Determinants Of Unemployment in Sabah: Long-Run and Short-Run Analysis

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Abstract

This study explores the determinants of unemployment in Sabah from 1982 to 2020. This study utilised the Autoregressive Distributed Lag order (ARDL) model to investigate the linear relationship between job vacancies, economic growth, government spending, labour force participation, and inflation on unemployment. Job vacancies were disaggregated into five types based on occupations to better understand the symmetric relationship between unemployment and vacancies based on the Beveridge curve theory. Alongside Beveridge Curve theory, this study included Okun's Law, Keynesian theory of fiscal policy, and Phillips curve theory, which explain the factors of unemployment. Findings revealed that unemployment was influenced by economic growth (GDP) and inflation (CPI) in Sabah.

Keywords: Unemployment, Job vacancies, Macroeconomic factors, Sabah

1. Introduction

Over the years, the issue of unemployment in Sabah has become a significant concern due to its alarming rate of growth. According to the Department of Statistics Malaysia (2024), unemployment refers to those who did not work during the reference week. Whereby, unemployment is used to assess the labour market scenario of the country. In the year 2020, Malaysia's labour market comprised 15.6 million, whereby 508.2 thousand from the total number of the labour force were unemployed. Specifically in Sabah, within the same year the total number of people who entered the labour force was 2.03 million. Of the total number of people in the labour force, 163 remain unemployed. This number shows the underutilisation of labour supply in the labour market.

Sabah is located in the east part of Malaysia and is recorded as the second-largest state after Sarawak. According to the Department of Statistics Malaysia (2020), the population in Sabah was estimated to be 3.921 million people. In the year 2020, Sabah was ranked as having the highest unemployment rate among states in Malaysia. For the past four decades, Sabah has experienced a high rate of unemployment, as illustrated in Figure 1. Based on Figure 1, Sabah experienced the worst unemployment problem in the years 1987 and 1990, with the unemployment rate reaching 9 percent within the year. The rising unemployment rate may be caused by the inefficiency of labour utilisation. Historically, in Sabah, the lowest unemployment rate was in 1994 at 2.8 percent, before it rose to 5 percent in 1995 and fell back in 1996 to 3.9 percent. The Asian Financial Crisis in 1997 caused the unemployment rate to increase. Since then, the unemployment rate in Sabah has remained above 4 percent, as illustrated in Figure 1.

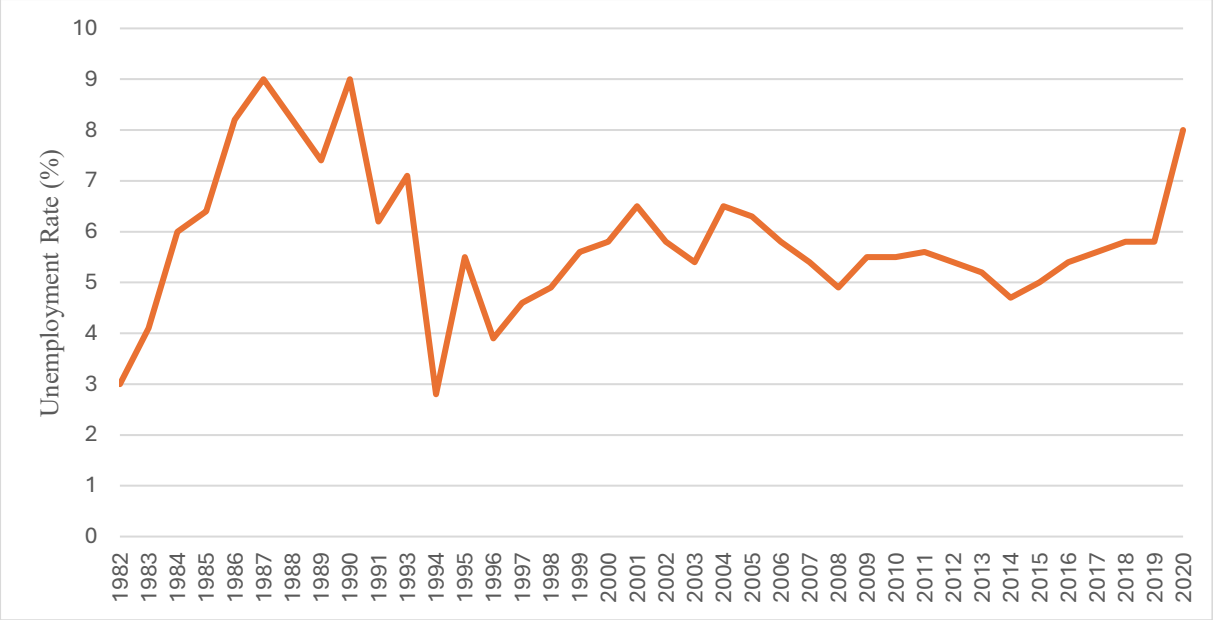


Figure 1: The Unemployment Rate in Sabah, 1982-2020

There are numerous studies related to unemployment issues. However, there have been limited studies related to unemployment and job vacancies. According to Sir William Beveridge (1944), job vacancies have a negative effect on unemployment in a country, whereas an increase in job vacancies will reduce the number of unemployed persons. The issue of unemployment arises when a country struggles to generate sufficient job opportunities to match the annual population growth (Al-Qudah and Nsairat, 2024). The Beveridge curve can be used to explain the cyclical state, the frictions, as well as the efficiency of the labour market in terms of job matching between the job seeker (unemployed people) and job vacancies (Bonthius et al., 2013; Bova et al., 2016). There has been an argument as some studies found that the increase in job vacancies does not necessarily reduce unemployment (Lazer and Spletzer, 2012). According to Mitsi (2023), the mismatch and structural unemployment cause a positive relationship between unemployment and job vacancy. Even if there is an existence of job vacancies, the job demanded by the firm does not match with the labour supply (Velciu, 2017). According to Bkeakly and Fuhrer (1997), the theory of the Beveridge curve mentioned that the growth of the labour force also plays an important role in affecting the changes in unemployment. The number of people entering the labour force and the number of people unemployed were moving together in Sabah. Hence, this study intends to investigate the link between unemployment and labour force participation as suggested by Bkeakly and Fuhrer (1997) using the theory of the Beveridge curve.

Other factors that affected the unemployment rate were economic growth (Akram et al. 2014 and Balan, 2014). According to Okun (1962), there exists a negative relationship between unemployment and economic growth, whereby an increase in the growth of economics will open up more job opportunities, which leads to a decrease in unemployment. The theories were supported by several studies which found that the unemployment rate and economic growth were negatively correlated (Baba and Bang Ali, 2021; Chen et al., 2017; Moazzami and Dadgostar, 2009; Ruxandra, 2015; Soylu et al., 2018). Aqil et al. (2014) refuted this finding, stating that there was no significant correlation between unemployment and economic growth. Meanwhile, Alhabees and Rumman (2012) mentioned in their study that the growth of the economy within a country is not necessarily able to reduce the number of unemployed people in the labour market. This can be explained that the economic growth in certain countries is unable to boost job creation. For example, India experienced a deterioration in employment even though there was an increase in economic growth, as this country experienced growth without jobs (Pincha, 2013).

The Keynesian theories of fiscal policy state that the intervention of government plays a crucial role in minimising the problem of unemployment. The intervention of government by giving a subsidy to a firm may increase production, which later increases employment (Keynes, 1936). The theory was

supported by Fosu (2019), which found that there is a negative relationship between government spending and unemployment. In line with a study by Saraireh (2020), it is explained that when the government expands their spending, more jobs are created, which leads to a reduction in unemployment in the labour market. The theory of the Phillips Curve (1958) asserts a negative relationship between inflation and unemployment (Clark and Lexton, 1997). Previously, many researchers found the inverse relationship between unemployment and inflation only occurs in the short-run (Friedman, 1977; Furuoka and Munir, 2014). However, some studies argue that inflation does not significantly affect unemployment (Dritsaki, 2013; Alrayes and Wadi, 2018; Veljanoska, 2019).

Therefore, the purpose of this study is to investigate the relationship between unemployment (UNEMP) with job vacancies (JV), economic growth (GDP), government spending (GS), labour force participation (LFP), and inflation (CPI) in Sabah. By using the ARDL analysis, this study aims to firstly identify the long-run relationship between JV, GDP, GS, LFP, and CPI on unemployment. Secondly, to investigate the short-run relationship between the factors on unemployment in Sabah.

This study is organised as follows. Section 2 provides descriptions of data and variables, while Section 3 discusses the methodology. Section 4 provides empirical results and finding. The conclusions are presented in Section 5.

2. Data

This study used the annual times series data from 1982 to 2020, which is collected from the Department of Statistics Malaysia. In order to estimate the relationship between dependent and independent variables, this study uses the overall number of unemployed persons in Sabah (UNEMP) as a dependent variable, the number of job vacancies (VAAF, VPAM, VPCT, VPTLE, VSS), economic growth (GDP), government spending (GS), labour force participation (LFP), and inflation (CPI) as the independent variables. The job vacancy was disaggregated into 5 different types based on occupation namely vacancy for agriculture, animal husbandry and forestry, and fishery workers (VAAF), job vacancy for professional, administration, and managerial workers (VPAM), job vacancy for professional technical, craft and related trade workers (VPCT), job vacancy for production, transport equipment operators, labourers, and elementary workers (VPTLE), and job vacancy for sales and services workers (VSS). Eviews and MicroFit software were used to analyse the data.

3. Methodology

The benchmark model of the Beveridge curve starts from the matching function in the labour market, as shown in equation (1) below. Using the approach by Bellani et al. (2002), the equation is written as follows:

$$\log(u)_t : \alpha + \beta_1 \log(v)_t + \varepsilon_1 \quad (1)$$

Where u_t is the unemployment rate in time t and v_t is the job vacancy rate in time t. The Beveridge Curve was extended by adding the macroeconomic factors. Thus, equation (1) can be rewritten as follow:

$$\log(u)_t : \alpha + \beta_1 \log(JV)_t + \beta_2 \log(GDP_t) + \beta_3 \log(GS_t) + \beta_4 \log(LFP_t) + \beta_5 \log(CPI_t) + \varepsilon_1 \quad (2)$$

The job vacancies were distinguished into five different types based on the type of occupation. The disaggregation of job vacancies into five different models was due to the singularity issues in job vacancies. Thus, the variables need to be tested separately to avoid the singularity or collinearity issues. The disaggregation of job vacancies written as follows.

- Model 1 includes vacancies for agriculture, animal husbandry, and forestry workers (VAAF)

- Model 2 includes vacancies for professional, administration, and managerial workers (VPAM)
- Model 3 includes the vacancies for professional technical, craft, and related trade workers
- Model 4 includes vacancies for production, transport equipment operators, labourer, and elementary workers (VPTLE)
- Model 5 includes the vacancies for sales and services workers (VSS).

Thus, the new linear model was written as follows:

$$LUNEMP_t = \alpha + \beta_1 LVAAF_t + \beta_2 LGDP_t + \beta_3 LGS_t + \beta_4 LLFP_t + \beta_5 LCPI_t + \beta_6 D_t + \mu_t \quad (3)$$
$$LUNEMP_t = \alpha + \beta_1 LVPAM_t + \beta_2 LGDP_t + \beta_3 LGS_t + \beta_4 LLFP_t + \beta_5 LCPI_t + \beta_6 D_t + \mu_t \quad (4)$$
$$LUNEMP_t = \alpha + \beta_1 LVPCT_t + \beta_2 LGDP_t + \beta_3 LGS_t + \beta_4 LLFP_t + \beta_5 LCPI_t + \beta_6 D_t + \mu_t \quad (5)$$
$$LUNEMP_t = \alpha + \beta_1 LVPTLE_t + \beta_2 LGDP_t + \beta_3 LGS_t + \beta_4 LLFP_t + \beta_5 LCPI_t + \beta_6 D_t + \mu_t \quad (6)$$
$$LUNEMP_t = \alpha + \beta_1 LVSS_t + \beta_2 LGDP_t + \beta_3 LGS_t + \beta_4 LLFP_t + \beta_5 LCPI_t + \beta_6 D_t + \mu_t \quad (7)$$

All variables in equation (2) were transformed into log-linear form as shown in equation (3)-(7). The variables set are LUNEMP, LVAAF, LVPAM, LVPCT, LVPTLE, LVSS, LGDP, LGS, LLFP, and LCPI. Meanwhile D_t is the dummy variable of structural break with '1" for crisis and '0' for otherwise. The ARDL model is stated in equation (8)-(12) below.

i. Job Vacancy: Agriculture, animal husbandry, forestry, fisherman and hunter (Model 1)

$$\Delta LUNEMP_t = c + \sum_{i=1}^{p} \alpha_{1i} \Delta LUNEMP_{t-i} + \sum_{i=0}^{q_1} \alpha_{2i} \Delta LVAAF_{t-i} + \sum_{i=0}^{q_2} \alpha_{3i} \Delta LGDP_{t-i} + \sum_{i=0}^{q_3} \alpha_{4i} \Delta LGS_{t-i} + \sum_{i=0}^{q_4} \alpha_{5i} \Delta LCPI_{t-i} + \sum_{i=0}^{q_5} \alpha_{6i} \Delta LCPI_{t-i} + \rho LUNEMP_{t-1} + \lambda_1 LVAAF_{t-1} + \lambda_2 LGDP_{t-1} + \lambda_3 LGS_{t-1} + \lambda_4 LLFP_{t-1} + \lambda_5 LCPI_{t-1} + \lambda_6 D_t + \varepsilon_t \quad (8)$$

ii. Job vacancy: Professional, administration, and managerial worker (Model 2)

$$\Delta LUNEMP_t = c + \sum_{i=1}^{p} \alpha_{1i} \Delta LUNEMP_{t-i} + \sum_{i=0}^{q_1} \alpha_{2i} \Delta LVPAM_{t-i} + \sum_{i=0}^{q_2} \alpha_{3i} \Delta LGDP_{t-i} + \sum_{i=0}^{q_3} \alpha_{4i} \Delta LGS_{t-i} + \sum_{i=0}^{q_4} \alpha_{5i} \Delta LCPI_{t-i} + \sum_{i=0}^{q_5} \alpha_{6i} \Delta LCPI_{t-i} + \rho LUNEMP_{t-1} + \lambda_1 LVPAM_{t-1} + \lambda_2 LGDP_{t-1} + \lambda_3 LGS_{t-1} + \lambda_4 LLFP_{t-1} + \lambda_5 LCPI_{t-1} + \lambda_6 D_t + \varepsilon_t \quad (9)$$

iii. Job vacancy: Professional, craft, technical and related worker (Model 3)

$$\Delta LUNEMP_t = c + \sum_{i=1}^{p} \alpha_{1i} \Delta LUNEMP_{t-i} + \sum_{i=0}^{q_1} \alpha_{2i} \Delta LVPCT_{t-i} + \sum_{i=0}^{q_2} \alpha_{3i} \Delta LGDP_{t-i} + \sum_{i=0}^{q_3} \alpha_{4i} \Delta LGS_{t-i} + \sum_{i=0}^{q_4} \alpha_{5i} \Delta LCPI_{t-i} + \sum_{i=0}^{q_5} \alpha_{6i} \Delta LCPI_{t-i} + \rho LUNEMP_{t-1} + \lambda_1 LVPCT_{t-1} + \lambda_2 LGDP_{t-1} + \lambda_3 LGS_{t-1} + \lambda_4 LLFP_{t-1} + \lambda_5 LCPI_{t-1} + \lambda_6 D_t + \varepsilon_t \quad (10)$$

iv. Job vacancy: Production, transport, labourer, and elementary worker (Model 4)

$$\Delta LUNEMP_t = c + \sum_{i=1}^{p} \alpha_{1i}\, \Delta LUNEMP_{t-i} + \sum_{i=0}^{q_1} \alpha_{2i} \Delta\, LVPTLE_{t-i} + \sum_{i=0}^{q_2} \alpha_{3i}\, \Delta LGDP_{t-i} + \sum_{i=0}^{q_3} \alpha_{4i}\, \Delta LGS_{t-i} + \sum_{i=0}^{q_4} \alpha_{5i} \Delta\, LCPI_{t-i} + \sum_{i=0}^{q_5} \alpha_{6i}\, \Delta LCPI_{t-i} + \rho LUNEMP_{t-1} + \lambda_1 LVPTLE_{t-1} + \lambda_2 LGDP_{t-1} + \lambda_3 LGS_{t-1} + \lambda_4 LLFP_{t-1} + \lambda_5 LCPI_{t-1} + \lambda_6 D_t + \varepsilon_t \quad (11)$$

v. Job vacancy: sales and services worker (Model 5)

$$\Delta LUNEMP_t = c + \sum_{i=1}^{p} \alpha_{1i}\, \Delta LUNEMP_{t-i} + \sum_{i=0}^{q_1} \alpha_{2i} \Delta\, LVSS_{t-i} + \sum_{i=0}^{q_2} \alpha_{3i}\, \Delta LGDP_{t-i} + \sum_{i=0}^{q_3} \alpha_{4i}\, \Delta LGS_{t-i} + \sum_{i=0}^{q_4} \alpha_{5i} \Delta\, LCPI_{t-i} + \sum_{i=0}^{q_5} \alpha_{6i}\, \Delta LCPI_{t-i} + \rho LUNEMP_{t-1} + \lambda_1 LVSS_{t-1} + \lambda_2 LGDP_{t-1} + \lambda_3 LGS_{t-1} + \lambda_4 LLFP_{t-1} + \lambda_5 LCPI_{t-1} + \lambda_6 D_t + \varepsilon_t \quad (12)$$

Where c is the constant term; α denote short-run coefficients, ρ and λ denote long-run coefficients, p and q are the optimal lag lengths for the dependent and independent variables respectively, and Δ is the first difference operator, D_t is the dummy variable of structural break with "1" for crisis and "0" otherwise, and ε is the error term. The bound testing procedure which based on the F-Statistic used to test the existence of cointegration between dependent and independent variables. Thus, the null and alternative hypothesis for the model is $H_0 : \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0$; and, $H_A : \lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq 0$. The null hypothesis indicates no cointegration exist between the dependent variable and independent variable. Meanwhile, the alternative hypothesis indicates exist cointegration between the variables**.** The ARDL was used to test the long-run and short-run relationship between the dependent and independent variables.

4. Results and Finding

Table 1 reveals the results of the unit root test for all variables, which consist of natural log of unemployment (LUNEMP), vacancies for professional technical, craft, and related trade workers (LVPCT), vacancies for professional, administrative, and managerial workers (LVPAM), vacancies for agriculture, animal husbandry, forestry workers, and fishery workers (LVAAF), vacancies for production, transport equipment operators, labourers, and elementary workers (LVPTLE), vacancies for sales and service workers (LVSS), economic growth (GDP), government spending (GS), labour force participation (LFP), and inflation (CPI).

The results from Augmented Dickey-Fuller (ADF) tests show that all variables are stationary at first difference, except for LUENMP and LVAAF, which found to be stationary at level. The test results suggest that an existing mixed order of integration. The trend of the data shows a presence of structural break. According to Perron (1989) with the presence of structural break, the non-rejection of the null hypothesis using the standard unit root test may be biased. Hence, this study included the Breakpoint unit root test. Table 1 shows that at level, only LUNEMP found to be stationary. However, the results reveal that after taking a first difference all variables are stationary except for LCPI. The break dates in Table 1 correspond with the economic events, which include the Black Monday in 1987 and the Global Financial Crisis in year 2008-09.

Table 1: Unit root test

Variables	**ADF**		**Perron (Breakpoint Unit root)**	
	Level	1st Difference	Level	1st Difference
LUNEMP	-2.7775*	-5.8270***	-5.6693** (2005)	-6.9441*** (1988)
LVAAF	-3.5585**	-5.6964***	-4.8800 (2010)	-8.3645***(2010)
LVPAM	-1.4785	-5.9792***	-1.3467(2014)	-6.7393***(2009)
LVPCT	-1.8633	-8.2835***	-3.8150(2009)	-9.3340***(2009)
LVPTLE	-1.3781	-5.5076***	-2.7733(2009)	-7.7983***(1989)
LVSS	-1.9243	-5.9554***	-3.9755(1988)	-9.1627***(1989)
LGDP	-1.3185	-4.7538***	-2.8643(1996)	-5.5100**(2001)
LGS	-0.9291	-5.1713***	-3.0651(2005)	-6.0929***(1988)
LLFP	-1.3606	-6.3402***	-6.1549*** (1992)	-7.7657***(1993)
LCPI	-0.9504	-3.5478**	-2.9269 (1992)	-4.7247(1989)

Notes: * significant at the 10% level, ** significant at the 5% level and *** significant at the 1% level. All variables are in logarithm form (L).

Table 2 presents the results of ARDL analysis for each model. The estimated F-statistics for each model exceeded the upper bound critical value at a 5 percent significance level. This indicates that there is a presence of long-run cointegration between the independent and dependent variables in each model. The second panel illustrated the long-run relationship between job vacancies (VAAF, VPAM, VPCT, VPTLE, VSS), economic growth, government spending, labour force participation, and inflation with unemployment. The estimation results show that job vacancies are not significantly influencing unemployment for all models in the long-run. Similar results show for government spending, labour force participation, and inflation, which reveal that these variables do not significantly influence unemployment in the long-run. However, the results show that in the long-run the economic growth with VPAM (model 2), economic growth with VPTLE (model 4) and economic growth with VSS (model 5) were found to be positive and significantly affect unemployment in Sabah by 10 percent of significance. Whereby, a 1 percent increase in economic growth causes an increase in unemployment by 1.0554 percent in Model 2, 0.9932 percent in Model 4, and 0.9718 percent in Model 5. In line with the study done by Bankole and Fatai (2013) and Babaloa et al. (2013), a positive association between unemployment and economic growth is found. The positive changes in economic growth and the increasing number of jobless people in the labour market are due to the workforce depending on foreign workers. According to Mahadi (2015), the main contributor to the Sabah economy is the primary sector populated by foreign workers. Sabah state government focuses on sustaining growth in the primary sector, especially in the palm oil industry, which increases the demand for labour in this sector. This sector was long dominated by foreign workers, especially among Indonesians (Johari and Goddos, 2003).

The third panel of the study illustrates the short-run relationship between unemployment and several factors, including job vacancies, economic growth, government spending, labour force participation, and inflation. The ARDL model estimates show that job vacancies (VAAF, VPAM, VPCT, VPTLE, VSS), economic growth, government spending, and labour force participation did not significantly affect unemployment in Sabah. However, inflation was found to have a significant and negative impact on unemployment in the short-run across all models. Specifically, In Model 1, a 1 percent increase in inflation leads to a 3.44 percent decrease in unemployment. Model 2 shows a 1 percent increase in inflation results in a 3.37 percent reduction in unemployment. Model 3 indicates a 1 percent rise in inflation reduces unemployment by 3.42 percent. Models 4 and 5 reveal that a 1 percent increase in inflation will reduce unemployment by 3.17 percent and 3.30 percent, respectively. These findings are aligned with the Phillips Curve theory, which posits an inverse relationship between unemployment and inflation in the short-run. The relatively low inflation rate in Sabah, compared to Sarawak and Malaysia (Zulkeffe et al., 2022), helps explain this negative relationship. As Sabah has the highest unemployment rate paired with low inflation, it supports the validity of the Phillips Curve theory. Thus, controlling inflation is crucial to reduce unemployment in Sabah.

Finally, the fourth panel shows the diagnostic test that was performed on the residual series as presented in Table 2. In general, most of the tests on the residual series confirmed the adequacy of the models of no serial correlation, no heteroscedasticity, and normally distributed.

Table 2: ARDL Model Estimation Results

Variable test	Model 1	Model 2	Model 3	Model 4	Model 5
			Bounds Test		
Panel 1: F-statistic	8.5180**	8.2119**	8.9712**	9.3275**	9.1203**
Panel 2: Long-run estimations					
LJV	-0.0054	0.0082	0.0265	-0.0107	0.0035
	(0.757)	(0.643)	(0.530)	(0.767)	(0.927)
LGDP	0.9388	1.0554*	0.8980	0.9932*	0.9718*
	(0.102)	(0.062)	(0.116)	(0.075)	(0.078)
LGS	0.0545	-0.2449	-0.2527	-0.1705	-0.2086
	(0.536)	(0.242)	(0.230)	(0.443)	(0.303)
LLFP	0.1876	0.0711	0.0829	0.1650	0.1288
	(0.648)	(0.855)	(0.829)	(0.668)	(0.734)
LCPI	-0.1115	-0.0268	0.0620	-0.0461	0.0010
	(0.923)	(0.980)	(0.955)	(0.967)	(0.212)
Panel 3: Short-run estimations					
dJV	-0.0031	0.0050	0.0156	-0.0063	0.0021
	(0.752)	(0.649)	(0.521)	(0.435)	(0.927)
dGDP	-0.5831	-0.6177	-0.7119	-0.5403	-0.5640
	(0.273)	(0.254)	(0.271)	(0.463)	(0.287)
dGS	-0.0903	-0.1490	-0.1483	-0.1007	-0.1249
	(0.550)	(0.263)	(0.235)	(0.668)	(0.323)
dLFP	0.1097	0.4324	0.0486	0.0974	0.0771
	(0.647)	(0.855)	(0.830)	(0.217)	(0.734)
dCPI	-3.4431*	-3.3712*	-3.4237*	-3.1658**	-3.3001*
	(0.062)	(0.055)	(0.051)	(0.005)	(0.072)
$ECM\ (-1)$	-0.5844	-0.6083	-0.5867	-0.5907	-0.5988
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Diagnostic Checking					
Job Vacancy :LVAAF, LVPAM, LVPCT, LVPTLE, LVSS					
Normality (JB)	0.3408	0.1977	0.5003	0.4619	0.2827
	(0.843)	(0.906)	(0.779)	(0.794)	(0.868)
Serial Correlation	0.0665	0.0027	0.3098	0.4025	0.1394
	(0.796)	(0.958)	(0.578)	(0.526)	(0.385)
Heteroscedasticity	1.8912	2.7425	1.1787	2.4757	1.8162
	(0.169)	(0.098)	(0.180)	(0.116)	(0.178)

Notes: LUNEMP is unemployment, JV is the job vacancies consist of LVAAF, LVPAM, LVPCT, LVPTLE and LVSS. Model 1 includes LVAAF, Model 2 includes LVPAM, Model 3 includes LVPCT, Model 4 includes LVPTLE and Model 5 includes LVSS. All variables are in logarithm form (L). (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%

5. Conclusions

The study explores the relationship between various economic factors such as job vacancies, economic growth, government spending, labour force participation, and inflation and unemployment in Sabah from 1982 to 2020, using the Autoregressive Distributed Lag (ARDL) approach. Below is a revised version of the summary of the study's findings, making it clearer and more concise. This study aimed to investigate the linear relationship between unemployment and several economic factors (job vacancies, economic growth, government spending, labour force participation, and inflation) in Sabah

from 1982 to 2020. The study employed the Autoregressive Distributed Lag (ARDL) approach as proposed by Pesaran et al. (2001). The cointegration and F-bound tests indicated that unemployment in Sabah was co-moved with several independent variables (VAAF, VPAM, VPCT, VPTLE, VSS, GDP, GS, LFP, CPI) in the long-run. Key findings include a positive long-run relationship between unemployment and economic growth, specifically between unemployment and job vacancies in the agricultural, elementary jobs, and service sectors (VPAM, VPTLE, and VSS). The economic growth in Sabah was unable to significantly reduce unemployment, which contradicts Okun's Law, which suggests a negative relationship between economic growth and unemployment. The study also aligned with the Phillips Curve theory, indicating a negative short-run relationship between unemployment and inflation across all models in Sabah.

To conclude, the results and findings presented in this study offer valuable insights into the significant factors that drive changes in unemployment. These findings can assist the government and policymakers in formulating strategies to mitigate and reduce unemployment levels. This study contributes to a deeper understanding of the underlying causes of unemployment, particularly in Sabah. The results provide a clearer picture of the key factors that need to be addressed in order to tackle the high unemployment rate effectively in this region.

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