

DETERMINANTS OF UNEMPLOYMENT AMONG FRESH  
GRADUATES IN MALAYSIA BEFORE AND DURING  
COVID-19 PANDEMIC

HENG HAN QUAN  
LIM CHAN HONG  
THEO DANIEL WEE XIN LIK  
YEP ZHEN YI

BACHELOR OF ECONOMICS (HONOURS) FINANCIAL  
ECONOMICS

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE  
DEPARTMENT OF ECONOMICS

APRIL 2023

HENG, LIM, THEO, YEP FRESH GRADUATES UNEMPLOYMENT BFE(HONOURS) APRIL 2023

Copyright @ 2023

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 FYP is the end 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 FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.
- (3) Equal contribution has been made by each group member in completing the FYP.
- (4) The word count of this research report is 22438 words.

Name of Student:	Student ID:	Signature:
1. <u>Heng Han Quan</u>	<u>19ABB03429</u>	<u><i>HENG</i></u>
2. <u>Lim Chan Hong</u>	<u>19ABB04516</u>	<u><i>LCH</i></u>
3. <u>Theo Daniel Wee Xin Lik</u>	<u>19ABB01522</u>	<u><i>TWXL</i></u>
4. <u>Yep Zhen Yi</u>	<u>19ABB03366</u>	<u><i>YEZ</i></u>

Date: April 2023

## ACKNOWLEDGEMENT

First and foremost, we would like to thank our Final Year Project Supervisor, Miss Thavamalar a/p Ganapathy for her amazing guidance, support, and valuable insights throughout this entirety of this research project. With her help, mentorship, and encouragement, we were able to shape and complete our research project without any major setbacks.

We would also like to acknowledge the support of our peers, whose feedbacks, suggestions, encouragement, opinions, and discussion have greatly refined our research study. Their insights and perspectives have helped us improve our findings and augment our study.

We are also grateful to the research participants who have generously contributed their time, ideas, and expertise to make this study possible and better in many ways. Without their help and contribution, this research would not be possible. We would also like to express our utmost appreciation to the staff at University Tunku Abdul Rahman for their assistance in providing us with the necessary resources, facilities, and the ability to conduct our research smoothly.

Lastly, we would like to thank our family, friends for their unrelenting support, both physically and mentally. Their continuous support, encouragement, and understanding throughout the ups and downs faced during our research have been the anchor and motivation during our research process.

We would like to thank you all for your contributions and support in making this research project a complete success.

TABLE OF CONTENTS

	Page
Title page.....	i
Copyright page.....	iii
Declaration.....	iv
Acknowledgement.....	v
Table of Contents.....	vi
List of Tables.....	viii
List of Figures.....	ix
List of Abbreviations.....	x
List of Appendices.....	xi
Preface.....	xii
Abstract.....	xiii
Chapter 1: INTRODUCTION.....	1
1.1    Background of Study.....	1
1.2    Problem Statement.....	3
1.3    Research Objectives.....	5
1.4    Research Question.....	6
1.5    Significant of the Study.....	6
1.6    Structure of the Study.....	7
Chapter 2: REVIEW OF LITERATURE.....	9
2.1    Review of Literature.....	9
2.1.1    Unemployment among fresh graduates.....	9
2.2    Review of Theories.....	10
2.2.1    Review of Relevant Concepts.....	11
2.2.2    Effect of Covid-19 pandemic towards graduates' unemployment.....	13
2.2.3    Employability Skills.....	14
2.2.4    Job Mismatch.....	16
2.2.5    Graduates' Attributes.....	18
2.2.6    Economic Instability.....	20
2.3    Conceptual Framework.....	22
2.4    Hypothesis Development.....	22
2.4.1    Employability Skills.....	23
2.4.2    Job Mismatch.....	23
2.4.3    Graduates Attributes.....	24
2.4.4    Economic Instability.....	25
2.4.5    Mean Difference before and during Covid-19 pandemic.....	25
2.5    Summary.....	26
Chapter 3: METHODOLOGY.....	28
3.1    Research Design.....	28
3.2    Data Collection Method.....	29

DETERMINANTS OF UNEMPLOYMENT AMONG FRESH GRADUATES IN MALAYSIA  
BEFORE AND DURING COVID-19 PANDEMIC

3.3	Design of sampling .....	30
3.3.1	Target Population .....	30
3.3.2	Frame and Location Sampling .....	31
3.3.3	Technique of Sampling .....	32
3.3.4	Size of Sampling .....	33
3.4	Research Instrument .....	34
3.4.1	Questionnaire Design .....	35
3.4.2	Variables Measurements .....	36
3.4.3	Questionnaire Reliability .....	38
3.4.4	Questionnaire Validity .....	39
3.4.5	Ethical Consideration .....	40
3.4.6	Pilot Test .....	41
3.5	Data Analysis Techniques .....	42
3.5.1	Research Model .....	46
3.6	Summary .....	47
Chapter 4: DATA ANALYSIS .....		48
4.0	Chapter Overview .....	48
4.1	Descriptive Analysis .....	49
4.1.1	Respondents' Profile .....	49
4.1.2	Descriptive Analysis for Model 1 and Model 2 .....	52
4.2	Inferential Analysis .....	63
4.2.1	Reliability Test .....	64
4.2.2	Diagnostic Checking (Multicollinearity, Autocorrelation, & Heteroscedasticity Testing) .....	65
4.2.3	Normality Test .....	66
4.2.4	Multiple Regression Analysis .....	67
4.2.5	Non-Parametric Test (Mann-Whitney Test) .....	73
4.3	Chapter Summary .....	76
Chapter 5: DISCUSSION, CONCLUSION & IMPLICATIONS .....		77
5.0	Chapter Overview .....	77
5.1	Discussion of Major Findings .....	77
5.2	Implications of the Study .....	79
5.2.1	Individuals .....	79
5.2.2	Educational Institution .....	80
5.2.3	Employers/ Businesses/ Companies .....	82
5.2.4	Policymakers .....	83
5.3	Limitations of the Study .....	83
5.4	Recommendations for Future Research .....	85
References .....		87
Appendices .....		98

LIST OF TABLES

	Page
Table 1. 1: The Unemployment of Fresh Graduates in Malaysia from 2016 – 2020. .....	1
Table 1. 2: The Graduates Unemployment Statistic in Malaysia from 2017 – 2020. .....	2
Table 3. 1: The measurements of dependent variables and each independent variable .....	37
Table 3. 2: Summary of Pilot Test Results .....	41
Table 3. 3: Data Analysis Techniques .....	43
Table 4.1: Summary of Respondent’s Profile.....	50
Table 4. 2: Frequency and percentage data for the durations of unemployment (months) for both DV1 and DV2 .....	53
Table 4. 3: Descriptive data for DV1 and DV2 .....	54
Table 4. 4: Summary of Descriptive Analysis for ES in both DV1 and DV2 .....	55
Table 4. 5: Summary of Descriptive Analysis for JM in both DV1 and DV2.....	56
Table 4. 6: Summary Descriptive Analysis for GA in both DV1 and DV2 .....	57
Table 4. 7: Summary of Descriptive Analysis for EI in both DV1 and DV2 .....	58
Table 4. 8: Summary of Descriptive Analysis for OP in both DV1 and DV2.....	59
Table 4. 9: Summary of Frequency Analysis for OP) in both DV1 and DV2.....	60
Table 4. 10: Summary of Frequency Analysis for Ranking of Importance between IVs for DV1 .....	61
Table 4. 11: Summary of Frequency Analysis for Ranking of Importance between IVs for DV2 .....	63
Table 4. 12: Summary of Reliability Test.....	64
Table 4. 13: Summary of Multicollinearity Testing .....	65
Table 4. 14: Summary of Autocorrelation and Heteroscedasticity Testing.....	66
Table 4. 15: Test for Normality .....	67
Table 4. 16: Summary of Significance of Independent Variable and Coefficient Comparison for DV1.....	68
Table 4. 17: Summary of Significance of Independent Variable and Coefficient Comparison for DV2.....	71
Table 4. 18: Summary of Mann-Whitney Test .....	74
Table 3A. 1: Employability skills’ Pilot Test’s Cronbach’s Alpha .....	108
Table 3A. 2: Job Mismatch’s Pilot Test’s Cronbach’s Alpha .....	108
Table 3A. 3: Graduates’ Attributes’ Pilot Test’s Cronbach’s Alpha .....	108
Table 3A. 4: Economic Instability’s Pilot Test’s Cronbach’s Alpha.....	109



LIST OF FIGURES

	Page
<i>Figure 2.1: The Conceptual Framework before and during Covid-19 pandemic..</i>	22
<i>Figure 2. 2: The link between Conceptual Framework before and during Covid-19 pandemic. ....</i>	26

LIST OF ABBREVIATIONS

BNM	Bank Negara Malaysia
DOSM	Department of Statistic Malaysia
MCO	Movement Control Order
MoHE	Ministry of Higher Education
NAM	National Associated of Manufactured
OLS	Ordinary Least Squares
RM	Ringgit Malaysia
SPSS	Statistical Package for Social Science
DV1	Duration of unemployment among fresh graduates in Malaysia before Covid-19
DV2	Duration of unemployment among fresh graduates in Malaysia during Covid-19
ES	Employability Skill
JM	Job Mismatch
GA	Graduate Attributes
EI	Economic Instability
OP	Overall Perception

LIST OF APPENDICES

	Page
Appendix 1 - Participant Information Page .....	98
Appendix 2 – Questionnaire Format (Section 1 - 7).....	100
Appendix 3 – Tables .....	108
Appendix 3 A– Pilot test result.....	108

## PREFACE

Over the years, the number of fresh graduates has gradually increased in Malaysia as tertiary education has become more accessible. It is a positive sign for Malaysia because the increase in human capital can contribute to the economic development of Malaysia in long run. However, the demand for labour in the Malaysia job market cannot fully accommodate and compensate for the increase in labour force, this causes an increase in the unemployment problem. In fact, fresh graduate unemployment is an increasing issue in every country as more employers and jobs demand greater qualifications and experience in the existing working field.

On account of the increasing unemployment in fresh graduates, the researchers of this study acknowledge this issue and are motivated to study and analyse the determinant factors that are contributing the fresh graduates' unemployment in Malaysia. Subsequently, four independent variables (employability skills, job mismatch, graduate attributes, economic instability) are selected to find out how each of them affects the dependent variable (fresh graduates' unemployment in Malaysia). At the same time, the researchers would also like to study the mean differences of each independent variable towards the dependent variable.

Lastly, the researchers hope that this study can bring a better and clearer picture for readers to understand the crucial elements and characteristics a fresh graduate should acquire when he or she in starting a new job, finding better working positions, and maintaining current work position.

## ABSTRACT

In this research, the primary focus is to examine the factors that contribute to the fresh graduate unemployment in Malaysia. The independent variables included are employability skills (ES), job mismatch (JM), graduates' attributes (GA), and economic instability (EI) and fresh graduate unemployment in Malaysia being our dependent variable. In addition, some theories such as Human Capital Theory and Job Matching Theory are found to be useful towards this study. The targeted respondents in this study are fresh graduates who ages between 20 to 30 in Malaysia. This study collected two sets data from questionnaire with DV1 (duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic) and DV2 (duration of unemployment among fresh graduates in Malaysia during Covid-19 pandemic), following to independent variables, including ES, JM, GA, and EI. The data analysis of this study is conducted in SPSS, descriptive and inferential analysis including demographic analysis, reliability analysis, multiple regression analysis, etc are conducted to determine the relationship between the independent variable and the dependent variable. This study has proven that all the independent variables introduced, ES, JM, GA, and EI have proven to be significant when regressing with the dependent variable DV1 and DV2 in multiple linear regression. The ES is most significant for DV1 while the EI is most significant for DV2. It illustrates that the respondents changed their views on fresh graduates' unemployment due to Covid-19 pandemic outbreak. In addition, the researchers found that there are significant mean differences in ES, GA, and EI while there is no significant mean difference in JM.

## Chapter 1: INTRODUCTION

### 1.1 Background of Study

With the progress of the times and change in science and technology, the knowledge, and technical requirements of jobs for human force market have increased in recent years. There are many opportunities and threats for employment and careers as a result of how consumer preferences and lifestyles have evolved as a process of globalization, disruptive technology, and digital transformation, this also in disguise increases the proportion of students attending universities (Seng, 2018). However, as the number of college graduates' increases, the labour market does not fully utilise the resource of fresh graduate and the fresh graduates was started to face the problems of unemployment.

In recent years, the problem of high unemployment rate among Malaysia graduates have been a growing concern among the public. According to the study conducted by Ministry of Education Malaysia's Graduate Tracer Study in 2018, there are total of 59 universities which consisted of 21 public-sectors and 38 private-sectors that produce about 51,000 graduates a year in Malaysia, however, there are about 60% of graduates remain unemployed (D'Silva, 2020).

Table 1. 1

*The Unemployment of Fresh Graduates in Malaysia from 2016 – 2020*

<b>Years</b>	<b>Unemployment of Fresh Graduates</b>
<b>2016</b>	1,458,000
<b>2017</b>	1,529,000
<b>2018</b>	1,620,000
<b>2019</b>	1,703,000
<b>2020</b>	2,024,000
<b>2021</b>	1,974,000

*Source: Graduates Statistics (2021).*

According to Figure 1.1, the figure shows the data of fresh graduates' unemployment in Malaysia from 2016 to 2021, the amount of unemployment among fresh graduates in Malaysia was showed a significantly increased from 2016 to 2020, with a slightly decrease in 2021. Based on the data, the problem of unemployment among fresh graduates in Malaysia in recent years was getting worse year by year especially in a period of Covid-19 outbreak. The number of graduates' unemployment was increased about 6.24% from 1,458,000 in 2016 to 1,529,000 in 2017. The problem was continued in 2018, which the graduate's unemployment was increased about 4.13% from 1,529,000 in 2017 to 1,613,000 in 2018, and the graduate's unemployment was continued increased about 5.5% from 1,613,000 in 2018 to 1,703,000 in 2019 (Department of Statistics Malaysia Official Portal, 2021).

Table 1. 2

*The Graduates Unemployment Statistic in Malaysia from 2017 – 2020*

<b>Years</b>	<b>Active Unemployment Graduated</b>	<b>Unemployment less than three months</b>	<b>Unemployment within six months</b>
<b>2017</b>	1,159,000	577,000	347,000
<b>2018</b>	1,259,000	577,000	461,000
<b>2019</b>	1,274,000	657,000	375,000
<b>2020</b>	1,584,000	714,000	476,000

*Source: Graduates Statistics (2021)*

Based on Figure 1.2, in 2019, the proportion of active unemployment graduated was accounted about 78.4% with the total number of 1,274,000 thousand. Among active unemployment graduates, there are about 51.6% of them which 657,000 thousand were unemployed less than three months and 29.5% of them which 375,000 thousand were unemployed within six months. In 2020, the number of active unemployment increased to 1,584,000, with 714,000 on unemployment less than three months and 476,000 on unemployment within six months, and there is not any information regarding this in 2021 (Department of Statistics Malaysia Official Portal, 2021).

The problem of graduates' unemployment was further enlightened when the Covid-19 pandemic swept the world in the first quarter of 2020. With the severity of the Covid-19 epidemic, the Malaysian government issued the Movement Control Order (MCO) for several months. Although the policy was successful in suppressing and delaying the spread of Covid-19, it also led to a recession in the Malaysian economy, with many companies laying off workers and closing. It comes to the concept of Phillips curve, according to Phillips (1958), there is a trade-off existed between unemployment and inflation, the shocks of Covid-19 cause Malaysian national income decreases and led to low national purchasing power in Malaysia. In this situation, the companies would employ less workers to reduce their cost in order to cope with low revenue cause by Covid-19 pandemic and others economic issues. Many workers faced unemployment, and the situation that is even more acute for recent graduates. The unemployment rate of fresh graduates in Malaysia was increased from 1,703,000 thousand in 2019 to 2,024,000 thousand in 2020 (Department of Statistics Malaysia Official Portal, 2021). The outbreak of Covid-19 pandemic exacerbates unemployment problem among fresh graduates year by year in Malaysia. However, the numbers of unemployed graduates in 2021 was slightly decrease 2.47% from 2,024,00 in 2020 to 1,974,000 in 2021, showing that the government has imposed some successful movement control and policies to cope with Covid-19 pandemic.

## **1.2 Problem Statement**

In recent year, unemployment has gradually become a public concern, it not only leads to underutilisation of the labour force, resulting in a decline in national purchasing power and a lack of confidence in the economy, which in turn leads to an economic downturn. This also makes contemporary universities students confused about employment after graduation. This has led to a decline in the proportion of students enrolled in universities, leading to a reduction and loss of talents in Malaysia, further creating a vicious cycle of economic downturn.



As a developing country, the problem of unable to fully utilize human resources especially fresh graduates has become a serious problem and has entered public concern in Malaysia. The realization of the value of higher education in enhancing lives has contributed to the increase in graduates over the years. Graduates from higher education frequently desire employment that matches their qualifications, as well as greater pay and all the perks that go along with it. However, the existing job market in Malaysia cannot fully employ fresh graduates, where the abilities required, and the employment market are vastly out of sync (Ignatius, 2022).

The problem of fresh graduates' unemployed has existed for many years and it became a serious problem year by year. With the outbreak of the Covid-19 pandemic in the first quarter of 2020, the Malaysian economy has been hit, and the unemployment problem of fresh graduates has reached the worst level. In 2019, there are 1,703,000 unemployed graduates in Malaysia, with the outbreak of Covid-19, the number of fresh graduates unemployed increased to 2,024,000 thousand in 2020 (Department of Statistics Malaysia Official Portal, 2021). From other perspective, talent was playing an importance role in developing country, the economic development consists of human development, where the success of economic is produced by the labour force and entrepreneurial inventiveness of this country (Parilla, 2019). As a potential talent, the problem of unemployment may force fresh graduates choosing to work abroad, which not only leads to the brain drain in Malaysia, but also reduces the confidence of the people in the government, thus leading to a vicious economic cycle.

According to several studies (McClelland & Macdonald, 1998; Institute of Labour Market Information and Analysis, n.d.), the public would lose faith in the national higher education level development policy as a result of the unemployment issue and graduate employment challenges. Today, many fresh graduates work in the fields that are entirely unrelated to their majors, leading to not fully utilise of workforce. With the development of higher education in Malaysia, more and more universities graduates enter into the labour market, resulting in a serious imbalance between supply and demand in the labour market (Chen et al., 2020). This will result in a large percentage of university students experience unemployed after graduation, when universities graduate unemployed, not only their personal capital will be

reduced, but the family and country's investment in higher education will also lose of returns, thereby affecting social stability and family harmony (McClelland & Macdonald, 1998). This presents a serious problem in Malaysia when the existed of the situation that job market demand is unable to meet the continuously increase in the number of highly educated graduates year by year.

### **1.3 Research Objectives**

In accordance with the research question, the following objectives are intended to be accomplished by this study:

Major:

To determine the factors of fresh graduates' unemployment before and during Covid-19 pandemic in Malaysia.

General:

1. To examine the impact of Employability Skill on unemployment problem among fresh graduates in Malaysia before and during Covid-19 pandemic.
2. To examine the impact of Job Mismatch on unemployment problem among fresh graduates in Malaysia before and during Covid-19 pandemic.
3. To examine the impact of Graduate Attribute on unemployment problem among fresh graduates in Malaysia before and during Covid-19 pandemic.
4. To examine the impact of Economic Instability on unemployment problem among fresh graduates in Malaysia before and during Covid-19 pandemic.
5. To analyse how the impact of Covid-19 pandemic towards the relationship between independent variables and graduates' unemployment in Malaysia.
6. To determine the mean differences between the fresh graduates' unemployment before and during COVID-19 pandemic in Malaysia.

## 1.4 Research Question

In response to the problems and gaps identified in previous research, this study attempts to answer the following questions:

1. How would Employability Skills affect the problem of fresh graduates' unemployment in Malaysia before and during Covid-19 pandemic?
2. How would Job Mismatch affect the problem of fresh graduates' unemployment in Malaysia before and during Covid-19 pandemic?
3. How would Graduate Attribute affect the problem of fresh graduates' unemployment in Malaysia before and during Covid-19 pandemic?
4. How would Economic Instability affect the problem of fresh graduates' unemployment in Malaysia before and during Covid-19 pandemic?
5. How the impact of Covid-19 pandemic towards the relationship between independent variables and graduates' unemployment in Malaysia?
6. Are there any mean differences between the fresh graduates' unemployment before and during Covid-19 pandemic in Malaysia?

## 1.5 Significant of the Study

This research contributes to the literature that related to the factors affecting graduates' unemployment in Malaysia. Based on literature reviews, the previous research has studied several significant variables that have a significant relationship with graduates' unemployment, for instant, employability skills (O'Neil et al., 1997; Doyle, 2019; Rahmah et al., 2011), job mismatch (Park, 2020; Ramlee et al., 2008.; Pang, 2011), graduates attributes (Bowden et al. 2000; Hager et al. 2002; Hossain et al., 2018), and economic instability (Hill et al., 2017; Kroft et al., 2016; Hwang, 2017). In addition, this research was conducted based on two relevant theories from past studies, Human Capital Theory and Job Matching theory.

With the outbreak of the Covid-19 pandemic, the structure of labour market is changes fast with the process of globalization, disruptive technology, and digital transformation, there may be lack of information about the Covid-19 and other

factors toward fresh graduates' unemployment in the research area. The results of this research may provide important information on how Covid-19 and other factors contribute to the unemployment problem of recent graduates. The research is educational and beneficial to fresh graduates, employers, and policy makers in Malaysia as it enables them to have a deep understanding on the graduate's unemployment problems. With this, university students are able to plan for their career life and prepare to cope with the unemployment problem. Besides, employers are able to cooperate with educational-related institution, develop a clearly and fairly hiring process, and keep their employee training program was in line with the current job markets needed. Other than that, the policy makers are able to adjust existing policies or release new policy such as "graduate employment incentive program" that can cope with the unemployment problem for fresh graduates and that might also restore the public confidence in the Malaysian government.

## **1.6 Structure of the Study**

Chapter 1 focuses on the introductory information of the study. The section first presents the research background on the unemployment problem among fresh graduates before and during Covid-19 pandemic in Malaysia, with the problem of unemployment among fresh graduates is getting worse year by year. Afterwards, the problem statement addresses how the unemployment problem affect the fresh graduates and Malaysia's economy. Following to conclude from the interpretation of the research question and objective, which what this study is aimed to know and what is the purpose of this study.

Chapter 2 highlights the literature review of this study. It consisted of the explanation of the theories, concepts, and models relevant to the study, and pointed out the information on past studies that relevant to fresh graduates' unemployment problem. Following that, this chapter examines the theoretical framework model based on the research topic, offers further details and discussion on the dependent and independent variables in this study, and explains the study's assumptions on the

dependent and independent variables. This section also discusses how this study varies from other completed studies as well as any research gaps it may have.

Chapter 3 studies the methodological approach used in this research. This section discusses the research process of this study in a logical and understandable manner, it contains a comprehensive discussion of the study design, data collection method, sampling design, and research tools. The methodologies for data analysis used in this study will finally be shown in this part, and the final section will summarise the anticipated outcomes and implications.

Chapter 4 will present several quantitative data analysis techniques that aimed to examine the relationship between DV (Duration of unemployment among fresh graduates in Malaysia before and during Covid-19 pandemic) and IVs (Employability Skill, Job Mismatch, Graduate Attribute, Economic Instability). The analysis techniques covered in this chapter will include descriptive analysis and inferential analysis, including demographic analysis, reliability analysis, multicollinearity, autocorrelation, heteroscedasticity testing, non-parametric test, normality analysis, and multiple regression analysis.

Chapter 5 will summarize the key findings of this study based on the data analysed in Chapter 4. The implications of this research will be discussed for policy makers, employers, individuals, and educational institution. Furthermore, this chapter will address the limitations encountered during the research process and provide recommendations for future researchers who may be studying related or similar topics.

## **Chapter 2: REVIEW OF LITERATURE**

### **2.1 Review of Literature**

Supportive evidence from previous studies will be provided in this part in each of the subsection for the dependent variable and each of the independent variables.

#### **2.1.1 Unemployment among fresh graduates**

Unemployment among fresh graduates is a serious problem that should be paying attention in all countries around the world. It has a huge impact towards the productivity and economic growth in a country before or during Covid-19 pandemic. According to Hanapi and Nordin (2014), when unemployment problem gets more serious in country, the nation will suffer a significant lost. Also, they said that it is difficult for Malaysia to produce human capital resources which has a world class level. Followed by Asmawati (2011), the author mentioned that skilful human capital resources are crucial for a country. If a country has low human capital resources, the country will have low initiatives in its socioeconomic activities.

In the case of Malaysia, before the Covid-19 pandemic, more than 50% of fresh graduates from public universities in Malaysia had reported that they earned lesser than the expected income from a bachelor's degree student (Seng, 2018). This means that Malaysian fresh graduates were forced to accept a low-level works or else they will be unemployed. After the outbreak of Covid-19 pandemic, this issue got severed in Malaysia because of Movement Control Order (MCO) to control the spreading of Covid-19 and this brought a huge impact to the economy of Malaysia. Businesses were forced to stop their operations temporary which resulted workers retrenchment as they did not have the ability to pay the wages of their workers' and to cut costs for their businesses to survive. This can be proved from the studies of D'Silva (2020), as the author mentioned that the graduate

unemployment and graduate underemployment rates are rising after Covid-19 pandemic. Also, the Graduate Tracer Study 2020 conducted by Ministry of Higher Education (MoHE) had reported a 1.8% drop from 86.2% to 84.4% in the graduate employability rate in 2020 compared to 2019 (Mail, 2021).

Moreover, according to The Edge Markets (2021), from the latest report of Department of Statistic Malaysia (DOSM), the number of unemployed graduate roses from 165,200 in 2019 to 202,400 in 2020. It represented a 22.5% increase in the unemployed graduates from 2019 to 2020. The main reasons for the high unemployed graduates in 2020 was due to Covid-19 pandemic that resulted unfavourable economic environment in 2020. Therefore, unemployment among fresh graduates in Malaysia is a serious issue to be discussed. What are the factors that caused this problem? How does these factors change before and during Covid-19 pandemic?

## **2.2 Review of Theories**

There are two theories that involved in this study such as human capital theory and job matching theory. All these two theories aimed to study whether there is any relationship between labour participation rate and unemployment rate.

According to Becker (1962), Human Capital Theory certain outcomes of the labour market can be explained by factors such as education, human capital characteristic and skills. As part of an individual's human capital, there are skills, values knowledge, and health that contribute to his or her productivity. The amount of effort applied at work and the labour supply are adjusted to buffer income, health, and wealth. In order to earn a living in retirement, career choices and human capital investments in education are essential factors. A significant portion of Becker's view relies on schooling and training to make people more productive. As a result of acquiring these skills, they will be able to increase their productivity and salary in the future. In fact, investing in human capital is more important for people with higher abilities since they experience a larger return on their education.

This theory relates to the employability skills and graduates' attributes. If the graduates put invest more in themselves, they will have better skills and easily get employed. In addition, if the graduates have a proactive attitude and put initiative to always strengthen itself in term of skills or knowledge, they are more favourable by the employers.

Job matching theory mentioned that when mismatch occurs between the skills possessed by a graduate and the skills required by the working field, it will bring negative impact towards the fresh graduate's wages, productivity and even probability to obtain a job (Tachibanaki, 1988). This means that if the competency level of graduates needs to meet the requirements of employers in order for them to find job easily. Under matching theory, fresh graduate unemployed or underemployed graduate-level skills reflect mismatches between graduates and employers resulting from several factors. One of the factors highlighted by Mason et al. (2009) is that fresh graduates can find job easily with reasonable pay if they possess employability skills through learning, teaching, and employability skills assessment.

This theory relates to job mismatch and economic instability. For job mismatch, it is obvious as the graduates have incompatible skills and knowledge in the working field due to not related to its field of study, it is very hard for them to find a job in that working field. Also, when economic is instable, the labour market tends to be disrupted in which either the demand is more, or supply is more. In many cases, the supply of labour market will be more which resulted the graduates have to find job that are unrelated to its field of study. However, the job mismatch problem will occur, and the graduates are unable to find a job. Thus, a vicious cycle is formed and graduates have to look for other factors that can help them to be more employable in order to break that cycle.

### **2.2.1 Review of Relevant Concepts**

The labour force statistics are formed up by three major groups: employed labour, unemployed labour, and inactive labour (labour out of labour force).



According to International Labour Organization (2018), within the working age, employed labour are person who involved in any activity that produced goods or provided services for profit or pay, while unemployed labour is person who is available and seeks for employment or job opportunity. In Malaysia, the working age is from 15 to 64 years old. For those people who is currently unemployed and possible to find any available job to work but refused in seeking work is known as the inactive labour. These inactive workers are not considered into the labour force (Department of Statistics, 2016).

Underemployment also be defined as inadequate or insufficient employment is a phenomenon where the employment does not meet certain standard in either education, remuneration or working time or employee is not able to fully showcase its abilities and skills while working (Skórska, 2016, p. 40). This phenomenon reflects employment mismatch and can be considered as low-quality employment (ILO, 1957).

Graduates are person who complete their degree or diploma course in a university or college. Fresh graduates refer to people who had recently completed their studies but do not have any working experience related to their field of study. Since they do not have any working experience, they are often offered with entry-level positions related or not related to their field of study to gain or accumulate some working experience (Dictionary.com, 2023).

Graduate unemployment is a term that refers to those graduates who are degree holder but still unemployed. It is a concept to describe where even though fresh graduates possess a certain level of skills and knowledge from their academic degree and are actively seeking for job, but they cannot find a job (Shahriar et al., 2021). When it comes to the term 'rate of graduate unemployment', it is measured with a formula that use the number of graduates unemployed divided by the total number of employees (Zhang, 2018).

For before Covid-19 pandemic, it refers to the period that was before the outbreak of Covid-19 (before March 2020). On the other hand, during Covid-19 pandemic refers to the period after the Covid-19 outbreak (after March 2020). For during Covid-19 pandemic, there are three phases to categorise the post-Covid-19 era which are emergency phase, transition phase and full recovery phase. Hence, the during Covid-19 pandemic included the period of all these three phases (Cobianchi et al., 2020).

### **2.2.2 Effect of Covid-19 pandemic towards graduates' unemployment**

As Covid-19 pandemic is an expected factor that caught everyone out of surprise, it does impact the fresh graduates' unemployment in Malaysia. According to Abd Rahman et al. (2020), Covid-19 pandemic has disrupted the balance between supply and demand in labour market. Excessive supply and low demand of labour and the advancement of technologies that allows repetitive tasks to be replaced have reduced the job availability in labour market, which eventually causes increase in fresh graduates' unemployment.

In such situation, fresh graduates have to upgrade themselves in term of their skills and knowledge to be competitive in labour market. Besides, personality of fresh graduates also plays an important role in affecting whether they are employing or not. Generally, proactive graduates are more likely easier to find freelancing jobs. This is because they take the initiative to accept and venture into new things in order to upgrade their knowledge and skills (Su & Zhang, 2020). Proactive people displayed characteristics that are more innovative in coming out new business ideas which allows them to have more job opportunities. Nevertheless, people with static mindset are limited with ideas and not agile, so they will not be as competitive as proactive people.

### **2.2.3 Employability Skills**

Employability skills can be defined as the necessary skills need for employment (O'Neil et al., 1997) or skills such as fundamental skills or job-readiness skills that will give employees a competitive edge in their careers development because these skills are transferable (Doyle, 2019). In recent years, the concept of employability has been broadened from mainly focus on technical skills and attributes to a wider range that includes non-technical areas like professional identity (Zegwaard, Campbell, & Pretti, 2017) and networking (Bridgstock, 2017). Overall, a graduate can increase its chances of employment by having employability skills which means they are employable and work-ready (Sachs, Rowe, & Wilson, 2017).

Based on the study from Mohd et al. (2020), the samples included are 159 workers that graduated from public universities located in Shah Alam and they found that employability skills are significantly affecting the unemployment among graduates in Malaysia. This is because the skills seeking by employers are communication or soft skills, so if the graduates possess these skills, it helps them adapt quickly and smoothly to the working environment.

According to Suppramaniam (2019), the author has collected 176 questionnaire samples of organizations from various sector in Malaysia. It had shown that on the employer side, they will prefer graduates with characteristics such as skills and experience, personal qualities, capabilities, and skills that are beyond the education that meet the demand of current labour market. The author also concluded that fresh graduates do not possess the employability skills that required by the company, so the tertiary educational institutions should make changes in their syllabus to equip fresh graduates with the relevant skills required in working field. Due to this reason, graduates that are very hard to find themselves a job which leads to the unemployment problem among fresh graduates.

Furthermore, a study done by Nazron, Lim and Nga (2017) mentioned that industrial training programs are more important in preparing fresh graduates to be work-ready. In their studies, they are using data from “Feedback on the Attributes of UMS Trainee Who Are Currently Undergoing Industrial Training 2015” and the “Graduates Tracer Study 2015” to carry out their testing. Then, they found that fresh graduates that went for industrial training can find job easier than those without industrial training. This is because fresh graduate with industrial training has the practical experience and technical skills that are required by the employers. These findings can be supported by another study conducted by Tahir et al. (2018), which he found that the local graduates are still lack of employability skills. From his study, he collected 360 effective sample on fresh graduates from random public universities in Malaysia and 400 organizations that open their position for fresh graduates. From the questionnaire, he found that among the six skills (communication, critical thinking & decision making, passion for learning, ethics & integrity, teamwork, leadership), majority of the employers said that the critical thinking and decision-making skills and leadership skills should be further developed by fresh graduates during their tertiary education.

According to Zahiid (2015), some of the fresh graduates have poor employability skills. They are hard to understand English as they do not really have good communication skills. This contributed to the unemployment among fresh graduates. Followed by an investigation done by the World Bank and Talent Corporation (2014), they found that 90% of the organization wish the universities graduates to acquire more industrial training experience before completing their studies. In addition, 81% of others surveyed graded that graduates are significantly insufficient in their communication skills. Furthermore, it was found that among the problem-solving skills, technical skills and communication skills in English, Malaysian graduates have lesser skills compared to the international graduates (Central Bank of Malaysia, 2002). Besides that, some employers complained that the graduates they have are lack of employability skills and do not have good working performance. This is due to the fact where these graduates do not have suitable skills or qualifications (Rahmah et al., 2011).

#### **2.2.4 Job Mismatch**

Job mismatch can be named specifically as qualification- or skill-job mismatch. According to Park (2020), qualification-job mismatch can be defined as a worker is working on a position that does not suit his or her qualifications such as education, knowledge, skills, and abilities. There are two types of qualification-job mismatch: over-qualification and under-qualification which over-qualification means the worker is being over-qualified and under-qualification means the worker is being under-qualified. On the other hand, skill-job mismatch means that discrepancy arise between the skills the individual possesses and the skills that are required by the employers. It also indicates that the education or training gone through by an individual is not providing the skills demanded in labour market (ILO, 2020).

From the above statements, it can be said that the job mismatch also happens when the supply and demand of fresh graduates in labour market is different. This is because in order to meet internal requirements or social needs, market wants different kind of labours in different industry. Also, many fresh graduates with different majors are finding jobs at the same time. Those majors that are demanded more in the working field can easily find a job while some majors are very hard to find a job. For example, graduates from Sciences, Social Sciences and Literature showed higher degree of joblessness (Hossain et al., 2018). Additionally, there are signs of showing lack of candidates in some working field. This statement is supported by a report done by National Associated of Manufactured (NAM) because in that report, it revealed that there are gaps between the ranges of skilfulness in almost every working field (Kahirool et al., 2008). Hence, graduates that go for interview in a different working field will get rejected easily as they do not fulfil the requirements of that industry.

According to Mohd et al. (2020), job mismatch is also a significant factor that causes unemployment among graduates in Malaysia. The authors found that

graduates that accept jobs that are not related to their field of study, they will be struggling to fit in the position. For instance, an engineering graduate needs longer time to master the necessary skills if he or she joins a finance company. This demonstrates that the job mismatch can disrupt the ability of graduates in finding a suitable job that meet their qualifications and field of study.

Subsequently, as mentioned by Mohd and Mahyuddin (2017) in Outlook and Policy 2017, the limited creation of high-skilled job and low supply of industry-ready graduates had caused the job mismatches in labour market. Although fresh graduates in Malaysia are getting more educated, but the Malaysian economy mainly required cheap labour for low value-added activities carrier out by domestic industries. On the other side, some firms mentioned that it was the shortage in high-skilled labour that hinder them from investing much for higher value chain. This relates again back to the workforce educational attainment and type of jobs created as fresh graduates in Malaysia are better than performing low-value added activities but unable to conduct high-value added activities due to knowledge or skills uncovered in syllabus of tertiary education.

According to Ramlee et al. (2008), they mentioned in their study which fresh graduates from higher educational institution in Malaysia are not ready to face k-economy era and globalization. This causes them being not compatible and unable to fully commit in the working world. As a results, foreign workers are demanded more over fresh graduates in Malaysia due to their inabilities. In addition, the matter where the quality of Malaysian graduates should be improved in term of skills and versatility in order to compete with international standard as there is a big gap between them (10th Malaysian Plan, 2010).

However, is it the fault of graduates that exists the gaps between the knowledge and skills learned by graduates in higher educational institutions and the knowledge and skills needed in the real working world? No, it is not the fault in the graduates, instead the government or educational institution should be responsible for this. As said by Bracey (2006) that fresh graduates

are hard to know which skills are really required by employer in different industry. According to Leo (2019), one of the top reasons for fresh graduates to be unemployed is due to skills mismatch. This is because the tertiary education institutions only emphasize in academic and professional qualifications while the employers really prioritize work experience and soft skills that fresh graduates possess.

Hence, according to Pang (2011), in order to produce integrated human resources, educational system and labour market system should be restructured in Malaysia so that graduates can achieve a higher academic achievement and Malaysia can become a high-income nation. Additionally, Malaysia was advised by the World Bank to identify the skills mismatch in fresh graduates in Malaysia and provide a detail performance feedback tool to the educational institution so that the fresh graduates have the correct and useful can be strengthen (Aina, 2017).

### **2.2.5 Graduates' Attributes**

Graduates' attributes refer to the skills, qualities, and understandings that a student will develop along their study with the university. Most university courses have traditionally emphasized in technical knowledge or disciplinary expertise or as their core curriculum, but these attributes go beyond that. These attributes are the qualities that prepare graduates entering into the working society (Bowden et al. 2000). However, in different education systems and universities, the graduate qualities are defined differently. This causes the emerging of different terms such as generic, personal, or transferable skills, core or key competencies or skills and generic graduates attributes. Although there are variety of definitions in different terms but the fundamental differences between them is just the 'skills' and 'attitudes' (Hager et al. 2002). Other than that, graduates' attributes also can be stated in four elements: knowledge, skills, abilities, and others characteristic. According to Hillage and Pollard (1998), a graduate with good attributes can be classified from three aspects which are knowledge, skills, and attitudes.

Knowledge refers to what the graduate knows; skills refer to what can the graduate do with what they know; attitudes refer to how the graduate carry on their task.

According to Jayasingam et al. (2016), sometimes the reason to unemployment among fresh graduates exists in graduates themselves. From the 244 useable questionnaire sample collected from human resources executives in Malaysia, he observed that some of the graduates with a degree or master are being too picky in selecting their job. They believe they are better in term of receiving higher education, so they tend to go for high position job which required working experiences. Conversely, they are just fresh graduates which resulted them to get rejected by the company as they aimed too high for the position. These findings can be further proven by a survey done by employment agency from Jobstreet.com. Based on their survey, they found that fresh graduates are being unrealistic from the perspective of the employer because some fresh graduates request for RM 3,500 as their allowance. Instead depending on the academic qualification of fresh graduates, the normal level of income offers to them are just around the range of RM 2,100 to RM 2,500 (Hossain et al., 2018).

Furthermore, speaking of graduates being too picky, some graduates tend to reject all the low paid job or low position jobs and willing to stay unemployed until they get the job that they are satisfied. However, the perception towards fresh graduates that request for high salary or too picky might be a misperception because monthly living wage for a young adult in Kuala Lumpur is RM 2,700 (Bank Negara Malaysia, 2018). This means that if the fresh graduates do not request a higher salary or find a better job they cannot survive in Kuala Lumpur. Thus, in the context of Malaysia, sometimes the fresh graduates are forces to be choosy and picky for them to survive the big city like Kuala Lumpur.

Additionally, the unrealistic salary requested by graduates also greatly affect their employment (Mohd et al., 2020). They authors found that after the outbreak of Covid-19 pandemic, the limited supply of job vacancy in the



labour market give opportunity for companies to offer graduates a lower salary. This resulted some graduates who put salary as top priority very hard to find a job. Also, the authors mentioned that graduates with good attributes are more likely to find a job as it is one of the important features in the working industry.

### **2.2.6 Economic Instability**

Economic Instability is the condition where there are unintentional or unpredictable repeating changes in the financial well-being or employment income over time (Hill et al., 2017). According to Hossain et al. (2018), graduates' unemployment also gets influenced by the market changes other than personality characteristic of graduates themselves. The demand of labour market suffers from policy changes and economic decline that contribute to higher level of uncertainty. It is these uncertainties that causes the opportunity of employment become lesser of job searching work become harder. Under different market condition, there are different employment opportunity. Graduates normally evaluate a job mostly from the wages part, but these flexible market environments can greatly affect the wages of fresh graduates. Upon that, the instability in the economic condition of a country will causes the movement of workforces among employment, unemployment, and non-participation (Kroft et al., 2016).

Under an economic recession, chances of getting employed is lower because there are new technologies to replace human skills and it costs lower. According to Tengku Kamarul Bahrim (2019), most of the employers tend to choose machines over workers in serving their workers with the intention of reducing inflation. Subsequently, many companies especially the factories will choose machines over human workforce to reduce their cost in wages payment to workers and increase production volume of the company. This shows that the economic irregular activity occurs, the economic uncertainty exists. Also, economic uncertainty can come from interest rate fluctuations, commodity price swings, stock market crashes, confidence level or black

swan events like the Covid-19 pandemic (Pettinger, 2020). The uncertainties erode the interest rate which causes higher unemployment, lower investment, productivity, and lower consumption.

Looking from other perspective, based on the law of labour demand and supply, overeducated graduates should get job because they have academic qualifications that exceed the social optimal education level, but it is not the case in reality. This is because many companies that only require lower academic attainments will offer low salaries or benefit to all the graduates. This causes some overeducated graduates not able to find jobs that pay what they really worth of (Hwang, 2017). In this case, the market condition causes different demands in labour which causes some overeducated graduates to be unemployed as they cannot find a job that fits them.

In the view of above case, it shows that graduates are normally paid very less. This will cause another socioeconomic which is income inequality. According to Vo (2019), income inequality can harm the economic development which resulting in lower economic growth, especially in the middle-income countries. The negative effect of this situation is that it will decrease the productivity of the country, slowdown in the country's development and eventually causes lesser job opportunities and high unemployment. It is a basically an unhealthy economic cycle that will cause even higher unemployment among fresh graduates.

## 2.3 Conceptual Framework

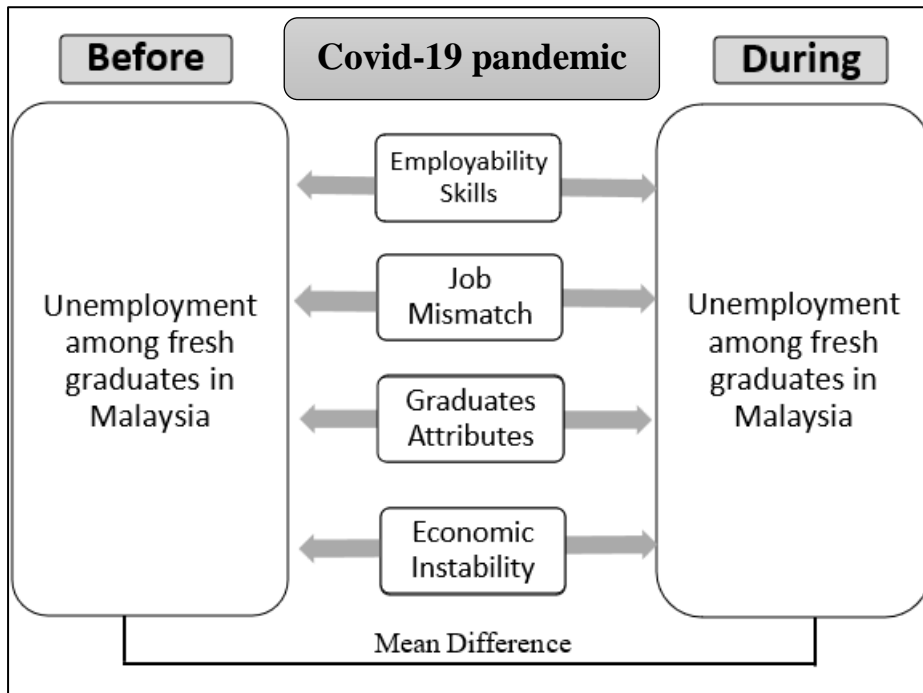


Figure 2.1: The Conceptual Framework before and during Covid-19 pandemic.

Figure 2.1 shows the conceptual framework of this study. Following the research objectives of this study, the researchers has developed four factors which are employability skills, job mismatch, graduates' attributes and economic instability that cause the unemployment problem among fresh graduates in Malaysia. Also, the researchers studied the effects of these factor before and during the Covid-19 pandemic towards the unemployment rate of fresh graduates in Malaysia.

## 2.4 Hypothesis Development

### Dependent variables:

Duration of unemployment among fresh graduates in Malaysia

### Independent variables:

Employability skills, Job mismatch, Graduates Attributes, Economic Instability

### **2.4.1 Employability Skills**

According to Hossain et al. (2018), there is a strong relationship indicating employability skills does affect the unemployment among fresh graduates in Malaysia. This is because employers nowadays seek for fresh graduates with good theoretical and practical skills other than good grades. Good grades become not that favourable by employers because it does not reflect the key skills or abilities possess by the fresh graduates which does not show the employability value of the fresh graduates. Thus, it is important for graduates to enhance their technical and employability skills because these skills can determine whether they can find a job or not (Abd Hair Awang et al., 2007). The expected relationship between employability skills and fresh graduates' unemployment for both before and during Covid-19 pandemic is negative relationship.

H1<sup>B</sup>: There is a negative significant relationship between employability skills and duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic.

H1<sup>D</sup>: There is a negative significant relationship between employability skills and duration of unemployment among fresh graduates in Malaysia during Covid-19 pandemic.

### **2.4.2 Job Mismatch**

According to Hossain et al. (2018), there is a strong relationship showing job mismatch does affect the unemployment among fresh graduates in Malaysia. Also, by looking at the example of other country. In Sri Lanka, 20,000 graduates were unemployed due to their skills did not fulfil the requirements of employer and incompatible with the needs of current labour market (Susima and Sununta, 2003). The expected relationship between job mismatch and fresh graduates' unemployment for both before and during Covid-19 pandemic is positive relationship.

H2<sup>B</sup>: There is a positive significant relationship between job mismatch and duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic.

H2<sup>D</sup>: There is a positive significant relationship between job mismatch and duration of unemployment among fresh graduates in Malaysia during Covid-19 pandemic.

### **2.4.3 Graduates Attributes**

According to Halik et al. (2009), mentality and attitudes of the graduates are one of the vital factors that cause unemployment among youth in Malaysia. According to their studies, they also found that graduates are being too choosy in term of salary, location, and position of the job. Additionally, graduates should have a good working attitude like being open-minded and speaking politely while working to improve their competencies in finding a job. The expected relationship between graduates' attributes and fresh graduates' unemployment for both before and during Covid-19 pandemic is negative relationship.

H3<sup>B</sup>: There is a negative significant relationship between graduates' attributes and duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic.

H3<sup>D</sup>: There is a negative significant relationship between graduates' attributes and duration of unemployment among fresh graduates in Malaysia during Covid-19 pandemic.

#### **2.4.4 Economic Instability**

Based on empirical study done by Abd Rahman et al. (2020), it is found that after the occurrence of black swan event like Covid-19 pandemic, the graduates' unemployment has rose compared to before Covid-19 pandemic. In fact, many of the graduates expected themselves to be unemployed for a long time due to the economic instability caused by Covid-19 pandemic. The expected relationship between economic instability and fresh graduates' unemployment for both before and during Covid-19 pandemic is positive relationship.

H4<sup>B</sup>: There is a positive significant relationship between economic instability and duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic.

H4<sup>D</sup>: There is a positive significant relationship between economic instability and duration of unemployment among fresh graduates in Malaysia during Covid-19 pandemic.

#### **2.4.5 Mean Difference before and during Covid-19 pandemic**

The mean difference of each of the independent variables (employability skills, job mismatch, graduates' attributes, and economic instability) is expected to be significant. This is because according to Lund et al. (2021), as much as 25% of the workers will need to switch their occupations after Covid-19 pandemic outbreak due to changing in labour market demand and different working skills required.

H5: There are significant mean differences between duration of unemployment among fresh graduates in Malaysia before and during Covid-19.

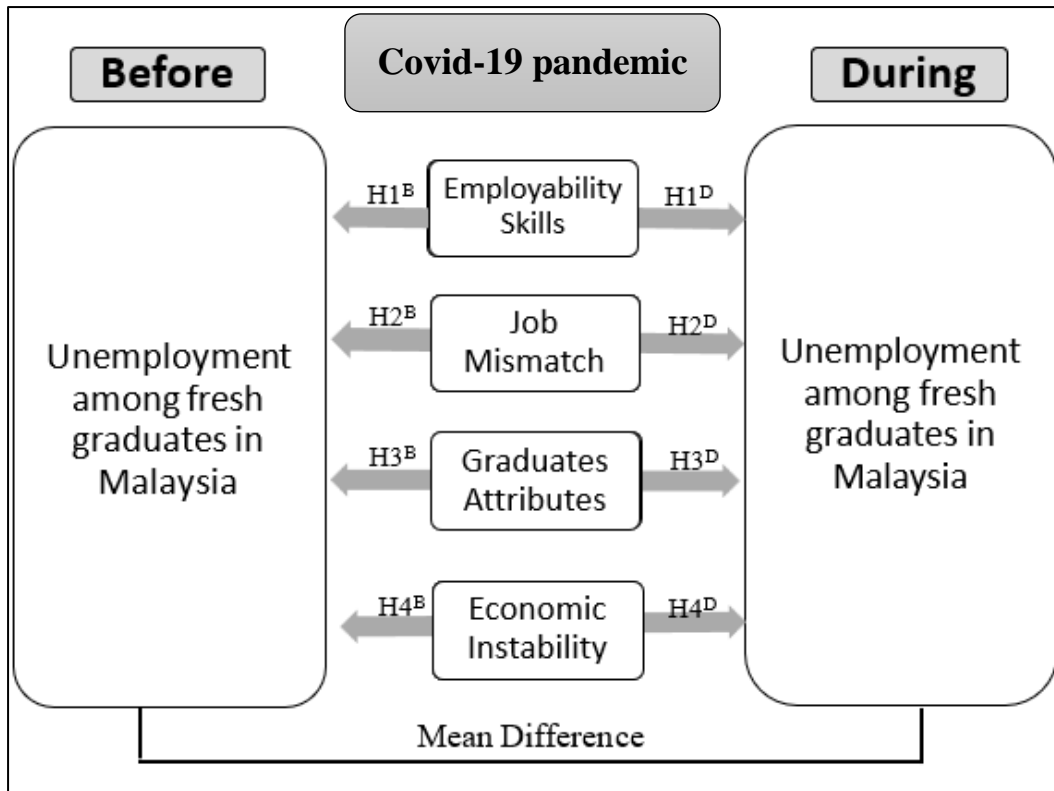


Figure 2. 2: The link between Conceptual Framework and hypotheses

## 2.5 Summary

Based on the literature review, the researchers noticed that majority of journals and articles included independent variables such as employability skills, job mismatch and graduates' attributes (Seng, 2018; Hossain et al., 2018; Noor Azina Ismail, 2011). However, for economic instability, there are only two journals articles that involved as independent variables (Tengku Kamarul Bahrim et al, 2019; Husin et al, 2021). In this case, the researchers would like to investigate the joint effect of these four independent variables towards the fresh graduates' unemployment in Malaysia before and during Covid-19 pandemic.

On the other hand, some journals focused their study only in Klang Valley (Hossain et al., 2018), in Sabah (Nazron, Lim and Nga, 2017) or only targeted the fresh graduates in public universities (Seng, 2018). Conversely, this study focused on fresh graduates in all universities around Malaysia. This is because the researchers believe that by including all fresh graduates in Malaysia, the researchers can better

examine whether Covid-19 pandemic has caused a change in the mean differences of each independent variables (employability skills, job mismatch, graduate attributes, economic instability) towards the dependent variables (fresh graduate unemployment in Malaysia).

Although some effect of Covid-19 towards fresh graduates' unemployment has been included in the literature review but it is insufficient compared to study done by Kamaruddin et al. (2020) and Abd Rahman et al. (2020). This is because this study mainly focuses in finding the determinant factors that cause fresh graduates' unemployment in long run and the researchers think that Covid-19 pandemic is just a short-term black swan event that might bring impact towards the determinant factors that leads to fresh graduates' unemployment. Therefore, in this study the researchers are interested to find out how this Covid-19 pandemic increase or decrease the impact of each determining factors and whether the underlying elements of each determining factors has been changed.

In chapter two, the theories and concepts related are discussed to explore readers for more basic understanding before further go through each element in this study. Next, review on literature was done on dependent variable, each of the independent variables and the effect of Covid-19 pandemic on the dependent variable. Upon that, conceptual framework and hypotheses development were formed to have a clearer look on this study. It is proposed that the employability skills and graduates' attributes will have negative relationship towards the fresh graduates' unemployment while the job mismatch and economic instability will have positive relationship towards the fresh graduates' unemployment.

In the next chapter, the discussions are mainly focused on the methodology to collect data and to perform data analysis. The methods suggested emphasised in finding the results to meet our research objectives and answer the research questions.



## **Chapter 3: METHODOLOGY**

### **3.1 Research Design**

This section is showing and displaying the methods and techniques that are used in completing this research. In order to begin the analysis for the research topic in a fair, logical, and a standard, researchers have to do the analysis with proper methods in a fair, logical and proper manner to not deliberately skew the results of the research. For this Final Year Project, researchers conducted research with quantitative research method by examining the effects and relationship between the dependent and independent variables.

A systematic and impartial investigate was conducted between variables for researchers to get the outcome of the quantitative result for the research. Research design is defined as the plan to answer the research topic while research method is the strategy that researchers using to carry out the plan. Hence, a good research design will assist researchers to ensure the data that researchers obtained is valuable to the research topic (Virginia Tech, 2018). The outcome from the quantitative research is critical for researchers to determine the validity of the hypothesis and get a clearer view about the effect and relationship between those chosen independent and dependent variables.

Next, the experimental design is the process of research in an objective to maximize the accuracy and get the conclusion to compare with research hypothesis (Bell, 2009). Researchers designed the experimental research to study how the change of independent variables can impact the dependent variable in a changing period of time. In this research, the researchers first study the determinate factors of unemployment before and during Covid-19 pandemic in Malaysia through journals and articles. Then, the researchers obtained the numerical data from respondents through survey to get result that help in examining the relationship between the research variables and the validity of the hypothesis formed by researchers.

### **3.2 Data Collection Method**

For the research on determining factors of unemployment among fresh graduates among Malaysians before and during the Covid-19 pandemic, the researchers used primary data collection method. Primary data collection for this research is ideal because this research is conducted to find out the comparison between the determining factors of unemployment among Malaysian fresh graduates before and during the Covid-19 pandemic. This research is conducted to examine the factors or variables proposed in this research that can explain the unemployment among fresh graduates in Malaysia from the above aforementioned variables such as employability skills, job mismatch, graduate attributes, and economic instability.

Questionnaires are handed out via online questionnaire and surveys via google forms, the researchers randomly distributed the links for the questionnaire randomly by posting on social media and even private messaging university graduates and seniors graduates to fill out this survey. The survey is strictly conducted in the context of Malaysia as this research is conducted to find out the determining factors of unemployment among fresh graduates in Malaysian before and during the Covid-19 pandemic. If the respondents fulfil the criteria of being in the target sample out of the population, the data of the respondents can be included in the research data analysis. If the respondent falls out of the target sample, the data is automatically excluded out of the data analysis and respondent can proceed to not answer the rest of the questionnaire.

In this research, respondents have to answer a few sections of questions which relate to employability skills, job mismatch, graduate attributes, and economic instability. Each section will contain questions relating to the title of the section and participants of this research can choose any answers freely based on past experiences, personal consideration, and accumulated knowledge about the title. Participants must answer multiple choice questions based on a scale of one to five with one being strongly disagree and five being strongly agree regarding questions about employability skills, graduate attributes, job mismatch and economic instability.

In this study, the researchers have carried out data collection for the questionnaire from 11 November 2022 to 28 November 2022 for Pilot Test. A sample size of around 20 respondents is collected for the Pilot Test to test the validity of the questionnaire. Since the Pilot Test Cronbach's Alpha values are within the acceptable ranges of 0.7 to 0.8, further data collection until the targeted sample size is carried out. The researchers carried out data collection from the period of 11 November 2022 to 20 March 2023 for actual study. The targeted duration to achieve the enough data respondents was initially set to 3 months, but due to time constraints and limitations, the researchers was only able to achieve the targeted sample size of approximately 700 respondents on 20 March 2023.

### **3.3 Design of sampling**

In this section, the researchers describe how the researchers conduct and design the method of sampling for this study. This section includes the Target Population, Frame and Location Sampling, Technique of Sampling, and Size of Sampling.

#### **3.3.1 Target Population**

In this research, the researchers chose Malaysian fresh graduates that are aged between 20 to 30 as targeted population to eliminate any complications regarding the experience gap of fresh graduates before and during the Covid-19 pandemic (Kadir et al., 2020).

The reason for researchers to choose the target population of Malaysians of ages 20 to 30 is because tertiary education is completely up to the choice of the students. Students have the choice of enrolling into any public, private university, college, or polytechnic after completing secondary education. Some students can even take some time off studying by taking up a part time job before enrolling into tertiary education programs. Some students who

have already completed bachelor's degrees can also directly enrol into any master's program or even doctorate programs. Therefore, the range ages of 10 years for fresh graduates are reasonable in order to determining the factors of unemployment among fresh graduates before and during Covid-19 pandemic.

Moreover, the reason why the researchers chose Malaysian fresh graduates between the ages of 20 to 30 is also because of the uprising issues of rising unemployment rate among fresh graduates all around the world, Malaysia being one of the developing nations in the world, so it is a rising and concerning issue within the nation. As a developing nation like Malaysia, the labour force and task force are essential to make sure that the nation keeps on moving forward, maximizing productivity, and improving all aspects in all sectors to enter into the list of developed nation as underutilization of the country's resources can cause disturbances in the economy. Therefore, cultivation of new young talents within the country is important than ever in any developing nation especially Malaysia to grow into a well-structured nation in the future.

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

In this research, the researchers sampled from the population of Malaysia as the researchers can observe an increase in unemployment rate among Malaysian fresh graduates especially after witnessing a shock in the economy which is caused by the Covid-19 pandemic. The Covid-19 pandemic however was not the greatest determining factor that contributed to the high unemployment rate among fresh graduates as before the pandemic, several factors such as an already declining economy, political instability, and economic instability has caused instability and uncertainty within the country of Malaysia. Thus, the researchers have observed the increase in unemployment among fresh graduates. As a result, the researchers aim to find out the main reason and determining factors of the increasing unemployment

rate of Malaysian fresh graduates by introducing several variables into the research model.

Besides that, the researchers obtain data samples from the population of Malaysia by sampling from Malaysian fresh graduates between the ages of 20 to 30 to help fill out an online survey questionnaire regarding the determining factors of unemployment among Malaysian fresh graduates before and during the Covid-19 pandemic. The reason why the researchers chose Malaysian fresh graduates between the ages of 20 to 30 is also because of the uprising issues of rising unemployment rate among fresh graduates all around the world, Malaysia being one of the developing nations in the world, it is a rising and concerning issue within the nation.

As a developing nation like Malaysia, the labour force and task force are essential to make sure that the nation keeps on moving forward, maximizing productivity, and improving all aspects in all sectors to create a developed nation. If the labour demand does not keep up and accommodate the increase in labour supply, unemployment issues are bound to occur. Unemployment issues within the nation like Malaysia can cause drops in GDP levels as a result of the underutilization of the country's resources. Therefore, cultivation of new young talents within the country is important than ever in any developing nation especially Malaysia to grow into a well-structured nation in the future.

### **3.3.3 Technique of Sampling**

In this research, the researchers aim to find out the unemployment rate of fresh graduates in Malaysian before and during the Covid-19 pandemic and make comparisons between the two periods. The researchers intend to find participants within an age range of 20 to 30 as this is the most common age where most Malaysian students will graduate. For that reason, the researchers intend to use the random cluster sampling method to collect samples as Malaysian fresh graduates that are aged between 20 to 30 are the ideal

demographic for this research. The random cluster sampling method selects random clusters of people from a population that share similar features, in the case of this research, Malaysian fresh graduates that are between 20 to 30 years old has an equal chance of being chosen to be included in the sample. Hence, the researchers had segregated the entire Malaysia population into people who are Malaysian fresh graduates between ages 20 to 30 and Malaysians who are not fresh graduates between the ages of 20 to 30. The researchers took samples from the cluster of population of Malaysian fresh graduates between the ages of 20 to 30.

The random cluster sampling is a great method in obtaining the ideal sample data as this method combined with the usage of internet and online surveys, the researchers able to obtain data in a fast, quick, less time consuming and fair way of sampling. By using this method of sampling, the research data cannot be skewed, this is because everyone that falls within the targeted sample which is Malaysian fresh graduates between the ages of 20 to 30 can be included in the data sampling and be included in this research regardless. The researchers obtained the required data by including demographic questions in the questionnaire such as employment status during the pandemic and the employment status before the pandemic, age, race, graduation year, duration of unemployment etc.

### **3.3.4 Size of Sampling**

Based on this research, the researchers aim to achieve a targeted sample size of at least 100 to 400 participants to fill out this survey for collection of research data for maximum accuracy and diversity in the data collection process. An adequate sample along with efficient data collection methods used can produce results that are more reliable, valid and give a greater picture of the research title (Bartlett et al., 2001).

The bigger the sample size, the more capable the data will be able to determine and truly explain the determining factors of unemployment among

Malaysian fresh graduates before and during the Covid-19 pandemic to make a comparison. Smaller sample sizes might be influenced by clusters of respondents with the same ideology, this can greatly affect the results of the study (Mumtaz Ali Memon et al., 2020). A bigger sample size can mean that a more general audience is achieved, respondents with different opinions and ideologies can be combined and diversify the pool of data collected for greater reliability and validity on the results of the research (Stenfors et al., 2020). The larger sample size for this research will increase the validity of each independent variables chosen in this study, as this research intends to test the significance of each variable chosen for both models.

For this study, the researchers generated two models to determine the factors of unemployment among Malaysian fresh graduates before and during the Covid-19 pandemic. As such, since the general consensus for each model is 100 to 400 respondents, the researchers will be collecting a total of at least 200 to 800 respondents in order to generate two models which can explain and compare the factors of unemployment among Malaysian fresh graduates before and during the Covid-19 pandemic.

### **3.4 Research Instrument**

In order for the research to be successful, researchers used different research instruments to collect, measure, analyse the data obtain from the questionnaire for the studies. The topic of the studies is to examine the determining factor of unemployment for fresh graduates before and during Covid-19 pandemic in Malaysia. For data collection, researchers chose Google form to design the questionnaire and distribute it online to obtain the response from fresh graduates and the employee that graduate for few years. The reason of choosing Google Form as method to collect data is because it allows researchers to reach large number of respondents with minimum costs. There are several ways for researchers to reach the targeted population, which the researchers spread the questionnaire in the job seeking Facebook page or sending link and showing QR code for the questionnaire

to fresh graduates that newly joined the working force once the researchers get to meet them. Other than the characteristic of cost saving and feasibility to approach large number of respondents, healthy concern is also one of the factors that concerned by the researchers even though government had eased the restriction policy of Covid-19 pandemic. Thus, researchers utilise social media and internet tools to assist in reaching the targeted respondents.

### **3.4.1 Questionnaire Design**

The questionnaire includes a list of questions designed to gather data from targeted respondents to generate a statistical information from a targeted population to achieve research objectives. The benefit of choosing questionnaire is that the researchers are able to gather a standard and comparable data from the responses since the questions for all participants are stationary. This helped the researchers in increasing the data gathering speed and the fairness of the recorded data. Therefore, researchers had designed a set of questions in the most proper form with a well orderliness of questions. For this questionnaire researchers included multiple choices questions, short answer questions, and linear scale questions. Furthermore, researchers had also separated the questionnaire into several segment to provide a better question experience for respondents.

The sections as shown as below:

- Section one : Notice of privacy and disclosure
- Section two : Target Sampling Audience
- Section three : Demographic
- Section four : Employability Skills (ES)
- Section five : Job Mismatch (JM)
- Section six : Graduate Attributes (GA)
- Section seven : Economic Instability (EI)
- Section eight : Overall perception towards the significance of each independent variable after the Covid-19 pandemic
- Section nine : Ending part for questionnaire



For section one, researchers notice the respondents about the privacy and disclosure statement to ensure the benefit and security of their information. For section two, the target sampling audience were being asked for filtering the targeted sampling audience. For section three, researchers are collecting the age, gender, state, duration of unemployment before and during Covid-19 pandemic, and educational level to get the demographic data from the respondents. Also, in section three all the question are using the multiple-choice questions and short answer questions.

For the section four until seven, it included the questions on each variable which are employability skills, job mismatch, graduate attributes, and economic instability. Researchers also used linear scales question which allow the respondents to provide their responses in numeric form with the scale of 1 to 5 for each question in section four until seven. Researchers had categorised the scale of strongly disagree as 1, and disagree as 2, neutral as 3, agree with 4, and strongly agree with 5. For section eight, researchers will collect overall perception towards the significance of each independent variable during the Covid-19 pandemic to get the impact changes of different independent variable towards the unemployment duration before and during Covid-19. For section nine, the ending part for the questionnaire, a thank you design is designed to gratitude the respondents' precious time and information provided for the researchers' study.

### **3.4.2 Variables Measurements**

Based on the research, researchers are trying to find the relationship between the dependent variable which is unemployment among fresh graduate in Malaysia before and during Covid-19 pandemic and the independent variable which are the employability skill, job mismatch, graduates' attributes, economics instability.

Table 3. 1

*The measurements of dependent variables and each independent variable*

Variables	Definition/Measurement
<p>Unemployment duration among fresh graduates in Malaysia before and during Covid-19 Pandemic (Dependent Variable)</p>	<ul style="list-style-type: none"> <li>● The unemployment among fresh graduate represented the employment status of the fresh graduate before and during Covid-19 pandemic.</li> <li>● All the data is obtained for the result of regression model which is denoted in numerical value. (For example: 1, 2, 3...).</li> </ul>
<p>Employability Skill</p>	<ul style="list-style-type: none"> <li>● The transferable skills which is applicable in every job include technical and soft skills (Indeed Editorial Team, 2022).</li> <li>● The data is obtained from the questionnaire which is denoted by the numerical scale (1=strongly disagree, ... , 5=strongly agree) for the certain skills needed (Jayasingam, Fujiwara, &amp; Thurasamy, 2016).</li> </ul>
<p>Job mismatch</p>	<ul style="list-style-type: none"> <li>● Job mismatch is representing the different of demand of the employer and the skills that is master by the employee (International Labour Organization, 2020).</li> <li>● The data is obtained from the questionnaire which is denoted by the numerical scale (1=strongly disagree, ... , 5=strongly agree) to determine the level of education skills compared to current job requirement skills (Park, 2020).</li> </ul>

(Continue)

Table 3.1

*(Continued)*

Graduate Attributes	<ul style="list-style-type: none"> <li>● Graduate attributes are the qualities, understandings that a student should gain during their education and personal experiences (University of Stirling, 2022).</li> <li>● The data is obtained from the questionnaire which is denoted by the numerical scale (1=strongly disagree, ... , 5=strongly agree).</li> </ul>
Economics Instability	<ul style="list-style-type: none"> <li>● The different factor that influences the economy conditions that might cause inflation and so on which result in high unemployment problem.</li> <li>● The data is obtained from the questionnaire which is denoted by the numerical scale (1=strongly disagree, ... , 5=strongly agree).</li> </ul>

---

*Source: Researchers Analysis*

### **3.4.3 Questionnaire Reliability**

A questionnaire with good quality should contain the questions in analytical form to improve the reliability of the question. Reliability means the instrument is providing same results even if the researchers repeat the questions constantly. For reliability test, researchers chose Test-retest Reliability to test the research questionnaire's reliability. This allows researchers to measure the reliability by running the same test two times in a different period of time. If the result from the two tests with the same group is same, it means that the data is reliable.

There are two assumptions that need to be fulfilled for the test-retest method. The first assumption is that the characteristic of the targeted group must not change during the re-testing effect period. The questionnaire designed by researchers has included some criteria in filtering the respondents. If the respondents are above 30 years old, then they will directly skip to ending section and the respondent is not allowed to answer any questions in the questionnaire. Then, the second assumption mentioned that the time interval should be in reasonable timing because the respondents need to memorize and not being affect by other external factors in between of taking the two tests. In this case, the researchers had set a targeted period of three months to ensure that the respondents can better remember the questionnaire and no change of opinion due to external factors.

Pilot test was being executed to test reliability of the questionnaire and the reliability was tested with the Cronbach's Alpha value. According to Vale et al. (1997), the Cronbach's Alpha value of 0.7 to 0.8 is good and reliable. Some researchers will target a high coefficient of Cronbach's Alpha value, but it is impractical due to low achievable possibility in the actual study. Also, a Cronbach's Alpha of above 0.6 can be accepted and is reliable (Nunnally and Bernstein, 1994). For pilot test results, please refer to section 3.4.6 for Cronbach's Alpha of independent variables.

### **3.4.4 Questionnaire Validity**

There are four types of validity to ensure the questionnaire's validity which are face validity, construct validity, criterion-related validity, and content validity. Conversely, for this study, the researchers only carried out construct validity and content validity. The construct validity is to identify the measurement tool that can represent the content that researchers' interest and the content validity is to test all aspects to guarantee there is no missing parts (Middleton, 2019).

Firstly, in the questionnaire, there are questions about skills which cannot be measured directly. Nevertheless, the researchers measured it by the specific

knowledge and with the aid of indicator to check the validity. In order to certify the content and construct validity, researchers conducted pilot test to a group of respondents to examine whether they can understand the questionnaire clearly and find any misrepresentation in the questions that prepared by the researchers in the questionnaire. From the test, researchers able to learn the effectiveness and the fairness of the questionnaire on whether the respondents can fully understand the questions.

After performing the pilot test, the Job Mismatch independent variable was having a low Cronbach's Alpha value of 0.278. This low Cronbach's Alpha value is not accepted, so the researchers have to excluded one question which was "Jobs offered to me do not match my qualifications" to make it 0.715. Also, during the pilot test, the questionnaire that included comments from respondent was send out by the researcher, and respondents had no comment or feedback after answered the questionnaire. Therefore, researchers continue proceed to conduct data collection with the questionnaire.

### **3.4.5 Ethical Consideration**

Research ethics is about the integrity, human rights and dignity of a person, the principal is to protect the volunteers' participation is safe and being respected during the research process (Bhandari, 2021). In addition, the participants should not be harm during any research method. Besides that, the researchers must respect the person dignity, the right of participant to understand the objective, process of the research and the any of the research funding that might be conflict with their benefit. Therefore, the participants should not be affected by the researchers that might affect the result and most importantly is the security of the data from the participants should be kept highly confidential.

Additionally, researchers do not collect sensitive personal information such as NRIC number, personal contact number, or other personal information to safeguard the privacy, security of data, and benefit of all respondents. This make sure all the participants are doing the survey in an anonymous status. In

addition, a notice is included in the questionnaire to notify respondents in which their data and personal information will not be used in any other fields except in this research process. After the whole research is done the data will be deleted to avoid the risk of data being spread.

### 3.4.6 Pilot Test

A pilot test is done to test the feasibility of the research before spreading the questionnaire to the targeted populations. The purpose of performing pilot test is to measure the validity of each question of the questionnaire. Also, pilot test can analyse the structure of the questions in which the arrangement of the questions are participants friendly, the time that the respondents needed for the survey is appropriate and the questions' ambiguity that might cause misunderstanding in participants and resulted in wrong answers.

The pilot test should be conducted with a test survey to a sample size of targeted population beside of doing the survey the respondents because it provides feedback about the survey (Cleave, 2021). Thus, pilot test is significant for researcher to run as it guarantees the participants to have the better experiences in doing the questionnaire. According to Hertzog (2008), the sample size range between 20 to 25 is suitable for the intervention between single group for pilot test to be carried out. According to that research, the author only research about the single group of unemployed fresh graduate.

Table 3. 2

*Summary of Pilot Test Results*

Independent Variables	Items	Cronbach's Alpha
Employability skills	5	0.773
Job Mismatch	4	0.715
Graduates' Attributes	5	0.790
Economic Instability	5	0.807

*Source: Researchers SPSS Pilot Test Result*

Based on the results of the pilot test which referring to the Cronbach's Alpha, the researchers decided to keep all questions for three independent variables which are employability skills, graduate attributes, and economic instability as the Cronbach's Alpha statistic is more than 0.7. Nonetheless, the researchers have decided to remove one of the questions in the job mismatch independent variable in order to maintain a Cronbach's Alpha value of more than 0.7. This is to ensure the consistency within the questionnaire in order to give a fair and reasonable explanation during the final analysis of this research about the independent variables. Hence, researchers can foresee that the 0.7 is the benchmark that indicates a good Cronbach's Alpha value.

### **3.5 Data Analysis Techniques**

In this research, the researchers used IBM SPSS software to carry out data analysis for this study to find out the determining factors of unemployment among Malaysian fresh graduates before and during the Covid-19 pandemic. The researchers will be running a multiple regression analysis to generate two different models which is a model for the unemployment model for the period of before the Covid-19 pandemic and another unemployment model for the period of during the Covid-19 pandemic. The research will be comparing the two models to determine the significance and changes in each independent variable proposed, the researchers also examine the differences between both models and the reasoning behind the changes. After the data collection process, the researchers conducted data regression analysis in SPSS by programming the variables and to determine the significance of each variable in the model.

In this study, the researchers ran an array of data analysis techniques to get a general idea of the population based on the targeted sample taken.

Table 3. 3

*Data Analysis Techniques*

Technique	Function(s)
Descriptive Statistics <ul style="list-style-type: none"> <li>• Mean</li> <li>• Percent</li> <li>• Frequency</li> </ul>	<ul style="list-style-type: none"> <li>• To examine the general characteristic of the population based on the sample data.</li> <li>• To examine the frequency of the data from the questionnaire and to make simple conclusions based on said data</li> </ul>
Reliability Analysis (Cronbach's Alpha)	<ul style="list-style-type: none"> <li>• To ensure the reliability of the research instruments</li> <li>• To identify the items that are not contributing to the reliability of the instrument.</li> <li>• To determine the overall reliability of the instruments</li> </ul>
Diagnostic Checking (Multicollinearity, Autocorrelation, Heteroscedasticity) Testing (Durbin Watson, Variable Inflation Factor (VIF), Heteroskedasticity)	<ul style="list-style-type: none"> <li>• To diagnose potential issues within the regression model.</li> <li>• To check for correlation between variables in the model</li> <li>• Prevent biased coefficient estimates, unreliable standard errors, and incorrect statistical inferences.</li> </ul>

(Continue)



Table 3.3

(Continued)

Parametric & Non-Parametric Testing	<ul style="list-style-type: none"> <li>• Parametric tests can be conducted if the data is normally distributed (eg. T-test, Z-test, Chi-Square, Pearson Correlation, Linear Regression, and etc.)</li> <li>• Non-parametric tests are conducted if the data is not normally distributed (Wilcoxon Rank-sum test, Mann Whitney Test, Kruskal Wallis Test, Friedman test, and etc.)</li> </ul>
Multiple Regression • ANOVA • R Squared • Model Coefficient Significance	<ul style="list-style-type: none"> <li>• To determine the relative importance of an independent variable in a model.</li> <li>• To control the effect of confounding variables</li> <li>• To make predictions</li> <li>• To test hypotheses</li> </ul>

*Source: Researchers' Analysis*

In this study, the researchers have analysed the data of the sample using different analysis in order to determine the characteristics of the general population based on the sample taken from the data collection. The researchers have carried out descriptive statistic testing by examining the mean, count, percent, and frequency based on the demographic, dependent variable, and independent variables. After that, the researchers have carried out reliability analysis using the Cronbach's Alpha value to determine the reliability of the instrument used in this research. This is to determine the reliability of individual instruments and the overall reliability of the model.

The researchers have also carried out multiple tests such as multicollinearity, autocorrelation, and heteroscedasticity testing in order to determine the suitability of the independent variables used to prevent bias coefficient estimates, error in

testing, unreliable standard errors, and incorrect statistical inferences. This testing is carried out to ensure accuracy within the regression and to check for potential issues within the regression model, and to check for correlation between the variables.

Other than that, the researchers have also run normality test to examine whether the data is normally distributed. The researchers have to carry out Kolmogorov-Smirnov testing in order to determine the normality of the data set in both models. If data sets are not normally distributed, the researcher will carry out non-parametric tests to determine more accurate readings in the data analysis. If the data is normally distributed, the researchers can carry out parametric testing. In this study, if the data is normally distributed, the researchers intend to carry out the linear regression analysis, t-testing, z-testing, Pearson Correlation and more to carry out analysis. If the data is not normally distributed, the researchers will use the Mann-Whitney test in order to determine if there are any significant differences between the two independent groups based on the ranked data.

Lastly, the researchers are carrying out the main analysis which is the multiple regression analysis. This analysis will cover the model significance by determining the significance of the ANOVA significance testing, the R Squared will also be used to determine the changes in percentage of independent variables that can explain the changes in dependent variables. The researchers will also be conducting the model coefficient significance to determine the significance of each variable in both model sets.

#### Multiple Regression Assumptions

- Relationship between the independent and dependent variables should be linear.
- Errors between observed and predicted values should be normally distributed.
- No multicollinearity in the data
- Homoscedasticity

It is worth noting that if assumptions of multiple regressions are violated, the data regression can be unreliable and biased. However, the researchers found that the

non-normally distribution assumption of multiple regression assumption can be excluded in this case because it is a common misconception that data variables should be normally distributed. It is as long as the estimators is consistent and the accuracy of the estimates can explain the estimator, the results of the multiple regression conducted can still be reliable and trustworthy (Carlos et al., 2013).

### 3.5.1 Research Model

The following section lists the research hypotheses in this research based on the survey to empirically test the significance of each variable in the model built,

#### Unemployment of Malaysian Fresh Graduates **Before** the Covid-19 pandemic

##### **Before Covid-19 pandemic, t:**

$$\begin{aligned} \text{Fresh Graduates Unemployment Duration}_t = & \beta_0 - \\ & \beta_1 \text{Employability Skills}_t + \beta_2 \text{Job Mismatch}_t - \\ & \beta_3 \text{Graduate Attributes}_t + \beta_4 \text{Economic Instabilit} + \varepsilon_t \dots\dots\dots 1 \end{aligned}$$

#### Unemployment of Malaysian Fresh Graduates **During** the Covid-19 pandemic

##### **During Covid-19 pandemic, t+1:**

$$\begin{aligned} \text{Fresh Graduates Unemployment Duration}_{t+1} = & \beta_0 - \\ & \beta_1 \text{Employability Skills}_{t+1} + \beta_2 \text{Job Mismatch}_{t+1} - \\ & \beta_3 \text{Graduate Attributes}_{t+1} + \beta_4 \text{Economic Instability}_{t+1} + \\ & \varepsilon_{t+1} \dots\dots\dots 2 \end{aligned}$$

### **3.6 Summary**

In this chapter, the researcher has detailed the methods of how the research will be carried out. This chapter includes the research design, data collection method, design of sampling, target population, frame and location sampling, technique of sampling, size of sampling, research instruments, questionnaire design, variable measurements, questionnaire reliability, ethical consideration, pilot testing, data analysis techniques and research hypotheses. Other analysis such as Reliability Analysis, Normality analysis, Multicollinearity, Autocorrelation and Heteroscedasticity testing is conducted for further in-depth analysis and make justifications regarding the research hypotheses.

Lastly, the researchers have detailed the type of analysis that will be used for this study. Multiple regression is used to determine and compare the models of unemployment of fresh graduates before and during the Covid-19 pandemic.

## **Chapter 4: DATA ANALYSIS**

### **4.0 Chapter Overview**

This chapter will introduce some related quantitative data analysis, including descriptive analysis, reliability analysis, normality analysis and multiple regression analysis. Before performing these analyses, the collected raw data underwent a data cleaning process in SPSS software to ensure accuracy and consistency.

The questionnaire used in this study was designed to be mandatory, requiring respondents to answer all questions in order to submit a response; no blank responses were found. However, very few respondents provided only partial answers to questions OP5 and OP6 (ranking the importance of each IV before and during the Covid-19 pandemic); they only answered the most or least important factors, without providing an opinion on the ranking of second and third important factors that affecting unemployment. There is total 738 responses collected in raw data, with two responses was excluded in data analysis because they are out of the target respondents in this study, where their age is exceeded of the population target of 20 to 30 years old. Thus, only 736 error-free data were retained for further analyses, with a total 348 sample sizes in graduates who experience unemployment before the Covid-19 pandemic (DV1) and 388 sample sizes in graduates who experience unemployment during the Covid-19 pandemic (DV2).

In order to analyse the determinants of unemployment among fresh graduates before and during Covid-19 pandemic, this questionnaire was designed to collected two sets of data based on respondents' responses on whether the respondent have graduated before or during the Covid-19 pandemic. The respondents then filled out the number of months of unemployment experienced before and during the Covid-19 pandemic and then continue to the other sections relating to this study's independent variables. Thus, two sets of data are collected, mainly respondents who have graduated before the Covid-19 pandemic and during the Covid-19 pandemic.

Respondents that graduate before Covid-19 pandemic are paired together with the number of months of unemployment experienced before the Covid-19 pandemic, respondents that graduate during the Covid-19 pandemic are paired with the number of months of unemployment experienced during the Covid-19 pandemic. The average of each of the independent variable questions are then computed as a variable in SPSS and are regressed separately with the number of months of unemployment experienced by respondents before and during the Covid-19 pandemic to compare the differences between both models and periods.

## **4.1 Descriptive Analysis**

In this section, a descriptive analysis was performed on the sample data to investigate the correlation between the independent variables, included Employability Skill (ES), Job Mismatch (JM), Graduate Attribute (GA), and Economic Instability (EI), and the dependent variables, durations of unemployment before Covid-19 Pandemic (DV1) and durations of unemployment during Covid-19 Pandemic (DV2). In addition, a demographic analysis was performed to better understand the profiles of the respondents, with a total of 736 participants evenly distributed across gender and age groups. Descriptive analysis aims to provide a detailed overview of the dependent variables (DV1 and DV2) and independent variables (ES, JM, GA, and EI), combining several measures of central tendency such as mean and mode and measures of dispersion such as range and standard deviation. In addition, a frequency analysis was performed to provide a comprehensive summary of the questionnaire responses for the dependent variables (DV1 and DV2) and independent variables (ES, JM, GA, and EI) in percentage (%).

### **4.1.1 Respondents' Profile**

The table 4.1 shows the summary of the respondent's profile. For DV1 it indicates the fresh graduates' unemployment in Malaysia before Covid-19 pandemic while DV2 indicates the fresh graduates' unemployment in

DETERMINANTS OF UNEMPLOYMENT AMONG FRESH GRADUATES IN MALAYSIA  
BEFORE AND DURING COVID-19 PANDEMIC

Malaysia during Covid-19 pandemic, with a total 348 respondents for DV1  
and 388 for DV2.

Table 4.1

*Summary of Respondent's Profile*

Variable	Classification	DV 1 (N=348)		DV 2 (N=388)	
		Frequency	Percent (%)	Frequency	Percent (%)
<b>Gender</b>	Male	183	53	196	51
	Female	165	47	192	49
<b>Age Group (Years Old)</b>	21	-	-	6	1.5
	22	-	-	31	7.9
	23	1	0.2	119	30.6
	24	5	1.4	142	36.5
	25	22	6.3	66	17
	26	59	16.9	14	3.6
	27	87	25.0	5	1.2
	28	75	21.5	2	0.5
	29	62	17.8	1	0.2
	30	37	10.6	2	0.5
<b>Race</b>	Chinese	218	63	301	77.7
	Malay	67	19	47	12.1
	Indian	63	18	39	10
	Others	-	-	1	0.2

Continue

DETERMINANTS OF UNEMPLOYMENT AMONG FRESH GRADUATES IN MALAYSIA  
BEFORE AND DURING COVID-19 PANDEMIC

Table 4.1

(Continued)

	Art & Social Science	151	43	169	44
	Science	56	16	73	19
	ICT	48	14	54	14
<b>Field of Study</b>	Education	35	10	24	6
	Technical	31	9	27	7
	Others	27	8	41	10
	Bachelor's Degree	290	83	339	87.6
<b>Education Qualification</b>	Diploma/Pre- U/STPM	33	9	38	9.7
	Master's Degree	25	7	10	2.5
	Doctorate/PHD	-	-	1	0.2
	Polytechnics	7	2	12	3
	Public University or college	224	64	83	21
<b>Type of Institution</b>	Private University or College	117	34	293	76
<b>Unemployment due to Covid-19 Pandemic</b>	No	140	40	104	27
	Yes	208	60	284	73

Source: Researchers' SPSS Result

Based on the table, the researchers observed a slight decrease in the number of male respondents for DV2 which is from 53% to 51% when compared to DV1. The number of female respondents has seen a slight increase for DV2 which is 47% to 49% when compared to DV1. Many of the respondents in



DV1 are aged 27 years old (25%) and the majority of respondents in DV1 are aged 24 years old (36.5%). Other than that, both DV1 and DV2 have the most respondents which are of Chinese race and the other race in DV2 is Sikh which is the only Sikh in the research.

The researchers have also observed that majority of the respondents in both DV1 and DV2 graduated in the field of Arts and Social Sciences and the others field of studies that fill by respondents from DV1 and DV2 are Accounting, Business, Finance, Economics, Marketing, Management and Nursing. Majority of the respondents in DV1 and DV2 have obtained a bachelor's degree with majority of the respondents in DV1 graduating from a Public University or College and majority of respondents in DV2 graduating from a Private University or College. The researchers have also observed an increase in the percentage of respondents who have experienced unemployment during the Covid-19 pandemic, the percentage of respondents who have experienced unemployment during the Covid-19 pandemic rose from 60% to 73%, a 13% increase when compared to DV1.

#### **4.1.2 Descriptive Analysis for Model 1 and Model 2**

Descriptive analysis aims to provide a comprehensive overview of a dependent variables (DV1 & DV2) and independent variables (ES, JM, GA, EI), combining various measures of central tendency such as mean and mode as well as measures of dispersion such as range and standard deviation.

##### **4.1.2.1 Frequency Analysis for DV1 and DV2**

Table 4.2 shows the frequency and percentage data for the durations of graduate's unemployment in both DV1 and DV2.

Table 4. 2

*Frequency and percentage data for the durations of unemployment (months) for both DV1 and DV2*

<b>Duration of Unemployment (Months)</b>	<b>DV1</b>		<b>DV2</b>	
	Frequency	Percentage	Frequency	Percentage
<b>0</b>	219	62.9	104	26.8
<b>1</b>	21	6.0	44	11.3
<b>2</b>	55	15.8	67	17.3
<b>3</b>	29	8.3	77	19.8
<b>4</b>	12	3.4	58	14.9
<b>5</b>	4	1.1	21	5.4
<b>6</b>	4	1.1	13	3.4
<b>7</b>	1	0.3	-	-
<b>9</b>	1	0.3	1	0.3
<b>12</b>	2	0.6	1	0.3
<b>15</b>	-	-	1	0.3
<b>18</b>	-	-	1	0.3
<b>Total</b>	348	100	388	100

*Source: Researchers' SPSS Result*

For DV1, the table 4.2 shows that the majority (62.9%) of individuals had no unemployment duration (0 months) before the pandemic, followed by 15.8% with a duration of 2 months and 8.3% with a duration of 3 months. On the other hand, the table shows a different pattern for DV2, with the proportion of individuals unemployed for 0 months decreasing from 62.9% to 26.8%, while the proportion of individuals unemployed for longer periods increased significantly. The most common duration of unemployment during a pandemic was 3 months with a frequency of 75.3%.

#### 4.1.2.2 Descriptive Analysis for Dependent Variables (DV1, DV2)

Table 4.3 shows the descriptives data for DV1 and DV2, including mean, standard error of mean, mode, etc.

Table 4. 3

*Descriptive data for DV1 and DV2*

	DV1 (Months)	DV2 (Months)
<b>Mean</b>	1.01	2.26
<b>Std. Error of Mean</b>	0.091	0.107
<b>Mode</b>	0	0
<b>Std. Deviation</b>	1.701	2.104
<b>Variance</b>	2.893	4.427
<b>Range</b>	12	18

*Source: Researchers' SPSS Result*

Based on the table 4.3, the mean duration of unemployment increased from 1.01 months before the Covid-19 pandemic to 2.26 months during the Covid-19 pandemic, showing that the Covid-19 pandemic has a significant impact on the duration of unemployment for individuals, while the standard error of mean is a measure of the sample means variability, its shown 0.091 for DV1 and 0.107 to DV2, which indicates that the sample means are close to the population mean. The mode for DV1 and DV2 are 0, which suggests that there are many respondents who did not experience any unemployment in the period of either before or during Covid-19 pandemic.

Additionally, the standard deviation for DV2 (2.104) is higher than for DV1 (1.701), the variance for DV2 (4.427) is higher than for DV1 (2.893), and the range for DV2 (18) is higher than for DV1 (12), all these three sets data supports that there is more variability in the data for the duration of unemployment during Covid-19 pandemic, and suggests that some graduates may be more vulnerable to the Covid-19 pandemic than others in terms of employment status.

#### 4.1.2.3 Descriptive Analysis for Employability Skill (ES)

Table 4.4 shows the data of mode, mean, standard error of mean for Employability Skills (ES1, ES2, ES3, ES4, ES5) in both DV1 and DV2.

Table 4. 4

*Summary of Descriptive Analysis for ES in both DV1 and DV2*

<b>Variable</b>	<b>Mode</b>	<b>Mean</b>	<b>Standard Error of Mean</b>
<b>DV1 (Durations of unemployment before Covid-19 Pandemic)</b>			
<b>ES 1</b>	5	4.48	0.034
<b>ES 2</b>	5	4.59	0.033
<b>ES 3</b>	5	4.36	0.042
<b>ES 4</b>	5	4.62	0.033
<b>ES 5</b>	5	4.51	0.035
<b>DV 2 (Durations of unemployment during Covid-19 Pandemic)</b>			
<b>ES 1</b>	5	4.36	0.037
<b>ES 2</b>	5	4.23	0.042
<b>ES 3</b>	4	4.03	0.048
<b>ES 4</b>	5	4.24	0.046
<b>ES 5</b>	5	4.31	0.039

*Source: Researchers' SPSS Result*

Based on table 4.4, the average score on the independent variable of employability skills decreased across all questions on DV2. As shown by the pattern of ES 1 to ES 5 in DV1, most respondents consider themselves highly employable. However, the mode of ES3 in DV2 changed from strongly agree (5) to agree (4). In DV2, the mean and standard error mean of ES1, ES2, ES3, ES4, and ES5 were generally higher than in DV1, indicating that the respondent's degree of agreed with the question is lesser, but still rated between 4 (Agree) and 5 (Strongly Agree). Conversely, the standard errors of mean for ES1, ES2, ES3, ES4, and ES5 in DV2 are

generally higher than in DV1, which means that the mean score in DV1 is more accurate and reliable estimate of the population mean.

#### 4.1.2.4 Descriptive Analysis for Job Mismatch (JM)

Table 4.5 shows the data of mode, mean, standard error of mean for Job Mismatch (JM1, JM2, JM3, JM4) in both DV1 and DV2.

Table 4. 5

*Summary of Descriptive Analysis for JM in both DV1 and DV2*

<b>Variable</b>	<b>Mode</b>	<b>Mean</b>	<b>Standard Error of Mean</b>
<b>DV1 (Durations of unemployment before Covid-19 Pandemic)</b>			
<b>JM 1</b>	4	4.22	0.034
<b>JM 2</b>	4	4.34	0.037
<b>JM 3</b>	4	4.30	0.039
<b>JM 4</b>	5	4.27	0.045
<b>DV 2 (Durations of unemployment during Covid-19 Pandemic)</b>			
<b>JM 1</b>	4	4.30	0.033
<b>JM 2</b>	4	4.23	0.034
<b>JM 3</b>	5	4.30	0.041
<b>JM 4</b>	5	4.33	0.043

*Source: Researchers' SPSS Result*

Based on table 4.5, the researchers observed an overall increase in mean for questions JM1 and JM4, a decrease in mean in question JM2, and no change in mean for question JM3. Other than that, there is a changing of mode in question JM3, from 4 in DV1 to 5 in DV2, while other remain unchanged, indicating the jobs offered was required higher qualifications and outstanding skills during Covid-19 pandemic. Besides, among 4 questions, JM1, JM2, and JM4 are slightly decreases in standard error of mean, while the standard error of mean of JM3 is increase in DV2, indicates that in

overall, the mean score in DV2 is more accurate and reliable compared to DV1.

#### 4.1.2.5 Descriptive Analysis for Graduate Attribute (GA)

Table 4.6 shows the data of mode, mean, standard error of mean for Graduate Attribute (GA1, GA2, GA3, GA4, GA5) in both DV1 and DV2.

Table 4. 6

*Summary Descriptive Analysis for GA in both DV1 and DV2*

Variable	Mode	Mean	Standard Error of Mean
<b>DV1 (Durations of unemployment before Covid-19 Pandemic)</b>			
<b>GA 1</b>	1	1.78	0.053
<b>GA 2</b>	1	1.91	0.060
<b>GA 3</b>	1	1.79	0.057
<b>GA 4</b>	5	4.12	0.064
<b>GA 5</b>	5	4.16	0.061
<b>DV 2 (Durations of unemployment during Covid-19 Pandemic)</b>			
<b>GA 1</b>	1	2.05	0.058
<b>GA 2</b>	2	2.34	0.054
<b>GA 3</b>	1	2.11	0.061
<b>GA 4</b>	5	4.33	0.044
<b>GA 5</b>	5	4.36	0.044

*Source: Researchers' SPSS Result*

Based on table 4.6, the researchers have observed an overall increase in the mean for all the questions in DV2 compared to DV1. This indicates that Covid-19 can be a causal factor in causing the increase in the overall mean of the questions regarding to graduate attitudes, which indicates that the graduate attribute is more tend to employment during the Covid-19 pandemic. Besides, there is a changing in the mode in question GA2, from

1 in DV1 to 2 in DV2, while others remain unchanged, which indicate that during Covid-19 pandemic, the degree of acceptance for respondents for any position offer for employment was increased. Additionally, the standard error of mean for GA1 and GA3 are increased, while there is a decrease of standard error of mean in GA2, GA4, and GA5, showing that in DV2, the mean score of questions GA is more accurate and less volatility compared to DV1.

#### 4.1.2.6 Descriptive Analysis for Economic Instability (EI)

Table 4.7 shows the data of mode, mean, standard error of mean for Economic Instability (EI 1, EI 2, EI 3, EI 4, EI 5) in both DV1 and DV2.

Table 4. 7

*Summary of Descriptive Analysis for EI in both DV1 and DV2*

Variable	Mode	Mean	Standard Error of Mean
<b>DV1 (Durations of unemployment before Covid-19 Pandemic)</b>			
<b>EI 1</b>	5	4.30	0.048
<b>EI 2</b>	5	4.74	0.031
<b>EI 3</b>	5	4.69	0.033
<b>EI 4</b>	5	4.64	0.036
<b>EI 5</b>	5	4.60	0.034
<b>DV 2 (Durations of unemployment during Covid-19 Pandemic)</b>			
<b>EI 1</b>	4	3.90	0.056
<b>EI 2</b>	5	4.60	0.037
<b>EI 3</b>	5	4.34	0.046
<b>EI 4</b>	5	4.31	0.047
<b>EI 5</b>	5	4.19	0.047

*Source: Researchers' SPSS Result*

Based on table 4.7, the researchers have observed an overall decrease in the means in DV2 for all questions compared to DV1, this indicates that from respondents' perspectives, the impact of factors of economic instability (inflation, politics, exchange rate) on graduates' unemployment in DV2 is relatively higher than DV1. Additionally, the mode value for EI1 was changed from 5 in DV1 to 4 in DV2, while others remain unchanged, it indicates that from respondent perspectives, the available jobs in labour market in DV2 was relatively higher than in DV1. Besides, the researchers have also observed an overall increase in the standard error of mean in DV2 for all the questions, which indicates the data is higher variability and lesser accuracy in DV2 when compared to DV1.

#### 4.1.2.7 Descriptive Analysis for Overall Perception (OP)

Table 4.8 shows the data of mode, mean, standard error of mean for Overall Perception (OP 1, OP 2, OP 3, OP 4) in both DV1 and DV2.

Table 4. 8

*Summary of Descriptive Analysis for OP in both DV1 and DV2*

Variable	Mode	Mean	Standard Error of Mean
<b>DV1 (Durations of unemployment before Covid-19 Pandemic)</b>			
<b>OP 1</b>	5	4.68	0.031
<b>OP 2</b>	4	4.01	0.042
<b>OP 3</b>	4	3.80	0.061
<b>OP 4</b>	5	4.65	0.041
<b>DV 2 (Durations of unemployment during Covid-19 Pandemic)</b>			
<b>OP 1</b>	5	4.54	0.035
<b>OP 2</b>	4	3.95	0.040
<b>OP 3</b>	4	4.00	0.043
<b>OP 4</b>	5	4.33	0.049

*Source: Researchers' SPSS Result*



Based on table 4.8, the researchers rank the importance of each variable in DV1 by OP1, OP4, OP2, OP3. This translates to ES being the most important, followed by EI, followed by JM, and lastly GA being the least important. The ranking of importance of each variable in DV2 can be listed as OP1, OP4, OP3, OP4. This translates to ES being the most important, followed by EI, followed by GA, and JM being the least important. The researchers have also observed an overall increase in the standard error of mean in DV2 except for OP3, which indicates that the data for questions OP in DV2 is relatively higher variability and lesser accuracy compared to DV1.

#### 4.1.2.8 Frequency Analysis for Overall Perception (OP)

Table 4.9 shows the data of frequency for the proportions of the responses for each option of Overall Perception (OP 1, OP 2, OP 3, OP 4) in both DV1 and DV2.

Table 4. 9

*Summary of Frequency Analysis for OP) in both DV1 and DV2*

Frequency (%)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>DV1 (Durations of unemployment before Covid-19 Pandemic)</b>					
<b>OP 1</b>	0.6	0	2.3	24.7	72.4
<b>OP 2</b>	0.6	4.3	14.7	54.9	25.6
<b>OP 3</b>	2.9	14.4	15.5	34.2	33.0
<b>OP 4</b>	0.9	2.9	3.7	15.2	77.3
<b>DV 2 (Durations of unemployment during Covid-19 Pandemic)</b>					
<b>OP 1</b>	0.8	1.0	3.6	33.0	61.6
<b>OP 2</b>	0.3	3.9	19.8	52.6	23.5
<b>OP 3</b>	1.0	3.1	20.1	46.1	29.6
<b>OP 4</b>	1.8	4.4	11.3	24.0	58.5

*Source: Researchers' SPSS Result*

Based on table 4.9, the majority respondents had strongly agreed on question OP1 with 252 (72.4%) on DV1 and 239 (61.6%) on DV2, with a slightly decline of OP1 in DV2, it indicates that respondents mostly believe that employability skill (ES) is the most important factor that make them much more employable regardless DV1 or DV2. Besides, majority respondents had agreed on question OP2 with 191 (54.9%) on DV1 and 204 (52.6%) on DV2, where respondents believe that job mismatch (JM) is an important factor that makes them much more employable.

In addition, majority respondents had agreed on question OP3 with 119 (34.2%) on DV1 and 179 (46.1%) on DV2, which shows that graduate attribute (GA) is an important factor towards more employable. Lastly, majority respondents had strongly agreed on question OP4 with 269 (77.3%) in DV1 and 227 (58.5%) in DV2, which indicates that most of respondent believe that an economic instability (EI) is an important factor that contributes to higher rate of graduates unemployability.

#### 4.1.2.9 Frequency Analysis for Ranking of Importance between IVs for DV1

Table 4.10 shows the data of frequency Ranking of Importance between IVs (ES, JM, GA, EI) before and during Covid-19 pandemic from the opinion of respondents who graduate before Covid-19 pandemic (DV1).

Table 4. 10

*Summary of Frequency Analysis for Ranking of Importance between IVs for DV1*

DV1	Mode	ES (1)	JM (2)	GA (3)	E1 (4)	Missing Data
<b>Importance of IV Before Covid-19 Pandemic (%)</b>						
<b>Most</b>	1 (ES)	52.7	12.1	14.7	20.5	-
<b>Second</b>	4 (EI)	23.6	19.9	17.3	37.8	1.4

Continue

Table 4.10

*(Continued)*

<b>Third</b>	3 (GA)	17.0	21.3	38.0	22.2	1.4
<b>Least</b>	2 (JM)	5.2	46.7	29.4	17.6	1.2
<b>Importance of IV During Covid-19 Pandemic (%)</b>						
<b>Most</b>	1 (ES)	50.1	11.6	14.7	23.4	0.3
<b>Second</b>	2 (JM)	24.7	28.5	22.4	20.6	3.9
<b>Third</b>	3 (GA)	10.8	30.1	36.0	19.3	3.9
<b>Least</b>	4 (EI)	11.3	27.0	23.7	34.4	3.6

*Source: Researchers' SPSS Result*

Based on Table 4.10, the researchers observed that the Overall Perception for the importance of the independent variables before the Covid-19 pandemic (from the opinion of respondents who graduate before Covid-19 pandemic) are ranked from most importance to least importance with 1 (ES), 4 (EI), 3 (GA), 2 (JM). The importance of the independent variables during the Covid-19 pandemic (from the opinion of respondents who graduate during Covid-19 pandemic) can be ranked from most importance to least importance with 1 (ES), 2 (JM), 3 (GA), 4 (EI).

#### **4.1.2.10 Frequency Analysis for Ranking of Importance between IVs for DV2**

Table 4.11 shows the data of frequency Ranking of Importance between IVs (ES, JM, GA, EI) before and during Covid-19 pandemic from the opinion of respondents who graduate during Covid-19 pandemic (DV2).

Table 4. 11

*Summary of Frequency Analysis for Ranking of Importance between IVs for DV2*

<b>DV2</b>	<b>Mode</b>	<b>ES (1)</b>	<b>JM (2)</b>	<b>GA (3)</b>	<b>E1 (4)</b>	<b>Missing Data</b>
<b>Importance of IV Before Covid-19 Pandemic (%)</b>						
<b>Most</b>	4 (EI)	27.1	6.9	8.4	57.6	-
<b>Second</b>	1 (ES)	44.7	14.1	15.3	24.5	1.4
<b>Third</b>	3 (GA)	20.7	35.4	35.7	6.6	1.4
<b>Least</b>	2 (JM)	6.6	42.7	40.1	9.6	1.2
<b>Importance of IV During Covid-19 Pandemic (%)</b>						
<b>Most</b>	4 (EI)	32.4	11.8	11.1	44.5	0.3
<b>Second</b>	1 (ES)	40.9	18.5	16.7	20.1	3.9
<b>Third</b>	2 (JM)	11.6	42.7	32.1	9.8	3.9
<b>Least</b>	3 (GA)	9.0	26.0	37.8	23.7	3.6

*Source: Researchers' SPSS Result*

Based on Table 4.11, the researchers observed that the Overall Perception for the importance of the independent variables before the Covid-19 pandemic (from the opinion of respondents who graduate before Covid-19 pandemic) are ranked from most importance to least importance with 4 (EI), 1 (ES), 3 (GA), 2 (JM). The importance of the independent variables during the Covid-19 pandemic (from the opinion of respondents who graduate during Covid-19 pandemic) can be ranked from most importance to least importance with 4 (EI), 1 (ES), 2 (JM), 3 (GA).

## 4.2 Inferential Analysis

In this section, the researchers will be doing inferential analysis to examine the sample data and to draw conclusions regarding the larger population and to make future estimates and prediction. In this section, the researchers will carry out

Reliability Analysis, Multicollinearity, Autocollinearity, Heteroscedasticity testing, Normality Testing and Multiple Regression.

#### 4.2.1 Reliability Test

In this section, reliability test is carried out and the results will be interpreted in detail to let readers have a better understanding of the necessity of performing reliability test.

Table 4. 12

*Summary of Reliability Test*

<b>Variable</b>	<b>Measurement</b>	<b>Cronbach's Alpha</b>
<b>Employability Skills</b>	ES1, ES2, ES3, ES4, ES5	0.836
<b>Job Mismatch</b>	JM1, JM2, JM3, JM4	0.735
<b>Graduates' Attributes</b>	GA1, GA2, GA3, GA4, GA5	0.690
<b>Economic Instability</b>	EI1, EI2, EI3, EI4, EI5	0.802

*Source: Researchers' SPSS Result*

As mentioned above in chapter 3.4.6, a Cronbach's Alpha of above 0.7 is acceptable. Also, aforementioned in 3.4.6, Cronbach's Alpha of 0.6 can be accepted and is reliable. Hence, the results from reliability test shown that the Cronbach's Alpha value of all four independent variables (employability skills, job mismatch, graduates' attributes, economic instability) ranging from 0.690 to 0.836. This proves that all four independent variables in this study are reliable variables and can proceed for further analysis.

#### 4.2.2 Diagnostic Checking (Multicollinearity, Autocorrelation, & Heteroscedasticity Testing)

In this section, the researchers will examine the suitability of the independent variables used when regressed with the dependent variable by finding the existence of multicollinearity, autocorrelation, and heteroscedasticity within the proposed model.

Table 4. 13

*Summary of Multicollinearity Testing*

Variable	Variable Inflation Factor (VIF)	
	DV1	DV2
<b>Constant</b>	-	-
<b>ESAVG</b>	1.553	1.876
<b>JMAVG</b>	1.261	1.472
<b>GAAVG</b>	1.067	1.040
<b>EIAVG</b>	1.592	1.569

*Source: Researchers' SPSS Result*

The Variable Inflation Factor (VIF) measure the severity and degree of multicollinearity in a regression analysis. The VIF measures the relationship between the increase in the variance of the regression as a result of the existence of multicollinearity in the regression. A high VIF value means that there is a high correlation between the independent variables within the regression. Therefore, a high VIF value in a regression is unfavourable because of high collinearity and the variables is unsuitable within the structure of the model. Introduction of new or adjusting existing variables can eliminate the VIF problem within the model and selection of independent variables. In this research the results of the VIFs show moderate correlation between the independent variables in both DV1 and DV2, indicating that the independent variables introduced into the model are suitable for regression analysis (O'brien, 2007).

Table 4. 14

*Summary of Autocorrelation and Heteroscedasticity Testing*

<b>Variable</b>	<b>Durbin Watson Statistic</b>	<b>Significance</b>			
		White Test	Modified Breusch- Pagan Test	Breusch- Pagan Test	F-Test
<b>DV1</b>	1.745	<0.001	<0.001	<0.001	<0.001
<b>DV2</b>	1.101	<0.001	0.010	<0.001	0.010

*Source: Researchers' SPSS Result*

In this study, the researchers have examined and conducted analysis based on the proposed model for autocorrelation and heteroscedasticity. Both autocorrelation and heteroscedasticity can show the researchers any potential problems within the model such as high correlation between the independent variables, potential bias coefficient estimates and more. At 5% significance, the researchers have observed that both models DV1 and DV2 do not suffer from autocorrelation and heteroscedasticity because the Durbin Watson statistic for both models is greater than one and the p-values for both models show significance at 5% significance (Keskin et al., 2009). Therefore, the researchers conclude that the models are suitable for further testing and both models do not suffer from multicollinearity, autocorrelation, and heteroscedasticity (Phillips & Loretan, 1991).

#### 4.2.3 Normality Test

In this section, the researchers will determine whether the data sample collected is normally distributed. This is to allow researchers to determine the suitable tests (namely Parametric or Non-Parametric Testing) that can be carried out for more in-depth analysis.

Table 4. 15

*Test for Normality*

<b>Variables</b>	<b>Kolmogorov-Smirnov</b>	
	DV1	DV2
<b>DV1</b>	0.352 ( $< 0.001$ )	-
<b>DV2</b>	-	0.141 ( $< 0.001$ )
<b>ESAVG</b>	0.180 ( $< 0.001$ )	0.130 ( $< 0.001$ )
<b>JMAVG</b>	0.152 ( $< 0.001$ )	0.155 ( $< 0.001$ )
<b>GAAVG</b>	0.121 ( $< 0.001$ )	0.148 ( $< 0.001$ )
<b>EIAVG</b>	0.220 ( $< 0.001$ )	0.161 ( $< 0.001$ )

*Source: Researchers' SPSS Result*

Based on the table 4.15, the researchers observed that the data for both DV1 and DV2 models are both not normally distributed as the data shows lower than 0.05 significance level. As a result, the researchers will have to use non-parametric tests to carry out more in-depth analysis on the data. The researchers decided to use the Mann-Whitney test in order to find out the mean differences in the data between the independent variables for both periods and examine the changes in significance in each of the independent groups accordingly based on the ranked data.

#### **4.2.4 Multiple Regression Analysis**

In this section, the multiple regression analysis is performed and summarized into table below and the importance or significance of each



independent variable are explained as well. In addition, the reason for using standardized coefficient beta and low R Square value for both DV1 and DV2 but all independent variables are significant are also explained. After going through the above diagnostic checking, the researchers are able to confirm that all the multiple regression assumptions have been fulfilled which implies that multiple regression analysis is possible to carry out.

When looking into significance of independent variables, the p-value that is below 0.10 or 0.05 indicates that the independent variable can significantly affect the dependent variable (Guyatt et al., 1995). Also, according to Everitt and Skrondal (2010), standardized coefficients beta allows researchers to directly compare the explanatory power of each independent variable towards the dependent variable. Standardized coefficients beta is more powerful in comparing the relative importance of the different independent variables as it is expressed in standard deviation units. A positive standardized coefficients beta denoted that 1 unit increase in the independent variable, the dependent variable will increase by the standardized coefficients beta while a negative standardized coefficients beta denoted that 1 unit increase in the independent variable, the dependent variable will decrease by the standardized coefficients beta.

Table 4. 16

*Summary of Significance of Independent Variables and Coefficient Comparison for DVI*

	<b>DV1</b>
<b>R Square</b>	0.059
<b>Adjusted R Square</b>	0.048
<b>ANOVA</b>	<0.001

*Note:*

*Dependent Variable: DVI*

*Predictors: (Constant), ESAVG, JMAVG, GAAVG, EIAVG*

*Continue*

Table 4.16

(Continued)

Variable	Standardized Coefficients Beta	Significance
<b>Constant</b>	1.306	0.230
<b>ESAVG</b>	- 0.213	0.001***
<b>JMAVG</b>	0.119	0.043**
<b>GAAVG</b>	- 0.108	0.047**
<b>EIAVG</b>	0.139	0.036**

\*(0.1) \*\*(0.05) \*\*\*(0.01)

Source: Researchers' SPSS Result

Model 1

$$DV_1 = 1.306 - 0.213ESAVG + 0.119JMAVG - 0.108GAAVG + 0.139EIAVG$$

For Model 1, the R Square value is 0.059 and the adjusted R Square is 0.048. This means that Model 1 can only explained 5.9% of duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic (DV1). Also, only 4.8% of variation in DV1 can be explained by employability skills (ESAVG), job mismatch (JMAVG), graduates' attributes (GAAVG) and economic instability (EIAVG).

It seems like the R Square value for DV1 is low even though all the independents' variables are significant at 5% level. It is a normal situation because it means that those independent variables are significantly contributing to the prediction of DV1 but there may be lacking other factors that can influence DV1 more (Kutner et al., 1974). It seems like the model is significant and all the IVs are significant so the analysis can proceed.

Then, for ANOVA test, p-value of 0.001 signified that the Model 1 is appropriate which the ESAVG, JMAVG, GAAVG and EIAVG does have impact on DV1. This is further confirmed by the significancy of each independent variable. For ESAVG, its p-value of 0.001 is significant at 1%,

level and the standardised coefficient beta is -0.213. This means that 1 unit increase in the ESAVG will cause the DV1 to decrease by 0.213. According to the five elements in the researchers' questionnaire, if the fresh graduates have required skills and qualifications; can solve problems with ease in the workplace; have leadership traits; good in English and can make critical decision, then the duration of unemployment will be lower before Covid-19 pandemic. This is because higher employability skills cause the fresh graduates to be more employable. This is consistent with the studies from Suppramaniam (2019); Nazron, Lim and Nga (2017); Rahmah et al. (2011). Hence, the hypothesis H1<sup>B</sup> is accepted.

Furthermore, EIAVG has p-value of 0.036 which is significant at 5% level and the standardised coefficient beta is 0.139. This indicates that 1 unit increase in EIAVG will increase the DV1 by 0.139. According to the five elements in researchers' questionnaire, if the fresh graduate think that there are less available jobs in labour market; average wages in Malaysia is low; rising cost of living, political instability and weak currency in Malaysia make it hard to find a job, then the fresh graduates duration of unemployment will be higher before Covid-19 pandemic. This is due to when economic is more instable, the fresh graduates can hardly find a job. This aligns with the study from Hossain et al. (2018); Kroft et al. (2016); Hwang, (2017) and Vo, (2019). Thus, the hypothesis H4<sup>B</sup> is accepted.

Moreover, the JMAVG has p-value of 0.043 which is also significant at 5% level and the standardised coefficient beta of 0.119. This denotes that 1 unit increase in JMAVG will increase the DV1 by 0.119. According to the four elements in the researchers' questionnaire, if a fresh graduate has a job that is relevant, related and match his or her qualifications; related to his or her field of study and required high qualifications and outstanding skills and the job offered are highly demanding and required high skill, then the fresh graduate is likely to have higher duration of unemployment before Covid-19 pandemic. Since the fresh graduates is finding jobs that can match with their field of study, it is harder for them to be employed. This result is same

with the findings from Ramlee et al. (2008); Mohd and Mahyuddin (2017) and Leo (2019). Therefore, the hypothesis H2<sup>B</sup> is accepted.

Lastly, the GAAVG has p-value of 0.047 which is significant at 5% level and the standardised coefficient beta is 0.108. This signifies that 1 unit increase in GAAVG will cause the DV1 to decrease by 0.108. According to the five elements in the researchers' questionnaire, if the fresh graduate can accept any salary offered; any working position; any working location; can work in a team and communicate effectively, then the fresh graduate will have lower duration of unemployment before Covid-19 pandemic. The reason is because the fresh graduate that has lower requirements for the job and can work well in a group is more employable. This finding is consistent with the studies from Jayasingam et al. (2016) and Hossain et al. (2018). Hence, the hypothesis H3<sup>B</sup> is accepted.

Table 4. 17

*Summary of Significance of Independent Variables and Coefficient Comparison for DV2*

	DV2
<b>R Square</b>	0.057
<b>Adjusted R Square</b>	0.047
<b>ANOVA</b>	<0.001

*Note:*

*Dependent Variable: DV2*

*Predictors: (Constant), ESAVG, JMAVG, GAAVG, EIAVG*

Variable	Standardized Coefficients Beta	Significance
<b>Constant</b>	1.411	0.200
<b>ESAVG</b>	- 0.213	0.002***
<b>JMAVG</b>	0.128	0.034**
<b>GAAVG</b>	- 0.103	0.042**
<b>EIAVG</b>	0.201	0.001***

\*(0.1) \*\*(0.05) \*\*\*(0.01)

*Source: Researchers' SPSS Result*

Model 2

$$DV_2 = 1.411 - 0.213ESAVG + 0.128JMAVG - 0.103GAAVG \\ + 0.201EIAVG$$

For Model 2, the R Square value is 0.057 and the adjusted R Square is 0.047. This means that Model 2 can only explained 5.7% of duration of unemployment among fresh graduates in Malaysia before Covid-19 pandemic (DV1). Also, only 4.7% of variation in DV2 can be explained by employability skills (ESAVG), job mismatch (JMAVG), graduates' attributes (GAAVG) and economic instability (EIAVG).

Then, for ANOVA test, p-value of 0.001 signified that the Model 1 is appropriate which the ESAVG, JMAVG, GAAVG and EIAVG does have impact on DV2. This is further confirmed by the significance of each independent variable. For EIAVG has p-value of 0.036 which is significant at 1% level and the standardised coefficient beta is 0.201. This indicates that 1 unit increase in EIAVG will increase the DV2 by 0.201. According to the five elements in researchers' questionnaire, if the fresh graduate think that there are less available jobs in labour market; average wages in Malaysia is low; rising cost of living, political instability and weak currency in Malaysia make it hard to find a job, then the fresh graduates duration of unemployment will be higher during Covid-19 pandemic. This is due to when economic is more instable, the fresh graduates can hardly find a job. Thus, the hypothesis H4<sup>D</sup> is accepted.

For ESAVG, its p-value of 0.002 is significant at 1% level and the standardised coefficient beta is -0.213. This means that 1 unit increase in the ESAVG will cause the DV2 to decrease by 0.213. According to the five elements in the researchers' questionnaire, if the fresh graduates have required skills and qualifications; can solve problems with ease in the workplace; have leadership traits; good in English and can make critical decision, then the duration of unemployment will be lower during Covid-19

pandemic. This is because higher employability skills cause the fresh graduates to be more employable. Hence, the hypothesis H1<sup>D</sup> is accepted.

Moreover, the JMAVG has p-value of 0.034 which is also significant at 5% level and the standardised coefficient beta of 0.128. This denotes that 1 unit increase in JMAVG will increase the DV2 by 0.128. According to the four elements in the researchers' questionnaire, if a fresh graduate has a job that is relevant, related and match his or her qualifications; related to his or her field of study and required high qualifications and outstanding skills and the job offered are highly demanding and required high skill, then the fresh graduate is likely to have higher duration of unemployment before Covid-19 pandemic. Since the fresh graduates is finding jobs that can match with their field of study, it is harder for them to be employed. Therefore, the hypothesis H2<sup>D</sup> is accepted.

Lastly, the GAAVG has p-value of 0.042 which is significant at 5% level and the standardised coefficient beta is 0.103. This signifies that 1 unit increase in GAAVG will cause the DV2 to decrease by 0.103. According to the five elements in the researchers' questionnaire, if the fresh graduate can accept any salary offered; any working position; any working location; can work in a team and communicate effectively, then the fresh graduate will have lower duration of unemployment before Covid-19 pandemic. The reason is because the fresh graduate that has lower requirements for the job and can work well in a group is more employable. Hence, the hypothesis H3<sup>D</sup> is accepted.

#### **4.2.5 Non-Parametric Test (Mann-Whitney Test)**

In this study, the researchers have decided to carry out non-parametric testing for further analysis for the data as the data set is found to be not normally distributed in the above sections. Non-parametric tests are tests that do not require any assumptions about the distribution of the population

in which the data is drawn. The Mann-Whitney Test is also used to examine the changes in significance between two independent groups.

Table 4. 18

*Summary of Mann-Whitney Test*

<b>Independent Variable</b>	<b>DV</b> <b>DV1 (n =348)</b> <b>DV2 (n = 388)</b>	<b>Mean Ranks</b>	<b>Mismatch (DV1 – DV2) (Sig Level)</b>	<b>Effect Size</b> $\left(\frac{U}{n_1 \times n_2}\right)$
<b>ESAVG</b>	DV1	419.39	+96.54	0.3688
	DV2	322.85	(< 0.001)	
<b>JMAVG</b>	DV1	366.06	-4.63	0.4937
	DV2	370.69	(0.766)	
<b>GAAVG</b>	DV1	325.63	-81.32	0.3895
	DV2	406.95	(< 0.001)	
<b>EIAVG</b>	DV1	425.36	+107.86	0.3535
	DV2	317.50	(< 0.001)	

*Source: Researchers' SPSS Result*

Based on the table 4.18, the Mann Whitney Test is conducted to examine the significant mean differences between the two independent groups based on the ranked data. The researchers have observed that the group of respondents in DV2 find that the Employability Skills (ESAVG) and Economic Instability (EIAVG) independent variable contribute significantly less towards respondents' unemployment, the group of respondents in DV1 find that the ES and EI independent variable contribute significantly more towards respondents' unemployment. This is due to the mean ranks for ES decreased from 419.39 in DV1 to 322.85 in DV2 as well as the EI decreased from 425.36 in DV1 to 317.50 in DV2.

On the other hand, the researchers have also observed that the group of respondents in DV2 find that Job Mismatch (JMAVG) and Graduates' Attributes (GAAVG) independent variables contribute significantly more towards respondents' unemployment, the group of respondents in DV1 find that JM and GA independent variables contribute significantly less towards respondents' unemployment. This is shown by the increased in mean ranks for JM from 366.06 in DV1 to 370.69 in DV2 and for GA from 325.63 in DV1 to 406.95 in DV2.

Furthermore, Table 4.18 shows the difference in value of mismatch between the determinant factors of unemployment among fresh graduates before the Covid-19 pandemic (DV1) and the determinant factors of unemployment among fresh graduates during the Covid-19 pandemic (DV2) on the factors of unemployment which are Employability Skills (ES), Job Mismatch (JM), Graduate Attributes (GA), and Economic Instability (EI). The level of mismatch is categorized into three: zero value means there are no mean differences between DV1 and DV2, positive value means DV1 considers the independent variable to be more important when compared to DV2 and a negative value means DV2 is perceived the independent variable to be more important than DV1. The positive value of ESAVG and EIAVG together with the negative value of JMAVG and GAAVG can further support the mean ranks observations above.

Other than that, the asymptotic significance of each independent variable proves that there is significant mean difference between each independent variable before and during Covid-19 pandemic except the Job Mismatch (JM) independent variable. The insignificant asymptotic insignificance of the mean difference of the Job Mismatch independent variable might have been over exaggerated and inflated by the observed effect size estimates, causing the Job Mismatch significance value to be insignificant (Hedges, 2019).



The effect size is largest for JM (0.4937), followed by ES (0.3688), then GA (0.3895) and EI (0.3535). According to Sofia et al. (2018), the effect size of 0.1 is counted as small effect, 0.3 is counted as medium effect, 0.5 and above is counted as large effect. This means that all the different impact of independent variables has medium effect changes before and during Covid-19 pandemic.

Hence, the researchers can conclude that research hypotheses H5 is accepted, and research objective number four is achieved as the researchers are able to examine significant changes in the mean differences between the unemployment of fresh graduates before and during the Covid-19 pandemic.

### **4.3 Chapter Summary**

In this chapter, the researchers have detailed the descriptive statistics of the demographic of the data sample and the types of analysis used for inferential analysis. Multiple regression is the main analysis of this study to determine the unemployment of fresh graduates before and during the Covid-19 pandemic based on the independent variable Employability Skills, Job Mismatch, Graduate Attributes, and Economic Instability. Several analyses were conducted to ensure the models met certain assumptions and the correct tests and analysis were conducted in order to achieve the research objectives.

## **Chapter 5: DISCUSSION, CONCLUSION & IMPLICATIONS**

### **5.0 Chapter Overview**

Based on the data analysis performed in the previous chapter, this section will explain the main findings and summarise the results of all proposed hypotheses. In addition, implications, limitations, as well as recommendations will be presents for future research. Lastly, this section will conclude by establishing the relationship between the independent variables (Employability Skill, Job Mismatch, Graduate Attribute, and Economic Instability) and dependent variables (Duration of unemployment before and during the Covid-19 pandemic).

### **5.1 Discussion of Major Findings**

The researchers have carried out an analysis on the unemployment of fresh graduates before and during the Covid-19 pandemic based on the independent variables of employability skills, job mismatch, graduates' attributes, and economic instability. The researchers also decided to collect the sample from the population of Malaysian fresh graduates that are aged between 20 to 30. In order to complete the study on this topic, the researchers used questionnaire as a medium to collect data for analysis. A sample of 736 is collected for data analysis.

Based on the analysis above, all the research objectives have been met and all research questions are answered by the analysis results in chapter 4. The main findings from this study are that employability skills, job mismatch, graduates' attributes and economic instability are the determining factors that cause the unemployment of fresh graduates before and during Covid-19 pandemic. Subsequently, the researchers also discovered that some independent variables become more significant or have a greater impact on duration of unemployment

among fresh graduates in Malaysia during Covid-19 pandemic compared to period before Covid-19 pandemic.

From the above analysis, it shows that employability skills, job mismatch, graduates' attributes and economic instability do have a significant relationship with the duration of unemployment among fresh graduates in Malaysia before and during Covid-19 pandemic. This is shown by the p-value of each independent variables which employability skills has p-value of 0.001 for DV1 and 0.002 for DV2. Followed by job mismatch which has p-value of 0.043 for DV1 and 0.034 for DV2. Then, the graduates' attributes have p-value of 0.047 for DV1 and 0.042 for DV2. Lastly, the economic instability has p-value of 0.036 for DV1 and 0.001 for DV2. The results displayed a noticeable change in the significance of economic instability for DV1 and DV2. This implies that fresh graduates who experienced unemployment during Covid-19 pandemic, perceived that economic instability is the most significant independent variable that cause unemployment among fresh graduates in Malaysia.

Besides that, employability skills and graduates' attributes have a negative standardised coefficients beta for DV1 and DV2, so this can conclude that employability skills have negative relationship with unemployment among fresh graduates in Malaysia before and during Covid-19 pandemic. On the other hand, job mismatch and economic instability have a positive standardised coefficients beta for both DV1 and DV2. This means that job mismatch and economic instability have a positive relationship with unemployment of fresh graduates in Malaysia before and during Covid-19 pandemic.

Furthermore, the researchers also observed that the employability skills, graduates' attributes, and economic instability have significant mean differences before and during the Covid-19 pandemic while the job mismatch has not significant mean differences before and during the Covid-19 pandemic. After conducting all these analyses, the results generated from the analysis were able to meet all the research objectives and answer all the research questions in this study.

## **5.2 Implications of the Study**

This study aims to investigate the impact of independent variables including employability skills (ES), job mismatch (JM), graduate attributes (GA), and economic instability (EI) on dependent variables (graduate unemployment before and during the Covid-19 pandemic). Theoretical implications of this study contribute to the past academic literature, while the practical implications provide insight into Malaysian millennials' perceptions and expectations of industry players. Overall, this study provides valuable insights into factors influencing graduate unemployment and could be a reference for individuals, educational institutions, employers, businesses, and companies, and policy markets to develop new policies and strategies aimed at reducing graduates' unemployment in Malaysia.

### **5.2.1 Individuals**

The findings of this study emphasize the crucial role of individual's responsibility in developing their employable skills and graduate attributes to increase employment opportunities, particularly in the constantly evolving job market that has been further complicated by the Covid-19 pandemic. Individuals equipped with relevant employability skills and graduates' attributes, including communication, problem-solving, teamwork, and leadership, are better prepared for success in workplace that matching with their study field. Therefore, individuals need to continually develop their interpersonal skills in order to keep pace with the latest job market trends and demands. It comes to the Human Capital Theory where labour capital is not recognised as homogeneous, which a graduate with excellent employability skills and graduate's attributes can help them to become more employability.

Furthermore, the study highlights the importance of individuals to carefully evaluating their career plans and remaining aware of job market requirements to ensure their skills align with the job requirements. This entails

exploring different career paths, scrutinising the skills and qualifications required for jobs, and conduct a comprehensive analysis against job market and industry trends. Additionally, Social Learning Theory suggests that individuals learn by observing and imitating the behaviours of others. Thus, to enhance knowledge and professional employability skills, individuals should take a proactive approach to career development and skill acquisition by seeking out relevant training opportunities and interact with industry professionals to gain more job-relevant information and enhance their knowledge and skills.

Besides, Career Construction Theory point out an importance of individual active engagement in shaping their career path, where individuals should engage in continuously self-reflection and exploration to identify their values, skills, and interest that align with the current job market requirements. In addition, there is necessitates that individuals should take proactive measures to prepare for potential job losses due to economy instability, including explore multiple career options, pursue opportunities to upskill or reskill, and maintain adaptability to changes in the job market. Besides, individuals need to keep abreast of government policies and support measures that assist job seekers, such as unemployment benefits, training programs, and financial assistance. In the current job market, active career planning and continuous skill development are crucial for employment and career success.

### **5.2.2 Educational Institution**

Due to the rapid development of technological innovation and automation, educational institutions need to adapt to the current shift in the job market. It actually relates to the Human Capital Theory mentioned in literature review, where educational institutions should regularly review and update relevant courses to ensure that graduates have relevant and necessary skills and knowledge to meet the needs of current job market.

Besides, Social Learning Theory stated the importance of experiential learning and the acquisition of knowledge and skills through social. Thus, educational institutions can also establish collaborations with employers to gain a deeper understanding of the skills and qualities that are highly valued in the job market. This collaborative approach not only provide students with valuable real-world experience through internships and work opportunities but also enhance their employability skills.

Moreover, in align with Career Construction Theory, it is recommended that educational institutions enhance their career counselling and training programs to help students acquire the essential employability skills and graduate attributes that employers seek for, including communication, teamwork, problem solving and leadership, which are highly valued by many employers. Therefore, educational institutions are advised to partner with educational institutions to enhance the training and development programs that meet their specific needs and provide opportunities for students to develop these skills.

In summary, educational institutions is advised to prioritize aligning their training program with the dynamic demands of the job market. To achieve this, educational institutions can take proactive steps such as regularly updating their curricula to align with current market needs, forming partnerships and collaborating with employers to design customized training and development initiatives, and offering and enhancing career counselling and training programs. By adopting these measures, educational institutions can enhance their graduates' readiness to excel in the constantly changing job market.

### **5.2.3 Employers/ Businesses/ Companies**

Employers/ businesses/ companies are advised to ensure that the job requirements are clearly defined and match the skills and attributes of the ideal candidate when recruiting graduates, which involves identifying the specific competencies, technical skills, and soft skills needed for each role and effectively communicating them in job postings and during the interview process. By doing so, employers can streamline the job search process for applicants and reduce the time and effort spent searching for relevant job opportunities and increase the employability of qualified individuals.

Additionally, to promote diversity and inclusion in hiring, employers are advised to strive attract and hire candidates from diverse backgrounds while avoiding any bias in the hiring process, which ensuring job postings are written in an inclusive manner, candidates are evaluated against objective criteria, and all applicants are given with a fair opportunity.

In addition to hiring candidates who already possess the necessary employability skills and graduate attributes, with Human Capital Theory, employers also advised to invest in training and development programs to help new hires acquire the skills they need to succeed on their job, involving on-the-job training, mentoring, mentoring or formal training programmes. Besides, Social Exchange Theory stated that the relationship between individuals and organisations are based on mutual exchange of resource, including effort, time, skills, and costs. Thus, employer might be motivated to invest in employee training and development progress to enhance the employability skills of new hires, in order to exchange with higher quality of staff productivity.

### **5.2.4 Policymakers**

Based on the findings, it is suggested that policy makers must prioritize in investing into education and training programs that meet the requirements of the job market. Following to Human Capital Theory, which suggests that education and training programs are significance in exchanging individual employability skills. Therefore, policies should be formulated in such a way as to promote the development of employable skills relevant to current and future job prospects.

In addition, policymakers must address the problems of job mismatch and economic instability. Job Matching Theory stated that a job mismatch occurs when graduates are unable to find jobs that matching their qualifications and field of study, often resulting in underemployment or unemployment. It may stem from discrepancies between the skills and knowledge graduates possess and the requirements of existing jobs, to alleviate this problem, policymakers are advised to establish and enhance career counselling and job placement programs to help graduates find suitable job opportunities.

Furthermore, policymakers can create a conducive business environment to stimulate job creation and economic growth, thereby mitigating unemployment. The policies that encourage entrepreneurship and small business to hire recent graduates by offering financial benefits or subsidies to both employers and employees. Thus, policymakers can encourage job creation and increase job market demand to reduce unemployment.

## **5.3 Limitations of the Study**

In this section, the researchers will highlight the limitations that can be identified within this research. It is important that researchers identify the limitations within a study because limitations can establish the boundaries of a study and to ensure that



the results of the study can be used in the correct and suitable context in which the study is intended for. In this section, the researchers will identify and discuss the limitations found within the study.

Firstly, the first limitation is the imbalance of respondents within the sample size, including field of study and type of institution. Due to time constraints, the researchers were unable to collect a large number of responses, each dataset (DV1 & DV2) was expected to have around 350 to 400 responses, and the target respondents of the questionnaire were graduates aged 20 to 30 which has further restrained the size of targeted respondents. As a result, researchers were unable to achieve a proportionate number of respondents for the field of study and educational qualifications during the data collection process. In the field of study, the proportion of respondents in arts and social sciences was 151 (43%) on DV1 and 169 (44%) on DV2. Similarly, in terms of institution type, the proportion of respondents from public universities or colleges was 224 (64%) on DV1 and 83 (21%) on DV2, while the proportion of respondents from private universities or colleges was 117 (34%) on DV1 and 293 (76%) on DV2. Therefore, this study is unable to determine whether differences in fields of study and type of institution of sample size will affect the graduate's unemployment before and during Covid-19 pandemic in Malaysia.

Secondly, cost constraints can significantly affect the data collection process and compromise the quality of data obtained. The primary challenge in this study is required on the large sample size, which can be especially hard for a large target sample size such as recent graduates in Malaysia, an insufficient fundings will hampers the ability to collect representative samples proportional to populations in this study. Additionally, cost constraints have affected the accuracy and completeness of data in questionnaire, some respondents may not take the survey seriously if they do not think it is important or think their responses are irrelevant and do not contribute to the study, which lead to incompleteness of the data collected. This problem is observed during data collection whereby 115 respondents (15.7%) did not fully answer the question in ranking the importance of IVs towards DV, some respondents only filled in the most or least important of IV in this survey

but did not fully answer the questions according to the requirements even though the questionnaire guidelines and instructions were simple and easy to understand.

## **5.4 Recommendations for Future Research**

In this section, the researchers will provide recommendations to make further improvements. This section aims to help other researchers in improving upon future research based on current researchers, existing journals, and the results and analysis for this study. This section aims to improve the quality of life of future researchers and to help future researchers publish better studies and make better inferences and analysis that can potentially improve the livelihoods and quality of life of commoners.

First of all, future researchers can improve upon the current study by overcoming the language barrier that exists within the respondents and the researchers. In a multiracial country like Malaysia, multiple different languages such as Bahasa Malaysia, English, Chinese, Tamil, and many more are used as tools of communication. Each respondents have different language preferences and first languages. Thus, an all-English questionnaire might not be ideal because of the language barrier and conflict when answering the questionnaire. The researchers should prepare different sets of questionnaires in different languages and allow respondents to choose the preferred languages when answering the questionnaire. This is to ensure greater accuracy when answering the questionnaire.

However, it is note-worthy that the researchers should only include one language in each set of questionnaire as multiple languages in one single questionnaire can cause misinterpretation of the questionnaire. If the questions in the questionnaire are not translated well, it can cause confusion within the respondents especially if the respondents are multilingual. It is also note-worthy that multiple languages in a single questionnaire can severely increase the length and repetitiveness of the questionnaire, respondents who are in a rush might carelessly fill in the questionnaire and cause inaccuracy within the data collected.

Secondly, future researchers that seek to improve upon this current study are also recommended to try out different combinations of variables that might be better for testing and regression. Future researchers should introduce other methods of regression or even introduce different variables for regression. Every combination of independent variables should be introduced to improve the accuracy of testing and to improve upon this current study. An example of introducing new independent variables into the regression would be to add the independent variable 'quality of life'. The introduction of new variables might increase the significance and improve upon the current study as a result.

Thirdly, future researchers that intend to improve upon this study should consider improving upon the questionnaire of the current study. In this current study, the researchers segregate respondents who graduate before and during the Covid-19 pandemic. As a result, the researchers did not capture the changes in opinion of respondents who graduated before the Covid-19 pandemic. Future researchers can design the questionnaire in a sense that the changes in opinion for respondents who have graduates before the Covid-19 pandemic are captured to examine the changes in opinion in both periods for better accuracy for the data analysis. This method might even give the researchers a better inference explanation and analysis based on the data collected.

Lastly, future researchers can improve upon this study by considering the locality and job availability within the respondent's location sample. Future researchers can collect additional data which is the place of work and state of residence. This is to consider the different people who are willing to work in different states as different states have different job markets and job availability which can contribute to the unemployment of the respondents. Since different states have different job markets and economic activity and job availabilities, the location of the job and the place of residence of the respondents might be a contributing factor to the unemployment of the respondents.

## References

- Abd Hair Awang et al. (2007). Potential demand for skilled labour in manufacturing, construction and services in Malaysia. Project Report. Universiti Kebangsaan Malaysia.
- Abd Rahman, N. H., Ismail, S., Ridzuan, A. R., & Abd Samad, K. (2020). The Issue of Graduate Unemployment in Malaysia: Post COVID-19. *International Journal of Academic Research in Business and Social Sciences*, 10(10), 834-841.
- Aina, N. (2017). More than 1.7 million foreign workers in Malaysia; majority from Indonesia. *The New Straits Time*. Retrieved from: <https://www.nst.com.my/news/nation/2017/07/261418/more-17-million-foreign-workers-malaysia-majority-indonesia>.
- Asmawati Desa (2011). Preservation of Human Capital Addressing Global Challenges. Selangor: Akademi Penyelidikan HALUAN
- Bank Negara Malaysia (2018). Annual Report 2018. Retrieved from [https://www.bnm.gov.my/documents/20124/791626/ar2018\\_book.pdf](https://www.bnm.gov.my/documents/20124/791626/ar2018_book.pdf)
- Bartlett, J., Kotrlik, J., & Higgins, C. (2001). Organizational Research: Determining Organizational Research: Determining Appropriate Sample Size in Survey Research Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance Journal*, 19(1), 43. <https://www.opalco.com/wp-content/uploads/2014/10/Reading-Sample-Size1.pdf>
- Becker, G. S. (1962). Investment in Human Beings: A Theoretical Analysis. *Journal of Political Economy*, Vol. 70, No. 5, Part 2, pp. 9-49.
- Bell, S. (2009). Experimental Design. *International Encyclopedia of Human Geography*, 672–675. <https://doi.org/10.1016/b978-008044910-4.00431-4>
- Bhandari, P. (2021). Ethical Considerations in Research | Types & Examples. Retrieved July 27, 2022, from Scribbr website: <https://www.scribbr.com/methodology/research-ethics/>

Bowden, J., Hart, G., King, B., Trigwell, K. and Watts, O. (2000). Generic Capabilities of ATN University Graduates. <http://www.clt.uts.edu.au/ATN.grad.cap.project.index.html>

Bracey, G.W. (2006). Research: The High Skills. *Phi Delta Kappan*, Vol. 88 No. 1, pp. 93-94.

Bridgstock, R. (2017). The university and the knowledge network: A new educational model for Twentyfirst Century learning and employability. In M. Tomlinson & L. Holmes (Eds.), *Graduate employability in context* (pp. 339-358). London: Palgrave Macmillan. doi: 10.1057/978-1-137-57168-7\_16

Carlos, M., Gomez, A., Dason Kurkiewicz, G., Williams, M., Grajales, Carlos, A., Gomez, & Kurkiewicz. (2013). Assumptions of Multiple Regression: Correcting Two Misconceptions. *Practical Assessment, Research, and Evaluation*, 18, 11. <https://doi.org/10.7275/55hn-wk47>

Central Bank of Malaysia (2002). Survey. <http://bond.npc.org.my>

Chen, Y. C., Nor, N. M., Ismail, N., Said, R., & Jamaludin, S. (2020). Measuring mismatch unemployment in the Malaysia labour market. *International Journal of Economic Policy in Emerging Economies*, 1(1), 1. <https://doi.org/10.1504/ijepee.2020.10031924>

Cleave, P. (2021). Pilot Testing Questionnaires - SmartSurvey. Retrieved July 27, 2022, from SmartSurvey website: <https://www.smartsurvey.co.uk/blog/pilot-testing-questionnaires>

Cobianchi, L., Pugliese, L., Peloso, A., Dal Mas, F., & Angelos, P. (2020). To a New Normal. *Annals of Surgery*, 272(2), e49–e51. <https://doi.org/10.1097/sla.0000000000004083>

D'Silva, V. (2020). More and more graduates are facing unemployment in Malaysia. NST Online; New Straits Times. <https://www.nst.com.my/news/nation/2020/02/562309/more-and-more-graduates-are-facing-unemployment-malaysia>.

Department of Statistics. (2016). Institute for Labour Market Information and Analysis (ILMIA). Unemployment. Retrieved July 23, 2022, from Ilmia.gov.my website:  
<https://www.ilmia.gov.my/index.php/en/component/content/article/2-uncategorised/53-tableau-unemployment?Itemid=275#:~:text=The%20term%20'labour%20force'%20refers,are%20at%20work%20or%20unemployed.>

Department of Statistics Malaysia Official Portal. (2018).  
<https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=cDJkZjM5b2hjdjJZMDIvNDlueU52Zz09>

Department of Statistics Malaysia Official Portal. (2019).  
[https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=476&bul\\_id=cDJkZjM5b2hjdjJZMDIvNDlueU52Zz09&menu\\_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=476&bul_id=cDJkZjM5b2hjdjJZMDIvNDlueU52Zz09&menu_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09)

Department of Statistics Malaysia Official Portal. (2020).  
[https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=476&bul\\_id=b3ROY1djSVROS2Zhc1ZaUWhLUVp5QT09&menu\\_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=476&bul_id=b3ROY1djSVROS2Zhc1ZaUWhLUVp5QT09&menu_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09)

Department of Statistics Malaysia Official Portal. (2021).  
[https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=476&bul\\_id=U1ltVWpwNXRNRUR2NlhRSHZmenRMUT09&menu\\_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=476&bul_id=U1ltVWpwNXRNRUR2NlhRSHZmenRMUT09&menu_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09)

Dictionary.com. (2023). [Www.dictionary.com. https://www.dictionary.com/browse/graduate.](https://www.dictionary.com/browse/graduate)

Doyle, A. (2019). Important employability skills for workplace success. Retrieved from The Balance Careers:  
[https://www.thebalancecareers.com/employability-skills-list-and-examples-4143571.](https://www.thebalancecareers.com/employability-skills-list-and-examples-4143571)

Everitt, B. S., and Skronal, A. (2010). The Cambridge Dictionary of Statistics. Google Books.  
[https://books.google.com.my/books/about/The\\_Cambridge\\_Dictionary\\_of\\_Statistics.html?id=C98wSQAACAAJ&redir\\_esc=y](https://books.google.com.my/books/about/The_Cambridge_Dictionary_of_Statistics.html?id=C98wSQAACAAJ&redir_esc=y)

- Guyatt, G., Jaeschke, R., Heddle, N., Cook, D., Shannon, H., & Walter, S. (1995). Basic statistics for clinicians: 1. Hypothesis testing. *CMAJ: Canadian Medical Association Journal*, 152(1), 27-32.
- Hager, P., Holland, S. and Beckett, D. (2002). Enhancing the Learning and Employability of Graduates: The Role of Generic Skills. Business/Higher Education Round Table Position Paper No. 9. Melbourne, Australia.
- Halik, M., Maakip, I., Ahmad, M. S. and Voo, P. (2009). The perception of graduate unemployment in Malaysia. Retrieved July 27, 2022, from ResearchGate website:  
[https://www.researchgate.net/publication/329557536\\_The\\_perception\\_of\\_graduate\\_unemployment\\_in\\_Malaysia/citations](https://www.researchgate.net/publication/329557536_The_perception_of_graduate_unemployment_in_Malaysia/citations)
- Hanapi, Z. & Nordin, M.S. (2014). Unemployment among Malaysia graduates: Graduates' attributes, lecturers' competency and quality of education. *Procedia-Social and Behavioral Sciences*, 1056-1063.
- Hedges, L. V. (2019). Estimation of Effect Size under Nonrandom Sampling: The Effects of Censoring Studies Yielding Statistically Insignificant Mean Differences - *Larry V. Hedges, 1984*. *Journal of Educational Statistics*.  
<https://journals.sagepub.com/doi/abs/10.3102/10769986009001061?journalCode=jeba>
- Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. *Research in nursing & health*, 31(2), 180-191.
- Hill, H. D., Romich, J., Mattingly, M. J., Shamsuddin, S., & Wething, H. (2017). An Introduction to Household Economic Instability and Social Policy. *Social Service Review*, 91(3), 371–389. doi:10.1086/694110
- Hillage, J. and Pollard, E. (1998) Employability: Developing a Framework for Policy Analysis, Research Brief No. 85, London: Department of Education and Employment.
- Hossain, M. I., Yagamaran, K. S. A., Afrin, T., Limon, N., Nasiruzzaman, M., & Karim, A. M. (2018). Factors Influencing Unemployment among Fresh Graduates: A Case Study in Klang Valley, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8(9), 1494 – 1507.

Husin, N. A., Rasli, S., Kumar, M. S. G., & Suppiah, G. (2021). UNEMPLOYMENT CRISIS AMONG FRESH GRADUATES. *American International Journal of Social Science Research*, 10(1), 1-14. <https://doi.org/10.46281/aijssr.v10i1.1461>

Hwang, Y. (2017). What is the cause of graduates' unemployment? *Journal of Educational Issues*, 10. <http://dx.doi.org/10.5296/jei.v3i2.11378>

Ignatius, C. (2022). Breadcrumb. *BusinessToday*. <https://www.businesstoday.com.my/2022/06/19/unemployment-among-recent-graduates/>

ILO. (1957). Measurement of underemployment, Report IV, Ninth International Conference of Labour Statisticians, Geneva.

ILO. (2020). What is skills mismatch and why should we care? Retrieved July 26, 2022, from Ilo.org website: [https://www.ilo.org/skills/Whatsnew/WCMS\\_740388/lang--en/index.htm](https://www.ilo.org/skills/Whatsnew/WCMS_740388/lang--en/index.htm)

Indeed Editorial Team. (2023). Employability Skills: Definition and 10 Examples | Indeed.com. Retrieved April 12, 2023, from Indeed Career Guide website: <https://www.indeed.com/career-advice/finding-a-job/employability-skills>

Institute of Labour Market Information and Analysis. (n.d.). Youth Unemployment - Institute for Labour Market Information and Analysis (ILMIA). [ilmia.gov.my. https://www.ilmia.gov.my/index.php/en/dashboard-datamart/kilm/indicators/youth-unemployment](https://www.ilmia.gov.my/index.php/en/dashboard-datamart/kilm/indicators/youth-unemployment)

International Labour Organization. (2018). Concepts and definitions in labour statistics - ILOSTAT. Retrieved July 23, 2022, from ILOSTAT website: <https://ilostat.ilo.org/resources/concepts-and-definitions/>

International Labour Organization. (2020). What is skills mismatch and why should we care? Retrieved July 27, 2022, from Ilo.org website: [https://www.ilo.org/skills/Whatsnew/WCMS\\_740388/lang--en/index.htm](https://www.ilo.org/skills/Whatsnew/WCMS_740388/lang--en/index.htm)

Jayasingam, S., Fujiwara, Y., & Thurasamy, R. (2016). "I am competent so I can be choosy": choosiness and its implication on graduate employability. *Studies in Higher Education*, 43(7), 1119–1134. doi:10.1080/03075079.2016.1221918



- Kadir, J. M. A., Naghavi, N., & Subramaniam, G. (2020). Unemployment among graduates-Is there a mismatch?. *International Journal of Asian Social Science*, 10(10), 583-592.
- Kahiroh Mohd Salleh et, al (2008). *Employability Skills Among Students and Lecturers : Comparison with Industry*.Universiti Tun Hussein Onn Malaysia, Johor.
- Kamaruddin, M. I. H., Ahmad, A., Husain, M. A., & Abd Hamid, S. N. (2020). Graduate employability post-COVID-19: the case of a Malaysian public university. *Higher Education, Skills and Work-Based Learning*, ahead-of-print(ahead-of-print). doi:10.1108/heswbl-05-2020-0114
- Keskin, I., Dag, B., Sariyel, V., & Gokmen, M. (2009). Estimation of growth curve parameters in Konya Merino sheep (Short communication). *South African Journal of Animal Science*, 39(2). <https://doi.org/10.4314/sajas.v39i2.44390>
- Kroft, K., Lange, F., Notowidigdo, M. J., & Katz, L. F. (2016). Long-term unemployment and the great recession: the role of composition, duration dependence, and nonparticipation. *Journal of Labor Economics*, 1123- 1167.
- Kutner, M. H., Nachtsheim, C. J., Neter, J., & Li, W. (1974). *Applied Linear Statistical Models*, New York: McGraw Hill.
- Leo, M. (2019). What You Didn't Know About Fresh Graduate Unemployment in Malaysia... Retrieved August 21, 2022, from EduAdvisor website: <https://eduadvisor.my/articles/what-didnt-know-fresh-graduate-unemployment-malaysia-infographic/>
- Lund, S., Anu Madgavkar, Manyika, J., Smit, S., Kweilin Ellingrud, & Robinson, O. (2021). *The future of work after COVID-19*. McKinsey & Company; McKinsey & Company. <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19>
- Mail, M. (2021). Higher Education Ministry: Malaysian graduates' employability down to 84.4pc in 2020. Retrieved July 25, 2022, from Malay Mail website: <https://www.malaymail.com/news/malaysia/2021/03/12/higher-education-ministry-malaysian-graduates-employability-down-to-84.4pc/1957347#:~:text=BANGI%2C%20March%2012%20%E2%80%94%20The%202020,Datuk%20Seri%20Dr%20Noraini%20Ahmad.>

Mason, G., Williams, G. and Cranmer, S. (2009), "Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes?", *Education Economics*, Vol. 17 No. 1, pp. 1-30.

Mcclelland, A., & Macdonald, F. (1998). The social consequences of unemployment.  
[https://library.bsl.org.au/jspui/bitstream/1/266/1/social\\_consequences\\_of\\_unemployment\\_AMcClelland.pdf](https://library.bsl.org.au/jspui/bitstream/1/266/1/social_consequences_of_unemployment_AMcClelland.pdf)

Middleton, F. (2019). The 4 Types of Validity in Research | Definitions & Examples. Retrieved July 27, 2022, from Scribbr website:  
<https://www.scribbr.com/methodology/types-of-validity/>

Mohd, D., & Mahyuddin, M. (2017). Outlook and Policy in 2017 Youth Unemployment in Malaysia: Developments and Policy Considerations. Retrieved from  
[https://www.bnm.gov.my/documents/20124/829203/cp04\\_003\\_box.pdf](https://www.bnm.gov.my/documents/20124/829203/cp04_003_box.pdf)

Mohd, J., Navaz Naghavi, & Subramaniam, G. (2020). Unemployment among Graduates - Is there a Mismatch? ResearchGate; unknown.  
[https://www.researchgate.net/publication/344318022\\_Unemployment\\_among\\_Graduates\\_-\\_Is\\_there\\_a\\_Mismatch#:~:text=The%20findings%20revealed%20that%20employability%20skills%2C%20job%20mismatch,factors%20such%20as%20courses%20provided%20by%20the%20universities.](https://www.researchgate.net/publication/344318022_Unemployment_among_Graduates_-_Is_there_a_Mismatch#:~:text=The%20findings%20revealed%20that%20employability%20skills%2C%20job%20mismatch,factors%20such%20as%20courses%20provided%20by%20the%20universities.)

Mumtaz Ali Memon, Ting, H., Cheah Jun Hwa, & Cham, T.-H. (2020). Sample Size for Survey Research: Review and Recommendations. ResearchGate; unknown.  
[https://www.researchgate.net/publication/343303677\\_Sample\\_Size\\_for\\_Survey\\_Research\\_Review\\_and\\_Recommendations/link/5f24eb8aa6fdccc439fd7a0/download](https://www.researchgate.net/publication/343303677_Sample_Size_for_Survey_Research_Review_and_Recommendations/link/5f24eb8aa6fdccc439fd7a0/download)

Nazron, M. A., Lim, B., & Nga. J. L.H. (2017). Soft Skills Attributes and Graduate Employability: A Case in Universiti Malaysia Sabah. Retrieved August 21, 2022, from Malaysian Journal of Business and Economics (MJBE) website:  
<https://jurcon.ums.edu.my/ojums/index.php/mjbe/article/view/1080>

- Noor Azina Ismail. (2011). Graduates' characteristics and unemployment: a study among Malaysian graduates. Retrieved June 21, 2022, from ResearchGate website:  
[https://www.researchgate.net/publication/268226150\\_GRADUATES'\\_CHARACTERISTICS\\_AND\\_UNEMPLOYMENT\\_A\\_STUDY\\_AMONG\\_MALAYSIAN\\_GRADUATES](https://www.researchgate.net/publication/268226150_GRADUATES'_CHARACTERISTICS_AND_UNEMPLOYMENT_A_STUDY_AMONG_MALAYSIAN_GRADUATES)
- Nor Azilah Husin, Rasli, S., Kumar, G., & Ganeswary Suppiah. (2021). UNEMPLOYMENT CRISIS AMONG FRESH GRADUATES. ResearchGate; unknown.  
[https://www.researchgate.net/publication/360031796\\_UNEMPLOYMENT\\_CRISIS\\_AMONG\\_FRESH\\_GRADUATES](https://www.researchgate.net/publication/360031796_UNEMPLOYMENT_CRISIS_AMONG_FRESH_GRADUATES)
- Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). McGraw-Hill.
- O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673–690. <https://doi.org/10.1007/s11135-006-9018-6>
- O'Neil, H. F., Allred, K., & Baker, E. L. (1997). Review of workforce readiness theoretical frameworks. In H. F. O'Neil (Ed.), *Workforce readiness: Competencies and assessment* (pp. 3–25). Mahwah, NJ: Lawrence Erlbaum.
- Pang Chau Leong (2011). *Technical Education and Vocational Training (TEVT) in Malaysia: Revisiting the TEVT Framework*. Malaysia
- Parilla, J. (2019). Talent is precious. That's why economic development should focus on developing it. Better Cities Project; Better Cities Project.  
<https://better-cities.org/economic-prosperity/talent-is-precious-thats-why-economic-development-should-focus-on-developing-it/>
- Park, K. (2020). Qualifications, job mismatch, and workers with disabilities. *Portuguese Economic Journal*, 20(2), 161–180. doi:10.1007/s10258-019-00170-3
- Pettinger, T. (2020). Causes of economic instability. Retrieved from <https://www.economicshelp.org/blog/43/economics/causes-of-economic-instability/>

- Phillips, A. W. H. (1958). The relation between unemployment and the rate of change of money wage rates in the United Kingdom. Retrieved August 23, 2022, from ResearchGate website: [https://www.researchgate.net/publication/243766720\\_The\\_relation\\_between\\_unemployment\\_and\\_the\\_rate\\_of\\_change\\_of\\_money\\_wage\\_rates\\_in\\_the\\_United\\_Kingdom](https://www.researchgate.net/publication/243766720_The_relation_between_unemployment_and_the_rate_of_change_of_money_wage_rates_in_the_United_Kingdom)
- Phillips, P. C. B., & Loretan, M. (1991). The Durbin-Watson ratio under infinite-variance errors. *Journal of Econometrics*, 47(1), 85–114. Retrieved from : [https://doi.org/10.1016/0304-4076\(91\)90079-s](https://doi.org/10.1016/0304-4076(91)90079-s)
- Rahmah et, al (2011). Employer Perceptions on Graduates in Malaysian Services Sector. *Medwell Journals*, 5(3):184-193.
- Ramlee Mustapha et, al (2008). K Ekonomy and Globalisation –Are ours Student Ready?. *Jurnal Personalia Pelajar*.(11), 1-23.
- Sachs, J., Rowe, A., & Wilson, M. (2017). Good practice report – WIL. Report undertaken for the Office of Learning and Teaching. Retrieved from [https://ltr.edu.au/resources/WIL\\_Report.pdf](https://ltr.edu.au/resources/WIL_Report.pdf)
- Seng, L. C. (2018). Malaysia public universities' graduate employability policies: An analysis of first degree graduate unemployment and underemployment issues. *International Journal of Social Science and Humanities Research*, 6(4), 480–489. <https://doi.org/10.5281/zenodo.2589702>
- Shahriar, M. S., Islam, K. M. A., Zayed, N. M., Hasan, K. B. M. R., & Raisa, T. S. (2021). The Impact of COVID-19 on Bangladesh's Economy: A Focus on Graduate Employability. *The Journal of Asian Finance, Economics and Business*, 8(3), 1395–1403. <https://doi.org/10.13106/JAFEB.2021.VOL8.NO3.1395>
- Skórska A. (2016). Uniwersytet Ekonomiczny W Katowicach. <https://www.ue.katowice.pl/jednostki/wydawnictwo/oferta-wydawnicza/podreczniki/skorska-a-rynek-pracy-wybrane-zagadnienia-2016.html>
- Stenfors, T., Kajamaa, A., & Bennett, D. (2020). How to ... assess the quality of qualitative research. *The Clinical Teacher*, 17(6), 596–599. <https://doi.org/10.1111/tct.13242>

- Sofia, Karadimitriou, M., Marshall, E., & Sheffield, C. (2018). Mann-Whitney U test (Non-parametric equivalent to independent samples t-test). <https://maths.shu.ac.uk/mathshelp/Stats%20support%20resources/Resources/Nonparametric/Comparing%20groups/Mann-Whitney/SPSS/step-marshall-MannWhitS.pdf>
- Su, F., & Zhang, J. (2020). Proactive personality and innovative behavior: A moderated mediation model. *Social Behavior and Personality*, 48(3), 1–12.
- Suppramaniam, S. S. (2019). An employability assessment of fresh business graduates in Kuala Lumpur from the perspective of employers. *International Journal of Recent Technology and Engineering*, 7(5), 307–317.
- Susima Weligamage & Sununta Siengthai (2003). Employer needs and graduate skills. The gap between employer expectations and job expectations of Sri Lankan University graduates. *International Conference on Sri Lanka Studies*. 28-30 November. Matara, Sri Lanka.
- Tachibanaki, T. (1988). Education, occupation, hierarchy and earnings. *Economics of Education Review*, 7(2), 221–229. doi:10.1016/0272-7757(88)90046-5
- Tahir, L. M, Samah, N., Omar, W., Mohammad, S., Latif, A., Yusof, S., ... Bahru. (2018). Re-examine Malaysian HEIs graduates' employability: comparing perspectives from graduates and employees. *The Turkish Online Journal of Design, Art and Communication -TOJDAC*, 1666–1685. <https://doi.org/10.7456/1080SSE/223>
- Tengku Kamarul Bahrim, T. A. (2019). High rate of unemployment among graduates in Malaysia. *E-Journal of Media & Society*, 3, 1–15.
- The Edge Markets. (2021). Malaysia's unemployed graduates rose 22.5% in 2020. The Edge Markets. <https://www.theedgemarkets.com/article/malaysias-unemployed-graduates-rose-225-2020>
- The World Bank and Talent Corporation. (2014). "Malaysia Economic Monitor Boosting Trade Competiveness" Retrieved July 26, 2022 from <https://documents1.worldbank.org/curated/en/801661468281719019/pdf/891020WP0P14640B00PUBLIC00MEM100web.pdf>

- University of Stirling. (2022). Graduate attributes. Retrieved July 27, 2022, from University of Stirling website: <https://www.stir.ac.uk/student-life/careers/careers-advice-for-students/graduate-attributes/>
- Vale, L., Silcock, J., & Rawles, J. (1997). An economic evaluation of thrombolysis in a remote rural community. *BMJ*, 314(7080), 570–570. <https://doi.org/10.1136/bmj.314.7080.570>
- Vo, D. H. (2019). What factors affect income inequality and economic growth in middle-income countries? *Journal of Risk and Financial Management*, 12(1), 1–12. <https://doi.org/10.3390/jrfm12010040>
- Virginia Tech. (2018). Research Guides: Research Methods Guide: Research Design & Method. Retrieved July 26, 2022, from Vt.edu website: <https://guides.lib.vt.edu/researchmethods/design-method>
- Zahid, S. J. (2015). PM: Poor English eroding Malaysian Graduates' self-belief. *Malaymail online*. Retrieved from: <http://www.themalaymailonline.com/malaysia/article/pmpoor-english-eroding-malaysian-graduates-self-belief>
- Zegwaard, K. E., Campbell, M., & Pretti, T. J. (2017). Professional identities and ethics: The role of workintegrated learning in developing agentic professionals. In T. Bowen & M. Drysdale (Eds.), *Work-integrated learning in the 21st century: Global perspectives on the future international perspectives on education and society* (pp. 145-160). Bingley, UK: Emerald Publishing Limited.
- Zhang, L. N. (2018). What are the Causes and Consequences of Graduate Unemployment in China? *DEStech Transactions on Social Science, Education and Human Science*. <https://doi.org/10.12783/dtssehs/meit2018/27641>
- 10th Malaysian Plan. (2010). <https://www.epu.gov.my/sites/default/files/2020-03/ringkasan-eksekutif.pdf>



## Appendices

### Appendix 1 - Participant Information Page

#### Section 1 – Personal Data Protection Statement

## Determining Factors of Unemployment among fresh graduate before and during Covid-19: In the case of Malaysia

Hello, we are Year 3 UTAR students that are currently pursuing a Bachelors Degree in Economics (Honours) Financial Economics. We are currently doing a study on unemployment among fresh graduates and we would like to ask you to help us fill out this survey if you are a Malaysian fresh graduates aged between 20 and 30. The completion of this survey will take 5-10 minutes. Thank you for your participation and time!

 hanquan.hq@utar.my (not shared) [Switch account](#) 

\* Required

#### 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.

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes: a) Name b) Identity card c) Place of Birth d) Address e) Education History f) Employment History g) Medical History h) Blood type i) Race j) Religion k) Photo l) Personal Information and Associated Research Data

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

- a) For assessment of any application to UTAR
- b) For processing any benefits and services
- c) For communication purposes
- d) For advertorial and news
- e) For general administration and record purposes
- f) For enhancing the value of education
- g) For educational and related purposes consequential to UTAR h) For replying any responds to complaints and enquiries
- i) For the purpose of our corporate governance
- j) For the purposes of conducting research/ collaboration

3. 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 also 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.

4. 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.

5. 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.

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

7. 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.

**Acknowledgement 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.



## Appendix 2 – Questionnaire Format (Section 1 - 7)

### Section 2 – Target Sampling Audience

**Target Sampling Audience**

What is your nationality? \*

Malaysian

Non-Malaysian

Are you aged between 20 to 30? \*

Yes

No

### Section 3 – Demographic and Characteristic of Respondents

**Demographic and Characteristic of Respondents**

Please fill in your personal details

Age \*

20

21

22

23

24

25

26

27

28

29

30

DETERMINANTS OF UNEMPLOYMENT AMONG FRESH GRADUATES IN MALAYSIA  
BEFORE AND DURING COVID-19 PANDEMIC

Gender \*

- Male
- Female

Race \*

- Chinese
- Malay
- Indian
- Other: \_\_\_\_\_

Field of Study \*

- Technical
- ICT
- Arts & Social Science
- Science
- Education
- Other: \_\_\_\_\_

Education Qualification \*

- Secondary Education
- Diploma
- Bachelors Degree
- Masters Degree
- Doctorate/ PhD

DETERMINANTS OF UNEMPLOYMENT AMONG FRESH GRADUATES IN MALAYSIA  
BEFORE AND DURING COVID-19 PANDEMIC

Type of Institution \*

- Public University or College
- Private University or College
- Polytechnics
- Other: \_\_\_\_\_

Employment Status Before Covid-19 pandemic (From Jan 2020 until Mar 2020) \*

- Employed
- Unemployed

Have you experienced unemployment because of the Covid-19 pandemic? \*

- Yes
- No

Longest Duration of Unemployment during Covid-19 pandemic \*  
(In terms of months: e.g. 3 months/ 18 months/ NA)

Your answer \_\_\_\_\_

Did you graduate before or during the Covid-19 pandemic? \*

- Before
- During

### Section 4 – Employability Skills

#### Section 4: Employability Skills (ES)

Employability skills means that the fundamental skills or job-readiness skills that you possess. Employability skills can be classified as technical or non-technical skills.  
Technical skills: Skills that are required for your field of working that you learned in your tertiary education.  
Non-technical skills: Soft skills such as communication, critical thinking & decision making, passion for learning, ethics & integrity, teamwork and leadership skills.

ES1. I have the required skills and qualifications \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

ES2. I am able to solve problems in the workplace with ease \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

ES3. I have quality leadership traits in the workplace \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

ES4. I am proficient in the English Language in the workplace \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

ES5. I can think critically and make decisions in the workplace \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

**Section 5 – Job Mismatch**

**Section 5: Job Mismatch (JM)**

Job Mismatch refers to qualification-job mismatch or skill-job mismatch. It means that a person is working in a position that does not suit his/her qualifications such as education, knowledge, skills and abilities.

Job Mismatch can be over-qualified or under-qualified.

JM1. The jobs offered are appropriate and relevant \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

JM2. The jobs offered are related and match my qualifications \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

JM3. Jobs offered related to my field of study require high qualifications and outstanding skills. \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

JM4. The jobs offered in the market are highly demanding and require high skill \*

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

*Section 6 – Graduates Attributes*

**Section 6: Graduate Attributes (GA)**

Graduate attributes refers to the graduate's personal preferences towards the jobs offered and the graduate characteristics. It is different from employability skills as the main focus here is on graduates' preferences and their characteristics. For instance, some factors like location, salary, employee's benefit might be the reasons for fresh graduates to reject or accept a job.

**GA1. I can accept any salary offered \***

1      2      3      4      5

Strongly disagree                  Strongly agree

**GA2. I can accept any position offered for employment \***

1      2      3      4      5

Strongly disagree                  Strongly agree

**GA3. I can accept any location of work offered for employment \***

1      2      3      4      5

Strongly disagree                  Strongly agree

**GA4. I can accept working in a group (teamwork) \***

1      2      3      4      5

Strongly disagree                  Strongly agree

**GA5. I can communicate effectively with teammates in the workplace \***

1      2      3      4      5

Strongly disagree                  Strongly agree

**Section 7 – Economic Instability**

**Economic Instability (EI)**

Economic Instability indicates that unintentional or unpredictable repeating changes in the economy of Malaysia. It could be caused by factors such as inflation, politics, exchange rate and etc.

EI1. There is a low demand for jobs in the labor market \*

1      2      3      4      5

Strongly disagree                  Strongly agree

EI2. The average wages in Malaysia make it hard to find a job \*

1      2      3      4      5

Strongly disagree                  Strongly agree

EI3. The rising cost of living in Malaysia has made it hard to find a job \*

1      2      3      4      5

Strongly disagree                  Strongly agree

EI4. The political instability within Malaysia has made it hard to find a job \*

1      2      3      4      5

Strongly disagree                  Strongly agree

EI5. The weak Ringgit Malaysian currency has made it hard to find a job \*

1      2      3      4      5

Strongly disagree                  Strongly agree

*Section 8 – Overall perceptions on each IVs towards DV*

**Overall perception towards the significance of each independent variable after the Covid-19 pandemic**

In this section, we would like to find out the magnitude changes of each elements above towards the fresh graduate unemployment before and during Covid-19 pandemic.

Do you agree that Employability Skills (ES) have become more significant? \*

1      2      3      4      5

Strongly disagree                        Strongly agree

Do you agree that Job Mismatch (JM) have become more significant? \*

1      2      3      4      5

Strongly disagree                        Strongly agree

Do you agree that Graduate Attributes (GA) have become more significant? \*

1      2      3      4      5

Strongly disagree                        Strongly agree

Do you agree that Economic Instability (EI) have become more significant? \*

1      2      3      4      5

Strongly disagree                        Strongly agree

How would you rank the significance of each variables (ES - 1, JM - 2, GA - 3, EI - 4) before Covid-19 pandemic? \*

Note: Rank from most to least (e.g. 2, 3, 4, 1). JM is most important factor and EI is least important factor.

Your answer \_\_\_\_\_

How would you rank the significance of each variables (ES - 1, JM - 2, GA - 3, EI - 4) after Covid-19 pandemic? \*

Note: Rank from most to least (e.g. 2, 3, 4, 1). JM is most important factor and EI is least important factor.

Your answer \_\_\_\_\_



**Appendix 3 – Tables**

**Appendix 3 A– Pilot test result**

Table 3A. 1

*Employability skills’ Pilot Test’s Cronbach’s Alpha*

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.773	5

Table 3A. 2

*Job Mismatch’s Pilot Test’s Cronbach’s Alpha*

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.278	5

<b>Item-Total Statistics</b>					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
JM1. The jobs offered are appropriate and relevant	13.35	3.818	.260	.651	.114
JM2. The jobs offered are related and match my qualifications	13.30	3.379	.424	.654	-.052 <sup>a</sup>
JM3. Jobs offered related to my field of study require high qualifications and outstanding skills.	13.30	2.537	.570	.427	-.346 <sup>a</sup>
JM4. Jobs offered to me do not match my qualifications	14.55	6.576	-.410	.411	.715
JM5. The jobs offered in the market are highly demanding and require high skill	13.50	4.368	.220	.117	.178

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Table 3A. 3

*Graduates’ Attributes’ Pilot Test’s Cronbach’s Alpha*

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.790	5

Table 3A. 4

*Economic Instability's Pilot Test's Cronbach's Alpha*

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.807	5