is based on self-determination theory, ranging from inherent to extrinsic incentive. Students are organically driven by curiosity, enthusiasm, trust, and the learning activity. Besides that, activity theory involves the effects of the learning environment based on the students' attitudes. On the other hand, learning theory can be linked to this relationship since it focuses on behaviorism, affecting the students' attitudes on online learning. Online-collaborative learning also links directly to the relationship between students' attitudes and perceptions of online learning, where the learning environment and collaboration with their respective instructors provide them with the ease of learning online.

The perceived learning and satisfaction of students combined can better comprehend the success of studying online (Gray, DiLoreto, 2016). (Richardson, Swan, 2003) indicated that the overall perception of students is significantly correlated to the satisfaction of students in online study. The exact high correlation (Swan, 2001) was proven and (Duque, 2014). (Marks, Sibley, and Arbaugh, 2005) claimed that a happy student was an instant result of a successful learning experience, and that the as a result of learning was a good measure of student happiness with online learning. As a result of the foregoing research, the following hypotheses are proposed has been formed:

H1: Students' attitudes and student perception on online learning have a significant relationship.

### **2.5.2 Relationship between Student Self-Efficacy and Student Perception on Online Learning**

Based on the underlying theories, activity theory aids in the self-efficacy among students and their view on online learning. Besides that, learning theory can also be linked to the self-efficacy of students and their attitudes toward online learning, where they are made to be responsible for solving problems and gain knowledge. The online-collaborative theory impacts the relationship too, where students can connect with their respective instructors to be self-efficacy and not depend on others via online learning. Next, the theory of diffusion of innovations with the technical conditions positively affects students' self-efficacy on online learning.

Motivation and self-efficacy are internal forces that push someone to act or progress toward a mission (Jones, Price, 2013). (Cole, Feild, and Harris, 2004) said that pupil's motivation is characterized as a student's ability, ingenuity, and readiness to study and get involved in classroom learning. (Kanuka and Jugdev, 2006) given the internet context, it has been argued, remoteness and disconnectedness may increase student failure rates and the distance creates a sense of isolation, which might reduce motivation to study. (Inoue, 2007). (Bolliger, Supanakorn, and Boggs, 2010) noted that in an online classroom setting, self-efficacy is a critical aspect in keeping students satisfied. The opposite relationship between students' self-efficacy and online instruction was indicated (Bulić and Blažević, 2020). The new techniques of education and online environment motivate students to study. The atmosphere of learning also affects the motivation of people. In a case study conducted by (Chyung, Winiecki und Fenner, 1998), Adult distance education students cited dissatisfaction with the learning environment as a cause for dropping out of online classes. (Gray and DiLoreto, 2016) indicated that graduate students are more self-motivated.

Thus, online learning does not impact the study's outcome and the requirement to work online with peers. As a result of the foregoing study, the research hypotheses has been formed:

H2: Students' self-efficacy and student perception on online learning have a significant relationship.

### **2.5.3 Relationship between Technical Condition and Student Perception on Online Learning.**

Based on the diffusion of innovations theory, students' perceptions of the technical conditions will affect their adaptation to online learning. Users' perceptions of innovation have a significant impact on their willingness to accept it. Besides, Activity Theory involves providing insights about students' use of technology in universities. Hence the technical condition is related to the use of technology.

According to Azhari & Kurniawati (2021), online learning also brings some limitations, including the availability of sufficient internet networks to access online learning. Compared with learning in traditional classrooms, students are also less motivated to learn online. Online courses can only be successful if all students have access to the Internet. To give the optimal learning experience, the minimal technical prerequisites, such as an internet connection, equipment, and software, should be met. The research by Peng, et al. (2006) the technical level of professors and students is a crucial aspect in determining the efficiency of online courses when it comes to using computers and the Internet. Piccoli et al. (2001), found that technical conditions can also conceal more fundamental causes of dissatisfaction. Lack of familiarity and mature learning strategies for the unfamiliar environment may lead to students' feelings of isolation and anxiety. Based on the above reviews, the following hypothesis is formed:

H3: Technical conditions and student perception on online learning have a significant relationship.

### **2.5.4 Relationship between Study Methods and Student Perception on Online Learning**

Based on the theory Online Collaborative Learning, online learning study method pursues more knowledge instead of traditional learning. It enables the instructor to keep track of individual students' participation and reply appropriately. Students can develop a variety of high-level intellectual skills directly through online collaborative learning, such as critical thinking, analytical thinking, synthesizing, and evaluation, which are crucial to student perception of future online learning (Bates, 2019). Besides, the Activity Theory allows us to know about student education on how to learn efficiently.

According to a study conducted by Graf and Kinshuk (2006), study methods are related to students' behaviour in online courses, and it was discovered that students using various study methods behave differently. In such classes, students have different attitudes to go online and access information. Students prefer online learning because it allows them to communicate with teachers and classmates while also allowing them to partake in study materials in the comfort and convenience of their own home. (Khan et al., 2020). Educational institutions can also screen students' study methods before enrolling in e-learning courses, to assist them in determining the courses' potential benefits. (Huang et al. 2012) stated that educational institutions could choose study methods before Students should evaluate the possible benefits of e-learning courses before enrolling. Based on the above reviews, the following hypothesis is formed:

H4: Study method and student perception on online learning have a significant relationship.

## **2.6 Chapter Summary**

As for the conclusion, according to this chapter, we had provided a literature review by using journals based on the previous researcher journal article regarding our dependent variable (student perception online learning and independent variable

(Self-efficacy, technical conditions, student attitudes, and study method. Moreover, the proposed conceptual framework as well as accompanying theoretical models had been discussed. In addition, we produced hypotheses that mention the relationships between the dependent and independent variables to summarize this chapter. Finally, we will go over the research methodology chapter 3 for our study in more details.

## **CHAPTER 3: METHODOLOGY**

### **3.0 Introduction**

Study methodology include design of the research, sampling techniques, data gathering methods, and statistical software for proposal proposals. Furthermore, an outline of the technique will be used to investigate the research issue, such as data collection to build a hypothesis and a brief description of the relationship between variables. Finally, research conducted collects accurate data for our research topic by running a reliability test.

### **3.1 Research Design**

The purpose of the study design, according to William (2006), is to guarantee that the evidence allows you to effectively analyse and answer the research problem. In social science research, access to information related to the research question is usually needed to specify the testing theory, the evaluation process, or accurate description and evaluation with the meaning of the observable phenomena related to the types of evidence required.

There are two forms of research in the research design: qualitative research and quantitative research. According to Pharm's research (2014), the qualitative research method is appropriate when the researchers or investigators investigation or plan to determine new research and theoretical problem. There are many qualitative methods, interpreting the text to understand the problem deeply and broadly. The most common types are interviews and observations. Qualitative research is a framework to record the practice and standard and realize, challenge, and strengthen. Because there is no structured study interview, most qualitative research interviews are half structure, light structure, or deep structure. Long-term fieldwork suggests using unstructured interviews, which asked participants to

express themselves in their way and rhythm, as far as possible not affect respondents answered.

Therefore, from the research Hopkins (2008), quantitative research aims to determine in a group an independent variable and a dependent variable or result of the relationship between variables. Quantitative research design is either descriptive research object measurement time or experimental research object measured before and after therapy. Descriptive research only establishes the connection between the variables experiments to establish the causal relationship. Then, quantitative research is to quantify the relationship between the variables. Variables included weight, performance, timing, and treatment. A variable that measures the object sample can be tissue, cell, animal, or human. Effect of use statistics to represent the relationship between the variables, such as correlation, the difference between relative frequency or average.

## **3.2 Data Collection Method**

Data gathering is important for the research, according to (Kabir,2016), because it affects the research methodology's trustworthiness. Hence, data collection is essential for the research question because it requires collecting the information on each variable for the research questionnaire.

There are two sorts of data gathering methods utilised in this study to collect data, and both are crucial for the study because they are different and will supply different information for the study.

### **3.2.1 Primary Data**

The phrase "primary data," according to Kabir (2016), refers to data that the researcher has received for the first time and will be used in the research. A questionnaire and a Google form loaded with questions about the issue, with

independent and dependent variables, will be delivered to the targeted demographic via WhatsApp and Facebook as the primary data collection method.

### **3.2.2 Secondary Data**

According to Kabir (2016), secondary data are gathered from online journals, newspapers, and other sources that are available in use. In questionnaire preparation, secondary data from journals will be helpful as references to create the question. Hence, we collect journals through the UTAR E-library that allows us to conduct this research more accessible.

## **3.3 Sampling Design**

The target population, sample frame and sampling location, sampling elements, sampling technique, sampling technique, and sampling size are all covered in this section of the study.

### **3.3.1 Target Population**

According to Kabir (2020), The term “target population” refers to information on a certain group that is required to qualify for a research study. The target population for this study is university students in Malaysia, both public and private universities, who can fill out a google form with their answers to each question. According to the Ministry of Higher Education [MOHE] showed that the total of student enrolled in public universities 584,576 and private universities are 574,434. As a result, the study's target population is 1,159,010 persons.

### **3.3.2 Sampling Frame and Sampling Location**

According to Kabir (2016). A sampling frame refers to a list of all sampling units. The sampling frame for this research is the university students in Malaysia for both public and private institutions. Moreover, we choose Malaysia because there are more students to collect high precision data from all university students in Malaysia private and public universities. However, we cannot obtain a sampling frame of the education sector in Malaysia because of the covid 19 pandemics that cause us to be unable to seek more information and to list out all the university students in Malaysia because the population is too broad.

Sampling location is where we distribute questionnaires and collect data from our target population. We focused on Malaysia public and private universities because of a large population of students from various universities to collect their perception of online learning.

### **3.3.3 Sampling Elements**

The respondents who took part in our survey are the sampling elements. Our respondents are university students from both private and public universities. Malaysia University is the location of the sampling. Because our questionnaire will be given to students from different states, ages, and genders, our respondents will help us in doing our research more effectively. We distributed the survey to several students to get a variety perspective on online learning during the Covid 19 pandemics. Furthermore, data collected from different respondents will be more reliable.

### **3.3.4 Sampling Technique**

According to Kabir (2016). The sampling technique is a process for this research to identify the questionnaire is reliable from the population. Besides that, probability sampling and non-probability sampling are the two types of sampling procedures. Thus, probability sampling refers to a part of the population selected to find out the result. However, non-probability sampling refers as hard to estimate the result because of the broad population. For this research, we will use a non-probability sampling technique because the population of the education sector is too large. Moreover, we are unable to get information owing to the covid 19 epidemic in person. Therefore, we will use the convenience sampling method to carry out this research because we can send the questionnaires online to our respondents without any restrictions.

### **3.3.5 Sampling Size**

According to (Ministry of Higher Education [MOHE],2020), sampling size refers to a list of respondents in the sample. The total of student enrolments in public universities is 584,576, and private universities are 574,434.

According to (Ahmad & Halim, 2017) found out a sample size table for research. Therefore, for us to determine the sample size, the table will be utilised to calculate the size of our sample as our targeted population is 1,159,010. Thus, we need to distribute 384 questionnaires.

Table 3.1:

#### *DETERMINING SAMPLE SIZE*

N	s	N	S	N	s
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

*Note.* Ahmad & Halim (2017). Determining sample size for research activities. The Case of Organizational Research, 2(1), 20-34.

### 3.4 Research Instruments

We collect data from the target survey participants, such as private and government university students, using the Questionnaire in our study. A questionnaire, according to Daniel (2020), is a research instrument made up of a series of queries. These problems can be enclosed also can be open. The purpose is to collect relevant data about the respondents and then use it for various purposes. For example, when you allow respondents to provide an answer to a more extended, it can produce

more views because they can detail their ideas. We are using the Questionnaire to collect the data is because the Questionnaire can help us save the cost of time and more efficient when collecting the data. Therefore, a useful design questionnaire design also will help us achieve our research objectives.

### 3.4.1 Questionnaire Design

Table 3.2:

*Questionnaire Section A, B and C*

Section	Components of Variables
Section A	Demographics Profile
Section B	Independent Variables: IV: Students Attitudes IV: Technical Conditions IV: Self-Efficacy IV: Study method
Section C	Dependent Variable: DV: Student Perception Online Learning

*Note.* Created for the purpose of study.

In our survey questionnaire, we have prepared 3 sections for the respondents to fill in the survey. Section A is Demographics Profile that include 6 questions for the respondents fill up such as sex, age, ethnic group, religion group, Education Level and University.

Then, in Section B, there are four independent variables: student attitudes (6 questions), technical conditions (6 questions), self-efficacy (6 questions), and study method (7 questions). All of the questions have a five-point Likert

scale rating ranging from strongly agree to strongly disagree. Furthermore, there is only one dependent variable in Section C, which is Student Perception Online Learning. Section C contains seven questions for respondents to complete, and section C is accompanied by a five-point Likert scale rating system that ranges from strongly agree to strongly disagree.

### 3.4.2 Pilot Test

Junyong claims that (2017). A pilot test is necessary for research, and it is used to evaluate a planned study before it is completed. The major goal of the pilot study was to see if the suggested research was feasible. A pilot test can also estimate a more extensive study of cost and the necessary sample size. A total of 6 questionnaires were sent to respondents across Malaysia private and public universities. The purpose of distributing six questionnaires is to confirm that the questionnaires are reliable for the research. Therefore, the SPSS was used in this pilot test to run the reliability test on these six questionnaires

Table 3.3:

*Summary of Reliability Test Results for pilot test*

<b>Construction Measurement</b>	<b>Cronbach's Alpha</b>	<b>Strength of Reliability</b>
IV: Students Attitudes	0.724	Good
IV: Study Methods	0.726	Good
IV: Technical Conditions	0.765	Good
IV: Self-Efficacy	0.711	Good

DV: Students Perception online learning	0.893	Very Good
--	-------	-----------

---

*Note.* Developed for the research

The pilot test results were shown in the table above using the SPSS software to run the data. In the four independent variables, the technical conditions showed the highest value of Cronbach's Alpha which is 0.765, for the study methods was the second higher of the Cronbach's Alpha which is 0.726. Moreover, the value of Cronbach's Alpha for students' attitudes is 0.724. Then, the last value of Cronbach's Alpha for self-efficacy was 0.711. In addition, the dependent variable, the Students Perception online learning, has shown the Very Good reliability of Cronbach's Alpha which is 0.893.

Based on the pilot test run by using the SPSS from the research, all variables have more than 0.7 and show that they were reliable. As a result, the researchers can perform extensive research on many respondents during this project.

### **3.5 Construct Measurement (Scale and Operational Definitions)**

#### **3.5.1 Origin of Construct**

Table 3.4:

*Table of Origin of Construct*

<b>Variable</b>	<b>Adopted form</b>	<b>Scale of Measurement</b>
-----------------	---------------------	-----------------------------

---

Student perception online learning (Dependent Variable)	<ul style="list-style-type: none"> <li>• Kurniawan &amp; Anggraini, (2021)</li> <li>• Ana et.al. (2020)</li> <li>• Guan-Yu Lin (2004)</li> <li>• D. Randy Garrison (2004)</li> <li>• T. Muthuprasad et.al (2021)</li> </ul>	Interval
Student Attitudes (Independent Variable)	<ul style="list-style-type: none"> <li>• Adnan, M., &amp; Anwar, K. (2020)</li> <li>• Kurniawan &amp; Anggraini, (2021)</li> <li>• Zabadi &amp; Al-Alawi, (2016)</li> <li>• Paul G. Paris (2004)</li> </ul>	Interval
Technical Conditions (Independent Variable)	<ul style="list-style-type: none"> <li>• Coman et al. (2020)</li> <li>• Devarajoo, K. (2021)</li> <li>• Antonius Setyawan Sugeng Nur Agung, (2020)</li> </ul>	Interval
Self-Efficacy (Independent Variable)	<ul style="list-style-type: none"> <li>• Rene´e S. Jansen (2017)</li> <li>• Khan et al., (2021)</li> <li>• Tseng et al. (2020)</li> </ul>	Interval
Study method (Independent Variable)	<ul style="list-style-type: none"> <li>• Al-Kumaim et al. (2021)</li> <li>• Klaudia Bovermann. (2018)</li> <li>• Zahra SHAHSAVAR, (2012)</li> <li>• Irma S. Jones, (n.a)</li> </ul>	Interval

---

- Genevieve Marie Johnson,  
(2006)
- 

*Note.* Developed from above research

### **3.5.2 Scale of measurement**

The measurement scale will be presented in the form of numbers or symbols in the data analysis (Lee, 2016). Presenting in numbers can be used as a measure of reference. At the same time, numbers can help researchers to study more conveniently. Measurement scales can be divided into four types, including nominal scale, ordinal scale, interval scale and ratio scale.

#### **3.5.2.1 Nominal Scale**

The nominal scale will be difficult to measure with numbers and it is also the lowest measurement level (Lee, 2016). The data distribution of the nominal scale does not involve order or ranking. This scaling only provides some basic, classified, and rough Information and personal data, such as gender.

##### **1. Gender**

**Male = 1**

**Female = 2**

*Note.* From the question we designed

#### **3.5.2.2 Ordinary Scale**

In ordinal scales, the number indicates the order of the level, indicating the order of quality or quantity, but the number does not provide the degree of quantity or quality (Lee, 2016). The number 1 is better than the number marked with 2; and so on, the number 2 is better than the number 3, and the number 3 is better than the number 4. But when using ordinal scales, it is difficult to find the spacing.

**4. What is your education level? (Choose ONE)**

1. PhD	<input type="checkbox"/>	2. Master degree	<input type="checkbox"/>
3. Bachelor's degree	<input type="checkbox"/>	4. Diploma	<input type="checkbox"/>
5. Secondary school	<input type="checkbox"/>	5. Other	<input type="checkbox"/>

*Note.* From the question we designed

**3.5.2.3 Interval Scale**

In the interval scale, the number will not only show the ranking, but it will also provide the gap in each ranking (Lee, 2016). We can compare these spacings to get the difference between objects faster. In short, the application of interval scale can quickly get the difference between objects.

IV: Student Attitudes						
NO	Questions	SD	D	N	A	SA
1	I'm comfortable to communicate online	1	2	3	4	5
2	Online learning is more motivating than traditional classroom learning	1	2	3	4	5
3	Possible to complete university courses effectively through online	1	2	3	4	5
4	It is easy to form assignment group online	1	2	3	4	5
5	face to face contact with lecturer is necessary for better learning experience compare to online contact	1	2	3	4	5

+

- 1) SD = Strongly Disagree
- 2) D = Disagree
- 3) N = Neutral
- 4) A = Agree
- 5) SA= Strongly Agree

*Note.* From the question we designed

## **3.6 Data Processing**

Data processing is the process of analysing and converting the data collected from raw data to the information provided in the questionnaire. The four descriptions of data preparations during the process are data checking, editing, coding, and transcribing.

### **3.6.1 Data Checking**

Data checking denotes to each of the questionnaires made to ensure no mistakes are made during the process. Data at the end should be suitable and accurate and therefore we would have to double check on the questionnaires in case of any errors.

### **3.6.2 Data Editing**

Data editing in the research refers to the flow of checking of any error in the data and information. Upon editing, the data is then ensured to be accurate for the questionnaires.

### **3.6.3 Data Coding**

Data coding is a flow of assigning all statistical values for coding and reformatting information into numbers. Data coding has its objective which is to summarize all data for analytical purpose in which for our research the code ranges from number 1 to number 5.

Table 3.5:

*Example of Data coding for questions in Section A, B, C from our research*

<b>Question No</b>	<b>Coding</b>
Section A (Students Attitudes)	1. Yes
1. Do you enjoy doing online assignment? (if no, this questionnaire is not relevant to you, thank you for your time.)	2. No
Section B (Independent Variables) (technical conditions)	1. Strongly disagree
2. Do you face poor network signal having you to miss the class?	2. Disagree
	3. Neutral
	4. Agree
	5. Strongly agree
Section B (Independent Variables) (Self-efficacy)	1. Strongly disagree
1. First time online learner finds it hard to cope with online learning.	2. Disagree
	3. Neutral
	4. Agree
	5. Strongly agree
Section B (Independent Variables) (Study method)	1. Strongly disagree
1. I can concentrate in studies through gamified learning.	2. Disagree
	3. Neutral
	4. Agree
	5. Strongly agree
Section C (Dependent Variable) (student perception on online learning)	1. Strongly disagree
1. I have new experiences through online learning.	2. Disagree
	3. Neutral
	4. Agree
	5. Strongly agree

*Note.* From the question we designed

### **3.6.4 Data Transcribing**

In the last step of data processing, data transcribing is done in which is a process involving all collected data to coding by entering SPSS analytical software for reliability testing and data analysis of each variable in the questionnaire. Therefore, the data generated by this software is the most accurate.

## **3.7 Data Analysis**

Data analysis is the process of applying statistical and/or logical approaches to describe and explain, condense and summarise, and evaluate data. After the data is obtained, it is analysed and evaluated using the Statistical Package for the Social Sciences (SPSS) software. Statistical charts, tables, and graphs will be used to present the generated data. The analysis methods will be descriptive analysis, reliability analysis, and inferential analysis.

### **3.7.1 Descriptive Analysis**

Descriptive statistics are short descriptive coefficients that summarize a given data set, which can be a representation of the whole or a sample of the whole (Hayes,2021). In our research, we applied measures of frequency to study the demographic data of the respondents under Part A of the questionnaire. It is important to understand how often an event or response may occur. In the analysis, we will analyse the gender, ethnic group, religion group, age, education level, and university of the interviewee.

### 3.7.2 Reliability Analysis

Reliability analysis methods calculate the reliability measures of various widely used scales and contain information about the relationship between specific items in the scale. Cronbach's Alpha will be used to measure reliability. According to Sekaran & Bougie (2016), it is poor reliability if the Cronbach's Alpha is lower than 0.60; 0.60 to 0.70 represents fair reliability; 0.70 to 0.80 is considered as good reliability; 0.80 to 0.95 is considered as very good reliability.

Table 3.6:

*Cronbach's Alpha Coefficient Value's*

<b>Cronbach's Alpha</b>	<b>Internal Consistency</b>
$\alpha = 0.80$ to $0.95$	Very Good Reliability
$\alpha = 0.70$ to $0.80$	Good Reliability
$\alpha = 0.60$ to $0.70$	Fair Reliability
$\alpha < 0.60$	Poor Reliability

*Note.* From Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.), Wiley & Sons, West Sussex.

### 3.7.3 Inferential Analysis

Inferential analysis is a technique for determining the relationship between independent and dependent variables. We have one dependent variable and four non-dependent variables in our questionnaires. Dependent variable is student perception on online learning while other four independent variables are students' attitudes, students' self-efficacy, technical conditions, and

study method. The Pearson Correlation Coefficient and Multiple Regression Analysis were utilised to examine the relationship between the dependent and independent variables in this study.

### 3.7.3.1 Pearson Correlation Coefficient

Pearson correlation coefficient analysis can reveal the relationship between independent and dependent variables. According to Sekaran & Bougie (2016), the two variables are completely connected if the coefficient value is +1.0. On the other hand, despite the fact that the coefficient value is -1.0, it reveals an entirely different relationship. If the value is 0, it signifies that the two variables have no relationship.

Table 3.7:

*Pearson Correlation Coefficient value*

<b>Range</b>	<b>Relationship</b>
±0.5 to ±1	Strong
±0.3 to ±0.49	Moderate
±0.1 to ±0.29	Weak

*Note.* From Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.), Wiley & Sons, West Sussex.

### 3.7.3.2 Multiple Regression Analysis

Multiple regression is frequently used to describe the relationship between multiple independent factors and a dependent variable. (Hayes, 2021). Within each set of data points and constant values, the dependent variable

is represented by a collection of independent variables. Multiple regression requires two or more independent variables for statistical analysis of data.

The multiple regression equation as below:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon$$

<b><i>y</i></b>	Student perception on online learning (Dependent variable)
<b><i>β<sub>0</sub></i></b>	Value of Y when all the independent variables ( <i>x<sub>1</sub></i> through <i>x<sub>4</sub></i> ) are equal to zero
<b><i>β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, β<sub>4</sub></i></b>	Slope of regression line
<b><i>x<sub>1</sub></i></b>	Students' attitudes (Independent variable)
<b><i>x<sub>2</sub></i></b>	Students' self-efficacy (Independent variable)
<b><i>x<sub>3</sub></i></b>	Technical conditions (Independent variable)
<b><i>x<sub>4</sub></i></b>	Study method (Independent variable)
<b><i>ε</i></b>	Residual (error)

### 3.8 Chapter Summary

To conclude, this chapter is about research methodology. Whereby we will explain the methods we used for this research, how data has been analyzed. Besides that, research methodology analysis data was created by the SPSS function to run a reliability test. The questionnaire was also examined using descriptive analysis, reliability analysis, inferential analysis, person correlation coefficient, and multiple regression analysis. Because the data and information gathered will be useful in the next chapter.

## **CHAPTER 4: DATA ANALYSIS**

### **4.0 Introduction**

Using SPSS Statistics Software, Chapter 4 will analyse and interpret data from descriptive analysis, scale measurement, reliability test, inferential analysis, scale measurement, Pearson correlation analysis, and multiple regression analysis.

There were 384 respondents' data collected from private and public universities in Malaysia. Hence, the questionnaires were collected and analyzed by using SPSS Statistics Software. Furthermore, the questionnaires containing the relationship between an independent and dependent variable through the table will be followed to collect accurate data using SPSS.

The demographic information of respondents will be discussed in the descriptive analysis. As a result, the spss result for mean and standard deviation is included in the central tendency measurement of the construct. Furthermore, by assessing the consistency for both independent and dependent variables, reliability analysis under scale measurement will evaluate the project's reliability. Under inferential analysis, there will also be Pearson correlation analysis and multiple linear regression analysis results. Finally, a summary of the entire chapter 4 will be presented in the conclusion.

### **4.1 Descriptive Analysis**

There are 6 question of respondent's demographic profile involved with 384 respondents from private and public universities. Hence, the questions included gender, ethnic group, religion group, age, education level, private or public. Furthermore, the question can be found in the questionnaires that we prepared. In the following sub-chapter, we shall discuss the outcome.

## 4.1.1 Respondent's Demographic Profile

This section will discuss about demographic data collected from respondents such as gender, ethnic group, religion group, age, education level, and whether the data is private or public.

### 4.1.1.1 Gender

Table 4.1: Statistics of Respondents' Gender

		Gender			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Male	243	63.3	63.3	63.3
	Female	141	36.7	36.7	100.0
	Total	384	100.0	100.0	

Source: Generated from SPSS software

Figure 4.1: Statistics of Respondents' Gender

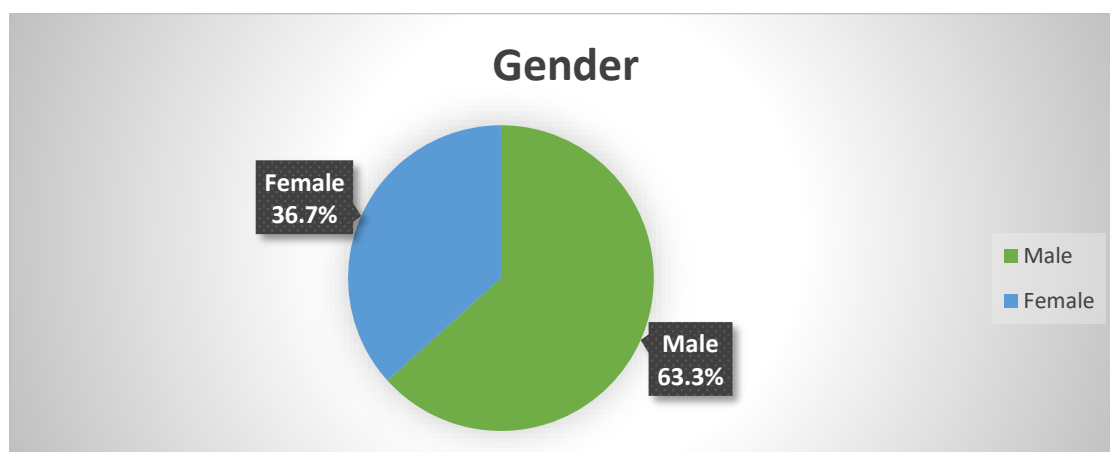


Table 4.1 and figure 4.1 shows that 36.7% are female respondents and 63.3% are male respondents. As shows that most respondents are male respondents participate in the survey.

#### 4.1.1.2 Ethnic Group

Table 4.2: Statistics of Respondents' Ethnic group

Ethnic Group		Freq uenc y	Per ce nt	Valid Percent	Cumulati ve Percent
Malay		27	7.0	7.0	7.0
Chinese		317	82.6	82.6	89.6
Indian		40	10.4	10.4	100.0
Total		384	100.0	100.0	

Source: Generated from SPSS software

Figure 4.2: Statistics of Respondents' Ethnic group

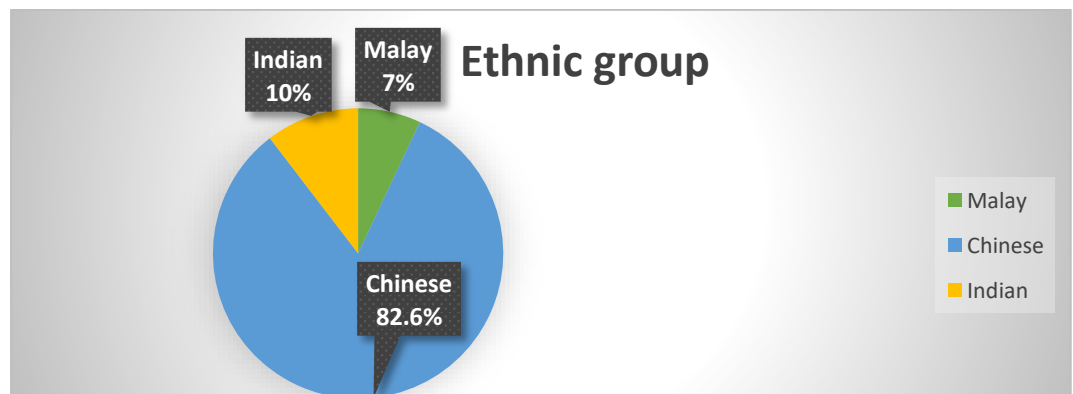


Table 4.2 and figure 4.2 shown there are 3 ethnic group include Malay, Chinese and India that contribute for this research. Hence, the most contributor is Chinese which have 82.6%. other than that, Indian contribute 10% as second most contributor. However, the lowest contributor will be Malay which only contribute 7%.

#### 4.1.1.3 Religion Group

Table 4.3: Statistics of Respondents' Religion Group

		Religion Group			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Islam	27	7.0	7.0	7.0
	Buddha	176	45.8	45.8	52.9
	Hindu	28	7.3	7.3	60.2
	Christian	153	39.8	39.8	100.0
	Total	384	100.0	100.0	

Source: Generated from SPSS software

Figure 4.3: Statistics of Respondents' Religion group

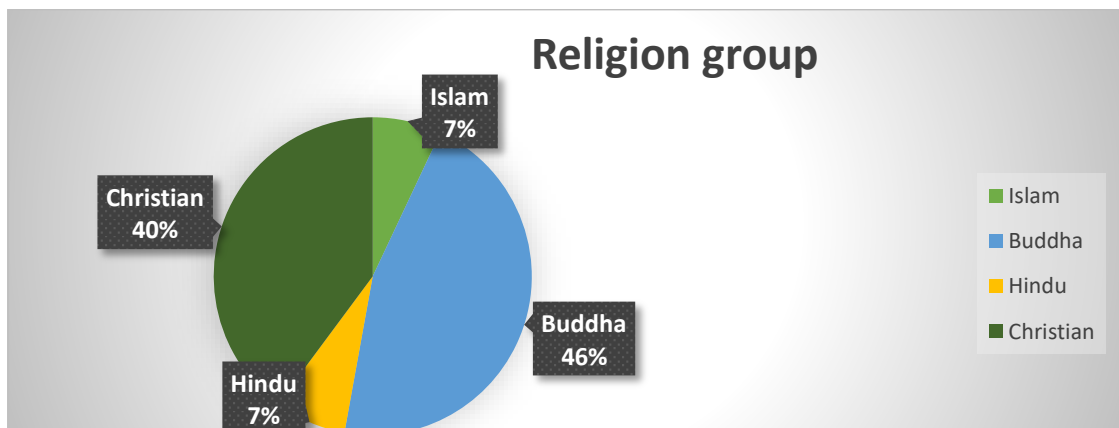


Table 4.3 and figure 4.3 shows religion group of respondents. The most contributor is respondents believe in buddha with 46% and the second most

contributor is respondents believe in Christian with 40%. whereas believer of Islam and Hindu share the same percentage 7%.

#### 4.1.1.4 Age

Table 4.4: Statistics of Respondents' Age

		Age			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	19	16	4.2	4.2	4.2
	20	45	11.7	11.7	15.9
	21	63	16.4	16.4	32.3
	22	57	14.8	14.8	47.1
	23	50	13.0	13.0	60.2
	24	92	24.0	24.0	84.1
	25	49	12.8	12.8	96.9
	26	12	3.1	3.1	100.0
	Total	384	100.0	100.0	

Source: Generated from SPSS software

Figure 4.4: Statistics of Respondents' Age

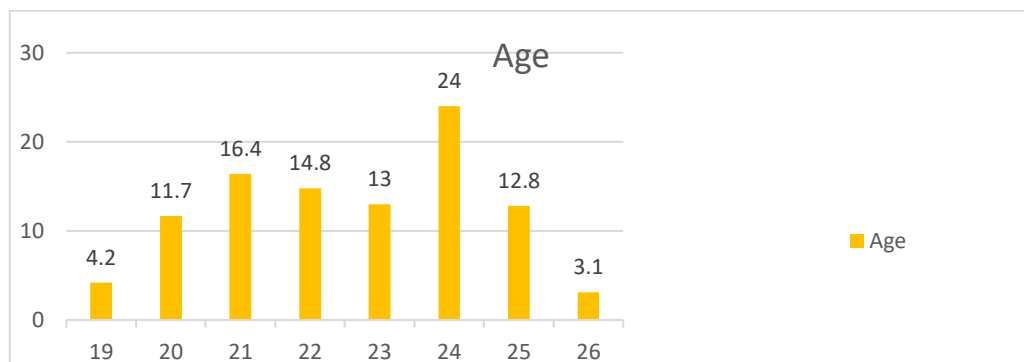


Table 4.4 and figure 4.4 shown respondents age. Age 19 shows 4.2% with (16 respondents), Age 20 shows 11.7% with (45 respondents), Age 21 shows 16.4% with (63 respondents), Age 22 shows 14.8% with (57 respondents), Age 23 shows 13% with (50 respondents), and for the highest

percentage is age 24 shows 24% with (92 respondents), Age 25 shows 12.8% with (49 respondents). Furthermore, for the lowest percentage is from age 26 shows 3.1% with (12 respondents).

#### 4.1.1.5 Education Level

Table 4.5: Statistics of Respondents' Education Level

		Education Level			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	Diploma	70	18.2	18.2	18.2
	Bachelor of Degree	304	79.2	79.2	97.4
	Master Degree	7	1.8	1.8	99.2
	Other	3	.8	.8	100.0
	Total	384	100.0	100.0	

Source: Generated from SPSS software

Figure 4.5: Statistics of Respondents' Education Level

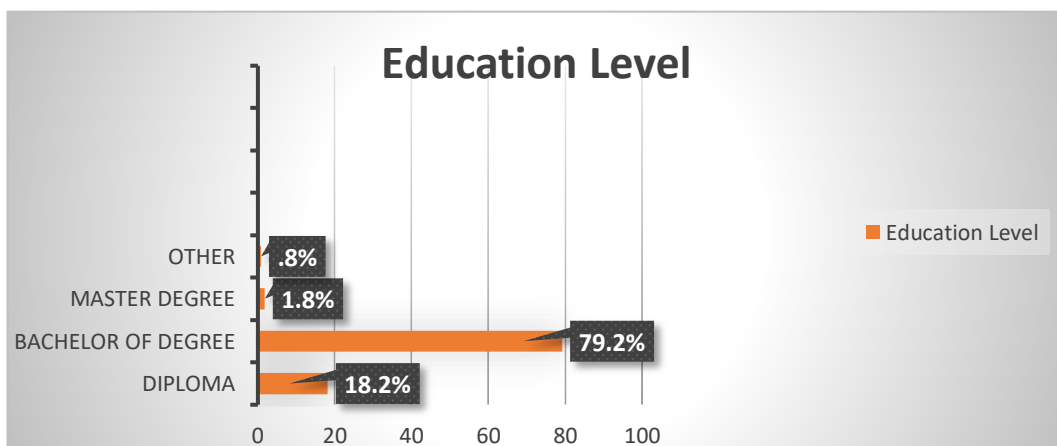


Table 4.5 and figure 4.5 shows four categories which are diploma, bachelor of degree, master's degree, other. As for the most respondents belong to Bachelor of degree consists of 304 respondents (79.2%). Thus, the second most respondents are 70 respondents belong to diploma level at (18.2%).

There are 7 respondents from master's degree with (1.8%). However, for the least contributor will be other (.8%) with 3 respondents.

#### 4.1.1.6 Private Public

Table 4.6: Statistics of Respondents' Private Public

		Private Public			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Private	282	73.4	73.4	73.4
	Public	102	26.6	26.6	100.0
	Total	384	100.0	100.0	

Source: Generated from SPSS software

Figure 4.6: Statistics of Respondents' Private Public

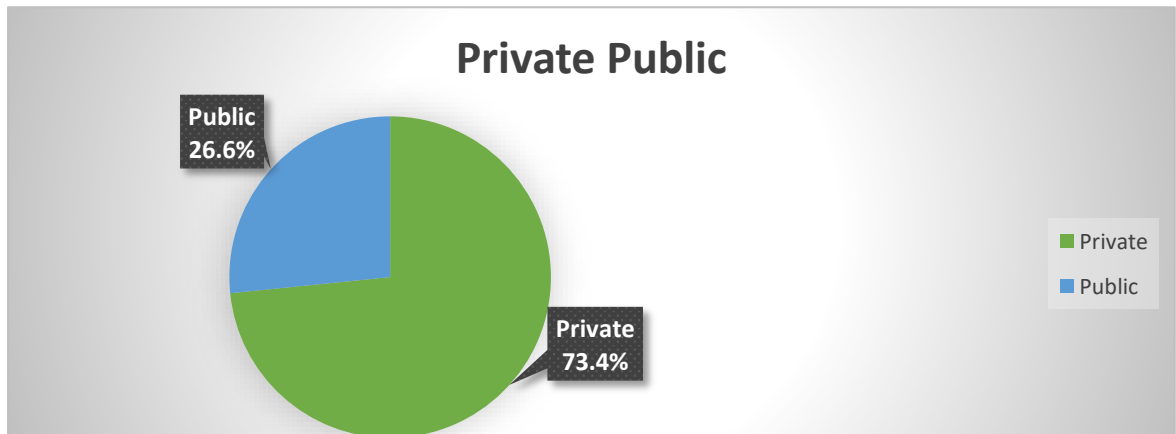


Table 4.6 and figure 4.6 shows respondents from private consists of 73.4% with 282 respondents and as for public consists of 26.6% with 102 respondents.

#### 4.1.2 Central Tendencies Measurement of Constructs

Central tendencies discussed the independent variable and dependent variable of mean and standard deviation inside the questionnaires and tested

the questions using SPSS to come out with result. There are 32 questions being measured by using 5-point Likert Scales which included 1= Strongly agree (SA), 2= Agree (A), 3= Neutral (N), 4= Disagree (D), and 5= Strongly disagree (SD)

#### 4.1.2.1 IV: Students Attitudes

Table 4.7: Central Tendencies Measurement of Student Attitudes

	Mean	Std. Deviation	N
Online learning is more motivating than traditional classroom learning	2.2839	.56453	384
Possible to complete university courses effectively through online	2.3125	.61423	384
It is easy to form assignment group online	2.2839	.59603	384
I think online learning allow me to gain more knowledge	2.2734	.61379	384
I prefer online learning to continue until graduate	2.2813	.68483	384
face to face contact with lecturer is necessary for better learning experience compare to online contact	2.1693	.64228	384

Source: Generated from SPSS software

Table 4.7 shows the central tendencies measurement of student’s attitudes and each question have inconsistent result. Question of “Online Learning is more motivating than traditional classroom learning” mean is same with third question “It is easy to form assignment group online” of 2.2839. Thus, second question “Possible to complete university courses effectively through online” mean is the highest with 2.3125. Moreover, fourth question

“I think online learning allow me to gain more knowledge” mean is 2.2734. Furthermore, fifth question “I prefer online learning to continue until graduate” mean is 2.2813. lastly, “face to face contact with lecturer is necessary for better learning experience compared to online contact” mean is the lowest with 2.1693.

Other than mean there will be standard deviation to be discussed. Question of “Online Learning is more motivating than traditional classroom learning” standard deviation is the lowest with 0.56453. Second question “Possible to complete university courses effectively through online standard deviation will be 0.61423. Third question “It is easy to form assignment group online” will be second lowest with 0.59603. Moreover, fourth question “I think online learning allow me to gain more knowledge” standard deviation is 0.61379. Furthermore, fifth question “I prefer online learning to continue until graduate” standard deviation is the highest with 0.68483. lastly, “face to face contact with lecturer is necessary for better learning experience compared to online contact” standard deviation is 0.64228.

#### 4.1.2.2 IV: Technical Conditions

Table 4.8: Central Tendencies Measurement of Technical Conditions

	Mean	Std. Deviation	N
I encounter difficulties when online learning started	2.3438	.71651	384
During online presentation I will face technical issue	2.5755	.73305	384
I prefer usage of online learning platforms such as zoom, Microsoft team for online learning	2.3464	.78320	384

Due to the limitation of network data, I can't join the class.	2.5599	.82807	384
I'm comfortable with online learning applications require using of online applications such as zoom, WhatsApp	2.3073	.77112	384
Lecturers give me enough time to complete our task	2.2917	.69186	384

Source: Generated from SPSS software

Table 4.8 shows the central tendencies measurement of technical conditions and each question have inconsistent results. Question of “I encounter difficulties when online learning started” mean is 2.3438. Thus, second question “During online presentation I will face technical issue” mean is the highest with 2.5755. Moreover, third question “I prefer usage of online learning platforms such as zoom, Microsoft team for online learning” mean is 2.3464. Furthermore, fourth question “Due to the limitation of network data, I can't join the class” mean is 2.5599. Hence, “I'm comfortable with online learning applications require using of online applications such as zoom, WhatsApp” mean is 2.3073. Lastly, “Lecturers give me enough time to complete our task” mean is the lowest with 2.2917

Besides, mean standard deviation of question technical conditions will be discussed. Question of “I encounter difficulties when online learning started” standard deviation is 0.71651. Thus, second question “During online presentation I will face technical issue” standard deviation is 0.73305. Moreover, third question “I prefer usage of online learning platforms such as zoom, Microsoft team for online learning” standard deviation is 0.78320. Hence, fourth question “Due to the limitation of network data, I can't join the class” standard deviation is the highest with 0.82807. Furthermore, fifth question “I'm comfortable with online learning applications require using of online applications such as zoom, WhatsApp” standard deviation is

0.77112. lastly, Lecturers give me enough time to complete our task standard deviation is the lowest with 0.69186.

#### 4.1.2.3 IV: Self-Efficacy

Table 4.9: Central Tendencies Measurement of Self-Efficacy

	Mean	Std. Deviation	N
I have confidence in facing challenges during online learning	2.2500	.60460	384
I feel confident to use my university online learning system	2.2891	.61511	384
I'm able to absorb knowledge through online learning class	2.2083	.66884	384
I do not have trouble trying to cope with online learning	2.3047	.66496	384
Adapt to technology allow me to adapt online learning quicker	2.2786	.69909	384
first time online learner finds it hard to cope with online learning	2.2161	.67220	384

Source: Generated from SPSS software

Table 4.9 shows the central tendencies measurement of self-efficacy, and each question have inconsistent results. Question “I have confidence in facing challenges during online learning” mean is 2.2500. Thus, second question “I feel confident to use my university online learning system” mean is 2.2891. Moreover, the lowest mean of all is question, third question “I’m able to absorb knowledge through online learning class” mean is 2.2083.

Furthermore, fourth question “I do not have trouble trying to cope with online learning” mean is the highest with 2.3047. Hence, “Adapt to technology allow me to adapt online learning quicker mean is 2.2786. lastly, question “first time online learner finds it hard to cope with online learning” mean is 2.2161.

Besides, mean standard deviation of question self-efficacy will be discussed. Question “I have confidence in facing challenges during online learning” standard deviation is the lowest with 0.60460. Thus, second question “I feel confident to use my university online learning system” standard deviation is 0.61511. Moreover, third question “I’m able to absorb knowledge through online learning class” standard deviation is 0.66884. Hence, fourth question “I do not have trouble trying to cope with online learning” standard deviation is 0.66496. Furthermore, fifth question “Adapt to technology allow me to adapt online learning quicker” standard deviation is the highest with 0.69909. Lastly, “first time online learner finds it hard to cope with online learning” standard deviation is 0.67220.

#### 4.1.2.3 IV: Study Method

Table 4.10: Central Tendencies Measurement of Study Method

	Mean	Std. Deviation	N
I prefer my class to use both synchronous and asynchronous class	2.1823	.57638	384
I prefer my class to be recorded	2.2005	.63320	384
I prefer my class to be live online	2.2240	.71671	384
Do you prefer class to be conducted through zoom	2.2786	.68016	384

I prefer the teacher encourage class discussion and activities	2.2135	.68648	384
I prefer teachers who provide detailed course Outlines and objectives	2.2109	.65420	384
I prefer teachers who use lectures and reading textbooks as their teaching methods.	2.2109	.64617	384

Source: Generated from SPSS software

Table 4.10 shows the central tendencies measurement of study method. Question sixth and seven “I prefer teachers who provide detailed course outlines and objectives” and “I prefer teachers who use lectures and reading textbooks as their teaching methods.” Share the same mean with 2.2109. Thus, question one “I prefer my class to use both synchronous and asynchronous class mean is the lowest with 2.1823. Furthermore, second question “I prefer my class to be recorded” mean is 2.2005. Moreover, third question “I prefer my class to be live online” mean is 2.2240. Hence, with the highest mean 2.2786 belong to question four “do you prefer class to be conducted through zoom”. Lastly, question five “I prefer the teacher encourage class discussion and activities” mean is 2.2135.

Besides, mean standard deviation of question study method will be discussed. Question one “I prefer my class to be use both synchronous and asynchronous class” standard deviation is the lowest with 0.57638. Thus, second question “I prefer my class to be recorded” standard deviation is 0.63320. Hence, Third question “I prefer my class to be live online” standard deviation is the highest with 0.71671. Moreover, fourth question “do you prefer class to be conducted through zoom” standard deviation is 0.68016. Furthermore, question five “I prefer the teacher encourage class discussion activities” standard deviation is 0.68648. Question sixth “I prefer teachers who provide detailed course outlines and objectives” standard deviation is

0.65420. Lastly, question seven “I prefer teachers who use lectures and reading textbooks as their teaching methods.” Standard deviation is 0.64617.

#### 4.1.2.4 DV: Student Perception Online Learning

Table 4.11: Central Tendencies Measurement of Student Perception Online Learning

	Mean	Std. Deviation	N
I Prefer online class over face to face	2.1875	.57923	384
Online class help me to understand better compare to traditional classroom learning	2.2578	.64122	384
Online learning allows me to communication with my lecturer easier compare to previous traditional classroom learning.	2.2474	.64936	384
I prefer to ask question through social media instead of face to face	2.2292	.63787	384
My technical skills improve since attending online class	2.2630	.65524	384
I spend more time on doing homework during online class compare with traditional classroom learning	2.1771	.62154	384
Lecturers help me to understand the online class better and make the class easier to learn.	2.2318	.63897	384

Source: Generated from SPSS software

Table 4.11 shows the central tendencies measurement of student perception online learning. Question one “I prefer online class over face to face” mean is 2.1875. Thus, question two “Online class help me to understand better compared to traditional classroom learning” mean is 2.2578. Moreover, question three “Online learning allows me to communication with my lecturer easier compared to previous traditional classroom learning” mean is 2.2474. Hence, question four “I prefer to ask question through social media instead of face to face” mean is 2.2292. Furthermore, question five “My technical skills improve since attending online class” mean is the highest with 2.2630. However, for the lowest mean will be question six “I spend more time on doing homework during online class compare with traditional classroom learning” mean is 2.1771. Lastly, question seven “Lecturers help me to understand the online class better and make the class easier to learn” mean is 2.2318.

Besides, mean standard deviation of question student perception online learning. Question one “I prefer online class over face to face” standard deviation is the lowest with 0.57923. Thus, question two “Online class help me to understand better compared to traditional classroom learning” standard deviation is 0.64122. Hence, question three “Online learning allows me to communication with my lecturer easier compared to previous traditional classroom learning” standard deviation is 0.64936. Moreover, question four “I prefer to ask question through social media instead of face to face” standard deviation is 0.63787. Furthermore, question five “my technical skills improve since attending online class” standard deviation is the highest with 0.65524.

Question six “I spend more time on doing homework during online class compare with traditional classroom learning” standard deviation is 0.62154. Lastly, question seven “Lecturers help me understand the online class better and make the class easier to learn” standard deviation is 0.63897.

## 4.2 Scale Measurement

This research involve using SPSS software to run reliability test to analyse the dependent variable and independent variable. There are total 384 respondents involve in the reliability test for this research.

Table 4.12: *Cronbach's Alpha Coefficient Value's*

<b>Cronbach's Alpha</b>	<b>Internal Consistency</b>
$\alpha = 0.80$ to $0.95$	Very Good Reliability
$\alpha = 0.70$ to $0.80$	Good Reliability
$\alpha = 0.60$ to $0.70$	Fair Reliability
$\alpha < 0.60$	Poor Reliability

*Note.* From Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.), Wiley & Sons, West Sussex.

	Variable	Number of items	Cronbach's Alpha	Reliability Result
DV	Studentperceptiononlinelearning	7	0.853	Very Good Reliability
IV	Studentattitude	6	0.822	Very Good Reliability
	Technicalcondition	6	0.856	Very Good Reliability
	Selfefficacy	6	0.849	Very Good Reliability
	Studymethod	7	0.878	Very Good Reliability

Table above describe the reliability test result of DV and IV of Cronbach's alpha coefficient value. The Cronbach's Alpha value of DV is 0.853 and it is considered as very good reliability. Thus, regarding reliability result for four IV all considered as very good reliability.

The highest value belongs to fourth IV variable studymethod (0.878). Followed by second IV variable technicalcondition (0.856) and Third IV variable selfefficacy (0.849). Besides that, the lowest IV variable is first IV variable studentattitude (0.822).

The overall reliability test shows a very good reliability result and that shows consistency.

### 4.3 Inferential Analysis

#### 4.3.1 Pearson's Correlation Coefficient

The goal is to measure the dependent variable (student perception of online learning) and the independent variable (student perception of online learning) at the intervals and ratios level (students Attitude, Technical Condition, the Self - efficacy, Study Method). The Pearson correlation coefficient of standard, including the coefficient of scope and intensity, is shown in Table 4.13. `

Table 4.13: Standard of Pearson Correlation Coefficient Analysis

<b>Coefficient Range</b>	<b>Strength of Association</b>
±0.50 to ±1	Strong Association
±0.30 to ±0.49	Moderate Association
±0.10 to ±0.29	Weak Association

##### 4.3.1.1 Student Attitude and Student Perception Online Learning

Table 4.14: Correlation between Student Attitude and Student Perception online Learning

<b>Independent Variables</b>		<b>Student Perception on online Learning</b>
<b>Student Attitude</b>	Pearson Correlation	0.433
	Significant (2-tailed)	0.000
	N	384

*Source: generated from SPSS software*

According to the table below, there is a positive association between student attitude and student perceptions of online learning since the Pearson correlation is 0.433 with a p-value of 0.000 and the p-value was less than the Alpha Value of 0.05, as shown by the SPSS results. Moreover, when the Student Attitude increase, the student Perceptions online learning also will increase. The strength of the Correlation Coefficient is 0.433 and the value was included in the  $\pm 0.30$  to  $\pm 0.49$  Coefficient range which is in the moderate Association.

#### 4.3.1.2 Technical Condition and Student Perceptions Online Learning

Table 4.15: Correlation between Technical Conditions and Student Perception online Learning

<b>Independent Variables</b>		<b>Student Perception on online Learning</b>
<b>Technical Conditions</b>	Pearson Correlation	0.386
	Significant (2-tailed)	0.000

	N	384
--	---	-----

*Source: Taken from SPSS*

The SPSS results, as shown in the table below, revealed a positive link between technical conditions and student perceptions of online learning, with a Pearson Correlation of 0.386 and a P-value of 0.000, and a P-value smaller than the Alpha Value of 0.05. Therefore, when the Technical Conditions increase, the student Perceptions online learning also increase. The strength of the Correlation Coefficient is 0.386 and the value was included in the  $\pm 0.30$  to  $\pm 0.49$  Coefficient range which is in the moderate Association.

#### 4.3.1.3 Self-efficacy and Student Perceptions Online Learning

Table 4.16: Correlation between Self-efficacy and Student Perception online Learning

Independent Variables		Student Perception on online Learning
Self-efficacy	Pearson Correlation	0.520
	Significant (2-tailed)	0.000
	N	384

*Source: Taken from SPSS*

According to the SPSS data, there is a positive association between self-efficacy and student perceptions of online learning, with a Pearson Correlation of 0.520 and a P-value of 0.000, which is less than the Alpha Value of 0.05. Therefore, when the Technical Conditions increase, the

student Perceptions online learning also increase. The strength of the Correlation Coefficient is 0.520 and the value was included in the  $\pm 0.50$  to  $\pm 1.0$  Coefficient range which is in the Strong Association.

#### 4.3.1.4 Study Method and Student Perceptions Online Learning

Table 4.17: Correlation between Study Method and Student Perception online Learning

Independent Variables		Student Perception on online Learning
Study Method	Pearson Correlation	0.484
	Significant (2-tailed)	0.000
	N	384

*Source: Taken from SPSS*

According to the SPSS data, there is a positive correlation between Study Method and Student Perceptions of Online Learning, with a Pearson Correlation of 0.484 and a P-value of 0.000, which is less than the Alpha Value of 0.05. Therefore, when the Study Method increase, the student Perceptions online learning also increase. The strength of the Correlation Coefficient is 0.484 and the value was included in the  $\pm 0.30$  to  $\pm 0.49$  Coefficient range which is in the moderate Association.

#### 4.3.2 Multiple Linear Regression Analysis

Multiple linear regression is a linear estimate in a quantitative dependent variable and relationship between two or more than two independent variables of regression model.

Table 4.18: Summary of Multiple Linear Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.585	.342	.335	.37578

*Source: Taken from SPSS*

- a. Predictors: (Constant), Study method, Student Attitude, Technical Conditions, Self-efficacy

According from the Table 4:18, correlation coefficient (R-Value) between with the DV: Student Perception online Learning and IV which include Study method, Student Attitude, Technical Conditions, Self-efficacy was 0.585. This is the positive and strong correlation Association. Between with IV and DV. Therefore, the coefficient of determination (R-Square) which include the IV: Study method, Student Attitude, Technical Conditions, Self-efficacy and DV: Student Perceptions on Online learning was 0.342 and can be explained 34.2% of the variation in DV was explained by the IV. The adjusted r square of the increase of the variable compensation, only when the new predictor enhanced model of probability can get results, r square will increase. On the contrary, the improvement of the model are as forecasters is less than the prediction of accident, it will fall.

Table 4.19: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	27.799	4	6.950	49.215	0.000
	Residual	53.520	379	0.141		
	Total	81.319	383			

Source: Taken from SPSS

- a. DV: Student Perceptions on Online Learning
- b. Predictors: (Constant), Study Method, Student Attitude, Technical Conditions, Self-efficacy.

H0: There is not significant relationship between the independent variables that include Study Method, Student Attitude, Technical Conditions and Self-efficacy

H1: There is a significant relationship between the independent variables that include Study Method, Student Attitude, Technical Conditions and Self-efficacy

The p-value of 0.000 was less than the alpha value of 0.05, according to table 4.19. As a result, in this study, the significant association in F statistics was substantial. The model is a good indicator of the relationship with the IV and DV, according to the SPSS. As a result, the IV, which consists of Study Method, Student Attitude, Technical Conditions, and Self-efficacy, was used to illustrate the significance of Student Perceptions of Online Learning. As a result, the data supported H1.

Table 4.20: Multiple Linear Regression Coefficient Summary

Model		Unstandardized	Coefficients	Standardized	t	Sig.
		B	Error	Beta		
	(Constant)	0.690	0.116		5.940	0.000

1	Student Attitude	0.142	0.061	0.139	2.321	0.021
	Technical Conditions	0.132	0.039	0.165	3.413	0.001
	Self-efficacy	0.220	0.067	0.237	3.296	0.001
	Study Method	0.181	0.055	0.196	3.278	0.001

*Source: Taken from SPSS*

From the table 4:19 have shown the relationship between all the IV and DV is significant cause all the independent P-value were lower than 0.5 Alpha value.

#### **4.3.2.1 Student Attitude and Students Perceptions Online Learning**

**H1: Students Attitude and Students Perceptions Online Learning have significant relationship**

The P-values of the student's attitude were 0.021, which is lower than the Alpha Level of 0.05, and the relationship is significant, according to the SPSS software results. As a result, the hypothesis (H1) has been accepted..

#### **4.3.2.2 Students' self-efficacy and student perception on online learning**

**H2: Students' self-efficacy and student perception on online learning have a significant relationship**

The P-values of the student's self-efficacy were 0.001, which is lower than the Alpha Level of 0.05, and the correlation is significant, according to the SPSS software results. As a result, the hypothesis (H2) has been accepted.

**4.3.2.3 Technical Conditions and Student Perceptions on Online Learning**

**H3: Technical conditions and student perception on online learning have a significant relationship**

The P-values of the Technical Conditions were 0.001, which is lower than the Alpha Level of 0.05, and the relationship is significant, according to the SPSS software results. As a result, the hypothesis (H3) has been accepted.

**4.3.2.4 Study Methods and Student Perceptions on Online Learning**

**H4: Study Methods and Student Perception on Online Learning**

The P-values of the Study Method were 0.001, which is lower than the Alpha Level of 0.05, and the relationship is significant, according to the SPSS software results. As a result, the hypothesis (H4) has been accepted.

When referring from the Table 4.20, we can find out the below equation.

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4$$

**y:** Student perception on online Learning

**$\beta_0$ :** Constant Value

**$X_1$**  Student Attitude

**$X_2$**  Technical Conditions

- X<sub>3</sub>** Self-efficacy
- X<sub>4</sub>** Study Method

$$\text{Students Perceptions Online Learning} = 0.690 + 0.142 (x_1) + 0.132 (x_2) + 0.220 (x_3) + 0.181 (x_4)$$

Based on the table 4.20, the self-efficacy was the independent variable that provide the highest to the Student Perceptions on Online Learning which is the Coefficient beta value was 0.220. then the second highest for the student Perceptions Online Learning was the Study Methods. This is because the Study Methods was conducting the 0.181 of the Coefficient beta Value. Then, the third highest is the student attitude which is the 0.142 of the coefficient beta Value that can bring to the Students Perception on Online learning. Lastly, the smallest of the Coefficient beta Value was the Technical Conditions which is provide the 0.132 value.

## 4.4 Conclusion

To summarise, data from 384 respondents was analysed using SPSS software. Tables, bar charts, and pie charts are used to display the demographic data of the participants. The dependent and independent variables, as well as the reliability, are also examined and summarised. Furthermore, the Pearson Correlation Coefficient Analysis was used to investigate the relationship between variables. Finally, as a forecast analysis, the multiple regression analysis is used to describe the relationship between the dependent and independent variables. The study's findings will be used by researchers to continue the topic in Chapter 5 and as a source of information.

# **CHAPTER 5: DISCCUSION, CONCLUSION & IMPLICATION**

## **5.0 Introduction**

A summary of the statistical analysis of the respondents' demographic profile, central tendency measurement, reliability test, Pearson's Correlation Analysis, and Multiple Linear Regression Analysis from chapter 4 is presented in chapter 5. In addition, the study's Major Findings and Implications will be detailed in this chapter. Recommendations and limits for future research will be considered before a summary is formed.

## **5.1 Summary of Statistical Analysis**

The results of the respondents' demographic profile, central tendencies measurement, reliability test, Pearson's Correlation Analysis, and Multiple Linear Regression Analysis from chapter 4 will be summarized in this part.

### **5.1.1 Summary of Descriptive Analysis**

#### **5.1.1.1 Respondents' Demographic Profile**

The demographics of the respondents are summarized in the table below. In total, 384 people involved in this study. Male respondents made up 63.3% of all respondents, with female respondents accounting for 36.7%. Majority of respondents are Chinese with 82.6%, followed by 10.4% of Indians, and 7% of Malays. Majority of respondents are Buddha with 45.8%, followed by 39.8% of Christian, 7.3% of Hindu and 7% of Islam. For respondent aged

19 shows 4.2%, age 20 shows 11.7%, age 21 shows 16.4%, age 22 shows 14.8%, age 23 shows 13%, and age 24 shows 24%, age 25 shows 12.8%, and age 26 shows 3.1%. In terms of education level, 79.2% of respondents had a bachelor's degree, followed by 18.2% of diploma holders, 1.8% of master's degree holders, and 0.8% of others. In University type 73.4% of respondent are Private University and 26.6% of respondent are Public University.

Table 5.1: Summary of Descriptive Analysis

Variables	Frequency	Percentage(%)
<u>Gender</u>		
Male	243	63.3
Female	141	36.7
<u>Ethnic Group</u>		
Malay	27	7.0
Chinese	317	82.6
Indian	40	10.4
<u>Religion Group</u>		
Islam	27	7
Buddha	176	45.8
Hindu	28	7.3
Christian	153	39.8
<u>Age</u>		
19	16	4.2
20	45	11.7
21	63	16.4
22	57	14.8
23	50	13.0
24	92	24.0
25	49	12.8
26	12	3.1
<u>Education Level</u>		
Diploma	70	18.3
Bachelor of Degree	304	79.2
Master's degree	7	1.8
Other	3	0.8
<u>Private Public</u>		
Private	282	73.4
Public	102	26.6

Note. Developed from Research

### 5.1.1.2 Summary of Central Tendencies Measurement

Technical Conditions came in top among the four variables, with an average mean value of 2.4041, and the biggest standard deviation of 0.75397, as shown in the table below. With a mean of 2.2674 and the lowest standard deviation of 0.61928, Students Attitudes finished in second. Furthermore, with a mean of 2.2578 and a standard deviation of 0.64913, Self-Efficacy finished in third. Furthermore, with a mean of 2.2277 and a standard deviation of 0.63192, Student Perception Online Learning came in first. With a mean of 2.4041 and a standard deviation of 0.65619, Study Method came in last.

Table 5.2: Summary of Central Tendencies Measurement

Variables	Mean	Standard Deviation
Students Attitudes	2.2674	0.61928
Technical Conditions	2.4041	0.75397
Self-Efficacy	2.2578	0.64913
Study Method	2.2172	0.65619
Student Perception Online Learning	2.2277	0.63192

*Note.* Generated from SPSS software

## 5.1.2 Summary of Scale Measurement

### 5.1.2.1 Reliability Test

According to the table below, the independent variables Student attitude, Technical condition, Self efficacy, and Study method exhibit Very Good Reliability, with an alpha value larger than 0.80. While the only dependent variable is student perception of online learning, it has a high level of reliability.

Table 5.3: Summary of Reliability Test

	Variable	Cronbach's Alpha	Reliability Result
DV	Student perception online learning	0.853	Very Good Reliability
IV	Student attitude	0.822	Very Good Reliability
	Technical condition	0.856	Very Good Reliability
	Self efficacy	0.849	Very Good Reliability
	Study method	0.878	Very Good Reliability

*Note.* Generated from SPSS software

### 5.1.3 Summary of Inferential Analysis

#### 5.1.3.1 Pearson Correlation Coefficient Analysis

According to the table below Student Perception online Learning is correlated with all independent variables in a substantial way. Other than Study Method, which exhibits a Strong Association ( $\pm 0.50$  to  $\pm 1$ ), all other variables exhibit Moderate Association ( $\pm 0.30$  to  $\pm 0.49$ ). Furthermore, because their significance levels are smaller than 0.05 alpha, all independent variables are strongly associated to Student Perception online Learning.

Table 5.4: Summary of Pearson Correlation Coefficient Analysis

Student Perception online Learning		Student Attitude	Technical Conditions	Self-efficacy	Study Method
	Pearson Correlation	0.433	0.386	0.520	0.484
	P - Value	0.000	0.000	0.000	0.000

	Strength of Association	Moderate Association	Moderate Association	Strong Association	Moderate Association
--	-------------------------	----------------------	----------------------	--------------------	----------------------

*Note.* Generated from SPSS software

### 5.1.3.2 Multiple Regression Test Analysis

The R square value of 0.342 suggests that Student Perception online Learning and the independent variables are positive and have modest correlations, according to the results below. As a result, in this study, the independent variables can account for 34.2 % of the variation in the independent variable. In contrast, 65.8% is unexplained, implying that other relevant elements that have not been investigated are likely to contribute to Student Perception Online Learning.

Table 5.5: Summary of Multiple Regression Test Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.585	.342	.335	.37578

*Note.* Generated from SPSS software

## 5.2 Discussions of major findings

### 5.2.1 Students' attitudes and students' perceptions towards online learning

Given the present health crises' elevated levels of reactions, it is expected that increased instructors are complaining about the negative emotional response to online technology use. Online settings for teaching and learning

can be beneficial, but only if teachers are aware of the parameters under which they can continue to educate successfully. The psychological mechanism of activation for a teacher's actions is motivation. This, along with other regulatory processes, is an external or internal determinant of their behaviour. As a result, whether external or intrinsic, cognitive, or emotional, positive or negative, there is an obvious relationship between motivation and the continuance of online instruction (Panisoara et al., 2020).

Besides that, the overabundance of concern among topic teachers to complete the syllabus on time, as described in prior research as the dread and terror among constructors about how to accomplish the programme of study. Second, despite COVID-19 forcing a shift in teaching and communication medium, the intended instructional plans remain same. Third, some university teachers and students lacked expertise dealing with, assessing, and administering online distance education or lacked training in this area. This second explanation was similar with prior study, which found that certain instructors and students are having issues owing to a lack of online teaching and learning experience because of the COVID-19's abrupt appearance. The students that use a variety of online learning platforms may be one of them. Finally, as discussed in the following chapter, students coping with different online learning platforms may be one of the causes of information overload, which leads to increased effort and stress among students (Al-Kumaim et al., 2021). Hence, there is a significant relationship between work stress and work performance.

### **5.2.2 Technical conditions and students' perception towards online learning**

The hierarchy of motives because college students are hesitant to analyze online is changing withinside the mild of the pandemic-brought about catastrophe. Technical problems have been the most usually cited problems, and that they had a large effect in decreasing college students' motivation.

Another key motive is teachers' loss of technical abilities, which displays the findings of different studies performed at some stage in the crisis. The 2nd purpose is a misalignment of the coaching fashion to the web environment, and college students indicated insufficient communicate and contact professors because the closing argument. Furthermore, college students understand that the web putting makes gaining knowledge of and digesting information difficult, which would result in decrease gaining knowledge of results. Because respondents stated negative absorption of material (Coman et al., 2020), mainly whilst taking greater difficult guides with professors who did now no longer have well-tailored coaching methods, our have a look at shows that technical situations and college students' belief closer to online gaining knowledge of do have a large relationship.

### **5.2.3 Study method and students' perceptions towards online learning**

The advantages of online learning, according to this study, go beyond the convenience of acquiring an education: the learning process empowers students to be responsible for their own studies. Students indicated that they were encouraged to take responsibility for their own learning and that they progressively got capable of doing so. They were able to gain abilities and confidence in managing challenging assignments and problem-solving thanks to the online learning environment and the Internet as a resource tool (Sit et al., 2005). Students expressed satisfaction not just with the ease of accessing learning materials, but also with the organisation, delivery, and feedback from teachers throughout the online learning process, as seen by their comments.

Online learning, unlike traditional classroom teaching, created a conducive setting in which students could participate in learning. It allowed students to repeat learning sessions at their own speed and at the degree and depth that best fit their requirements. Students were also able to engage in their

studies and handle tough learning tasks thanks to the learning materials, study guide, discussion forum, and online exam. Therefore, study methods and students' perceptions towards online learning does have a significant relationship.

#### **5.2.4 Self-efficacy and students' perceptions towards online learning**

COVID-19 The pandemic is transforming society's social order into external elements that are affecting the current learning process. Physical limitations and large-scale social events prevent face-to-face learning, which has a significant influence on learning activities that must be carried out realistically. Areas like laboratories, practical learning is increasingly prevalent. This practical learning necessitates psychomotor ability. Scientific lectures are one of the practical lessons touched by the COVID-19 epidemic. Learning cannot be accomplished just through the provision of theoretical information in a discipline of science whose development and application of knowledge requires the findings of experimental effort that meets requirements. Online learning follows the curriculum in terms of resources and timeframes. In terms of location, online learning allows you more flexibility in terms of studying time; you may study anywhere and at any time. This is because implementing health procedures on campus is challenging, thus online learning is an excellent option during a pandemic like this. Both professors and students profit from online learning. Online learning provides students with an alternate form of learning that does not require them to attend class. Furthermore, if online learning is carried out as it is now, it will foster a culture of autonomous learning and increase interaction among students, particularly among students who are not active speakers, allowing them to express their opinions/questions more freely through writing. Hence, there is a significant relationship between self-efficacy and students' perceptions towards online learning.

### **5.2.5 Relationship between students' attitudes, technical conditions, study methods and self-efficacy and students' perceptions towards online learning**

Students may be able to enhance their academic performance, develop new skills, and engage in different types of self-improvements if they are made aware of the proper use of technology. Previous research has shown, however, that technology addiction caused by incorrect usage of ICT can lead to poor academic performance. During the COVID-19 epidemic, the current study discovered a favourable association between technology addiction and views toward e-learning, as well as its impact on academic accomplishment. According to this finding, the students were able to utilise technology without crossing the line into addiction, and the fact that they had positive opinions regarding e-learning may have contributed to this good association.

Several variables may have influenced this conclusion, including the fact that students had no choice but to use e-learning to continue their education throughout the epidemic, and so had to remain highly motivated to actively engage in e-learning and be academically successful. Next study method unlike traditional classroom instruction, online learning provided a suitable environment for students to participate in learning. It allowed students to go back and forth between learning sessions at their own pace, to the degree and depth that best suited their needs. Intriguingly, the current study found that, in a virtual training environment, consistency of interest had no effect on self-efficacy as a psychological reaction among employees. Therefore, there is a significant relationship between students' attitudes, technical conditions, study methods and self-efficacy and students' perceptions towards online learning.

## **5.3 Implication of The Study**

In this study, we have favorably got those data about the effect of self-efficacy, technical conditions, student attitudes and study method among student perception on online learning. The independent variables which have been set in this study can be confirmed to have a substantial relationship with the student perception on online learning.

### **5.3.1 Managerial Implication**

In this study, the independent variables (self efficacy, technical conditions, student attitudes and study method) were found to have the significantly influence to student perception on online learning. There are several practical implications can be found in this study. First, the Ministry of Education needs to give more funds to improve the overall hardware of online learning, because all the data in this study are positive, which also predicts that online learning will be an important part of future education. If the government had prepared the hardware for online learning before the outbreak, many problems would not have occurred during the outbreak. Therefore, the government's preparation now is to prepare for the future. Next, the management of the college also needs to start preparing the hardware for online learning. The prepared online learning hardware can also open a new development direction for the school. Working-study students or some students can be arranged to take online classes in shorter semesters, which can reduce the crowding of physical classrooms arranged by schools. In addition, most parents also need to pay attention to the status of their children's online learning, because many students have a challenging time controlling their behavior. Parents just need to give their children some advice to improve their learning posture. For student perception on online learning, to a significant extent, students need to manage themselves, so other people can only give some limited help.

## **5.4 Limitations of The Study**

First of all, the sampling frame is not enough and this study only collected more than 300 samples for reference, which will affect the overall data accuracy. Compared with the beginning of the epidemic, many problems have been solved better, and many students are more accustomed to this online learning mode. Because this study uses Google form to collect data, we have no way to collect ideas from respondents outside the options. This creates a lack of perspective.

Next, due to the problem of mental ability, the most important data collection objects for this study are college students, but the research topics actually include primary school students and middle school students. This is also a limitation.

Furthermore, many university students also have their own academic pressures, which can cause them to be reluctant to participate or ignore surveys. Therefore, the number of people surveyed is limited, so the data for the entire study is also impressed. Finally, some of the options on the questionnaire can also be misinterpreted or incomprehensible. At the same time, the respondents were not able to get the correct guidance when answering.

## **5.5 Recommendation**

The first and most important condition for improvement is increasing the sample size of survey respondents. To obtain more accurate data, future researchers will need to improve data acquisition. Increasing the sample size can also solve the problem of uncooperative respondents, because we cannot force the respondents to answer. Respondents are not obliged to answer, so researchers can only hope that respondents can answer well. Even if the sample size is increased, the answer rate is the same, but the number will also increase.

Next, future researchers can try to expand the targets of their investigations. For example, a survey can be done on elementary or middle school students, and the area to expand the survey is not limited to Malaysia. Researchers can use these methods to obtain more multi-faceted data, thereby reducing missing data.

In addition, researchers can try to increase the way surveys are collected, such as in schools. Compared with a single method, multiple methods are performed simultaneously to obtain the desired data faster and more accurately. A single collection method can easily fail when there is no alternative solution, resulting in the failure of the study.

## **5.6 Chapter summary**

A summary of descriptive and inferential statistics is presented at the end of this chapter. There is also a discussion of the major findings that explain the link between the dependent and independent variables. This study's findings revealed a substantial association between four independent variables (student attitude, technical condition, self-efficacy, and study method) and the dependent variable (Student Perception on online Learning). Moreover, after the research is done, the understanding of the independent variable (Student attitude, Technical condition, Self-efficacy, and Study method) and dependent variable (Student Perception on online Learning) has been strengthened. Additionally, there are some suggestions for future researchers that will help improve future research. This research has accomplished the main goal of the study. Other universities can benefit from the information in this study.

## REFERENCES

- Agung, A.S.S.N. (2020). Students' Perception of Online Learning during COVID-19 Pandemic. A Case Study on the English Students of STKIP Pamane Talino. *Journal of Social Sciences and Humanities*. Volume 10, Number 2, 2020 p-ISSN. 2088-2262 e-ISSN. 2580-5622. Retrieved From: [ojs.pnb.ac.id/index.php/SOSHUM/](https://ojs.pnb.ac.id/index.php/SOSHUM/)
- AbuMansor, M, S. (2012). Learning Styles and Perception of Engineering Students Towards Online Learning. *Procedia - Social and Behavioral Sciences* Volume 69, 24 December 2012, Pages 669-674. Retrieved from: <https://doi.org/10.1016/j.sbspro.2012.11.459>
- American College of Radiology Volume 17, Issue 10, October 2020, Pages 1322-1328. retrieved from: <https://doi.org/10.1016/j.jacr.2020.07.022>
- Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. 2(1), 2–8.
- Al-Kumaim, N. H., Mohammed, F., Gazem, N. A., Fazea, Y., Alhazmi, A. K., & Dakkak, O. (2021). Exploring the Impact of Transformation to Fully Online Learning During COVID-19 on Malaysian University Students' Academic Life and Performance. *International Journal of Interactive Mobile Technologies*, 15(5), 140–158. <https://doi.org/10.3991/ijim.v15i05.20203>
- Alqurashi, E. (2016). Self-Efficacy In Online Learning Environments: A Literature Review. *Contemporary Issues in Education Research (CIER)*, 9(1), 45–52. <https://doi.org/10.19030/cier.v9i1.9549>
- Amir, L. R., Tanti, I., Maharani, D. A., Wimardhani, Y. S., Julia, V., Sulijaya, B.,

& Puspitawati, R. (2020). Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Medical Education*, 20(1), 1–8. <https://doi.org/10.1186/s12909-020-02312-0>

Azhari, T., & Kurniawati. (2021). Students' Perception on Online Learning During the Covid-19 Pandemic. 495(*ICoSPOLHUM 2020*), 46–50. <https://doi.org/10.2991/assehr.k.210125.009>

Ang, M. (2022). UiTM Takes Action Against Lecturer Who Berated B40 Student With No Laptop. Retrieved 31 March 2022, from <https://says.com/my/news/uitm-takes-action-against-lecturer-who-berated-b40-student-with-no-laptop?msclkid=7eb98266b0fa11eca7c8a474dfa6fafd>

Bin Ahmad, H., & binti Halim, H. (2017). Determining Sample Size for Research Activities: The Case of Organizational Research. *Selangor Business Review*, 2(1), 20–34.

Baber, Hasnan, Determinants of Students' Perceived Learning Outcome and Satisfaction in Online Learning during the Pandemic of COVID-19 (2020). *Journal of Education and e-Learning Research*, Vol. 7, No. 3, 285-292, 2020, Available at SSRN: <https://ssrn.com/abstract=3679489>

Bestiantono, D. S., Agustina, P. Z. R., & Cheng, T.-H. (2020). How Students' Perspectives about Online Learning Amid the COVID-19 Pandemic? *Studies in Learning and Teaching*, 1(3), 133–139. <https://doi.org/10.46627/silet.v1i3.46>

Bolliger, D. U., Supanakorn, S., & Boggs, C. (2010). Impact of podcasting on student motivation in the online learning environment. *Computers & Education*, 55(2), 714- 722. Available at: <https://doi.org/10.1016/j.compedu.2010.03.004>

- Bates, T. (2019). *Teaching in a digital age : guidelines for designing and learning*. Tony Bates Associates Ltd.
- Chun Y. C. (2015). Development and Validation of the Perception of Students Towards Online Learning (POSTOL), *Educational Technology & Society* Vol. 19, No. 1 (January 2016), pp. 350-359 (10 pages) Published By: International Forum of Educational Technology & Society. Retrieved from: <https://www.jstor.org/stable/jeductechsoci.19.1.350>
- Cole, M. S., Feild, H. S., & Harris, S. G. (2004). Student learning motivation and psychological hardiness: Interactive effects on students' reactions to a management class. *Academy of Management Learning & Education*, 3(1), 64-85. Available at: <https://doi.org/10.5465/amle.2004.12436819>.
- Coman, C., Țîru, L. G., Meseșan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability (Switzerland)*, 12(24), 1–22. <https://doi.org/10.3390/su122410367>
- Daniel, N. (2020). Questionnaire: Types, Definition, Examples & How to Design Your Own. Retrieved from: <https://www.kyleads.com/blog/questionnaire/>
- Dong C., Cao S. & Li H. (2020). Young children's online learning during COVID-19 pandemic: Chinese parents' beliefs and attitudes. *Children and youth services review*. Vol. 118. doi: 10.1016/j.chilyouth.2020.105440
- DOSM (2019). "ICT Use and Access by Individuals and Households Survey Report: 2019". <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=SFRacTRUMEVrUFo1Ulc4Y1JILzBqUT09>
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis, *Journal of Educational Technology Systems*. Volume: 49 issues: 1, page(s):

5-22. June 20, 2020; Issue published: September 1, 2020 Retrieved from:  
<https://doi.org/10.1177/0047239520934018>

Diaz, D. P. (2010). Students' Learning Styles in Two Classes: Online Distance Learning and Equivalent On-Campus. Volume 47, 1999 - Issue 4. Pages 130-135. Retrieved from: <https://doi.org/10.1080/87567559909595802>

Duque, L. C. (2014). A framework for analysing higher education performance: Students' satisfaction, perceived learning outcomes, and dropout intentions. *Total Quality Management & Business Excellence*, 25(1-2), 1-21. Available at: <https://doi.org/10.1080/14783363.2013.807677>.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska Symposium on Motivation: Vol. 38. Perspectives on motivation* (pp. 237-288). Lincoln: University of Nebraska Press.

Elham Hussein, Sumaya Daoud, Hussam Alrabaiah, Rawand Badawi, 2020, Exploring undergraduate students' attitudes towards emergency online learning during COVID-19: A case from the UAE, *Children and Youth Services Review*, Volume 119, ISSN 0190-7409, <https://doi.org/10.1016/j.chilyouth.2020.105699>

Ferri F., Grifoni P. & Guzzo T. (2020). Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. *Societies*. Vol. 10. Doi: 10.3390/soc10040086

Fidalgo, P. (May 20,2020). Students' perceptions on distance education: A multinational study, *International Journal of Educational Technology in Higher Education* volume 17, Article number: 18 (2020). Retrieved from: <https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-020-00194-2>

Farida U.K. (n.a.). ELAM: A Model for Acceptance and Use of E-learning by Teachers and Students. Retrieved from: <https://www.cse.iitb.ac.in/~sri/papers/elam-icel09.doc>

Gordon M. B. (2019). Individual innovativeness, self-efficacy and e-learning readiness of students of Yenagoa study centre, National Open University of Nigeria. *Journal of Research in Innovative Teaching & Learning* Emerald Publishing Limited 2397-7604. Retrieved from: <https://www.emerald.com/insight/content/doi/10.1108/JRIT-12-2019-0079/full/pdf?title=individual-innovativeness-self-efficacy-and-e-learning-readiness-of-students-of-yenagoa-study-centre-national-open-university-of-nigeria>

Graf, S., & Kinshuk. (2006). Considering learning styles in learning management systems: Investigating the behavior of students in an online course. *Proceedings of the First IEEE International Workshop on Semantic Media Adaptation and Personalization (SMAP 06)*, 25–30, Athens, Greece.

Gray, J. A., & DiLoreto, M. (2016). The effects of student engagement, student satisfaction, and perceived learning in online learning environments. *International Journal of Educational Leadership Preparation*, 11(1), n1

Gray, J., & DiLoreto, M. (2015). Student satisfaction and perceived learning in online learning environments: The mediating effect of student engagement. Paper presented at the Annual Meeting of the National Council of Professors of Educational Leadership, Washington, DC

Hanushek E. & Woessmann L. (2020). The Economic Impacts of Learning Losses. <https://www.oecd.org/education/The-economic-impacts-of-coronavirus-covid-19-learning-losses.pdf>

- Hall, D. (2020, January 5). Buildings without foundations – Malaysia’s education system. Malaysiakini. Retrieved from <https://www.malaysiakini.com/letters/505992>
- H. Peng, C.C. Tsai, Y.T. Wu (2006). University students’ self-efficacy and their attitudes toward the internet: The role of students’ perceptions of the internet. *Educational Studies*, 32 (1) (2006), pp. 73-86
- Harmon-Jones, E., Harmon-Jones, C., & Price, T. F. (2013). What is approach motivation? *Emotion Review*, 5(3), 291-295. Available at: <https://doi.org/10.1177/1754073913477509>
- Hsu, H.-C. K., Wang, C. V., & Levesque-Bristol, C. (2019). Re-examining the impact of self- determination theory on learning outcomes in the online learning environment. *Education and Information Technologies*, 24(3), 2159-2174. Available at: <https://doi.org/10.1007/s10639-019-09863-w>.
- Huang, E. Y., Lin, S. W., & Huang, T. K. (2012). What type of learning style leads to online participation in the mixed-mode E-learning environment? A study of software usage instruction. *Computers & Education*, 58(1), 338-349. <https://doi.org/10.1016/j.compedu.2011.08.003>
- Hayes, A (2021). Descriptive Statistics. Retrieved from: [https://www.investopedia.com/terms/d/descriptive\\_statistics.asp](https://www.investopedia.com/terms/d/descriptive_statistics.asp)
- Hayes, A (2021). Multiple Linear Regression (MLR). Retrieved from: <https://www.investopedia.com/terms/m/mlr.asp>
- Hopkins, W.G. (2008). Quantitative Research Design. *Sport science* 4(1). Retrieved from: <https://www.sportsci.org/jour/0001/wghdesign.html>
- Ikhsan, R. B., Saraswati, L. A., Muchardie, B. G., & Susilo, A. (2019). The determinants of students' perceived learning outcomes and satisfaction.

- Inoue, Y. (2007). Online education for lifelong learning: A silent revolution. In *Online education for lifelong learning* (pp. 1-27): IGI Global.
- In J. (2017). Introduction of a pilot study. *Korean journal of anesthesiology*, 70(6), 601–605. <https://doi.org/10.4097/kjae.2017.70.6.601>
- Jalli, N. (2020, April 7). Commentary: E-learning sees no smooth sailing in Malaysia and Indonesia. CNA. Retrieved from <https://www.channelnewsasia.com/news/commentary/coronavirus-covid-19malaysia-indonesia-school-e-learning-online-1261944>
- Jimmie, A. (n.a, 2020). Building Students' Self-efficacy in Online Learning. Curtin University, Malaysia. Retrieved from: <https://news.curtin.edu.my/insight/2020-2/building-students-self-efficacy-in-online-learning/>
- Kabir, S. M. S. (2016). Sample and sampling designs. *Fundamentals of Research Methodology and Statistics*, July 2016, 323.
- Kabir, S. M. S. (2016). *Methods of data collection*. Book Zone Publication
- Kanuka, H., & Jugdev, K. (2006). Distance education MBA students: An investigation into the use of an orientation course to address academic and social integration issues. *Open Learning: The Journal of Open, Distance and e-Learning*, 21(2), 153-166. Available at: <https://doi.org/10.1080/02680510600715578>.
- Khan, M. A., Vivek, V., Nabi, M. K., Khojah, M., & Tahir, M. (2021). Students' perception towards E-learning during COVID-19 pandemic in India: An empirical study.: *Sustainability*, 13(1), 57. <https://doi.org/10.3390/su13010057>

- Kiran, O.D (2018). ATTITUDE TOWARDS E-LEARNING: THE CASE OF MAURITIAN STUDENTS IN PUBLIC TEIS, *International Journal of Social Sciences* ISSN 2454-5899, Volume 4 Issue 3, pp. 628-643. Retrieved from: <https://doi.org/10.20319/pijss.2018.43.628643>
- Kurniawan, D. A., & Anggraini, L. (2021). Perception, Attitude, and Student Awareness in Working on Online Tasks During the Covid-19 Pandemic. *Journal Pendidikan Sains Indonesia (Indonesian Journal of Science Education)*, 9(1), 108–118. <https://doi.org/10.24815/jpsi.v9i1.18039>
- L. Smart, K., & J. Cappel, J. (2006). Students' Perceptions of Online Learning: A Comparative Study. *Journal of Information Technology Education: Research*, 5(December), 201–219. <https://doi.org/10.28945/243>
- Lee, J. A. (2016). Measurement scale. *Encyclopedia Britannica*. Retrieved from: <https://www.britannica.com/topic/measurement-scale>
- Muhammad Adnan1 and Kainat Anwar1, (20 June 2020). Online learning amid the COVID-19 pandemic: Students' perspectives, *Journal of Pedagogical Sociology and Psychology* Volume 2, Issue 1,2020. Retrieved from: <http://www.doi.org/10.33902/JPSP.2020261309>
- Muthuprasad T., Aiswarya S. Aditya K. & Jha G. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open*. Vol. 3(1). <https://doi.org/10.1016/j.ssaho.2020.100101>
- Maeda, M., & Ono, Y. (2019). Diffusion of lesson study as an educational innovation. *International Journal of Comparative Education and Development*, 21(1), 46–60. <https://doi.org/10.1108/IJCED-10-2018-0044>
- Marks, R. B., Sibley, S. D., & Arbaugh, J. B. (2005). A structural equation model of predictors for effective online learning. *Journal of Management*

Education, 29(4), 531-563. Available at:  
<https://doi.org/10.1177/1052562904271199>.

Minghat, A. D., Ana, A., Purnawarman, P., Saripudin, S., Muktiarni, M., Dwiyantri, V., & Mustakim, S. S. (2020). Students' Perceptions of the Twists and Turns of E-learning in the Midst of the Covid 19 Outbreak. *Revista Romaneasca Pentru Educatie Multidimensionala*, 12(1Sup2), 15–26.  
<https://doi.org/10.18662/rrem/12.1sup2/242>

Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open*, 3(1), 100101.  
<https://doi.org/10.1016/j.ssaho.2020.100101>

Ministry of Higher Education (2020). Macro Higher Education Institutions. Retrieved from:  
[https://www.mohe.gov.my/en/downloads/statistics/2020/492-statistik-  
pendidikan-tinggi-2020-03-bab-1-makro-institusi-pendidikan-tinggi/file](https://www.mohe.gov.my/en/downloads/statistics/2020/492-statistik-pendidikan-tinggi-2020-03-bab-1-makro-institusi-pendidikan-tinggi/file)

Norwati M. Y. (2007). Analisis Deskriptif e-Forum dalam Pembelajaran Kursus Terjemahan di Universiti Kebangsaan Malaysia. *GEMA Online Journal of Language Studies* Volume 7(2) 2007. Page 79-93. Retrieved from:  
[http://journalarticle.ukm.my/4243/1/page79\\_93.pdf](http://journalarticle.ukm.my/4243/1/page79_93.pdf)

Panisoara, I. O., Lazar, I., Panisoara, G., Chirca, R., & Ursu, A. S. (2020). Motivation and Continuance Intention towards Online Instruction among Teachers during the COVID-19 Pandemic: The Mediating Effect of Burnout and Technostress. *International Journal of Environmental Research and Public Health*, 17(21), 8002.

- Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, 21(3), 166-190. Retrieved from: [10.24059/olj.v21i3.1225](https://doi.org/10.24059/olj.v21i3.1225)
- Plitnichenko, L. (2020). 10 Challenges of E-Learning during COVID-19. <https://jellyfish.tech/10-challenges-of-e-learning-during-covid-19/>.
- Portnov-Neeman, Y., & Barak, M. (2013). Exploring Students' Perceptions about Learning in School: An Activity Theory Based Study. *Journal of Education and Learning*, 2(3), 9–25. <https://doi.org/10.5539/jel.v2n3p9>
- Pharm, J. B. C. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy*. 5(4): 87–88. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4194943/>
- Roberto D. Costa, Gustavo F. Souza, Ricardo A.M. Valentim, Thales B. Castro, 2020, The theory of learning styles applied to distance learning, *Cognitive Systems Research*, Volume 64, Pages 134-145, ISSN 1389-0417, <https://doi.org/10.1016/j.cogsys.2020.08.004>.
- Rajaendram, R. (2022). Another video of UiTM lecturer berating student surfaces online. Retrieved 30 March 2022, from <https://www.thestar.com.my/news/nation/2022/03/30/another-video-of-uitm-lecturer-berating-student-surfaces-online?msclkid=05db95deb0c211ecb6dcaaecdeb890be>
- Syeda FarjanaShetu, (November 2021). Impactful e-learning framework: A new hybrid form of education, *Current Research in Behavioral Sciences* Volume 2, November 2021, 100038. Retrieved from: <https://doi.org/10.1016/j.crbeha.2021.100038>
- Samat M., Awang N., Hussin S. & Nawi, (2020). *Asian Journal of University Education (AJUE)* Vol. 16(3). <https://files.eric.ed.gov/fulltext/EJ1274172.pdf>

Shape Sea (2020). Challenges to Learning and Teaching in Malaysia in the Time of Covid-19. <https://shapesea.com/op-ed/covid-19/challenges-to-learning-and-teaching-in-malaysia-in-the-time-of-covid-19/>

Smidt, E. (2014). Student Attitudes about Distance Education: Focusing on Context and Effective Practices. *The IAFOR Journal of Education* Volume 2 - Issue 1 – Winter. Retrieved from: <http://iafor.org/archives/journals/iafor-journal-of-education/10.22492.ije.2.1.02.pdf>

Scanlon, E., & Issroff, K. (2005). Activity Theory and Higher Education: Evaluating learning technologies. *Journal of Computer Assisted Learning*, 21(6), 430–439. <https://doi.org/10.1111/j.1365-2729.2005.00153.x>

Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education*, 22(2), 306- 331. Available at: <https://doi.org/10.1080/0158791010220208>.

Sit, J. W., Chung, J. W., Chow, M. C., & Wong, T. K. (2005). Experiences of online learning: students' perspective. *Nurse Education Today*, 25(2), 140–147. <https://doi.org/10.1016/j.nedt.2004.11.004>

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.), Wiley & Sons, West Sussex.

Tsegaye Mulugeta , 2021, Impacts of COVID-19 on Food Security, Employment and Education: An Empirical Assessment During the Early Phase of the Pandemic, *Clinical Nutrition Open Science*.

Tseng, H., Kuo, Y. C., & Walsh, E. J. (2020). Exploring first-time online undergraduate and graduate students' growth mindsets and flexible thinking and their relations to online learning engagement. *Educational*

Technology Research and Development, 68(5), 2285–2303.  
<https://doi.org/10.1007/s11423-020-09774-5>

UNESCO (2020). Global Education Coalition.  
<https://en.unesco.org/covid19/educationresponse/globalcoalition>

UNESCO, (2020). “Malaysia: Literacy Rate”, access from,  
<http://uis.unesco.org/en/country/my>,

Voorhis F., Maier M., Epstein J. & Lloyd C. (2013). The Impact of Family Involvement on the Education of Children Ages 3 To 8.  
<https://files.eric.ed.gov/fulltext/ED545474.pdf>

William M.K., (2006). Types of Research Design. Retrieved from:  
<https://libguides.usc.edu/writingguide/researchdesigns>

Zabadi, A. M., & Al-Alawi, A. H. (2016). University Students’ Attitudes towards E-Learning: University of Business & Technology (UBT)-Saudi Arabia-Jeddah: A Case Study. *International Journal of Business and Management*, 11(6), 286. <https://doi.org/10.5539/ijbm.v11n6p286>

Zhang, L., Wen, H., Li, D., Fu, Z., & Cui, S. (2010). E-learning adoption intention and its key influence factors based on innovation adoption theory. *Mathematical and Computer Modelling*, 51(11–12), 1428–1432.  
<https://doi.org/10.1016/j.mcm.2009.11.013>

Zhu, Au, Grey, Yates. (2006). University Students’ Attitudes Toward Online Learning.

## APPENDICES

### Appendix A

UNIVERSITI TUNKU



ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE (FBF)

BACHELOR OF BUSINESS ADMINISTRATION (HONS)

**Students Perception On Online Learning During Covid 19 Pandemic**

Dear Respondents,

We are students of Bachelor of Business Administration (Hons) from University Tunku Abdul Rahman (UTAR). We are currently conducting a survey under the assignment of UBMZ 3016 Research Projects. The purpose of we doing this final year's project survey is to determine the Students Perception Online Learning During Covid-19 Pandemic. This survey will help us to understanding what factors will cause the students perception towards the online learning during pandemic covid 19.

There are THREE (3) sections in this questionnaire. Section A is on demographics. Section B is independent Variables that include Students Attitudes, Technical Conditions, Self-efficacy, and Study Method. Then, the section C is Dependent variable that include student perception online learning. Please read the instructions carefully before answering the questions. Please answer ALL questions in ALL sections. Completion of this questionnaire will take you approximately 5 to 10 minutes.

The information collected from you will be kept strictly private and confidential. All responses and findings will be used solely for academic purpose. Your assistance in completing this questionnaire is very much appreciated. Thank you use your times for this survey.

If you have any enquiries, please do not hesitate to contact:

Name	Student ID	Email
Jeffrey Siao Chin Khen	19ABB02799	Jeffreysiao@lutar.my
Teh E-Hang	19ABB02976	tehhang99@lutar.my

Roeshan A/L Suntra Murthi	19ABB01556	Roeshan13@lutar.my
Choo Zhe Yan	19ABB01670	Zheyan20000410@lutar.my
Wong Zhi Fong	16ABB02950	Wongzf00@lutar.my

## PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 (“PDPA”) which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (“UTAR”) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

### Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to

- For assessment of any application to UTAR
- For processing any benefits and services
- For communication purposes
- For advertorial and news
- For general administration and record purposes
- For enhancing the value of education
- For educational and related purposes consequential to UTAR
- For the purpose of our corporate governance
- For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

### Consent:

1. By submitting this form, you hereby authorise and consent to us processing

(including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at \_\_\_\_\_.

**Acknowledgment of Notice**

(  ) I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice

(  ) I disagree, my personal data will not be processed.

### **Section A: Demographic Profile**

Please choose one option for each of the following.

**1. Gender**

- Male
- Female

**6. University**

- Private
- Public
- Others

**2. Ethnic Group**

- Malay
- Chinese
- Indian
- Others

**3. Religion group**

- Islam
- Buddha
- Hindu
- Christian
- Others

**4. Age**

- \_\_\_\_\_

**5. Education Level**

- Diploma
- Bachelor of Degree
- Master's degree
- PHD
- Others

### **Section B: Independent Variables**

Please choose one answer based on each statement using five Likert scale.

(1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree)

## Student Attitude

No.	Questionnaire	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Online learning is more motivating than traditional classroom learning	1	2	3	4	5
2	Possible to complete university courses effectively through online	1	2	3	4	5
3	It is easy to form assignment group online	1	2	3	4	5
4	I think online learning allow me to gain more knowledge	1	2	3	4	5
5	I prefer online learning to continue until graduate	1	2	3	4	5
6	face to face contact with lecturer is necessary for better learning experience compare to online contact	1	2	3	4	5

### Technical Conditions

No.	Questionnaire	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I encounter difficulties when online learning started	1	2	3	4	5
2	During online presentation I will face technical issue	1	2	3	4	5
3	I prefer usage of online learning platforms such as zoom, Microsoft team for online learning	1	2	3	4	5
4	Due to the limitation of network data, I can't join the class.	1	2	3	4	5
5	I'm comfortable with online learning applications require using of online applications such as zoom, WhatsApp	1	2	3	4	5
6	Lecturers give me enough time to complete our task	1	2	3	4	5

### Self-Efficacy

No.	Questionnaire	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I have confidence in facing challenges during online learning	1	2	3	4	5
2	I feel confident to use my university online learning system	1	2	3	4	5
3	I'm able to absorb knowledge through online learning class	1	2	3	4	5
4	I do not have trouble trying to cope with online learning	1	2	3	4	5
5	Adapt to technology allow me to adapt online learning quicker	1	2	3	4	5
6	first time online learner finds it hard to cope with online learning	1	2	3	4	5

### Study method

No.	Questionnaire	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I prefer my class to use both synchronous and asynchronous class	1	2	3	4	5
2	I prefer my class to be recorded	1	2	3	4	5
3	I prefer my class to be live online	1	2	3	4	5
4	Do you prefer class to be conducted through zoom	1	2	3	4	5
5	I prefer the teacher encourage class discussion and activities	1	2	3	4	5
6	I prefer teachers who provide detailed course Outlines and objectives	1	2	3	4	5
7	I prefer teachers who use lectures and reading textbooks as their teaching methods.	1	2	3	4	5

### Section C: Dependent Variables

Please choose one answer based on each statement using five Likert scale.

(1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree)

**Student Perception Online Learning**

No.	Questionnaire	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I Prefer online class over face to face	1	2	3	4	5
2	Online class help me to understand better compare to traditional classroom learning	1	2	3	4	5
3	Online learning allows me to communication with my lecturer easier compare to previous traditional classroom learning.	1	2	3	4	5
4	I prefer to ask question through social media instead of face to face	1	2	3	4	5
5	My technical skills improve since attending online class	1	2	3	4	5
6	I spend more time on doing homework during online class compare with traditional classroom learning	1	2	3	4	5
7	Lecturers help me to understand the online class better and make the class easier to learn.	1	2	3	4	5

spss iv attitude output.spv [Document1] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Extensions Window Help

Output

- Log
- Reliability
  - Title
  - Notes
  - Active Dataset
  - Warnings
  - Scale: IV: students attitude
    - Title
    - Case Process
    - Reliability Sta
    - Item Statistics
    - Inter-Item Cor
    - Item-Total Sta

**Reliability**

[DataSet1] C:\Users\ziwei\Desktop\TEH E-HANG UTAR\spss\SPSS.sav

**Warnings**

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

---

**Scale: IV: students attitude**

**Case Processing Summary**

		N	%
Cases	Valid	6	100.0
	Excluded <sup>a</sup>	0	.0
	Total	6	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.724	.688	6

spss iv self efficacy.spv [Document3] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Extensions Window Help

Output

- Log
- Reliability
  - Title
  - Notes
  - Warnings
  - Scale: IV: self efficacy
    - Title
    - Case Process
    - Reliability Sta
    - Item Statistics
    - Inter-Item Cor
    - Item-Total Sta

**Reliability**

```
RELIABILITY
/VARIABLES=EFFICACY1 EFFICACY2 EFFICACY3 EFFICACY4 EFFICACY5 EFFICACY6
/SCALE('IV: self efficacy') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE CORR
/SUMMARY=TOTAL.
```

**Warnings**

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

---

**Scale: IV: self efficacy**

**Case Processing Summary**

		N	%
Cases	Valid	6	100.0
	Excluded <sup>a</sup>	0	.0
	Total	6	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.711	.720	6

IV study method.spv [Document4] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Extensions Window Help

Output

- Log
- Reliability
  - Title
  - Notes
  - Warnings
  - Scale: IV: study method
    - Title
    - Case Process
    - Reliability Sta
    - Item Statistics
    - Inter-Item Cor
    - Item-Total Sta

RELIABILITY

```

/VARIABLES=METHOD1 METHOD2 METHOD3 METHOD4 METHOD5 METHOD6 METHOD7
/SCALE('IV: study method') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE CORR
/SUMMARY=TOTAL.

```

→ Reliability

**Warnings**

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

**Scale: IV: study method**

**Case Processing Summary**

Cases	Valid	N	
		N	%
	Valid	6	100.0
	Excluded <sup>a</sup>	0	.0
	Total	6	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.726	.837	7

SPSS IV technical conditions Output.spv [Document2] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Extensions Window Help

Output

- Log
- Reliability
  - Title
  - Notes
  - Warnings
  - Scale: IV: Technical
    - Title
    - Case Proces
    - Reliability Sta
    - Item Statistics
    - Inter-Item Cor
    - Item-Total Sta
- Log
  - Reliability
    - Title
    - Notes
    - Warnings
    - Scale: IV: Technical
      - Title
      - Case Proces
      - Reliability Sta
      - Item Statistics
      - Inter-Item Cor
      - Item-Total Sta

RELIABILITY

```

/VARIABLES=CONDITIONS1 CONDITIONS2 CONDITIONS3 CONDITIONS4 CONDITIONS5 CONDITIONS6
/SCALE('IV: Technical conditions') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE CORR
/SUMMARY=TOTAL.

```

Reliability

**Warnings**

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

**Scale: IV: Technical conditions**

**Case Processing Summary**

Cases	Valid	N	
		N	%
	Valid	6	100.0
	Excluded <sup>a</sup>	0	.0
	Total	6	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.765	.773	6

SPSS DV.spv [Document5] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Extensions Window Help

Output

- Log
- Reliability
  - Title
  - Notes
  - Warnings
  - Scale: DV: student
    - Title
    - Case Proces
    - Reliability Sta
    - Item Statistics
    - Inter-Item Cor
    - Item-Total Sta

```

RELIABILITY
/VARIABLES=PERCEPTION1 PERCEPTION2 PERCEPTION3 PERCEPTION4 PERCEPTION5 PERCEPTION6 PERCEPTION7
/SCALE('DV: students perception online leraning') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE CORR
/SUMMARY=TOTAL.

```

**Reliability**

**Warnings**

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

**Scale: DV: students perception online leraning**

**Case Processing Summary**

		N	%
Cases	Valid	6	100.0
	Excluded <sup>a</sup>	0	.0
	Total	6	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.893	.897	7

→ **Correlations**

**Descriptive Statistics**

	Mean	Std. Deviation	N
studentattitude	2.2674	.45111	384
technicalconditions	2.4041	.57621	384
selfefficacy	2.2578	.49476	384
studymethod	2.2173	.49990	384
studentperceptiononlinelearning	2.2277	.46078	384

**Correlations**

		studentattitude	technicalconditions	selfefficacy	studymethod	studentperceptiononlinelearning
studentattitude	Pearson Correlation	1	.315**	.703**	.389**	.433**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	384	384	384	384	384
technicalconditions	Pearson Correlation	.315**	1	.349**	.485**	.386**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	384	384	384	384	384
selfefficacy	Pearson Correlation	.703**	.349**	1	.651**	.520**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	384	384	384	384	384
studymethod	Pearson Correlation	.389**	.485**	.651**	1	.484**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	384	384	384	384	384
studentperceptiononlinelearning	Pearson Correlation	.433**	.386**	.520**	.484**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	384	384	384	384	384

➔ **Regression**

**Variables Entered/Removed<sup>a</sup>**

Model	Variables Entered	Variables Removed	Method
1	studymethod, studentattitude, technicalconditions, selfefficacy <sup>b</sup>	.	Enter

a. Dependent Variable: studentperceptiononlinelearning

b. All requested variables entered.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.585 <sup>a</sup>	.342	.335	.37578

a. Predictors: (Constant), studymethod, studentattitude, technicalconditions, selfefficacy

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.799	4	6.950	49.215	.000 <sup>b</sup>
	Residual	53.520	379	.141		
	Total	81.319	383			

a. Dependent Variable: studentperceptiononlinelearning

b. Predictors: (Constant), studymethod, studentattitude, technicalconditions, selfefficacy

## → Reliability

[DataSet1] C:\Users\user\OneDrive\Desktop\fyp2\JEFF.sav

### Scale: IV:studentattitude

#### Case Processing Summary

		N	%
Cases	Valid	384	100.0
	Excluded <sup>a</sup>	0	.0
	Total	384	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.822	6

#### Item Statistics

	Mean	Std. Deviation	N
Online learning is more motivating than traditional classroom learning	2.2839	.56453	384
Possible to complete university courses effectively through online	2.3125	.61423	384
It is easy to form assignment group online	2.2839	.59603	384
I think online learning allow me to gain more	2.2734	.61379	384

Knowledge			
I prefer online learning to continue until graduate	2.2813	.68483	384
face to face contact with lecturer is necessary for better learning experience compare to online contact	2.1693	.64228	384

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Online learning is more motivating than traditional classroom learning	11.3203	5.419	.604	.791
Possible to complete university courses effectively through online	11.2917	5.142	.649	.780
It is easy to form assignment group online	11.3203	5.346	.589	.793
I think online learning allow me to gain more knowledge	11.3307	5.350	.563	.798
I prefer online learning to continue until graduate	11.3229	4.997	.607	.790
face to face contact with lecturer is necessary for better learning experience compare to online contact	11.4349	5.359	.523	.808

#### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.6042	7.326	2.70665	6

## → Reliability

### Scale: IV:selfefficacy

#### Case Processing Summary

		N	%
Cases	Valid	384	100.0
	Excluded <sup>a</sup>	0	.0
	Total	384	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.849	6

#### Item Statistics

	Mean	Std. Deviation	N
I have confidence in facing challenges during online learning	2.2500	.60460	384
I feel confident to use my university online learning system	2.2891	.61511	384
I'm able to absorb knowledge through online learning class	2.2083	.66884	384
I do not have trouble trying to cope with online	2.3047	.66496	384

trying to cope with online learning			
Adapt to technology allow me to adapt online learning quicker	2.2786	.69909	384
first time online learner finds it hard to cope with online learning	2.2161	.67220	384

<b>Item-Total Statistics</b>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I have confidence in facing challenges during online learning	11.2969	6.423	.660	.820
I feel confident to use my university online learning system	11.2578	6.385	.659	.820
I'm able to absorb knowledge through online learning class	11.3385	6.198	.651	.821
I do not have trouble trying to cope with online learning	11.2422	6.252	.637	.824
Adapt to technology allow me to adapt online learning quicker	11.2682	6.254	.592	.833
first time online learner finds it hard to cope with online learning	11.3307	6.311	.607	.830

### Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.5469	8.812	2.96857	6

## ➔ Reliability

### Scale: IV:technicalcondition

#### Case Processing Summary

		N	%
Cases	Valid	384	100.0
	Excluded <sup>a</sup>	0	.0
	Total	384	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.856	6

#### Item Statistics

	Mean	Std. Deviation	N
I encounter difficulties when online learning started	2.3438	.71651	384
During online presentation I will face technical issue	2.5755	.73305	384
I prefer usage of online learning platforms such as zoom, Microsoft team for online learning	2.3464	.78320	384
Due to the limitation of	2.5599	.82807	384

## ➔ Reliability

### Scale: IV:studymethod

#### Case Processing Summary

		N	%
Cases	Valid	384	100.0
	Excluded <sup>a</sup>	0	.0
	Total	384	100.0

a. Listwise deletion based on all variables in the procedure.

#### Reliability Statistics

Cronbach's Alpha	N of Items
.878	7

#### Item Statistics

	Mean	Std. Deviation	N
I prefer my class to use both synchronous and asynchronous class	2.1823	.57638	384
I prefer my class to be recorded	2.2005	.63320	384
I prefer my class to be live online	2.2240	.71671	384
Do you prefer class to be conducted through zoom	2.2786	.68016	384
I prefer the teacher encourage class	2.2135	.68648	384

I prefer teachers who provide detailed course Outlines and objectives	2.2109	.65420	384
I prefer teachers who use lectures and reading textbooks as their teaching methods.	2.2109	.64617	384

<b>Item-Total Statistics</b>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I prefer my class to use both synchronous and asynchronous class	13.3385	9.488	.683	.859
I prefer my class to be recorded	13.3203	9.362	.641	.863
I prefer my class to be live online	13.2969	8.846	.677	.859
Do you prefer class to be conducted through zoom	13.2422	9.192	.628	.865
I prefer the teacher encourage class discussion and activities	13.3073	9.153	.631	.865
I prefer teachers who provide detailed course Outlines and objectives	13.3099	9.102	.688	.857
I prefer teachers who use lectures and reading textbooks as their teaching methods.	13.3099	9.107	.697	.856

<b>Scale Statistics</b>			
Mean	Variance	Std. Deviation	N of Items
15.5208	12.245	3.49929	7

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.690	.116		5.940	.000
studentattitude	.142	.061	.139	2.321	.021
technicalconditions	.132	.039	.165	3.413	.001
selfefficacy	.220	.067	.237	3.296	.001
studymethod	.181	.055	.196	3.278	.001

a. Dependent Variable: studentperceptiononlinelearning

the class.			
I'm comfortable with online learning applications require using of online applications such as zoom, WhatsApp	2.3073	.77112	384
Lecturers give me enough time to complete our task	2.2917	.69186	384

### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I encounter difficulties when online learning started	12.0807	8.732	.639	.833
During online presentation I will face technical issue	11.8490	8.844	.590	.842
I prefer usage of online learning platforms such as zoom, Microsoft team for online learning	12.0781	8.245	.688	.824
Due to the limitation of network data, I can't join the class.	11.8646	8.170	.654	.831
I'm comfortable with online learning applications require using of online applications such as zoom, WhatsApp	12.1172	8.339	.678	.826
Lecturers give me enough time to complete our task	12.1328	8.904	.622	.837