



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



The Determinants of Labour Productivity Growth in Malaysia

Nadia Nurul Najwa Mohmad Hassan, Mohd Hakimi Harman, Nur Fariyah Mohammad Azhar

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i5/16893>

DOI:10.6007/IJARBSS/v13-i5/16893

Received: 16 March 2023, **Revised:** 18 April 2023, **Accepted:** 31 April 2023

Published Online: 11 May 2023

In-Text Citation: (Hassan et al., 2023)

To Cite this Article: Hassan, N. N. N. M., Harman, M. H., & Azhar, N. F. M. (2023). The Determinants of Labour Productivity Growth in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 13(5), 2063 – 2077.

Copyright: © 2023 The Author(s)

Published by Human Resource Management Academic Research Society (www.hrmars.com)

This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at: <http://creativecommons.org/licenses/by/4.0/legalcode>

Vol. 13, No. 5, 2023, Pg. 2063 – 2077

<http://hrmars.com/index.php/pages/detail/IJARBSS>

JOURNAL HOMEPAGE

Full Terms & Conditions of access and use can be found at
<http://hrmars.com/index.php/pages/detail/publication-ethics>



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



www.hrmars.com

ISSN: 2222-6990

The Determinants of Labour Productivity Growth in Malaysia

Nadia Nurul Najwa Mohmad Hassan, Mohd Hakimi Harman,
Nur Fariah Mohammad Azhar

Faculty of Management and Business, Universiti Teknologi MARA Cawangan Johor
Kampus Segamat, Malaysia

Email: nadia666@uitm.edu.my, mohdh2465@uitm.edu.my, nurfariah17@gmail.com

Abstract

Productivity of a country measures the country's capacity to create more money or value added. Malaysia is expected to shift to a high-income economy between 2024 and 2028, reflecting the country's economic development trajectory during the previous decades. As Malaysia strives to become a developed country with a high standard of living, great productivity in manufacturing processes is critical. The aim of this research was to investigate the factors could have impact on Malaysia's labour productivity. The research was performed using secondary data from economic indicators, which were the real wages, inflation, foreign direct investment (FDI), unemployment, and employment rate. The research sample use a time-series data on Malaysia's labour productivity from 1990 until 2020. According to the results, there were three significant factors, which were the real wages, foreign direct investment and inflation rate, while the unemployment and employment rates were not significant. The real wages, foreign direct investment, and employment rate, showed a positive correlation. Meanwhile, the inflation rate and unemployment rate showed a negative correlation with labour productivity. This study will reveal some of the factors that will affect the labour productivity and may help the government to create policies to manage the crucial contributor of labour productivity to increase the countries' gross domestic product.

Keywords: Inflation, Foreign Direct Investment, Unemployment, Real Wages, Employment Rate, Labour Productivity.

Introduction

The global economic downturn began as the Covid-19 disease and its implications overtook the globe in 2020. The virus has spread quicker due to global interconnection, which slowed down the movement of trade, goods, and humans. The epidemic generates two big crises which are the health and the economy. The rising rate of Covid-19 infection and death developed a cause to flatten the curve for Covid-19 is by limiting the flow of products and people, or imposing a complete lockdown had rooting for the economic activity to a halt in numerous countries. As a result, the effects of global and domestic economic growth and productivity have both slowed.

Malaysia's economy has been buffeted by a series of shocks that have hampered productivity development during the last decade. The Covid-19 pandemic is the most recent shock to Malaysia's economic performance. These shocks caused by the diminishing undercurrent of key drivers of productivity development. The proof showed Malaysia's labour productivity contracting by -5.5 percent in 2020, to RM89,025 per person employed. The decline was the first since the global financial crisis in 2009, and it was the smallest in 10 years.

Labour productivity is a pillar of socioeconomic sustainability, and the industrial sector is vital to economic and social well-being. Productivity is described as the ratio of the volume of output to the volume of inputs. In other words, it assesses how effectively production inputs such as labour and capital are used in an economy to generate a certain amount of output. Productivity metrics are broadly characterised as either single-factor productivity measures, which relate a measure of output to a single measure of input, such as labour productivity, or multifactor productivity measures, which relate a measure of output to a bundle of inputs, such as multifactor productivity. Productivity is seen as a fundamental driver of economic development and competitiveness.

Continuous long-term economic growth comes from increases in worker productivity. Labour productivity is an important economic indicator that is closely linked to economic growth, competitiveness, and living standards within an economy. As an economy's labour productivity grows, it produces more goods and services for the same amount of work. This increase in output makes it possible to consume more of the goods and services at an increasingly reasonable price. Labour productivity can also indicate short-term and cyclical changes in an economy, possibly even a turnaround. If output is increasing while labour hours remain static, it signals that the labour force has become more productive.

Purpose of Study

Malaysia has struggled in recent years as a result of the Covid-19 virus outbreak. Malaysia's labour productivity continued to decline in 2020, despite the entire economy being wrecked by a viral outbreak. The Covid-19 outbreak has led the economy to stall and operate at a reduced capacity. The disease has led the economy to shut down and cease normal operations. This is due to the government's desire to safeguard the safety of the people. Therefore it is crucial to determine the factors that will help to increase labour productivity especially during economic recovery effort. Thus, the primary goal of this study is to determine the elements that will help to drive Malaysia's labour productivity development. The study focuses on to investigate the relationship between real wages, inflation, foreign direct investment, unemployment and employment rate with labour productivity in Malaysia. The independent variables were real wages, inflation, foreign direct investment, unemployment, and employment rate, with labour productivity as a dependent variable. The motivation of this study is the factors that affect productivity of a country is important to be revealed because this study uses macroeconomic variables which some of the variables can be influenced with government's monetary or fiscal policy. Whenever a country wants to boost productivity of labour, a policy that can intervene with certain macroeconomic variable should be developed so that the variables will move to the desired level, which in turn will affect the labour productivity effectively. For example, this study uses real wages and foreign direct investment as variable that could have impact on labour productivity. If the

government develop policy that will increase the level of these variables, the labour productivity also will be increased if the relationship was positive.

Literature Review

Many factors influenced labour productivity as found in the previous studies. Most of the studies highlighted that mostly the macroeconomic variables may affect labour productivity. One of the factors mentioned to affect labour productivity was by Islam and Ghani (2017) is inflation. Research by Palel et al (2016) found foreign direct investment has relationship with labour productivity. In addition, Goh and Wong (2010), they only found one factor that affects labour productivity in Malaysia, which is unemployment.

The past researches suggested that the macroeconomic variables have relationship with labour productivity. However in the direction of relationships of all variables is not yet found consistently in findings of all researches. Thus, this study is going to test whether the factors affecting labour productivity in Malaysia may be affected by the real wages, inflation, foreign direct investment, employment rate and unemployment were acceptable or not.

Real Wages

Wages are source of income which influence standard of living directly becomes the main component of consumption and as one of the determinant in a country's economic operations. The necessity to enhance labour productivity and its relationship with wages is important to raise employees' living standard (Herman, 2020). According to Strain (2019) study on how businesses reward workers for their position, found that the higher the pay, the more employees want to work. Basri et al (2018) asserts that increased in real wages will be accompanied by increases in labour productivity as in efficiency wage hypothesis

Ibrahim and Putit (2021) found that the efficiency principle: paying higher salaries to employees motivates them to work more and produce more. The research indicates that salaries have positively impacted the labour productivity of enterprises of all sizes. Tamašauskienė and Stankaitytė (2013) discovered that the higher-paid employees do not want to lose their employment will work more efficiently. There is positive relationship between wages and labour productivity with macro-level and micro-level competitiveness (Šileika et al., 2010).

According to Gričar et al (2021) suggested that the increased robotization, indicates there is no significant relationship between real wages and labour productivity. According to Nikulin (2015), concluded that salaries do not fully react to changes in productivity. Šileika, et. al (2010) revealed that positive wage policies have a significant beneficial influence on wage outcomes but showed insignificant relationship between labour productivity and real wages.

Inflation

Inflation is the decline of a currency's purchasing power over time. Eryilmaz and Bakır (2018) investigated a long-term relationship between productivity and inflation in Turkey demonstrated a result in which in the short-term, a causality relationship was determined between inflation and productivity. Iheanacho (2017) explored the long run and short run correlations between real wages, inflation, and labour productivity in Nigeria, supported the

necessity to propose solutions to inflationary trends that lead to increased productivity and living standards.

Unit labour costs are further decomposed into changes in nominal pay and actual labour productivity. As a result, increases in real labour productivity have only a slightly negative relationship with inflation (Fedderke and Liu, 2018). Kim et al (2013) studied the productivity growth and inflation in Korea, found negative relationship in the productivity-inflation nexus in Korea has been stronger since the Asian financial crisis, owing in part to structural change and technological advancement. Inflation reduces the incentive to work which will limit productivity growth indirectly. Inflation and productivity growth are negatively associated, not just because employees' buying power impacts motivation and effort, but also because inflation affects enterprises' investment plans, capital depreciation rates, and production technique choices (Kumar et al., 2012)

When there is a negative relationship, it also has a positive relationship between labour productivity and inflation. According to Iheanacho (2017), the inflationary tendencies contribute to increasing production and living standards. It has evidence of a positive influence on productivity growth difference between traded and non-traded sectors on inflation differentials. On the other hand, Narayan and Smyth (2009) investigated the impact of inflation and real wages on productivity in the G7 nations from 1960 to 2004, found the effects of inflation on productivity are statistically insignificant for the majority of individual nations and the panel as a whole.

Foreign Direct Investment

Foreign direct investment (FDI) is a major source of funding for emerging and less developed countries. Hudáková et al (2020) suggested the FDI obtained by country on productivity gains is more powerful when foreign companies are aiming to increase efficiency, because the technologies and methods transferred by these businesses impact the host country's labour productivity both directly and indirectly, via training effects. FDI also transfer production technology, skills, innovation, and organizational and managerial practices between locations, as well as access to international marketing networks, all of which are critical to a country's economic development (Baskoro et al., 2019). Productivity increase is a factor that FDI may influence through modernization and better worker competency as is was found in long-term connection between FDI and productivity in the Philippines (Paglingayen and Razon, 2018).

The FDI spillover effects have a greater positive impact on enhancing labour productivity than domestic investment from domestic investors and research and development investment (Yunus and Masron, 2020). Vinh (2019) revealed that the FDI had a positive influence on labour productivity in the short and long run in Vietnam. Serfraz (2018) found in Pakistan's industrial and services sectors that attract more foreign direct investment (FDI) inflows cause labour productivity in these sectors rises. Lawana (2016) found FDI had a statistically significant positive influence on labour productivity in South Africa which highlighted the policies aiming at increasing foreign direct investment (FDI) should be followed, as this improves productivity in the automotive industry, which would then spread to other sectors of the economy.

Unemployment

Unemployment is defined as those over a particular age who are jobless, available for paid work or self-employment, and actively seeking work. Increase in unemployment, with the biggest effect likely to be in low-skill and decrease productivity sectors, such as tourism and retail some countries because it only measures the productivity of those who work (Gandy and Mulhearn, 2021). According to Michael and Geetha (2020), unemployment is a situation in which people who are actively looking for work are unable to find work. Dosi, Pereira, Roventini and Virgillito (2018) suggested when the Slovakia unemployment benefits are reduced significantly; macroeconomic conditions tend to deteriorate in terms of long-run growth of earnings and productivity. Razzak (2015) stated that employment–vacancy ratio and average labour productivity are predicted to be the same by dynamic search, suggested that a rise in unemployment decreases real earnings. Lee et al (2010) found the unemployment rates in nine high-performing Asian economies appears to be consistent with the implications of the labour market in a small open economy with comparatively high productivity growth.

Some studies found insignificant relationship between unemployment and productivity. Gandy and Mulhearn (2021) revealed that there is no relationship between nations' labour productivity and unemployment rates in the G7 nations, Spain, Greece, Ireland, and Portugal. Rolčíková et al (2014) stated that although the rate of unemployment was increasing in Czech Republic, the study found no significant relationship between unemployment and labour productivity. Amassoma and Nwosa (2013) analyzed the relationship between the unemployment rate and productivity growth in Nigeria found for both the long run and short-run models indicated that the unemployment rate had little impact on productivity development.

Employment Rate

The employment rate is the proportion of people who are employed in comparison to the overall population. It shows that a less age-diverse workforce, greater levels of education and training, increasing levels of gender diversity, and a more racially diverse workforce are required for better real compensation and labour productivity advantages (Mihi et al., 2020). Van Zyl (2014) propose a less age-diverse workforce, greater levels of education and training, increasing levels of gender diversity, and a more racially diverse workforce are required for better real compensation and labour productivity advantages in South Africa as the result showed increasing the concentration of employees in the 35 to 55-year group has the highest positive effect on labour productivity. Bhat and Siddharthan (2013) examined the role of human capital in driving labour productivity in India found capital intensity is a key driver of labour productivity and has a positive sign which suggests a large urban population and industrialization have better productivity as a result of agglomeration benefits.

Galí and Van (2021) study on changes in labour market dynamics in the United States proved that labour productivity has disappeared, and employment volatility has grown in relation to productions which imply the connection of productivity with employment has become negative. Bartolini et al (2019) study on twenty OECD nations revealed the effect of employment rate increase is compensated by a decrease in labour productivity growth. Máté (2015) to investigate the influence of human capital acquisition on productivity development from a sectoral perspective found in low-skilled industries, the degree of human capital is

negatively connected with productivity growth. Preliminary research suggests that the proportion of adult temporary employees has a significant and negative impact on labour productivity but youthful temporary work has a mixed impact (Parisi et al., 2014). On the other hand, Das and Sengupta (2015) who analyzed how employment growth is connected to productivity growth by using Indian data found relationship between output growth and employment growth of either kind of worker was not significant which showed most sectors in India used a tiny workforce relative to the quantity of capital.

Methodology

This study was conducted by using secondary data gathered from Thomson Reuters DataStream. Samples include the labour productivity in Malaysia as the dependent variable. The independent variables which were the real wages, inflation, foreign direct investment, unemployment, and employment rate. The time-series data period for this research was from 1991 until 2020 which is 30 years. This study performed descriptive analysis to present the data because it shows the underlying qualities of data in a sample and is the simplest approach to summarize a set of data. Other than that, the correlation analysis was conducted for this study because it shows when one variable's value changes, the value of the other variable tends to change in the same way. Understanding the relationship is beneficial because the value of one variable may be used to predict the value of the other. Lastly, to achieve the study objective; the regression analysis was conducted to decide whether or not a hypothesis should be accepted.

Analysis

The tests were done by using EViews software to determine the association between independent and dependent variables. The descriptive analysis and hypothesis tests were employed in this study is shown below:

Table 1

Descriptive Analysis

	LP	RW	IR	FDI	U	ER
Mean	3.264333	71.50033	2.535667	4.088333	3.354333	60.17333
Median	3.690000	74.32500	2.385000	3.775000	3.345000	59.85000
Maximum	7.230000	76.78000	5.440000	8.760000	4.550000	62.54000
Minimum	-9.670000	0.000000	-1.140000	0.060000	2.450000	58.21000
Std.Dev.	3.878821	13.60985	1.491233	1.904362	0.410144	1.389312
Skewness	-1.957224	-5.072090	-0.070082	0.463088	0.373037	0.595364

Note: The Dependent Variable is Labour Productivity (LP). The Independent Variables are Real Wages (RW), Inflation Rate (IR), Foreign Direct Investment (FDI), Unemployment (U) and Employment Rate (ER).

Table 1 shows the descriptive figures for the data used in this study. Descriptive analysis is used to describe the underlying properties of data. The data includes samples selected in Malaysia from 1991 to 2020. Thirty observations were used in this study. The average or mean, median, maximum, minimum, standard deviation, skewness, and kurtosis are all shown in table above for labour productivity (LP), real wages (RW), inflation rate (IR), foreign direct investment (FDI), unemployment (U) and employment rate (ER).

In these results, the mean of labour productivity (LP) is 3.26, and the median is 3.69. The data appear to be skewed to the left, which explains why the mean is lower than the median. The maximum value was 7.23 and the minimum was -9.67. The standard deviation is 3.88. With normal data, most of the observations are clustered close to the mean. The mean of real wages (RW) was at 71.50 with the median of 74.33. The data are skewed to the left tail with value -5.07. The data are spread wide from the mean as the standard deviation was 13.61. The maximum value was 76.78 and the minimum was 0.00 which is very large gap of real wage in the data. The inflation rate (IR) mean value was 2.54 which more than the median of 2.39. This showed the data were skewed to the right. The standard deviation of 1.49 showed that the data are clustered near the mean value. The maximum value was 5.44 and the minimum was -1.14. The data for foreign direct investment (FDI) also skewed to the right as the mean value of 4.09 is larger than the median of 3.78. The data also spread wide than the mean value as shown by standard deviation of 1.90. The maximum value was 8.76 and the minimum was 0.06. The data for unemployment (U) showed the mean of 3.35 and the median is 3.34 which is skewed to the right by 0.37. The standard deviation was 0.41 which showed the data were not dispersing far from the mean. The maximum was 4.55 and the minimum value was 2.45. Last, but not the least, the employment rate (ER) mean value was 60.17 with the maximum value was 62.54 and the minimum value was 58.21. There was fairly small gap between the maximum and minimum value. The data were skewed to the right as the median value of 59.85 was less than the mean value. However, the data were not dispersed widely from the mean as a low standard deviation of 1.34.

Table 2
Correlation Analysis

Correlation Probability	LP	RW	IR	FDI	U	ER
LP	1.000000 ---					
RW	0.45212 0.0117	1.000000 ---				
IR	0.245996 0.1901	0.417467 0.0217	1.000000 ---			
FDI	0.435423 0.0162	-0.226330 0.2291	0.420102 0.0208	1.000000 ---		
U	-0.316569 0.0883	-0.5723 0.0010	-0.244733 0.1924	0.187729 0.3205	1.000000 ---	
ER	-0.008207 0.9657	-0.169407 0.3708	-0.205199 0.2767	-0.074200 0.6968	-0.134473 0.4787	1.000000 ---

Note: The Dependent Variable is Labour Productivity (LP). The Independent Variables are Real Wages (RW), Inflation Rate (IR), Foreign Direct Investment (FDI), Unemployment (U) and Employment Rate (ER).

Correlation analysis is used to determine the relationship between the variables. Based on Table 2, it shows the correlation matrix between the changes in the dependent variable and the independent variables in this study. A negative association is shown by a correlation value near to -1, whereas a strong positive relationship is indicated by a correlation value close to 1. If there is no relationship between the variables, the correlation value is 0 and indicates a weak relationship. The level of significance is set at 5 percent, which is 0.05.

Based on Table 2, the variables which have a moderate relationship with labour productivity (LP) were real wage (RW) and foreign direct investment (FDI) with values of 0.4521 and 0.4354 respectively. Inflation rate (R) has weak relationship with LP at 0.2460 and statistically significant at 5 percent level. Whereas the unemployment (U) and exchange rate (ER) were insignificant with LP. The IR has positive moderate relationship with RW at 0.4175 and the U has strong negative relationship with RW. Both variables were statistically significant. However the FDI and ER were having no significant correlation with RW. Only FDI has a moderate positive correlation with IR at 0.4201 and is statistically significant. But, the U and ER has no correlation with IR because insignificant. The FDI has no correlation with U and ER because insignificant correlation.

In conclusion, the independent variables which are real wages (RW) and foreign direct investment (FDI) have a significant relationship with labour productivity (LP). Meanwhile, inflation rate (IR), Unemployment (U) and employment rate (ER) have no significant relationship with labour productivity (LP) as it is a weak relationship.

Table 3

Regression Analysis

Dependent Variable: LP Method: Least Squares Observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-24.34293	25.67616	-0.94808	0.35250
RW	0.21522	0.05098	4.22193	0.00030
IR	-1.11855	0.43826	-2.55227	0.01750
FDI	1.66507	0.31854	5.22730	0.00000
U	-1.25900	1.49294	-0.84330	0.40740
ER	0.207254	0.369493	0.560913	0.5801
R-squared	0.634700	Mean dependent var		3.264333
Ad. R-Squared	0.558595	S.D. dependent var		3.878821
S.E. of Reg	2.577022	Akaike infor criterion		4.900800
Sum Sq resid	159.3851	Schwarz criterion		5.188242
Log likelihood	-67.52004	Hannan-Quinn criter.		4.997654
F-statistic	8.339871	Durbin-Watson stat		1.785356
Prob(F-stat)	0.000111			

Note: The Dependent Variable is Labour Productivity (LP). The Independent Variables are Real Wages (RW), Inflation Rate (IR), Foreign Direct Investment (FDI), Unemployment (U) and Employment Rate (ER).

Regression analysis were used to assess the relationship between more than two variables and to determine whether the independent factors have an effect on the dependent variable. The regression analysis results are shown in Table 3.

The F-statistic shows a value of 8.3399 and the probability was 0.0001 which is less than 5 percent. Therefore, the null hypothesis must be rejected. This means that at least one of the variables was useful or has an impact on the labour productivity. In addition, the value of r-squared was 63.47 percent of the variance in the labour productivity can be explained by the variation of independent variables which were the real wages, inflation rate, foreign direct investment, unemployment, and employment rate while the remaining 36.53 percent were influenced by other independent variables. The first independent variable is real wages (RW). The coefficient of RW value is 0.2152. It assumes that for each one percent increase in the coefficient, a 21.52 percent increase in consumption factors in the labour productivity. The probability value was less than 5 percent significance level. This means that the null hypothesis can be rejected since changes in real wages have significance positive relationship with the labour productivity in Malaysia.

The second independent variable is inflation rate (IR). The coefficient value depicts that for each one percent increase in IR, it would result in a 111.85% decrease in inflation rate factors in the labour productivity. Nevertheless, the probability value is 0.0175 which is smaller than the 5 percent significance level. This means that the null hypothesis can be rejected since changes in inflation rate have significance negative relationship with the labour productivity in Malaysia. The third independent variable is foreign direct investment (FDI). The coefficient value of FDI depicts that for each one percent increase in FDI, it would result in a 166.51% increase in foreign direct investment factors in the labour productivity. Nevertheless, the probability value is 0.0000 which is lower than 5 percent significance level. This means that the null hypothesis can be rejected since changes in foreign direct investment have significance positive relationship with the labour productivity in Malaysia.

The fourth variable is unemployment (U). The correlation value depicts that for each one percent increase in U, it would result in a 125.9% decrease in unemployment factors in the labour productivity. Nevertheless, the probability value is 0.4074 which is greater than the 5 percent significance level. This means that the null hypothesis cannot be rejected since changes in unemployment have no significance with the labour productivity in Malaysia. Lastly is employment rate (ER). The coefficient showed that for each one percent increase in ER, it would result in a 20.72% increase in employment rate factors in the labour productivity. Nevertheless, the probability value is 0.5801 which is greater than the 5 percent significance level. This means that the null hypothesis cannot be rejected since changes in employment rate have no significance with the unemployment rate in Malaysia.

To summarize, the independent variables which were the real wages and foreign direct investment (FDI), both had positive relationship, the inflation rate (IR) have a significant negative relationship with labour productivity (LP). Meanwhile, unemployment (U) and employment rate (ER) have no significant relationship with labour productivity (LP).

Finding

This study found a statistically significant positive relationship between real wages and productivity. The result was consistent with Ibrahim and Putit (2021) who also found positive relationship. The study suggested that paying higher salaries to employees motivates them to work more and produce more. Other than that, the higher-paid employees do not want to lose their employment will work more efficiently (Tamašauskienė and Stankaitytė, 2013). This study also found a statistically significant negative relationship between inflation and productivity. This suggested by Kumar, Webber and Perry (2012) that inflation will reduce the incentive to work causing inflation and productivity growth are negatively associated because employees' buying power impacts motivation and effort. Apart from that, inflation also affects enterprises' investment plans, capital depreciation rates, and production technique choices. Foreign direct investment was found to have positive relationship with productivity and is statistically significant. As explained by Hudáková et al (2020), that the FDI obtained by country on productivity gains is more powerful when foreign companies are aiming to increase efficiency, because the technologies and methods transferred by these businesses impact the host country's labour productivity both directly and indirectly, via training effects.

This study found the employment rate and unemployment were not significant with the productivity. These results were consistent with Das and Sengupta (2015) who also found insignificant relationship between employment growth and productivity growth by using Indian data which showed most sectors in India used a tiny workforce relative to the quantity of capital. Furthermore, for unemployment result in past studies were found insignificant in study of (Gandy and Mulhearn, 2021; Rolčíková et al., 2014; Amassoma and Nwosa, 2013). It was explain that unemployment rate and productivity growth in Nigeria found for both the long run and short-run models indicated that the unemployment rate had little impact on productivity development (Amassoma and Nwosa, 2013).

Conclusion

This study focused on finding the relationship between five independent variables with labour productivity. The independent variables tested in this study were real wages, inflation rate, foreign direct investment, unemployment and employment rate. In past studies, all five factors were found as the determinants for labour productivity in various countries. According to the results, there were three significant factors found, which were the real wages, foreign direct investment, and the inflation rate, while the unemployment and employment rates were not significant. The result of this study showed that the independent variables, which were the real wages, foreign direct investment, and employment rate showed a positive correlation. Meanwhile, the inflation rate and unemployment rate showed a negative correlation with labour productivity. The factors could be used as references for the Malaysian government to take any wise actions to increase productivity in Malaysia, to help the country to grow well, especially in the economic sector. It can be an eye-opener for the government to be well prepared as the pandemic was affecting the gross domestic product growth of the country.

Implications

To better the productivity, the more efficient process is needed is because the fundamental inputs such as personnel, capital, and so on can be employed efficiently. Management of

companies must take actions to enhance the elements that impact productivity in order to boost productivity. A firm must get the attention of investor from domestic or foreign to invest in a big project. This will be a long-term investment and to produce the product or services in a great quality. When the firm is getting new project, more job will be offered. If the firm attracts foreign investor, it will be contributing the country's economic growth. Furthermore, it will increase the labour productivity growth.

The employer is plays a great role in employee productivity. Employer must make a strategy on how employee can generate target output to get the new achievement. For example, communicate when there is problem, serving a conducive and great environment for the workers work and give any allowance or incentives when the target of output is achieving. Thus, it will impact the company performance and the country's gross domestic product. The workforce must possess a certain level of human capital. The mix of education, knowledge, skills, and health of workers who do labour in the economy is referred to as human capital. If the employees have this kind of set, the output will be more in hours, and it will increase the productivity.

In order to achieve improved productivity, it was advised that Malaysian authorities should boost salaries and stimulate large investment in training, information technology, and research and development. Policymakers should keep emphasizing the adoption of real wages that are commensurate with labour productivity. As a result, the way forward is to improve workforce skills in order to develop a pool of highly trained knowledge workers, which is critical to increasing the country's labour productivity. Higher job security and consequent cooperative connections between management and staff, may have a positive impact on business performance, boosting inventive activity and supporting efficiency improvements.

Limitations of Study

This study has a limited scope of study because the variables only focusing on macroeconomic variables as the control variable on the labour productivity. Thus, any other scope of research maybe inapplicable as comparison with the findings of this study. Lastly, this study has a limited data for analysis which is yearly data from 1990 to 2020 of Malaysian economic performance. Therefore, the result only can be generalized with countries on the regional or same level of income and economic stage.

Contributions of Study

The factors affecting Malaysia's labour productivity are important because they will lead to labour productivity growth increasing or decreasing in Malaysia. The finding of this study may help Malaysia's economy to benefit from increased labour productivity as a result of increased productivity. Firm competition increases productivity development by increasing incentives for innovation and via selection. Many productivity-boosting inventions will reach the market if enterprises are given substantial incentives to develop them. The government may change the tax system to create incentives for jobless workers to return to work or learn new skills. As a result, the new skill will improve skills and boost corporate production. As a result, improved production leads to larger tax collections.

As for the country, the hourly output of a country's economy, which is the amount of real gross domestic product (GDP) generated by an hour of labour, is measured by the country. It

may generate basic statistical data for numerous worldwide comparisons and country performance evaluations. Economic growth will benefit the country via increased labour productivity. Labour productivity is the relationship between production and the number of employees employed. When the number of employees rises, such as when employment increases, or when each worker produces more, the economy grows. Changes in labour productivity indicate whether production is rising or decreasing per worker and are frequently used in wage negotiations to reward employees for productivity gains.

Recommendations for Future Study

It is recommendation for future study to expand the focus on one sector or industry. This study only focuses in Malaysia but in all sectors. If future study focuses on one sector, more detail explanations about the industry can be proven. Furthermore, it can expand the factors and to compare the result. Other than that, future study can expand to other nations in order to have a better understanding of what is happening in terms of the global labour productivity. So, by comparing one country to another, it could observe the relationship between independent variance and the labour productivity in greater clarity and depth. Apart from that, it is recommended to add more independent variables such as human skill, technology factor, and demographic factors for further studies to gain results on types of variables that have an effect on the labour productivity growth.

Acknowledgement

The authors gratefully acknowledge financial support from the Universiti Teknologi MARA Cawangan Johor Kampus Segamat under grant of Pembiayaan Publish Cherish @ UiTM Johor 2023.

References

- Amassoma, D., & Nwosa, P. I. (2013). The impact of unemployment rate on productivity growth in Nigeria: an error correction modeling approach. *International Journal of Economics and Management Sciences*, 2(8), 1-13.
- Bartolini, D., Ninka, E., & Santolini, R. (2019). Tax decentralization, labour productivity, and employment in OECD countries. *Applied Economics*, 51(34), 3710-3729.
- Baskoro, L. S., Hara, Y., & Otsuji, Y. (2019). Labor Productivity and Foreign Direct Investment in the Indonesian Manufacturing Sector. *Signifikan: Jurnal Ilmu Ekonomi*, 8(1), 9-22.
- Basri, N. M., Karim, Z. A., Ismail, R., & Sulaiman, N. (2018). The Effect of Wages and Industry-Specific Variables on Productivity of Manufacturing Industry in Malaysia: A Dynamic Heterogeneous Panel Evidence. *International Journal of Economics & Management*, 12(2).
- Bhat, S., & Siddharthan, N. S. (2013). Human capital, labour productivity and employment. *In Human Capital and Development* (pp. 11-22). Springer, India.
- Das, P., & Sengupta, A. (2015). Wages, productivity and employment in Indian manufacturing industries: 1998-2010. *The Journal of Industrial Statistics*, 4(2), 208-220.
- Dosi, G., Pereira, M. C., Roventini, A., & Virgillito, M. E. (2018). The effects of labour market reforms upon unemployment and income inequalities: an agent-based model. *Socio-Economic Review*, 16(4), 687-720.
- Eryilmaz, F., & Bakir, H. (2018). Real wages, inflation and labor productivity: An evaluation within Turkish context. *Hitit University journal of social sciences institute*, 11(3), 1946-1959.

- Fedderke, J., & Liu, Y. (2018). Inflation in South Africa: An assessment of alternative inflation models. *South African Journal of Economics*, 86(2), 197-230.
- Gali, J., & Van Rens, T. (2021). The vanishing procyclicality of labour productivity. *The Economic Journal*, 131(633), 302-326.
- Gandy, R., & Mulhearn, C. (2021). Allowing for unemployment in productivity measurement. *SN Business & Economics*, 1(1), 1-38.
- Goh, S. K., & Wong, K. N. (2010). Analyzing the productivity-wage-unemployment nexus in Malaysia: Evidence from the macroeconomic perspective. *International Research Journal of Finance and Economics*, 53, 145-156.
- Gricar, S., Sugar, V., & Bojnec, S. (2021). The missing link between wages and labour productivity in tourism: evidence from Croatia and Slovenia. *Economic Research-Ekonomska Istrazivanja*, 34(1), 732-753.
- Herman, E. (2020). Labour productivity and wages in the Romanian manufacturing sector. *Procedia Manufacturing*, 46, 313-321.
- Hudakova, J., Papcunova, V., Stubnova, M., & Urbanikova, M. (2020). Relationship of labour costs and labour productivity with foreign direct investment in the V4 countries. *Polish Journal of Management Studies*, 22.
- Ibrahim, N. A., & Putit, L. (2021). Effects of Wages and Global Financial Crisis on Labour Productivity-Does Size Matters?. *International Journal of Trade, Economics and Finance*, 12(3).
- Iheanacho, E. (2017). Emperical Review on the Relationship between Real Wages, Inflation and Labour Productivity in Nigeria. ARDL bounds testing approach. *Issues in Economics and Business*, 3(1), 9-29.
- Islam, R., and Ghani, Abdul. (2017) Determinants of factors that affecting inflation in Malaysia. *International Journal of Economics and Financial Issues*, 7 (2). pp. 355-364. ISSN 2146-4138
- Kim, S., Lim, H., & Park, D. (2013). Does productivity growth lower inflation in Korea?. *Applied Economics*, 45(16), 2183-2190.
- Kumar, S., Webber, D. J., & Perry, G. (2012). Real wages, inflation and labour productivity in Australia. *Applied economics*, 44(23), 2945-2954.
- Lawana, N. (2016). The impact of foreign direct investment on labour productivity of the automotive sector in South Africa (Doctoral dissertation, University of Fort Hare).
- Lee, H. Y., Wu, J. L., & Lin, C. H. (2010). Hysteresis in east asian unemployment. *Applied Economics*, 42(7), 887-898.
- Mate, D. (2015). Impact of human capital on productivity growth in different labour-skilled branches. *Acta Oeconomica*, 65(1), 51-67.
- Michael, E., & Geetha, C. (2020). macroeconomic factors that affecting youth unemployment in malaysia. *Malaysian Journal of Business and Economics*, 181-181.
- Mihi-Ramirez, A., Melchor-Ferrer, E., & Sobieraj, J. (2020). Integration and productivity of labor factor in Europe. Perspective from nationality and the attainment level. *Engineering Economics*, 31(1), 18-25.
- Narayan, P., & Smyth, R. (2009). The effect of inflation and real wages on productivity: new evidence from a panel of G7 countries. *Applied economics*, 41(10), 1285-1291.
- Nikulin, D. (2015). Relationship between wages, labour productivity and unemployment rate in new EU member countries. *Journal of International Studies Vol*, 8(1).
- Paglingayen, J. R., & Razon, B. (2018). The relationship of foreign direct investment and labor productivity in the Philippines. ISSN No. 2362-7832, 395.

- Palel, N. S. M., Ismail, R., & Awang, A. H. (2016). The impacts of foreign labour entry on the labour productivity in the Malaysian manufacturing sector. *Journal of Economic Cooperation and Development*, 37(3), 29-56. Retrieved from www.scopus.com
- Parisi, M. L., Marelli, E., & Demidova, O. (2014). Labour productivity of young and adult temporary workers and youth unemployment: a cross-country analysis. Discussion Papers 1_2015, CRISEI, University of Naples "Parthenope", Italy. 1_2015, CRISEI, University of Naples "Parthenope", Italy.
- Razzak, W. A. (2015). Wage, productivity and unemployment: microeconomics theory and macroeconomics data. *Applied Economics*, 47(58), 6284-6300.
- Rolcikova, M., Krcmarska, L., Otte, L., Cerny, I., & Seidl, M. (2014). The Average Salary, The Labour Productivity and The Unemployment in The Field of Brown Coal Mining.
- Serfraz, A. (2018). Foreign direct investment inflows and labor productivity in Pakistan: A sector-wise panel cointegration analysis. *Asian Journal of Economics and Empirical Research*, 5(1), 1-18.
- Sileika, A., Tamasauskienė, Z., & Barteliene, N. (2010). Comparative analysis of wages and labour productivity in Lithuania and other EU-15 countries. *Socialiniai tyrimai*, (3), 132-143.
- Strain, M. R. (2019). The Link Between Wages and Productivity Is Strong. Expanding Economic Opportunity for More Americans, The Aspen Institute.
- Tamasauskienė, Z., & Stankaitytė, A. (2013). Evaluating of the relationship between wages and labour productivity in Lithuania: territorial and sectoral approaches. *Socialiniai tyrimai*, (1), 24-35.
- Van Zyl, H. (2014). Labour productivity and employee diversity in the South African workplace. *Journal of Economic and Financial Sciences*, 7(2), 451-466.
- Vinh, N. T. (2019). The impact of foreign direct investment, human capital on labour productivity in Vietnam. *International Journal of Economics and Finance*, 11(5), p97.
- Yunus, N. M., & Masron, T. A. (2020). Spillover effects of inward foreign direct investment on labour productivity: An analysis on skill composition in manufacturing industry. *International Journal of Asian Social Science*, 10(10), 593-61.