FACTORS INFLUENCING YOUTH UNEMPLOYMENT IN MALAYSIA

BY

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DECLARATION

We hereby declare that:

(1) This undergraduate research project 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 research project 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 research project.

(4) The word count of this research report is 13,111 words.

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YUR	Youth Unemployment
GDP	Gross Domestic Product
INF	Inflation
FDI	Foreign Direct Investment
URB	Urbanization

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PREFACE

The youth unemployment problem has always existed in the world, because youth unemployment has always been higher than the adult unemployment rate. It is still rising, especially after COVID-19, it has risen to another peak. This has also led to youth unemployment becoming a focus of attention. Because if it stays at a peak for a long time, it may affect the country's economy and society. Therefore, this study tends to apply macroeconomic variables in the study, including gross domestic product (GDP), inflation rate, foreign direct investment, and urbanization. The country selected in this study is Malaysia.

Even though many factors can influence youth unemployment, the researcher of this study strongly believes that macroeconomic determinants still play a crucial role in identifying youth unemployment.

This research was done successfully due to the researcher's curiosity and motivation from many parties. It has been conducted so that researchers can gain more knowledge and deep understanding about youth unemployment in Malaysia.

ABSTRACT

This research's objective is to examine the factors influencing youth unemployment in Malaysia from year 1991 to year 2022.This project studies the relationship between the gross domestic product, inflation rate, foreign direct investment and urbanization to the youth unemployment. The Vector Autoregression test has been chosen in this research.

The findings of this research show the gross domestic product and foreign direct investment has positive impact on the youth unemployment. Besides, the inflation and urbanization are insignificant on the youth unemployment. The results contributed to government, policy makers, investors, educators and future researchers.

CHAPTER 1

INTRODUCTION

1.0   Research Overview

This study aims to examine the factors influencing the youth unemployment rate in Malaysia from 2003 to 2022. Four factors have been considered in this study: the youth unemployment in Malaysia. The labour market in Malaysia will be discussed in this chapter, followed by the problem statement, research questions, objectives, and significance of the study.

Global concerns about mobility labour and job prospects have grown as a result of the changes that the globe has undergone. The core of the economy is now human capital as a result of developments in globalisation. This leads to the prioritisation of technology in addition to personnel and assets. As a result, the focal point of development plans has switched to human capital, which is made up of components like education, knowledge, and skills.

However, teenagers who have just left society have less experience and training, which has increased difficulties to entrance into the labour market and increased the probability of unemployment. Compared to more experienced seniors, there is a bigger gap between them in the labour market. Additionally, their chances of losing their employment eventually are increased. This relates to hiring procedures and the structure of the labour market in developed nations. When hiring new staff, employers think job experience is important. Employment in many modern nations is split between flexible, short-term contracts that offer less security and permanent contracts that offer more protection. Younger workers tend to have more temporary contracts. A significant portion of the youth population is likely to cycle between temporary work and unemployment if it is difficult to transition from temporary to permanent contracts.

When young people experience higher unemployment rates than adults, their frustrations escalate and they become more involved in risky and antisocial behaviours like group crime. Young people's creativity, enthusiasm, and inventiveness can be very valuable, but they also carry a risk of squandering valuable resources for society.

1.1   Global Youth Unemployment Trends

The fraction of the young labour force that do not have work is between the ages of 15 and 24 is known as youth unemployment. The International Labour Organisation (ILO) defines unemployment as when a person has not worked for an extended length of time but is still actively looking for work and eligible for employment.

Figure 1. 1Global unemployment rate and global youth unemployment rate from 2003 to 2022
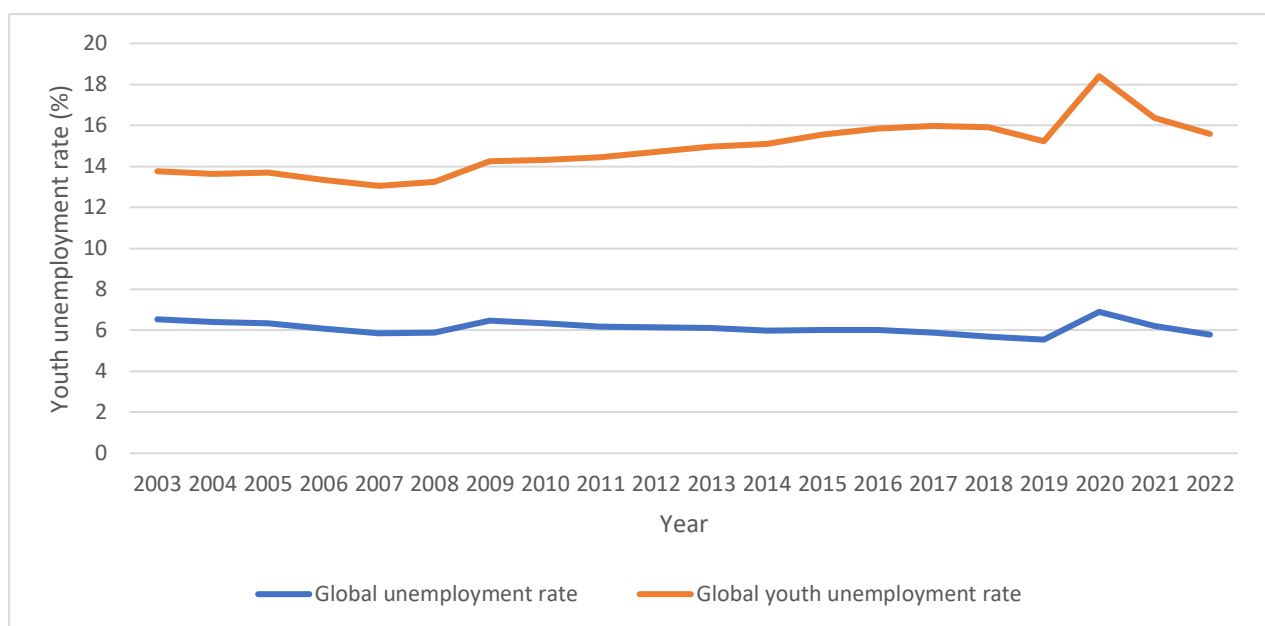
Sources: World Bank Indicators

One of the most critical issues faced by both developed and developing countries is youth unemployment. In every country, the probability of young people between the ages of 15 and 24 entering the workforce is lower than that of adults. In 2022, the rate of unemployment worldwide is 15.58%, compared to 5.77% in 2021 (Neill, 2022). This is between two and three times the average unemployment rate worldwide. The percentage of youths between the ages of 15 and 24 who do not have a job has been rising over the last several years. The rate of youth unemployment peaked in 2020 at 18.40%, then slightly increased in 2021 before declining once more in 2022. A lot of individuals lost their employment in 2020 as a result of the economic crisis, forcing them to take up lower-paying positions. Some of these occupations did not require long or sometimes too long working hours, and the wages were often very low. They pose a further threat to the cost of living,

which, should prices increase more quickly than incomes, would push more people into poverty. Poverty rates have increased as a result of the COVID-19 pandemic's disproportionate impact on low-income individuals in several nations. The labour market is more harder to navigate for young people. Since the economy recovered, unemployment has decreased, but the rate of unemployment among young people is still much higher than the general rate.

The International Labour Organisation (ILO) expects there will be ongoing issues with unemployment worldwide. It is anticipated to increase to 208 million by 2023, or 5.8% of the global population. The persistent difficulty of giving young people job opportunities is shown by the fact that youth unemployment is still significant and above average. Multiple strategies that include targeted job programming, education, and skill development is necessary to address young unemployment. As nations overcome these challenges, a culture of innovation and entrepreneurship is crucial to ensuring steady economic growth.

1.2   Youth Unemployment Trends in East Asia and the Pacific

Now, the trend of youth unemployment in East Asia and the Pacific as shown as below:

Figure 1. 2: Youth unemployment in East Asia and the Pacific from 2003 to 2022
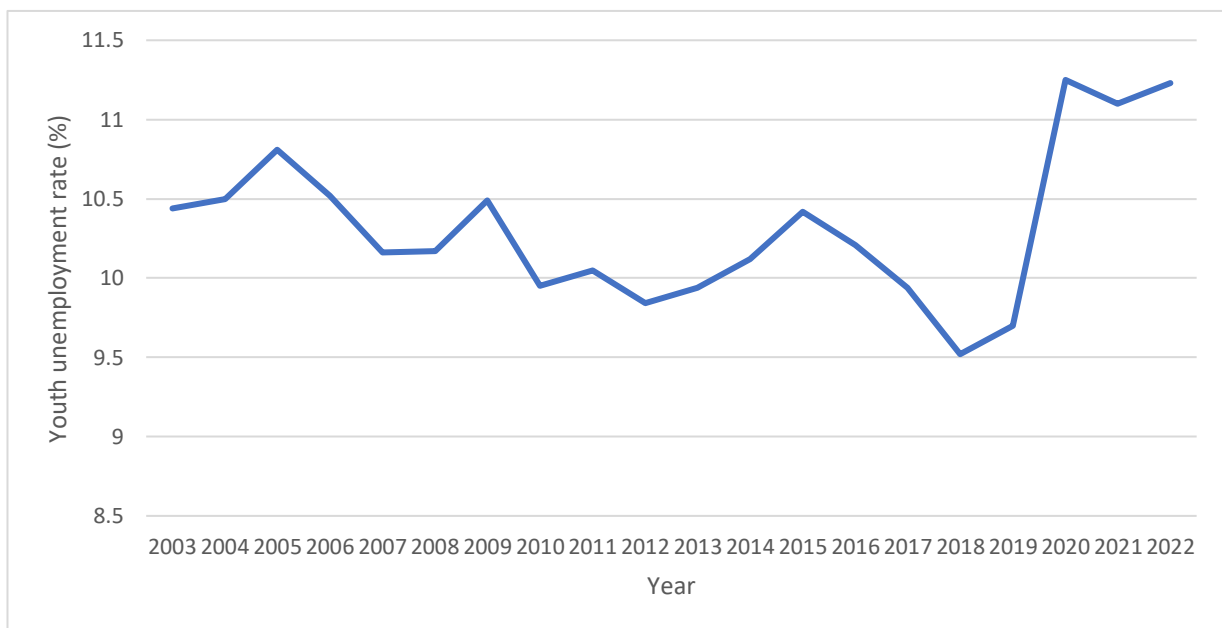
Sources: Statista

According to the data, in East Asia and the Pacific, the young unemployment rate was 10.44 in 2007, but it dropped to 10.16% the following year. The global financial crisis led to a dramatic increase in young unemployment, which reached 10.49%. Although the economy began to gradually improve a few years later, young unemployment remained persistently high in 2019—between 9.5% and 10.5%. Economic turmoil was also brought on by a substantial increase in young unemployment, which peaked in 2020 at 11.25% as a result of the COVID-19 epidemic. In general, the trend declined steadily until 2018, when it was 9.52. As young people experience economic shocks, the financial crisis and the COVID-19 epidemic are two of the primary causes of the growing youth unemployment rate.The labour market demonstrates that young unemployment is still quite high, even in spite of government initiatives to boost the economy and create job possibilities. This points to ongoing difficulties in the labour market as fewer jobs become available and competition for those positions rises.

Furthermore, trends in young unemployment differ among East Asian and Pacific nations. Australia, Brunei, Myanmar, Cambodia, China (including the Special Administrative Regions of Hong Kong and Macau), East Timor, Fiji, Indonesia, Japan, Kiribati, Laos, Malaysia, Marshall Islands, Micronesia, Mongolia, Nauru, New Zealand, North Korea, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, South Korea, Taiwan, Thailand, Tonga, Tuvalu, Vanuatu, and Vietnam are all included in the region known as East Asia and the Pacific. Certain nations with robust social safety nets and varied economies may effectively tackle young unemployment through knowledge exchange and cooperative efforts with other nations. Some nations have more difficulties than others because of their heavy reliance on export-oriented businesses or tourism.

Governments also fund STEM education and vocational training to meet the demands of the labour market, which lowers young unemployment and boosts employment prospects. Although young men in the region have a much higher unemployment rate (16% vs. 12.7% in 2022), young women have a higher potential labour force rate due in part to traditional gender stereotypes and a lack of access to affordable healthcare, which highlights the difficulties faced by this demographic.

1.3   Youth Unemployment Trends in ASEAN

There are a few countries in ASEAN, which is Brunei, Philippines, Laos, Vietnam, Malaysia, Indonesia, Singapore, Cambodia, Thailand, Myanmar and Timor-Leste. These countries youth unemployment trends are shown as below:

Figure 1. 3: Youth unemployment rate in ASEAN from 2003 to 2022
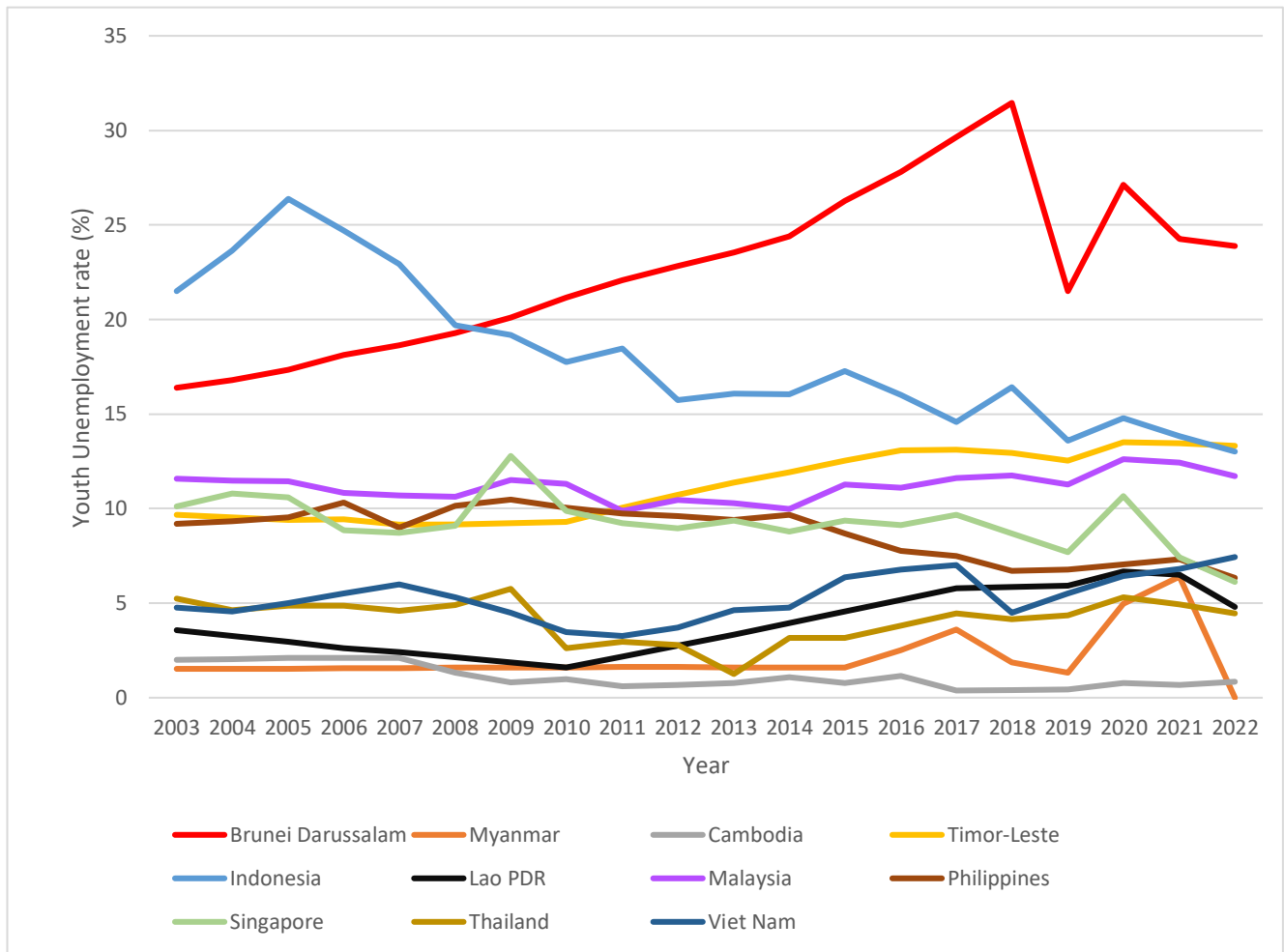
Sources: World Bank Indicators

Similarly in ASEAN, the unemployment rate for young people is three to five times greater than that of adults. Over the previous few decades, the highest prevalence among ASEAN nations has been seen in Indonesia and Brunei. Over the past few decades, Indonesia's young unemployment rate has decreased while Brunei's has increased. In general, Brunei has a higher young unemployment rate than Indonesia. The rate of

young unemployment in Brunei varies between 16.391% and 31.453%, whilst the rate in Indonesia varies between 13.016% and 26.379%.

In recent decades, Brunei has had the highest percentage of young unemployment among ASEAN nations. It is commonly known that oil and petrol contribute to 90% of Brunei's export earnings and more than half of its GDP, making it one of the world's most reliant economies. According to ACE, it is also the fourth-biggest oil producer in Southeast Asia and the ninth-largest gas exporter in the globe. There is a huge pay difference between foreign and domestic labour due to low local population participation and a high reliance on foreign labour.

Due to the migration of industry from rural regions, Indonesia's young unemployment rate is still significant but is on the decline. The Indonesian economy is supposedly shifting according to the World Bank. The industrial and service sectors are seeing an increase in employment at the expense of agriculture. Both job creation and unemployment will decline as a result. In addition, Indonesia's high rate of young unemployment is a result of the country's increasing university graduates. The lack of training or certification that schools give makes it difficult to get work since there is a gap between education and business.

Furthermore, the rates of young unemployment in Cambodia and Myanmar are at their lowest points in decades. Because the government placed an early emphasis on long-term economic progress and young employment, Cambodia has the lowest unemployment rate among ASEAN member nations. The nation prioritises growth, has established positive relationships with other nations and partners on the world stage, and has generated a large number of employment within its borders. Both international and domestic investors have invested money into a number of businesses in Cambodia. The recovery from the pandemic and investment facilitation, as reported in the 2022 ASEAN Investment Report, demonstrate the robust recovery of FDI inflows. In 2021, FDI inflows surged by 42% to US$174 billion. This expansion more than made up for the 2020 drop brought on by COVID-19 and shows how appealing the local economy is to investors. Second only to China in terms of external direct investment, ASEAN continues to be the primary hub for outward direct investment from developing nations, which is essential to the revival of the global economy.

Furthermore, the majority of workers in Myanmar are employed in the unorganised sector, which has contributed to the low unemployment rate in the nation, particularly among young people. According to data from the International Labour Organisation, 85.7% of young people in Myanmar work in informal jobs such

as wage labour, unregistered company employment, domestic work, and self-employment. Due to the challenges and limitations brought about by the worldwide pandemic and the military takeover on February 1, 2021, young unemployment increased in 2021 and contributed significantly to the high rate of unemployment in Myanmar. It is necessary to realise that working circumstances are still becoming worse and that job quality is declining, even in spite of a small rise in employment.

1.4   Youth Unemployment in Malaysia

The graph shows the trends of youth unemployment rate in Malaysia:

Figure 1. 4 : Youth unemployment rate in Malaysia from 2003 to 2022
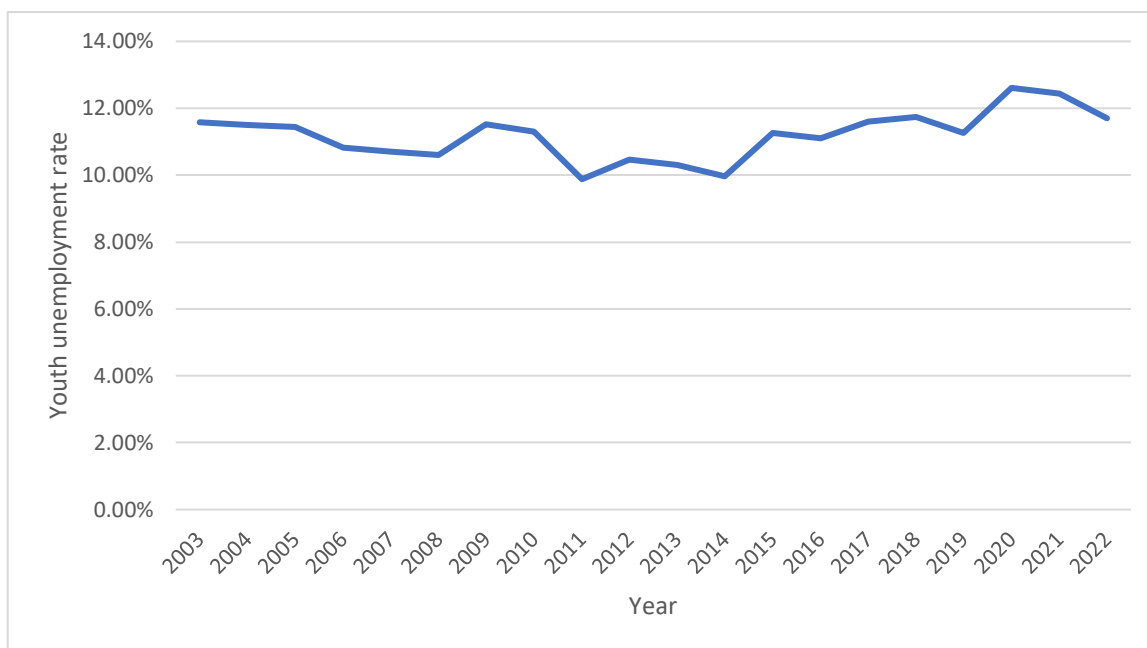
Sources: Statista

In Malaysia, youth unemployment is a severe issue with potential effects on long-term social and economic stability. Over the previous 20 years, Malaysia's youth unemployment rate has gotten worse. Malaysia has had different levels of young unemployment over this time, with fluctuations in unemployment rates occurring in tandem with general economic circumstances. Data from the Statista website show that the young unemployment rate was neither close to 10% nor below it after 2003. Malaysia's economy expanded rapidly in the middle of the 2000s, which decreased the country's total unemployment rate. However, due to

issues including a lack of work opportunities, an increase in graduates, and a skill gap between available positions and recent graduates, youth unemployment has remained high. The severity of the issue is demonstrated by the fact that the young unemployment rate hit a record high of 12.61% by the end of 2020. Datuk Seri Noorani Ahmad, the former minister of higher education, predicts that the coronavirus would cause a 25% rise in young unemployment, particularly for those between the ages of 20 and 24. Approximately 75,000 recently graduated workers will be impacted by this, since they will look for job six months following graduation. Compared to the start of 2020, when the young unemployment rate was 12.61%, this is nearly twice as high. Approximately 6 million adolescents and young adults, aged 15 to 29, have been negatively impacted by the COVID-19 pandemic. Due to a declining employment market and fewer work prospects, young people are most likely to be the first to lose their jobs.

In order to create a strategy to boost the GDP of the nation, stop the COVID-19 epidemic, and deal with unemployment, the government had to take a number of factors into account when it chose to restart the economy in 2020. These included tax reduction initiatives, financial aid to people and businesses, and targeted help for the sectors most impacted by the pandemic restrictions. There were increased work prospects and a decline in young unemployment as more economic sectors were reopened. The federal government included technical and vocational education and training programmes in the 2022 budget since young unemployment is still quite high. According to the Malaysian Master Builders Association, the lack of competent foreign workers in Malaysia's construction sector is the result of the industry's over reliance on unskilled migrant labour (Bernama, 2021). For this reason, local workers are required. In order to provide young people with a safe workplace, the government must also intervene.

1.5   Problem Statement

There The nation will be in serious danger if the unemployment rate among young people is greater than that of the general population. The Malaysian Department of Statistics has released new data showing that young unemployment is still a significant issue in the nation. The rate of unemployment among Malaysian youth between the ages of 15 and 24 in 2022 remained higher than the national average, at 10.39%, with a percentage over 10%. After Brunei, India, and Indonesia, Malaysia has the fourth-highest young unemployment rate in ASEAN, although being lower than the average of 10.18% for the region.Though Malaysia's economy is growing, increasing young productivity is necessary for future economic growth, which is why local leaders are concerned. Young Malaysians must take on the challenge of achieving the job

at hand. It is imperative that the Malaysian government enhances the quality of education and productivity to foster economic expansion and expand prospects for youth. The importance of education is further highlighted by the development of technology in today's world, and the government must devise plans to develop the next generation of workers and satisfy the demands of the labour market.

The mismatch between young aspirations and reality, the economic structure, and the mismatch in education are only a few of the numerous variables that lead to Malaysia's high youth unemployment rate. The term "education mismatch" describes how graduates' lack of skills prevents them from living up to the expectations of employers. Agriculture and manufacturing have given way to services and high-tech businesses in Malaysia's economic structure. Young job searchers may not be able to completely absorb the labour market due to the difficulty of this shift. The disconnect between teenager aspirations and reality is making it difficult for young people to enter the workforce.

There is still more work to be done to find a solution to Malaysia's young unemployment issue, despite the fact that several previous research have offered insightful information. Though a lot of research has been done on the issue of youth unemployment in Malaysia, much of it concentrates on general patterns and data rather than providing a thorough examination of particular young populations, such as recent graduates or marginalised communities. Furthermore, little study has been done on the efficacy of programmes and policies aimed at lowering young unemployment.

1.6   Research Questions &Research Objective

- What is the current trend of the youth unemployment rate in Malaysia?
- What are the factors influencing the youth unemployment rate in Malaysia?
- How can we reduce the youth unemployment rate in Malaysia?

General objectives

This study aims to identify the factors influencing youth unemployment in Malaysia.

Specific objectives

- To determine the current state and prediction of youth unemployment in Malaysia.
- To examine the factors that cause youth unemployment in Malaysia.
- To develop the recommendation policy to reduce the youth unemployment rate in Malaysia.

1.7   Significance of Study

One of the main problems that the majority of countries in the globe are now dealing with is rising young unemployment. Malaysia is not an exception. Concerns have grown in Malaysia in recent years, as evidenced by reports on the country's economy and by the opinions of its youth. The most recent Statista data indicates that in 2022, Malaysia's young unemployment rate was 10.39%. This is a significant problem that requires quick attention and fixing. The trend of young unemployment has been monitored by the following departments:

In addition to tackling gender inequities and promoting women's economic involvement, the Ministry of Women, Family, and Community Development is dedicated to assisting in the larger effort of lowering female youth unemployment. The female labour force participation percentage has to be raised to 60%, according to the government, since it is now quite low. When it comes to putting plans into action or expanding possibilities for women in the workforce, the ministry is essential.

The Ministry of Human Resources aims to not only lower young unemployment but also get the nation ready for the future by recognising the changing dynamics of the labour market. By keeping an eye on trends and spotting employment openings in the digital era, the ministry makes sure that youth are equipped for their future jobs.

In order to reduce young unemployment and expand work prospects, the Ministry of young and Sports has taken a number of aggressive measures. By providing them a feeling of purpose and motivating them to enter the workforce, the programme not only offers a rapid solution but also increases the sense of empowerment among young people.

By assessing the courses they offer and their relevance, educational institutions, particularly universities, have the ability to dramatically lower young unemployment. In order to minimise the possibility of a skills mismatch and provide youth with the tools they need to thrive in the workforce, education programmes should be matched with the demands of companies going forward.

SMEs are expected to be major contributors to the decrease in young unemployment because they are significant participants in the labour market. These enterprises may invest in their staff, increase productivity, and give young people meaningful job options by offering government subsidies and incentives for training programmes.

As a result, in order to improve youth employment initiatives and offer suggestions for accelerating economic growth and lowering poverty, it is critical to comprehend the reasons of young unemployment. Finally, youth unemployment has an impact on politics, the economy, and society. In order to comprehend the underlying reasons of Malaysia's young unemployment issue, which impacts a sizeable segment of the labour force, employers and other labour market participants should read the study's results.

1.8   Scope of the study

This study focuses on youth unemployment, especially among recent graduates as a larger proportion of these people are new graduates with degree qualifications. It needs to understand the current worldwide trends in youth unemployment as well as those in Asia, ASEAN, and Malaysia. This study looks at the causes of youthful unemployment in Malaysia from both a theoretical and empirical perspective. It provides some suggestions on how to address youth unemployment among Malaysian youth in addition to evaluating the reasons for it and their implications on the country's economy.

1.9   Conclusion

This chapter includes a few research backgrounds including the current trend of youth unemployment from the world, Asia, ASEAN and Malaysia and the factors that affect the youth unemployment in Malaysia.

CHAPTER 2
LITERATURE REVIEW

2.0   Introduction

The research background for each determinant, the problem statement, the research questions, the research objectives, and the importance of the study regarding youth unemployment in Malaysia were outlined in the earlier chapter. Before shifting to empirical analysis, various prior research studies on the factors influencing youth unemployment had been conducted in Malaysia. In the research, numerous factors were used.

This chapter examines the correlation between the independent determinants (GDP, inflation rate, FDI and urbanization) and the dependent determinant, youth unemployment. Besides, the theories used in the previous research will be discussed.

2.1   Empirical Evidence

It is outside of the scope of this work to provide a thorough analysis of the literature on the factors that contribute to young unemployment. It solely reviews current research on factors related to young unemployment.

A research on the relationship between young unemployment in Africa and information and communication technology (ICT) was carried out (Ogbonna et al., 2022). Doing an analysis of the relationship between ICT and young unemployment in Africa using a Generalised Method of Moment (GMM) model. The study uses system GMM and difference on a sample of 41 African nations between 2003 and 2018. Inflation rate, GDP, corruption index, and physical capital accumulation are the variables considered in this study. Furthermore, since the inflation rate has a negative impact on youth unemployment, the data supports the Phillip curve concept. Furthermore, there is proof that greater economic growth, fewer levels of corruption, and increased physical capital accumulation can all help to cut young unemployment in Africa. In order to lower the rate of young unemployment in the medium- to long-term, governments in many African nations would need to update educational curriculum to incorporate ICT-based training due to declining economic growth and the impending economic slump.

From 2006 to 2016, Claudiu et al. (2018) studied A EU Level Analysis of Several Youth Unemployment Related Factors. It looks at the connections between factors like the GDP, minimum wages, paternalistic mindset, and a large disparity and teenage unemployment. The research conclusion demonstrates that the primary factors influencing unemployment in the EU are a large gap, paternalistic culture, minimum pay, and GDP. While the GDP, the minimum wage, and paternalistic mindset all had a major detrimental influence on teenage unemployment, there was also a considerable beneficial impact due to a large gap.

The purpose of the study is to examine how foreign direct investment, as reported by Mkombe et al. (2020), affected young unemployment in the Southern African Development Community between 1994 and 2017. Using the Feasible Generalised Least Squares (FGLS-Parks) method, the impact of foreign direct investment on young unemployment was examined. The outcome demonstrates that FDI has little impact on lowering young unemployment in the SADC area. This may be the result of the region's FDI being mostly in the form of mergers and acquisitions, which have a lower potential to create employment than greenfield investment. GDP, however, indicates that it had a negative and considerable influence on young unemployment. This result is in line with Okun's law. Aside from that, it was discovered that there was a negative and significant relationship between urbanisation and youth economic opportunities. This is because urban labour markets offer a wider range of jobs, from manufacturing to secretarial work, and living in an urban area has been linked to increased access to formal employment and labour markets. Additionally, young unemployment in Southern Africa was significantly impacted negatively by population increase.

An investigation of the macroeconomic variables influencing young unemployment in Malaysia is carried out by Geetha and Michael (2020). The data covered by this study would span 19 years, from 2001 to 2019. It makes use of the VECM model. The macroeconomic variables selected as the primary drivers of young unemployment in Malaysia are GDP, inflation, and foreign direct investment. The empirical findings indicate a substantial negative relationship between GDP and inflation and young unemployment. Conversely, there was a notable and favourable impact of foreign direct investment on young unemployment.

Another study by Liotti (2020) is about labour market flexibility, economic crisis and youth unemployment in Italy. The researcher used the ARDL model to examine the relationship between the variables and youth unemployment. The variables such as inflation, ALMP, population, average wage, private investment and productivity are chosen in this study. The empirical conclusion demonstrates that inflation and employment are negatively correlated since rising prices lower real wages, which in turn raises labour demand and

employment from businesses. In Italy, young unemployment was shown to be positively correlated with population, but negatively correlated with ALMP. When aggregate demand rises, the specified average pay has a negative link. Furthermore, productivity and private investment both help to lower young unemployment; however, no evidence of a distinct effect of LMRI on the two macro domains was found.

Kang (2021) explores the determinants of youth unemployment: an empirical analysis of OECD and EU member countries in 2000-2017. The Hausman test was applied to test youth unemployment in OECD and EU countries. The independent variable in this study are GDP, employment protection legislation for regular workers, employment protection legislation for irregular workers, share of temporary workers in youth population, PISA score, work-study program period during total expected education period for 15-29 years old, share of the youth in total population, public spending in education, and the share of following industries in gross added value. The results indicate a favourable link between GDP and young unemployment. Most of the time, there is a negative correlation between the young unemployment rate and the economic growth rate and a positive correlation between the two. There are only exclusions when additional industrial sector variables are taken into account. The job protection laws for both regular and irregular workers have a considerable impact on young unemployment, with a statistically significant coefficient. While the protection level for regular workers (EPL(r)it) does not reflect statistically significant coefficients for the majority of situations, it is linked to lower rates and higher rates of young employment when it comes to temporary contracts. The PISA score and public education investment have little impact on the unemployment rate among young people. There was a favourable association identified between the percentage of youth workers and temporary workers. It implies that when their economies are experiencing a downturn in the business cycle, nations with a large proportion of young, temporary workers are more susceptible to the youth unemployment issue. Additionally, there was a negative link between the work-study programme term and the entire anticipated education period for students aged 15 to 29. It implies that obtaining two degrees helps to lessen the workforce supply and demand mismatch that is seen in the entry-level labour markets. In addition, the percentage of youth in the overall population likewise demonstrates the negative correlation. This is because the results of our analysis should be interpreted in light of the fact that we only included developed nations where the population has aged and where the proportion of young people is declining.

Hasan and Sasana (2020) looked into the factors that influence young unemployment in ASEAN. Between 2001 and 2017, this study was carried out in nations that are members of the Association of Southeast Asian Nations. The Fixed Effect Model is employed in the analytical process. Based on actual evidence, GDP has a negative impact since greater GDP levels are associated with lower unemployment rates in a given nation.

This supports the Okun law and is consistent with several studies that show a rise in GDP will lower rates of youth unemployment. However, FDI displays findings that contrast from those of other studies, indicating a detrimental and noteworthy impact. Young people will have more employment options in a nation with higher FDI. Trade openness is beneficial since it reduces youth unemployment; the more open a nation is, the more youth unemployment it will decrease. The source of this situation is ASEAN's extremely high import levels, which prevent local industries from growing and competing and, eventually, from being able to hire workers, particularly younger ones. Ultimately, it will result in higher rates of young unemployment. Because a greater inflation rate corresponds with a lower young unemployment rate, inflation is a negative indicator. This demonstrates that there is a trade-off or a temporary negative link between unemployment and inflation, supporting the validity of the Philips curve. The human development index (HDI) also revealed a negative correlation, with greater HDI values being associated with higher rates of youth unemployment. This is a result of the uneven distribution of the human development index throughout the ASEAN nations' regions.

Ni et al. (2021) investigate a study that uses multiple linear regression to estimate Malaysia's young unemployment rate. The data set that the researcher will examine spans 29 years, from 1991 to 2019. the elements include inflation, FDI, GDP, and urbanisation. The empirical findings indicate a favourable correlation between GDP and young unemployment. This differs from the findings of previous studies since Okun's law indicates that there are substantial and unfavourable correlations between economic development and young unemployment. Additionally, a favourable association between FDI and youth unemployment was discovered. This indicates that FDI significantly lowers young unemployment in Malaysia. Inflation and urbanisation do not significantly affect young unemployment in this construct.

The impact of per capita income on young unemployment in Kenya is examined by Okuom et al. (2023). The ARDL model is used in this study for the years 1991–2021. the factors include female participation rate, inflation, and per capita income. The outcome demonstrates that there is a negative impact on per capita income. Aggregate demand theory and Okun's law both supported the negative link between young unemployment and per capita income. Demand for products and services rose in tandem with income, leading to higher output and employment levels. Additionally, a favourable association between adolescent unemployment and the female involvement rate was discovered. Women's human capital grows when more of them pursue education, improving their prospects for work and lowering the young unemployment rate.

According to Ali (2013), a cointegration and error correction model analysis was conducted to examine the factors that contribute to unemployment in Sudan. The factors include GDP growth, trade openness, inflation, government spending, and the relationship between foreign direct investment and average years of education. Because a high inflation rate, which is predicted to come from increases in government spending, would be linked to economic expansion in the short run if government spending is focused on both soft and hard infrastructures, the empirical result demonstrates that inflation and growth have a positive relationship. Conversely, the long-term growth of economic activity and, consequently, the creation of jobs, continue to be heavily reliant on other actual elements like the availability of capital and a skilled labour force. Higher government spending, which is typically accompanied by a high rate of inflation, promotes short-term gains in economic growth and, thus, reduced unemployment rates. This is another reason why government spending is beneficial. Apart from that, trade openness exhibits a negative association since increased government expenditure, which is often correlated with high inflation, boosts economic growth in the near term and lowers unemployment rates. There is a negative association between young unemployment and the GDP as well as the interplay between average years of schooling and foreign direct investment.

Lab (2020) investigates the factors that contribute to Pakistan's young unemployment rate. The ANOVA model is used. factors including the agricultural sector's backwardness, overcrowding, lack of investment, and political stability. According to the research findings, every variable has a favourable impact on young unemployment. Increased young unemployment due to political unrest would have an impact on foreign direct investment (FDI) and investment in Pakistan, which will reduce the number of job offers relative to the number of job seekers.

The research Determinants of Youth Unemployment in Uganda: A Case research of Kampala District was reviewed by Neslon & Christoper (2022). It makes use of time series data spanning from 1980 to 2020 and the VAR model. The factors include FDI, inflation, and the rate of population increase. The empirical conclusion demonstrates that while the population growth rate has no discernible effect on young unemployment, FDI and inflation have a negative link with it.

The factors influencing Slovakia's young unemployment rate are examined by Papik et al. (2022). The GDP per capita, flat price per square, and Slovak language state exam results are the factors in this study. The results of the Slovak language state exam show a negative effect because the higher the study results of high school graduates, the higher the probability of finding a job immediately after graduation. In contrast, the GDP per capita shows a positive correlation because young people living in regions with higher economic

growth have a higher chance of being employed after graduation. There is no discernible correlation between young unemployment and the price per square metre of apartments.

The Democratic Republic of the Congo's young unemployment rate is determined by an empirical investigation conducted between 2001 and 2020, according to Balemba (2022). The OLS technique is used. Education, GDP growth rate, inflation, investment, and population are the factors. The empirical finding demonstrates the beneficial impact of education, as the majority of recent graduates lack work experience. Due to the numerous constraints on investment in the DRC, the investment also shows promise. On the other hand, inflation is detrimental. The Philips curve theory, which postulates a declining link between the unemployment rates, is supported by these findings. Due to the demographic slowdown, there is a negative link between population and growth. The GDP growth rate, however, has little bearing on youth unemployment.

The macroeconomic factors influencing unemployment in Nigeria have been analysed by Adejare (2023) using data from dynamic least square and fully-modified ordinary least square. The factors include the rate of GDP growth, the rate of inflation, the level of economic openness, and domestic private investment. The empirical finding demonstrates that while private domestic investment also has a positive and negligible influence on young unemployment, the GDP growth rate and inflation rate have a negative and small impact on it. On the other hand, whereas increased trade openness may lower young unemployment in Nigeria, the level of economic openness has a negative and substantial effect on youth unemployment.

Almula-Dhanoon&Ali (2021) have explore the determinants of youth unemployment in Arab Countries. It employs multiple linear regression method and the panel data for the period 1990-2019. The variables such as FDI, inflation, government spending ratio, population growth rate, economic growth rate, the degree of economic openness and the corruption risks index. The empirical findings demonstrate that FDI and the level of economic openness significantly and negatively affect young unemployment. Trade openness boosts job prospects and competitiveness, particularly for skilled individuals. However, the Arab nations' young unemployment rate is not significantly affected by economic progress. Youth unemployment in the Arab world is positively impacted by inflation, government expenditure, population growth, and the likelihood of corruption. Arab nations are experiencing rapid population expansion, which has put them under strain from high rates of young unemployment. Because government jobs are safer, they like them more.

Analysis of youth unemployment in Sub-Saharan Africa: determinants and possible ways forward study by Ebaidalla (2016) . It employs a fixed and random effect model and the data period from 1991-2012. The variables such as GDP growth, inflation, trade openness, FDI, education, fertility rate, corruption, and natural resources. The outcome demonstrates that young unemployment is significantly impacted negatively by GDP growth. This outcome validates the Okun law's applicability to SSA nations. Youth unemployment is significantly impacted negatively by trade openness, foreign direct investment, corruption, and education. An growth in FDI suggests a nation with a high level of trade openness, however in certain parts of SSA, there is no issue with skills mismatch. However, because SSA has high fertility rates and limited natural resources available for utilisation, these factors have a positive and considerable impact on young unemployment.

Ebaidalla (2016) examined the determinants of youth unemployment in OIC member states: A dynamic panel data analysis. It employs a fixed effect model and GMM model and the data period from 1993 to 2012. The variables such as GDP growth, inflation, trade openness, domestic investment, economic environment, education and fertility. The empirical conclusion confirms Okun's law's validity for the OIC nations, indicating a negative and substantial link between GDP growth. Additionally, the inflation data is negative and noteworthy, supporting the validity of the Philips curve concept in the OIC member states. However, home and educational factors can have a detrimental and noteworthy impact on young unemployment. On the other hand, young unemployment is positively and significantly impacted by trade openness and fertility. Trade liberalisation in OIC nations would harm domestic sectors and raise unemployment mostly because of high import levels. OIC nations also suggest a nation with a high fertility rate.

2.2   Review of Relevant Theoretical Models

Based on the literature above, it found out three theory related to the study:

2.2.1 Okun's Law

Okun's Law, which was first published in the early 1800s, is a widely recognised statistical finding that states there is a negative relationship between GDP growth and unemployment. In the framework of the

underground economy, Okun's law indicates a strong positive association between the shadow economy and unemployment. The results of their study provided insight into the ways in which the loss of their jobs during a recession compelled unemployed people to partake in a variety of illicit activities. This formula suggests that for every 1% decrease in GDP, the unemployment rate may increase by around 2%. Increased unemployment rates are often associated with slower real GDP growth. Many academics link unemployment to the effects of real GDP growth. Poor real GDP growth, especially in times of financial crisis, has a major effect on the unemployment rate. Many academics have tried to assess how Okun's law applies in their own countries.

2.2.2 Phillips Curve Theory

In 1970, William Phillips created the Phillips curve. Inflation and unemployment have a consistent, negative connection, according to the Phillips curve. Decreased inflation is associated with higher rates of unemployment, whereas greater inflation is associated with lower rates of unemployment. Because more people have more purchasing power, demand increases when more people are employed. This theory suggests that there is a negative relationship between inflation and youth unemployment.

2.2.3 Neoclassical Growth Theory

In 1956, Trevor Swan and Robert Solow first proposed the neoclassical growth theory. The interaction of the three forces of labour, capital, and technology results in a steady rate of economic growth, which is explained by neoclassical growth theory. This growth theory states that how people utilise their money and how much capital accumulates inside an economy both have an impact on economic growth. Furthermore, the way that labour and capital interact within an economy determines its production. Finally, technology is expected to increase labor's capacity for output and worker productivity. Therefore, the production function of neoclassical growth theory is used to determine the growth and equilibrium of an economy. That is the function $Y = AF(K, L)$.

The relationship between labour and technology, however, often results in a reconstructed production function as $Y = F(K, AL)$. This suggests that labour is enhanced by technology and that workers' productivity is based on the level of technology.

Increasing each input shows how it affects GDP and, in turn, the condition of economic equilibrium. Nonetheless, if the three elements of neoclassical growth theory are not equal, the returns on an economy for both capital and unskilled labour fall. These lower returns imply that, whereas technology's potential for development and output are boundless, the benefits of increasing these two inputs are exponentially decreasing.

2.3   Hypotheses Development

Based on the conceptual framework, there are four research hypotheses below

2.3.1   Gross Domestic Development

H0: There is no relationship between youth unemployment and GDP.

H1: There is a positive or negative relationship between youth unemployment and GDP.

2.3.2   Inflation rate

H0: There is no relationship between youth unemployment and inflation.

H1: There is a positive or negative relationship between youth unemployment and inflation.

2.3.3   Foreign Direct Investment

H0: There is no relationship between youth unemployment and FDI.

H1: There is a positive or negative relationship between youth unemployment and FDI.

2.3.4 Urbanization

H0: There is no relationship between youth unemployment and urbanization.

H1: There is a positive or negative relationship between youth unemployment and urbanization.

2.4 Conclusion

The chapter looked the evaluation of the previous studies. The hypothesis were developed based on the previous studies.

CHAPTER 3
METHODOLOGY

3.0   Introduction

This chapter will cover includes the model specification, research design, data collection, time series analysis and diagnostic test. In this following chapter, the research model is examined using each procedure. The five factors used in this research to determine the factors influencing the youth unemployment rate in Malaysia are the Gross Domestic Product (GDP), the inflation rate, the foreign direct investment, and the urbanization. The sample period of this study is from 1980 to 2022. There are 43 total observations in the year from all the data.

3.1   Empirical Model

Drawing upon the framework for the state-driven establishment of middle classes in Malaysia, the previously mentioned empirical research, and the persistent nature of joblessness, it states the empirical model as :

YUR = f(GDP, INF, FDI, UB)

3.1.1   Youth Unemployment

Where YUR is the ILO-modeled youth unemployment rate. as opposed to the youth unemployment rate, which is determined by the national statistics authority using the proportion of youngsters without jobs in the labour force. There is no missing observation in the young unemployment rate data modelled by the ILO. The ILO model has the benefit of being internationally standardised and less susceptible to changes in definitions of youth and unemployment. The percentage of the labour force between the ages of 15 to 24 who do not have a job but are looking for one is known as youth unemployment. The dependent variable, YUR, is the percentage of the labour force between the ages of 15 to 24 that is made up of all young unemployment.

3.1.2   Gross Domestic Product (GDP)

Next, the gross domestic product, or GDP, is the total value of the final products and services a country produces over a specific time period, less the value of imports. It measured by the GDP growth. Ogbonna et al. (2022) found that negative correlation in Africa's youth unemployment. Furthermore, most researchers mention that GDP has significant and negatively correlated with youth unemployment. Besides, the result of GDP negatively because it confirms the validity of Okun's law. When the lower real GDP , the higher youth unemployment. This were supported by Claudiu et al. (2018), Mkombe et al. (2020), Geetha & Michael (2020), Hasan & Sasana (2020), Ali (2013), Balemba (2022), Bayrak&Tatli (2018), Adejare (2023), Ajibola&Oraka (2020), Ebaidalla (2016), and Singh&Lee (2023). However, Nelson et al. (2024), Ni et al. (2021) and Kang (2021) indicates that GDP positively affects youth unemployment. This study expects the youth unemployment and GDP have the significant and negatively relationship.

3.1.3   Inflation Rate

The speed at which prices rise over a specific time period is known as inflation. Generally, inflation is measured broadly, such as the whole increase in prices or the rise in the national cost of living. It measure by the consumer price , inflation. It apply by the Philip curve theory. The study by Ogbonna qt al. (2022) state that negative relationship between inflation and youth unemployment in Africa. This supported by Geetha& Michael (2020), Liotti (2020), Nelson& Christoper (2022), Balemba (2022), Bayrak & Tatli (2018) were found to have negative and significant relationship with youth unemployment. Ni et al. (2021),Adejare (2023), Ajibola&Oraka (2020), Ebaidalla (2016), Wen et al. (2022)argued that there have a negative and insignificant in the studies. However, Hasan& Sasana (2020), Okuom et al. (2023), Ali (2013), Amula-Dhanoon& Ali (2021) mentioned that there were positive correlated with the youth unemployment. Other than that,Singh& Lee (2023) indicated that inflation not significant to the youth unemployment. This study expects the youth unemployment and inflation have the significant and negatively relationship

3.1.4   Foreign Direct Investment (FDI)

A foreign government, business, or investor may purchase stock in a foreign project or firm. This type of investment is known as foreign direct investment (FDI). Since FDI establishes strong, enduring connections between economies, it is a vital component of global economic integration. International commerce is

facilitated by foreign market access, knowledge transfer between nations is facilitated by FDI, and it has the potential to drive economic growth. This group's metrics include industry, FDI restrictions, partner nation, and inward and outward values for stocks, flows, and income. It measured by the outflow of FDI in Malaysia. Mkombe et al. (2021) found out that there have negative and not significant in the study while Hasan&Sasana (2020) argued that there have negative and significant relationship between FDI and youth unemployment. It supported by Almula-Dhanoon &Ali (2021), Ajibola&Oraka (2020), Ebaidalla (2016), and Wen et al. (2022). Other than that, Geetha& Michael (2020), Ni et al. (2021), Nelson et al (2024) , Nelson & Christopher (2022) indicated there have the positive correlation with youth unemployment. This study expects the youth unemployment and FDI have positive and significant relationship.

3.1.5 Urbanization

Urbanisation is the process by which cities expand and ever larger proportions of the population move into urban areas. It measured by the urban population growth. In these studies, Wen et al. (2022), Ni et al. (2021), and Mkombe et al (2020) found there are negative and significant relationship between urbanizations and youth unemployment in Malaysia and Southern Africa.

3.2   Data Collection

To look at the relationship between macroeconomic factors and young unemployment, data collection is required. Every bit of data comes from secondary sources once a year. The study used the GDP, inflation rate, foreign direct investment, and urbanisation as independent variables to investigate the significant connection with young unemployment in Malaysia. Additionally, the information was gathered between 1991 and 2022 from the World Bank Indicators database.

3.3   Analysis Techniques

Analysis Techniques include descriptive analysis, correlation analysis, multiple regression analysis, vector autoregression model, model evaluation.

3.3.1 Descriptive Analysis

Descriptive analysis is a technique that generates information and the essential features of a sample. It will provide an overview of the data that was acquired. Consider central tendency and dispersion measurements like mean, median, mode, standard deviation, and variance minimum and maximum value as an example.

3.3.2 Correlation analysis

A correlation test is used to check the direction and linearity of the relationship between the independent and dependent variables. The alternative hypothesis for this test is that there is a positive connection, whereas the null hypothesis is that there is no positive correlation between the dependent and independent variables. The variable is important if the analysis demonstrates that the correlation coefficient differs considerably from zero. In the event that the correlation coefficient is not statistically significant, it indicates that it is not different from zero. If not, it is not important.

3.3   Diagnostic Checking

Diagnostic checking including unit root test, autocorrelation test, heteroscedasticity test, multicollinearity test, and normality test.

3.3.1   Unit Root Test

Unit root tests are test for stationary in the time series. Time series variables in the unit roots test is nonstationary. We used the Augmented Dickey-Fuller and Phillip-Perron test in this study. The hypothesis testing in unit roots test is hypothesis null is the time series data is unit root while the hypothesis alternative is time series is no unit root.

3.3.2   Serial Autocorrelation Test

Serial autocorrelation is the phrase used to describe the correlation between error terms from the same unit of observation across time. Relative autocorrelation is the alternative hypothesis to the null hypothesis, which

is that residual autocorrelation does not exist. As a result, there is no autocorrelation in the error term if the probability value exceeds the critical alpha 0.05 value.The frequently used test to identify the first-order autocorrelation issue in the regression analysis is the Durbin -Watson test. The hypothesis testing of the Durbin-Watson test is as below:

H0: $P = 0$

H1: $P \neq 0$

If the Durbin-Watson value is between 1.5 and 2.5, then there is no autocorrelation, according to the decision criteria for the Durbin-Watson test for autocorrelation.

3.3.3 Heteroscedasticity Test

When the variance of the error terms is not constant, heteroscedasticity becomes a problem. There are no BLUE in heteroscedasticity since the variance is not the least. Heteroskedasticity manifests itself in two primary ways: unconditionally and conditionally. Conditional heteroskedasticity identifies nonconstant volatility that is linked to the volatility of the preceding period (e.g., daily volatility). Unconditional heteroskedasticity is the term used to describe general structural changes in volatility that are independent of volatility in earlier periods. Unconditional heteroskedasticity is used when future high and low volatility periods may be predicted Hypothesis:

H0: The residuals are no heteroscedasticity.
H1: The residuals are heteroscedasticity.

Decision rule: Do not reject the null hypothesis if the probability value exceeds the threshold alpha 0.05 value, therefore there is no heteroscedasticity in the error term.

3.3.4 Multicollinearity Test

Multicollinearity is the term for the relationship between related independent variables. Because they are so closely connected to one another and have such a strong correlation, multicollinearity makes it hard to

identify which explanatory variable influences the dependent variable. Multicollinearity does not imply causation. Hypothesis:

H0: The residuals are no multicollinearity.

H1: The residuals are multicollinearity.

Decision rule: Do not reject the null hypothesis if the probability value exceeds the threshold alpha 0.05 value, therefore there is no multicollinearity in the error term.

3.3.5 Normality Test

A bell-shaped error term is implied by the normalcy test. Using the calculated regression coefficient, one of its primary applications is in hypothesis testing, which investigates ideas regarding economic behaviour. To ascertain if the skewness and kurtosis of our study data are compatible with a normal distribution, we may use a test statistic known as Jarque-Bera. A measure that conveys the imbalance in the frequency distribution is called skewness. Conversely, kurtosis quantifies the extent to which the frequency distribution is reducing. Hypothesis:

H0: The error term is normally distributed.

H1:The error term is not normally distributed.

Decision rule: Do not reject the null hypothesis if the probability value exceeds the threshold alpha 0.05 value, therefore the error term is normally distributed.

3.4 Multiple Regression Analysis

When there are more than two explanatory factors and a dependent variable, multiple regression analysis expands the scope of the two-variable model. In this study, the dependent determinants are explained by four independent variables. To look at the relationship between the regress and regressors, a multiple regression model is employed. A thorough model will be constructed in this investigation.

The general model takes only the independent variable into account. The following equation:

$$YU_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \mu_{it} \text{ --------Eq. (1)}$$

$$YU_{it} = \beta_0 + \beta_1 GDP_{1it} + \beta_2 INF_{2it} + \beta_3 FDI_{3it} + \beta_4 UR_{4it} + \mu_{it} \text{ --------Eq. (2)}$$

Where,

YU_{it} =   Unemployment, youth total (%   of total labor force ages 15-24) (modeled ILO estimate)

GDP_{it} =   GDP growth (annual %)

INF_{it} = Inflation, consumer price (annual %)

FDI_{it} = Foreign Direct Investment, net outflows (% of GDP)

UR_{it} = Urban population growth (annual %)

μ_{it} = Error term

3.4.1 Vector Autoregression Model

An unconstrained VAR designed for use with stationary series that are known to be cointegrated is referred to as a VAR model, according to Gilbert (1986) (Hendry and Ericssion, 2001). As a simultaneous system is the foundation of the VAR method, all variables are seen as endogenous (Box and Jenkins, 1976). Glenn and Granger, 1991). When using VAR, the value of each variable in the model is expressed as a linear function of its lagged value and the other variables' values.

3.4.2 Granger Causality Test

A statical hypothesis test called the Granger causality test is used to assess if one time series can be forecasted using another. The direction link between the independent and dependent variables may be tested using Granger causality.

3.4.3 Model evaluation

In the study, model assessment is evaluated. In order to predict future development, model evaluation is a method that shows links among economic factors. We are able to do model evaluation using the U-theil criterion, mean absolute error (MAE), mean absolute percentage error (MAPE), and root mean square error (RMSE).

The residuals' standard deviation is known as RMSE. The RMSE quantifies the degree of dispersion of these residuals. The formula of RMSE is

$$RMSE = \sqrt{\frac{\sum(Pt - At)^2}{T}}$$

Without taking into account the direction of the mistakes, MAE calculates the average size of the errors in a series of projections. The formula of MAE is

$$MAE = \frac{\sum(Pt - At)}{T}$$

The mean, or average, of the forecast's absolute percentage mistakes is known as the MAPE. It evaluates a forecast system's accuracy. The formula of MAPE is

$$MAPE = \frac{\sum(Pt - \frac{AtI}{At}) * 100}{T}$$

U-Theil is an indicator for relative accuracy that contrasts the outcomes of predicting with limited historical data. The formula of U-theil is

$$U - Theil = \frac{\sqrt{\frac{\sum(Pt - At)^2}{T}}}{\sqrt{\frac{\sum(Pt)^2}{T}} + \sqrt{\frac{\sum(At)^2}{T}}}$$

3.5 Conclusion

In summary, this chapter covered the proposed empirical model, data sources, variable descriptions, and methods used in this study for analyses and testing. The E-views software's data analysis result and findings for each method will be presented and explained in detail in the following chapter.

Chapter 4

Data Analysis

4.0   Introduction

This chapter concentrates on presenting and analyzing the empirical findings obtained through the hypothesis testing used in the methods described in Chapter 3. This Chapter's main highlights are the result of the VAR model and the Granger Causality test. EViews 12 is used to generate all of the outcomes. A discussion of further clarification will follow each test result.

4.1   Descriptive Analysis

The table below shows descriptive analysis results including mean, median, maximum, minimum, standard deviation, skewness, kurtosis, jarque-bera and probability.

Table 4.1 Descriptive Summary Statistic of All Variables

	YUR	GDP	INF	FDI	URB
Mean	10.9726	5.3543	2.5609	2.9283	3.4779
Median	11.2655	5.6867	2.5698	2.6591	3.5142
Maximum	12.9710	10.0027	5.4408	6.6721	5.2544
Minimum	8.1750	-7.3594	-1.1387	0.1944	1.7439
Std. Dev	1.0389	4.0119	1.4494	1.7936	1.1682
Skewness	-0.8720	-1.6280	-0.1163	0.5156	0.0758
Kurtosis	4.2150	5.7666	3.0215	2.3722	1.6170
Jarque-Bera	6.0234	24.3421	0.0727	1.9430	2.5809
Probability	0.04921	0.0000	0.9643	0.3785	0.2751
Sum	351.1220	171.3377	81.9498	93.7044	111.2921
Observation	31	31	31	31	31

Sources: EViews

Table 4.1 outcome is based on 31 annual observations from 1991 to 2022. The table displays findings for all the variables that are relevant to descriptive statistics, such as youth unemployment (YUR), gross domestic product growth (GDP_G), inflation rate (INF), foreign direct investment (FDI), and urbanization (URB).

Based on the table above, the maximum youth unemployment reaches 12.9710, and the minimum is 8.1750. The standard deviation is 1.0389, and the median of youth unemployment is 11.2655. The youth unemployment data is volatile than others as it results in high kurtosis which is 4.1250 and it more than 3.

The highest of GDP growth is 10.0023, while the lowest is -7.3594. The standard deviation of GDP growth is 4.0119, whereas the median is 5.6867. The data on GDP growth is more volatile since the kurtosis exceeds 3, which is 5.7666.

Besides, the maximum inflation rate reached 5.4408 and the minimum fell to -1.1387. The result leads to 1.4494 of the standard deviation and 2.5698 of the median of the inflation rate. The inflation rate in Malaysia is volatile because it exceeds 3 which is 3.0215.

Moreover, the highest FDI peaked at the 6.6721 and the lowest reached 0.1944. The standard deviation result in 1.7936, and the median is 2.6591. The FDI data is relative stable as the kurtosis is less than 3, which is 2.3722.

Last but not least, the maximum urbanization growth rate peaked at 5.2544, and the minimum fell to 1.7439. The median of the urbanization is 3.5141 and the standard deviation is 1.1682. The urbanization data is more stable due to its kurtosis is less than 3 which is 1.6170.

4.2   Correlation Analysis

To check the relationship between the independent variable.

Table 4.2 Correlation Analysis

	YUR	GDP	INF	FDI	URB
YUR	1.0000	-0.2335	-0.2764	-0.3688	-0.1953
GDP	-0.2335	1.0000	0.3058	0.1378	0.3165
INF	-0.2764	0.3058	1.0000	0.0952	0.4322
FDI	-0.3688	0.1378	0.0952	1.0000	-0.3079

| URB | -0.1953 | 0.3165 | 0.4322 | -0.3079 | 1.0000 |

Sources: EViews

If the relationship is more than 0.7 means that there are high correlations, 0.4 to 0.7 is a moderate correlation, 0.2 to 0.4 is a low relationship. Whereas, less than 0.2 are almost negligible relationship. Table 4.2 shows that YUR and GDP , YUR and INF, FDI and YUR, GDP and INF, URB and GDP, URB and FDI have low correlation. While INF and URB is moderate correlations. Other than that, YUR and URB, GDP and FDI, INF and FDI are no relationship.

4.3   Diagnostic Checking

Diagnostic checking includes serial autocorrelation, heteroscedasticity, multicollinearity and normality test.

4.3.1   Autocorrelation

To check the autocorrelation , Durbin Watson test is being to used in this study.

Table 4.3 Durbin-Watson Test

No of the observation	32
Hypothesis	H_0: $P = 0$
	H_1: $P \neq 0$
Durbin-Watson Statistic	1.9151
Result	No Autocorrelation

Sources: EViews

According to the Durbin-Watson Test's decision rules, autocorrelation does not exists if the Durbin-Watson value is between 1.5 and 2.5. There is no autocorrelation issue because the Durbin-Watson statistic is 1.9151. Therefore, do not reject the null hypothesis.

4.3.2 Heteroscedasticity

To check the heteroscedasticity, the white test is being used in this study.

Table 4.4 White Test

No of observation: 32	
Hypothesis	H0: The residuals are no heteroscedasticity.
	H1: The residuals are heteroscedasticity.
Decision rule	Reject H0: If the p-value is lower than 0.05. Otherwise, do not reject H0.
P-value	0.3559
Result	No Heteroscedasticity

Sources: EViews

Based on the table, the p-value is higher than the significant level of 5%; therefore, do not reject the null hypothesis because there is no heteroscedasticity.

4.3.3 Multicollinearity

To check the correlation in the model, VIF test is used in this study.

Table 4.5 Variance Inflation Factors Analysis

No of the observation	32
Hypothesis	H0: There is no multicollinearity exists among explanatory variables.
	H1: There is multicollinearity exists among explanatory variables.
R^2	0.2535
VIF	1.3396
Result	No Multicollinearity (VIF 5 >1.3396)

Sources: EViews

If the variance inflation factors are more than 5 in a small sample, the multicollinearity will exist, whereas when the variance factors are less than 10 in a big sample, the multicollinearity does not exist. There is a

significant multicollinearity issue. According to the table 4.2 findings, there is no significant multicollinearity issue among the independent variables because variance inflation factor is less than 5 .

4.3.4 Normality

To check the model are normally distributed, normality test must used in this study.

Table 4.6 Jarque-Bera test

No of observation: 32	
Hypothesis	H0:: The error term is normally distributed.
	H1:: The error term is not normally distributed.
Decision rule	Reject H0: If the p-value is lower than 0.05. Otherwise, do not reject H0.
Jarque-Bera	4.3956
P-value	0.1110
Result	Normally distributed

Sources: EViews

Based on the table 4.3, the p-value is higher than the significance level of 5 %; therefore, the alternative hypothesis is rejected as it indicates the error term is normally distributed.

4.4   Time Series Regression Analysis

4.4.1 Unit root Test

To check the stationary of the model , need to used ADF and PP test.

Table 4. 7: Augmented Dicky-Fuller Unit Root Test (ADF)

	Level		First Difference	
	Intercept	Trend & Intercept	Intercept	Trend & Intercept
GDP	0.0005***	0.0040***	0.0000***	0.0000***
INF	0.0018***	0.0022***	0.0001***	0.0006***
FDI	0.1187	0.3789	0.0000***	0.0000***
URB	0.7885	0.6815	0.0000***	0.0000***

Note: The value in the table refers to the probability obtained for each variable at level and first difference. The asterisk *** indicates 1 % level of significance.

Sources: EViews

Table 4.8: Phillips-Perron Unit Root Test (PP)

	Level		First Difference	
	Intercept	Trend & Intercept	Intercept	Trend & Intercept
GDP	0.0006***	0.0015***	0.0000***	0.0000***
INF	0.0012***	0.0024***	0.0000***	0.0000***
FDI	0.1316	0.4100	0.0000***	0.0000***
URB	0.9783	0.0001***	0.0000***	0.0000***

Note: The value in the table refers to the probability obtained for each variable at level and first difference. The asterisk *** indicates 1 % level of significance.

Sources: EViews

Table 4.6 and Table 4.7 show that the ADF and PP test indicate that GDP and INF have unit roots at the level and first difference. Variable FDI is stationary only in the first difference at the ADF test and PP test. Another variable which is URB has stationary at first difference in the ADF test, but in the PP test, it has unit root in the level of trend and intercept and at first differences.

4.4.2 Vector Autoregression Test

To check whether the variable have short term relationship between the variable so need to use VAR model.

$$\text{YURt: } 9.1220 - 0.0190GDP_{t-1} + 0.0990INF_{t-1} - 0.2413FDI_{t-1} - 0.3068URB_{t-1}$$

$$[-0.4186] \qquad [0.7498] \qquad [-2.1049**] \qquad [-1.5229*]$$

$$+0.3168YUR_{t-1} + 2.4774_{\varepsilon t}$$

$$[1.7504*]$$

$$R^2 = 0.4170 \, , Adj \, R^2 = 0.3004$$

Based on the YUR VAR model's results, the explanatory variables accounted for about 41.70 percent of the variation in the youth unemployment equation. Estimates reveal that the explanatory variables, namely the foreign direct investment(FDI), urbanization (URB), youth unemployment in the lag period (YUR_{t-1})were the important explanatory variables with statistically significance at the α 0.05 level and at the 0.1 level respectively. However FDI was the most important variable in the model. It is because FDI can create many job opportunities to the countries.

$$GDPt: -25.3156 + 2.1858YUR_{t-1} + 0.5776INF_{t-1} + 0.2895FDI_{t-1} + 1.1117URB_{t-1}$$
$$[2.9847**] \qquad [1.0813] \qquad [0.6241] \qquad [1.3639]$$

$$+0.0509GDP_{t-1} + 10.0223_{\varepsilon t}$$
$$[0.2776]$$

$R^2 = 0.3379 , Adj\ R^2 = 0.2055$

Based on the GDP VAR model's results, the explanatory variables accounted for about 33.79 percent of the variation in the Gross Domestic Product (GDP) equation. Estimates reveal that the explanatory variables, namely youth unemployment (YUR) were the important explanatory variable with a statistically significant at the α 0.05 level. However, YUR was the most important variable in the model due to the productivity of the country. When GDP increase , YUR will decrease.

$$INFt: -0.2744 + 0.0453YUR_{t-1} + 0.0218GDP_{t-1} + 0.1155FDI_{t-1} + 0.4980URB_{t-1}$$
$$[0.1540] \qquad [0.2954] \qquad [0.6198] \qquad [1.5200*]$$

$$+0.0260INF_{t-1} + 4.0283_{\varepsilon t}$$
$$[0.1210]$$

$R^2 = 0.1677 , Adj\ R^2 = 0.0012$

Based on the INF VAR model's results, the explanatory variables accounted for about 16.77 percent of the variation in the inflation rate (INF) equation. Estimates reveal that the explanatory variables, namely

urbanization (URB) were the important explanatory variable with a statistically significant at the α 0.1 level. However, URB was the most important variable in the model. It is because more teenagers in urban will increase the competitor in the workplace lead the wage increase. It will also affect the cost of the product increase, and the price of goods also increase. Inflation occur.

$$FDI_t: -7.1297 + 0.5948YUR_{t-1} - 0.1076GDP_{t-1} - 0.2220INF_{t-1} + 0.5351URB_{t-1}$$
$$[2.5774**] \qquad [-1.8265*] \qquad [-1.3188] \qquad [2.0835**]$$

$$+0.9667FDI_{t-1} + 3.1583_{\varepsilon t}$$
$$[6.6140***]$$

$R^2 = 0.6597, Adj\ R^2 = 0.5917$

Based on the FDI VAR model's results, the explanatory variables accounted for about 65.97 percent of the variation in the foreign direct investment (FDI) equation. Estimates reveal that the explanatory variables, namely the youth unemployment (YUR), foreign direct investment(FDI), urbanization (URB), and foreign direct investment in the lag period (FDI_{t-1}) were the important explanatory variables with statistically significance at the 0.01 level, at the α 0.05 level and at the 0.1 level respectively. However, FDI in the lag period ((FDI_{t-1}) was the most important variable in the model. FDI can refer the previous FDI result and consider whether invest in this country is worth to the company a not.

$$URB_t: 0.0478 + 0.0039YUR_{t-1} + 0.0130GDP_{t-1} + 0.0639INF_{t-1} - 0.0544FDI_{t-1}$$
$$[0.1089] \qquad [1.4413] \qquad [2.4242**] \qquad [-2.3781**]$$

$$+0.9303URB_{t-1} + 0.4946_{\varepsilon t}$$
$$[23.1268***]$$

$R^2 = 0.9813, Adj\ R^2 = 0.9776$

Based on the URB VAR model's results, the explanatory variables accounted for about 98.13 percent of the variation in the urbanization (URB) equation. Estimates reveal that the explanatory variables, namely the

foreign direct investment(FDI), inflation (INF) and urbanization in the lag period (URB_{t-1}) were the important explanatory variables with statistically significance at the α 0.01 level and at the α 0.05 level respectively. However, URB in the lag period ((URB_{t-1}) was the most important variable in the model. It is due to looking at the previous and predict better future.

4.4.3 VAR model Lag Length Selection Criteria

To check the significant in which lag length level.

Table 4.9 Lag Length Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-282.2427	NA	76.9005	18.5318	18.7631	18.6072
1	-184.8094	157.1505*	0.7364*	13.8567*	15.2464*	14.3110*

The table shows that the lag between the variables is the most significant at lag 1.

4.4.4 Granger Causality

To check whether there have long term relationship between two variable, so need to use Engle-Granger test:

Table 4.10: Engle-Granger test

Null Hypothesis	Obs	F-statistic	Probability
GDP does not Granger Cause YUR	31	1.2249	0.2778
YUR does not Granger Cause GDP	31	6.1185	0.0197 **
INF does not Granger Cause YUR	31	0.0321	0.8590
YUR does not Granger Cause INF	31	0.1583	0.6937
FDI does not Granger Cause YUR	31	2.4944	0.1255
YUR does not Granger Cause FDI	31	5.3937	0.0278 **
URB does not Granger Cause YUR	31	0.4808	0.4938
YUR does not Granger Cause URB	31	0.5806	0.4524
INF does not Granger Cause GDP	31	1.3217	0.2600
GDP does not Granger Cause INF	31	0.8641	0.3605
FDI does not Granger Cause GDP	31	0.9352	0.3418
GDP does not Granger Cause FDI	31	2.6081	0.1175

URB does not Granger Cause GDP	31	1.6131	0.2145
GDP does not Granger Cause URB	31	0.7442	0.3956
FDI does not Granger Cause INF	31	0.0020	0.9645
INF does not Granger Cause FDI	31	1.4263	0.2424
URB does not Granger Cause INF	31	2.8999	0.0997 *
INF does not Granger Cause URB	31	2.8927	0.1001
URB does not Granger Cause FDI	31	0.0140	0.9068
FDI does not Granger Cause URB	31	2.4929	0.1256

Note: The asterisk ** and * indicates 5 %, 10% level of significance.

Sources: EViews

Based on table 4.7, the Engle-Granger test, the F statistic of the two variables of GDP $\rightarrow$ YUR is not significance at α 0.05 level and the YUR $\rightarrow$ GDP is significant at α 0.05 level. Therefore, there is a variable of YUR "Granger-causes" a variable GDP and the direction of the Granger causality relationship of YUR and GDP is uni-direction (YUR $\rightarrow$ GDP). Then, there is a cointegrated and also long-term equilibrium relationship between the two variables of YUR and GDP.

Besides, the F statistic of the two variables of FDI $\rightarrow$ YUR is not significance at α 0.05 level and the YUR $\rightarrow$ FDI is significant at α 0.05 level. Therefore, there is a variable of YUR "Granger-causes" a variable FDI and the direction of the Granger causality relationship of YUR and FDI is uni-direction (YUR $\rightarrow$ FDI). Then, there is a cointegrated and also long-term equilibrium relationship between the two variables of YUR and FDI.

Furthermore, the F statistic of the two variables of URB $\rightarrow$ INF is significant at α 0.1 level and the INF $\rightarrow$ URB is not significant at α 0.1 level. Therefore, there is a variable of URB "Granger-causes" a variable INF and the direction of the Granger causality relationship of URB and INF is uni-direction (URB $\rightarrow$ INF). Then, there is a cointegrated and also long-term equilibrium relationship between the two variables of YUR and GDP.

However, other variables such as INF and YUR in the Engle-Granger test, F statistic of two variables of INF $\rightarrow$ YUR and YUR $\rightarrow$ INF are not significant at α 0.01 level. There is also not a variable INF "Granger-causes" a variable of YUR. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of INF and YUR.

Next, in the Engle-Granger test, F statistic of two variables of URB $\rightarrow$ YUR and YUR $\rightarrow$ URB are not significant at α 0.01 level. There is also not a variable URB "Granger-causes" a variable of YUR. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of URB and YUR.

Additionally, in the Engle-Granger test, F statistic of two variables of INF $\rightarrow$ GDP and GDP $\rightarrow$ INF are not significant at α 0.01 level. There is also not a variable INF "Granger-causes" a variable of GDP. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of INF and GDP.

Likewise, in the Engle-Granger test, F statistic of two variables of FDI $\rightarrow$ GDP and GDP $\rightarrow$ FDI are not significant at α 0.01 level. There is also not a variable FDI "Granger-causes" a variable of GDP. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of FDI and GDP.

Moreover, in the Engle-Granger test, F statistic of two variables of URB $\rightarrow$ GDP and GDP $\rightarrow$ URB are not significant at α 0.01 level. There is also not a variable URB "Granger-causes" a variable of GDP. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of URB and GDP.

As well as that, in the Engle-Granger test, F statistic of two variables of INF $\rightarrow$ FDI and FDI $\rightarrow$ INF are not significant at α 0.01 level. There is also not a variable INF "Granger-causes" a variable of FDI. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of INF and FDI.

Last but not least, in the Engle-Granger test, F statistic of two variables of URB $\rightarrow$ FDI and FDI $\rightarrow$ URB are not significant at α 0.01 level. There is also not a variable URB "Granger-causes" a variable of FDI. Then, there is not cointegrated and also not a long-term equilibrium relationship between the two variables of URB and FDI.
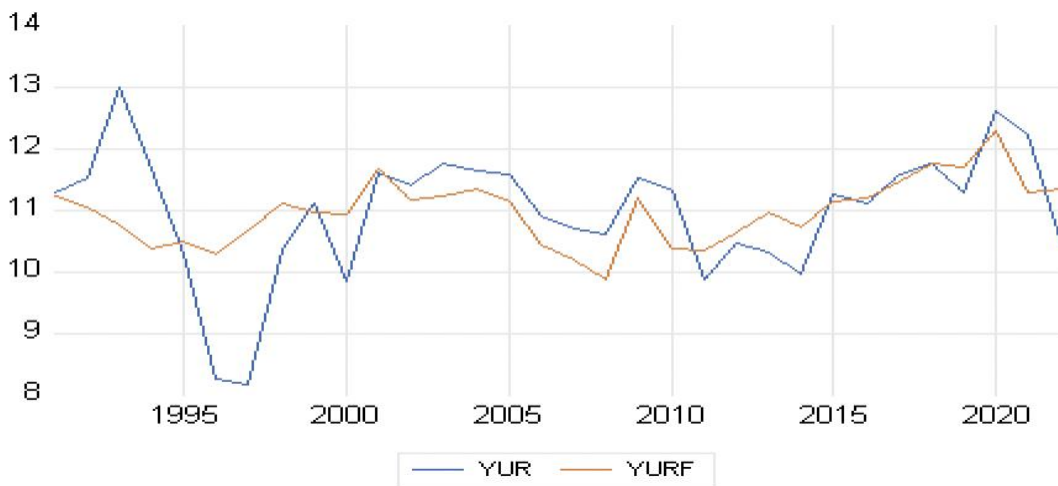
4.4.5   Model stimulation

To see whether the actual and the forecast is move closely or move differently.

Figure 4.1 Actual and Forecast Value

Sources: Eviews

The graph shows that YUR value and the forecast YUR value are having the same path and looking upward.

4.4.6 Model evaluation

Using the RMSE, MAE, MAPE and U-theil, see the model performance is better fit in this study or not.

Figure 4.2 RMSE, MAE, MAPE, U-Theil graph
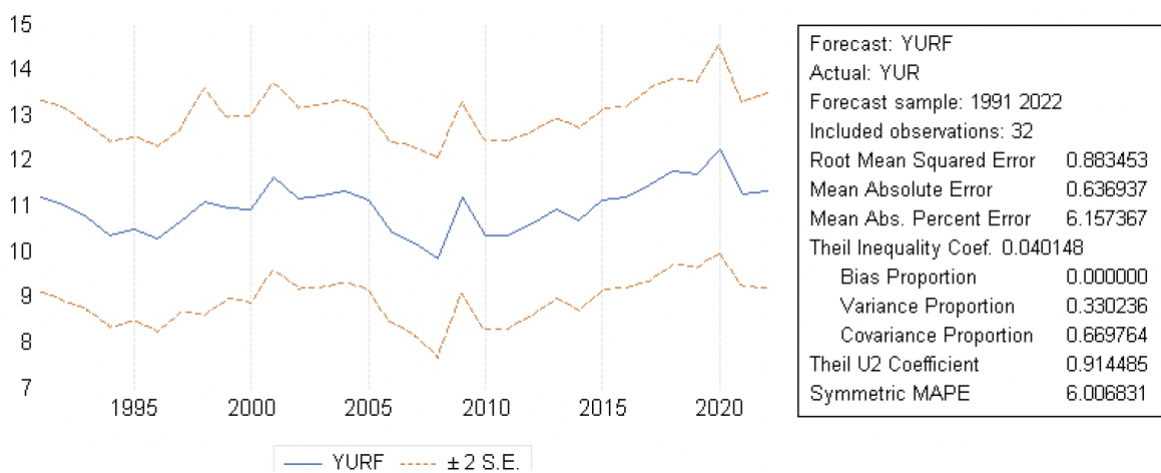
Sources: Eviews

According to the RMSE criteria, the lower the error, the better model predicting performance. The value of RMSE, MAE , MAPE and U-theil have a positive percentage, and the forecasting model is under estimated. The RMSE, MAE and U-theil value are close to zero , which indicates that the model forecasting performance is acceptable even though the MAPE value is 6.0068, which is there have some biases.

4.5   Conclusion

This chapter covers Granger causality, VAR model, descriptive analysis, and model evaluation analysis in general. EViews runs all of the results. The study's findings, conclusions, limitations, suggestions, and other material will be presented in more detail in Chapter 5, which comes after this section.

Chapter 5 Discussion, Conclusion and Recommendation

5.0   Introduction

This chapter will summarize the key findings and earlier discussion once all the data analysis in Chapter 4 has been completed. Additionally, the study's conclusion, limits and recommendations will be highlighted.

5.1   Summary of the Time Series Regression Analysis

To analyse the relationship between the dependent variable and independent variable in the short run, VAR model are used. The study revealed that the Foreign Direct Investment (FDI) and youth unemployment have a positive relationship and significant in the short run. Besides, it also found out there have a positive correlated between the Gross Domestic Product (GDP) and youth unemployment. On the other hand , it is discovered that the youth unemployment is insignificant to the inflation and urbanization.

5.2   Summary of Major Findings

Based on the result refer above, the summary of the result are shown in the table below:

Table 5.1: Summary of Regression Result

Dependent Variable	Independent Variable	Expected Sign	Regression Result
Youth Unemployment	Gross Domestic Product (GDP)	Negative	Positive
	Inflation rate (INF)	Negative	Insignificant
	Foreign Direct Investment (FDI)	Positive	Positive

	Urbanization (URB)	Negative	Insignificant

Based on the Table 5.1, Inflation rate and urbanization are insignificant influence the youth unemployment. The GDP and FDI positively and significant influence the youth unemployment.

There may be several reasons why GDP is positively correlated with youth unemployment. Firstly, skilled labour is more important to the economy. According to the majority of businesses, experienced employees are more productive than new hires, thus they can increase output and satisfy the expanding demand. Certain businesses could also go from being labor-intensive to becoming technology-intensive. In order to increase production and decrease the number of employees, they could invest in automation technology, as technology has the ability to replace labour and increase efficiency. Furthermore, because certain positions demand professional skills or technical knowledge, some businesses do not require new hires because youthful people lack these abilities. Furthermore, some businesses may not require new hires because young workers lack the necessary abilities, particularly for professions that call for technical or professional knowledge. However, these businesses might not want to invest the time and resources necessary to educate new hires.

There exists a favourable correlation between young unemployment and foreign direct investment. The top investing nations in Malaysia include Australia, Singapore, China, Japan, the United States, the Netherlands, South Korea, Hong Kong, the United Kingdom, and Germany. Malaysia is categorised as an emerging market with rapid development. Malaysia have shifting from agriculture and manufacturing to high tech industries and service sectors. High-tech equipment will be used by highly technological nations investing in Malaysia, while labor-intensive nations relocate to Thailand, India, or Indonesia due to lower labour costs. Investors in highly skilled nations want experienced and trained labour, yet there are few job prospects for the younger generation of university or high school graduates since they lack experience. To develop youth, businesses must invest more funds in vocational training programmes. Furthermore, a lot of businesses are recruiting contract workers, which implies they are employing fewer full-time workers. Contract employees are not acting in the best interests of their employers and are not as protected as full-time employees. Although they might give employees flexibility with their schedules, they don't offer young people looking for long-term jobs strong employment chances.

5.3   Implication of the study

This study can be used as a reference for policymakers, businesses, governments and educators. The findings show that there is a positive correlation between FDI, GDP and youth unemployment. In addition to attracting FDI, policymakers should create plans to boost economic expansion and remove barriers that cause youth unemployment. The sector will use automated technology when investors invest in advanced technology in Malaysia. This will attract labourers in need of expertise. Employers will give employing these qualified employees first priority. The majority of youth lack skills, and this is a problem that the government has to address. To close the gap between the younger generation and the workforce, the education and training systems must be strengthened. Companies and educational institutions must collaborate to guarantee that graduates have the skills needed for employment. Additionally, the educational system needs to be continuously updated to keep up with the shifting needs of the labour market. Professors who alter the curriculum might include skills that employers are looking for, such as digital literacy, problem-solving abilities, and technical expertise in developing fields. Enhancing vocational training can increase young people's employability by closing the skills gap between them and industry demands. Industry collaborations may also give young people access to real-world training opportunities so they can develop relevant skills and real-world experience.

5.4   Recommendation of the study

Addressing youth unemployment in Malaysia, especially in the context of its positive correlation with foreign direct investment (FDI) and GDP growth. First, the government can fund programmes for education and career training, which are essential for assisting young people in more readily acquiring the skills needed by business. working together with business to match curriculum to industry needs. Furthermore, labour market changes are crucial since it's necessary to take into account a number of factors and strike a balance between promoting youth job prospects and defending workers' rights. Since SMEs are the ones that generate the majority of new employment, government support in the form of subsidies is also essential. Young people are a great source of inspiration for innovation, thus SMEs may recruit young talent by offering financing and assistance programmes. To ensure that youth receive treated equally, the government must develop focused policies to address structural disparities like gender and regional differences that prevent youth from obtaining employment opportunities. These policies should also guarantee that youth have equal access to training, education, and employment opportunities. Before policymakers can make well-informed

judgements, they must regularly evaluate the situation and use data to guide their decisions. International collaboration may boost domestic efforts aimed at addressing young unemployment and promoting economic growth.

5.5   Limitations of the Study

The first study restriction highlighted is the small amount of data about young unemployment in Malaysia within the collected data. This is a result of the World Bank Indicators database having just 32 observations. Only 32 years out of the data range ranging from 1991 to 2022 were examined in this research. This is as a result of yearly data collection from the World Bank Indicators for both the independent and dependent variables. There are fewer observations in the research, which reduces its power and accuracy.

These macroeconomic factors have an impact on young unemployment in this research. Nonetheless, microeconomic variables like demographics also have an impact on young unemployment. In order to give accurate information, future researchers are advised to compare young unemployment with macroeconomic and microeconomic factors, as this study may not have examined youth unemployment in sufficient detail.

In addition, no other nations are studied in this study; instead, it concentrates on Malaysia. A comparative study of various socioeconomic circumstances is necessary to have an in-depth understanding of worldwide patterns in young unemployment, even if the Malaysian article certainly offers insightful information. Because young unemployment in other nations is not examined in this study, researchers in the future can compare Malaysia to other nations and analyse their data.

5.5   Recommendation for Future Researchers

In order to have a deeper knowledge of the determinants driving young unemployment, it is recommended that future study involve more independent variables, such as trade openness, education, or gross domestic saving. This study does not have access to these variables. Adding more independent variables can increase the flexibility and decrease the bias of the regression, resulting in a better-fit model; however, this must be justified within a theoretical framework to prevent the creation of an over-fit model.

Future studies might look at macroeconomic and microeconomic factors related to young unemployment. The reason for this is that opportunities differ between urban and rural places. The average young unemployment rate, which is not region-specific, is represented by the researched data..

To get up-to-date statistics and trends, expand the study's scope and add more nations. This is due to the fact that it would enable them to carry out a more comprehensive assessment and comparison in order to analyse young unemployment and offer a more accurate policy to solve the problems in these nations.

5.6   Conclusion

Firstly, this study mainly examines the factors that affect youth unemployment in Malaysia. Furthermore, this study uses a vector autoregression model and draws results using data from 2003 to 2022.

The empirical results show that GDP growth and foreign direct investment have a positive and significant impact on youth unemployment. Moreover, the findings show that inflation and urbanization have a minimal impact on youth unemployment.

In order to solve the issues that young job seekers encounter, Malaysia must tackle youth unemployment with a comprehensive strategy and in partnership with other organisations. A further indication that action is required while also maintaining economic growth. There are positive correlation shown between young unemployment, GDP growth, and foreign direct investment (FDI). Malaysia's government can provide its young people the tools and resources they need to succeed in the dynamic labour market by supporting innovation, investing in education and vocational training.

Young people can also find greater employment prospects through labour market changes, focused measures to attract foreign direct investment, and assistance for small and medium-sized businesses. However,young people must be treated equally by the market in terms of job, training, and educational prospects. Furthermore, the most effective way for nations to debate policies and practices is through international cooperation. Malaysia may solve youth unemployment by putting these proposals into practice. The growth of the nation may also be sustained and advanced by way. In conclusion, this research offers suggestions to policymakers aimed at lowering young unemployment in Malaysia. Lastly, several restrictions and recommendations are made for future researchers to consider in order to prevent issues and enhance similar studies in the future.

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Appendix

Appendix 1: Descriptive Statistic

	YUR	GDP	INF	FDI	URB
Mean	10.97256	5.354303	2.560931	2.928263	3.477878
Median	11.26550	5.686650	2.569800	2.659100	3.514150
Maximum	12.97100	10.00270	5.440800	6.672100	5.254400
Minimum	8.175000	-7.359400	-1.138700	0.194400	1.743900
Std. Dev.	1.038876	4.011944	1.449407	1.793633	1.168227
Skewness	-0.871974	-1.628067	-0.116270	0.515558	0.075757
Kurtosis	4.215000	5.766619	3.021547	2.372237	1.616987
Jarque-Bera	6.023435	24.34213	0.072718	1.943050	2.580910
Probability	0.049207	0.000005	0.964294	0.378505	0.275146
Sum	351.1220	171.3377	81.94980	93.70440	111.2921

Appendix 2: Correlation Analysis

	YUR	GDP	INF	FDI	URB
YUR	1	-0.233502	-0.276424	-0.368831	-0.195259
GDP	-0.233502	1	0.305838	0.137796	0.316515
INF	-0.276424	0.305838	1	0.0095236	0.432224
FDI	-0.368831	0.137796	0.0095236	1	-0.307898
URB	-0.195359	0.316515	0.432224	-0.307898	1

Appendix 3: Vector Autoregression test

Vector Autoregression Estimates
 Date: 05/02/24 Time: 21:35
 Sample (adjusted): 1992 2022
 Included observations: 31 after adjustments
Standard errors in () & t-statistics in []

	YUR	GDP	INF	FDI	URB
YUR (-1)	0.316851	2.185764	0.45337	0.594786	0.003945
	(0.18102)	(0.73232)	(0.29435)	(0.23077)	(0.03614)
	[1.75037]	[2.98471]	[0.15403]	[2.57739]	[0.10915]
GDP(-1)	-0.018965	0.050879	0.021753	-0.107573	0.013037
	(0.04530)	(0.18328)	(0.07366)	(0.05775)	(0.00904)
	[-0.41862]	[0.27761]	[0.29530]	[-1.86259]	[1.44140]
INF(-1)	0.0999014	0.577637	0.025978	-0.222016	0.063909

	(0.13205)	(0.53423)	(0.21472)	(0.16835)	(0.02636)
	[0.74981]	[1.08126]	[0.12098]	[-1.31881]	[2.42400]
FDI(-1)	-0.241312	0.289450	0.11559	0.966663	-0.054431
	(0.11464)	(0.46380)	(0.18642)	(0.14615)	(0.02289)
	[-2.10487]	[0.62409]	[0.61990]	[6.61405]	[-2.37800]
URB(-1)	-0.306810	1.111702	0.497974	0.535168	0.93265
	(0.20148)	(0.81509)	(0.32761)	(0.25685)	(0.04023)
	[-1.52280]	[1.36391]	[1.52002]	[2.08357]	[23.1260]
C	9.121938	-25.31547	-0.274565	-7.129785	0.047687
	(2.47736)	(10.0223)	(4.02829)	(3.15823)	(0.49462)
	[3.68212]	[-2.52593]	[-0.06816]	[-2.25753]	[0.09641]
R-squared	0.417033	0.337930	0.167671	0.659722	0.981306
Adj. R-squared	0.300440	0.205516	0.001206	0.591666	0.977567
Sum sq. resids	19.45118	318.3456	51.42914	31.61225	0.775363
S.E. equation	0.882070	3.568449	1.434282	1.124495	0.176109
F-statistic	3.576821	2.552071	1.007243	9.693868	262.4667
Log likehood	-36.76286	-80.08893	-51.83347	-44.29023	13.18327
Akaike AIC	2.758894	5.554124	3.731191	3.244531	-0.463437
Schwarz SC	3.036440	5.831670	4.008737	3.522077	-0.285891
Mean dependent	10.96297	5.219103	2.502952	3.011235	3.448942
S.D. dependent	1.054607	4.003473	1.435148	1.759747	1.175823

Determinant resid covariance (dof adj)	0.030002
Determinants resid covariance	0.203697
Log likehood	-184.8082
Akaike information criterion	13.85859
Schwarz criterion	15.24632
Number of coefficients	30

Appendix 4: Granger Causality Test

Pairwise Granger Causality Tests
Date: 05/02/24 Time: 21:35
Sample: 1991 2022
Lags: 1

Null Hypothesis	Obs	F-statistic	Probability
GDP does not Granger Cause YUR	31	1.2249	0.2778
YUR does not Granger Cause GDP	31	6.1185	0.0197 **
INF does not Granger Cause YUR	31	0.0321	0.8590

YUR does not Granger Cause INF	31	0.1583	0.6937
FDI does not Granger Cause YUR	31	2.4944	0.1255
YUR does not Granger Cause FDI	31	5.3937	0.0278 **
URB does not Granger Cause YUR	31	0.4808	0.4938
YUR does not Granger Cause URB	31	0.5806	0.4524
INF does not Granger Cause GDP	31	1.3217	0.2600
GDP does not Granger Cause INF	31	0.8641	0.3605
FDI does not Granger Cause GDP	31	0.9352	0.3418
GDP does not Granger Cause FDI	31	2.6081	0.1175
URB does not Granger Cause GDP	31	1.6131	0.2145
GDP does not Granger Cause URB	31	0.7442	0.3956
FDI does not Granger Cause INF	31	0.0020	0.9645
INF does not Granger Cause FDI	31	1.4263	0.2424
URB does not Granger Cause INF	31	2.8999	0.0997 *
INF does not Granger Cause URB	31	2.8927	0.1001
URB does not Granger Cause FDI	31	0.0140	0.9068
FDI does not Granger Cause URB	31	2.4929	0.1256

Note: The asterisk ** and * indicates 5 %, 10% level of significance.