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Productivity effect of minimum wage in the manufacturing sector of Malaysia

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ABSTRACT

This study measured the effectiveness of Malaysia's minimum wage by assessing the effect of minimum wage on productivity in the Malaysian manufacturing sector. Panel data covering a 10-year period were collected from 297 manufacturing firms in Peninsular Malaysia that were registered with the Federation of Malaysian Manufacturers (FMM) and analysed using static panel data regression to examine the effect of minimum wage on productivity. Panel data analysis revealed that the study's random effect model (REM) was the best model to describe the relationship between the minimum wage and productivity. The study found that the minimum wage improved labour productivity. Therefore, the minimum wage policy that was introduced in Malaysia under the Minimum Wage Order 2012 increased firms' productivity. Increasing workers' wages motivated them to be more productive. This study's results are useful in highlighting to regulators, policymakers, manufacturing associations, employers, and workers the effects of the minimum wage. The implications of the findings will help improve the national minimum wage policy.

Contribution/ Originality: The article contributes to the literature on the impact of minimum wage on productivity. As there is a paucity of literature that examines the productivity effect of minimum wage, this research offers particular originality, especially in the case of the Malaysian labour market.

1. INTRODUCTION

In the labour market, the equilibrium wage is achieved when firms are willing to pay the wages that are demanded by the workers. However, an increase in living costs can drive demand for higher wages. According to Aizcorbe, Bradley, Greenaway-McGrevy, and Judd (2020), low-income workers, mostly employed in low-skilled jobs, are the most affected when there is a hike in the cost of living. These people need higher salaries to survive in today's growing economy.

In the Malaysian manufacturing sector, most firms are highly dependent on low-skilled foreign workers. Businesses employ these workers due to the cheap labour they provide. However, the inflow of foreign workers has

caused unemployment among the local people and distortions of the labour market (Arain, Bhatti, Ashraf, & Fang, 2020). One initiative the government has taken to reduce the number of low-skilled foreign workers and to cater to locals' demand for higher wages is the introduction of the minimum wage policy.

According to the International Labour Organization (2013), a minimum wage was introduced in Malaysia in 2012 under the Minimum Wage Order (MWO) 2012. The policy aimed to develop the Malaysian economy into a high-income country. The system can alleviate poverty and promote better living standards for poorly paid employees who are mostly involved in the unskilled job sector (Kasimu, 2020). Additionally, a minimum wage can reduce the dependency on foreign workers by attracting more local workers into low-skilled jobs.

Today, the majority of countries, both developed and developing, have implemented a minimum wage policy. All European countries that are registered with the International Labour Organization (2016) have a minimum wage, which covers the private sector at least in part. In Asia, 90 per cent of countries have minimum wage legislation, except for Singapore, Brunei, Bahrain and Macau. Meanwhile, Sweden, Denmark and Switzerland are among the developed nations that have not implemented a minimum wage. These countries have high salaries and low unemployment levels. Additionally, Sweden and Denmark have a social contract in place that enables workers to receive a reasonable wage from their employers.

Even though the policy was launched to accomplish several objectives, its negative impacts on the system have been challenging. Since the minimum wage was introduced, many firms, mostly small and medium enterprises (SMEs) have disagreed with the implementation (Addo, 2020). They argued that the minimum wage would distort their firms' performance since they would incur higher labour costs. Before the minimum wage was introduced, they only need to pay a salary of MYR400 to MYR500 to their low-skilled workers (MYR: Malaysian Ringgit). However, when the minimum wage was implemented, they incurred higher labour costs with minimum salaries of MYR920 to MYR1000. Hence, most firms thought that the minimum wage would cause an increase in labour costs, resulting in a decrease in firms' financial performance.

Nguyen (2019) examined the impact of the minimum wage increase on productivity in Vietnam using firm-level data. The study suggested that the minimum wage increase was associated with higher productivity levels. Another study by Dube, Giuliano, and Leonard (2019) in the United Kingdom (UK) analysed the impact of minimum wage changes on productivity. The results indicated that minimum wage increases are associated with positive productivity effects in industries with a higher proportion of low-wage workers, but not in industries with a lower proportion of low-wage workers.

Ahmad, Scott, and Abdul-Rahman (2016) conducted a study on the challenges faced by human resource managers due to the implementation of minimum wage policies. The study found that managers experienced difficulties in compensating their low-skilled workers because some employees were deemed unproductive and were thus not eligible for minimum wage payments. Furthermore, as the minimum wage only applied to low-skilled workers, other employees, who did not benefit from the policy, were demotivated and less efficient. Consequently, the reduced productivity resulting from minimum wage implementation negatively impacted the firms' performance. However, it is worth noting that minimum wage policies have the potential to motivate workers to increase their productivity. As minimum wage regulations can decrease the hiring of additional workers, current employees may become more productive to sustain their positions in the company.

Rizov, Croucher, and Lange (2016) analysed the effects of minimum wage on productivity in low-paying sectors in Britain. The study used a financial dataset containing annual records of more than 360,000 firms from 1995 to 2008. The study found that the introduction of the minimum wage in the UK positively affected the aggregate productivity of low-paying sectors. The findings of Rizov et al. (2016) were supported by Riley and Bondibene (2017), who also analysed the minimum wage's effect on productivity in Britain. Their study found that firms increased their labour productivity in response to the higher labour costs. The workers were more motivated and became more productive when they received higher wages.

In Malaysia, the situation regarding the role of minimum wage in employee productivity and performance has been inconclusive so far. The implementation of the minimum wage appears to be a double-edged sword with both positive and negative effects on management and employees. From the management's perspective, the minimum wage can lower employee turnover (Balasingam, Hussain, & Manaf, 2020). However, the negative side of the minimum wage is a potential increase in the company's costs (Ahmad et al., 2016; Hwa, Lok, Hamid, & Cheong, 2019). From the employee's perspective, the minimum wage can motivate and increase job satisfaction (Che Ahmat, Arendt, & Russell, 2019). However, it also can be an abusive factor when there is an increased workload at a lower payment level (Balasingam et al., 2020; Eng, Hamid, & Tahir, 2013; Joo-Ee, 2016).

This study used the efficiency wage theory to analyse the productivity effects of the increase in the minimum wage. The theory, which was introduced by Akerlof (1982), is commonly applied to measure the effects of an increase in the minimum wage on productivity (Akerlof, 1982). In today's competitive market, workers tend to be more productive when they are motivated. The theory of an 'efficiency wage', as formulated by Akerlof (1982), suggests that increasing wages is a form of motivation for workers. This theory was supported by Reich, Allegretto, and Godøy (2018), who found that the minimum wage had a positive impact on workers' effort levels. A higher level of motivation or effort among workers due to higher wages will increase firms' productivity.

Since the minimum wage was introduced, numerous studies have analysed its impact on the Malaysian labour market. However, few of these studies have comprehensively addressed its impact on productivity levels. Hence, this study examines the effect of the national minimum wage on productivity in the Malaysian manufacturing sector.

This paper is organised into five sections. Section 1 presents the introduction with the study's background and objectives; Section 2 explains the methodological aspects; Section 3 presents the results and empirical findings; Section 4 contains a discussion of the results; and Section 5 concludes and offers recommendations.

2. METHODOLOGY

In this study, the researcher used questionnaires to collect data directly from the respondents. The population of the study comprises manufacturing companies located in Peninsular Malaysia that are registered with the Federation of Malaysian Manufacturers (FMM). Established in 1968, the FMM is an economic organisation that represents the manufacturing and services industries in Malaysia. The list of manufacturing firms was obtained from the FMM Directory 2017 (Federation of Malaysian Manufacturers, 2017).

A sample of firms was randomly selected, and the questionnaires were distributed to the targeted respondents in person. The researcher utilised probability sampling techniques, which include cluster sampling and simple random sampling. The scope of the population is manufacturing firms in Peninsular Malaysia with 75 or more employees. Based on the FMM Directory 2017, 1292 manufacturing firms in Peninsular Malaysia with 75 or more employees were registered with FMM as of 2017.

A panel data analysis was carried out, spanning from 2008 to 2017. A sample of 297 manufacturing firms registered with FMM was randomly selected to examine the effect of minimum wage on productivity. The respondents of the study were employees from the human resources divisions, who could provide the companies' data. All the data provided by the respondents were treated as highly confidential.

According to the Malaysia Productivity Corporation (2019), the most commonly used indicators of labour productivity are the following:

i) Added value per employee = added value/number of employees.
ii) Total output per employee = total output/number of employees.
iii) Added value per hour worked = added value/total hours worked.

In this study, the second indicator was used to calculate productivity: total output per employee. In the survey, the respondents from the manufacturing companies were asked to provide their companies' total output data and number of employees. These data were required to estimate the companies' labour productivity.

In addition to considering minimum wage and productivity, the study examined four control variables: the firm's size, profit, age and location. The firm's size was determined by its sales turnover; the study only included medium and large manufacturing firms. As classified by the SME Corporation, a medium firm is defined as having a sales turnover of between MYR15 million and MYR50 million, while a large firm has a sales turnover exceeding MYR50 million. Profit refers to the amount of profit the firm generates in a given year, while age refers to the number of years the firm has been in operation. The location variable was divided into four zones: Klang Valley (including Kuala Lumpur and Selangor), the southern zone (Negeri Sembilan, Melaka and Johor), the northern zone (Kedah and Perlis), and the eastern zone (Pahang, Terengganu and Kelantan).

The study's data were first analysed using the pooled ordinary least squares (OLS) model. Next, the equation of the productivity effect of minimum wage was further analysed using random effect and fixed effect models. Tests were conducted to determine which model was the most appropriate for this study. The Breusch-Pagan Lagrange Multiplier (LM) test was used to determine whether the pooled OLS or random effect model was the best to employ. Meanwhile, the Hausman test was performed to decide whether the fixed or random effect model would be suitable for further analysis. These models were utilised to examine the relationship between minimum wage and productivity.

Pooled OLS model:

$$PROD_{it} = \beta_0 + \beta_1 MW_{it} + \beta_2 SIZE_{it} + \beta_3 PROFIT_{it} + \beta_4 AGE_{it} + \beta_5 LOC_{it} + \varepsilon_{it} \quad (1)$$

Equation 1 presents the effect of productivity on minimum wage, where I represents the company, t represents the time period, PROD is the productivity level of the company, MW is the minimum wage, SIZE is the size of the company, PROFIT is the company's profit, AGE is the years the company has operated, LOC is the location of the company, and ε is the error term.

However, the equation representing the pooled OLS model may be too restrictive and could result in several problems. Panel data regression could lead to a misleading interpretation through the problems of autocorrelation and heteroskedasticity (Law, 2018). Nevertheless, these problems can be controlled by using either a random or fixed effect model.

$$\varepsilon_{it} = \lambda_i + u_{it} \quad (2)$$

Equation 2 shows the two intercepts of the error terms. In the random and fixed effect models, the heterogeneity of the error terms may be included in the model. The error terms in both the fixed and random effect models have two intercepts, which are 'u', varied in time, and 'λ', constant in time.

2.1. Random Effect Model

$$PROD_{it} = \beta_0 + \beta_1 MW_{it} + \beta_2 SIZE_{it} + \beta_3 PROFIT_{it} + \beta_4 AGE_{it} + \beta_5 LOC_{it} + (u_i + \varepsilon_{it}) \quad (3)$$

Equation 3 presents the random effect model that could be employed in this study. The random effect model's underlying assumption is that the error term is not correlated with the independent variables. The time-invariant factor 'λ' is included in the model. This factor has a similar role to other exploratory variables; hence, the inclusion of the unique factors in the regression model is allowed. Additionally, random effect models also allow time-constant independent variables to be included in the regression model.

2.2. Fixed Effect Model

$$PROD_{it} = (\beta_0 + u_i) + \beta_1 MW_{it} + \beta_2 SIZE_{it} + \beta_3 PROFIT_{it} + \beta_4 AGE_{it} + \beta_5 LOC_{it} + \varepsilon_{it} \quad (4)$$

Equation 4 shows the fixed effect model that could be used in this study. u_i is the individual-level effect, and ε_{it} is the disturbance term. The underlying assumption of the fixed effect model is that the error term is correlated

with the independent variables. Every firm has its own unique factors, and the factors that are assumed to be constant across time may or may not have effects on the dependent variables. In the fixed effect model, the model would control for unobserved factors that could result in biased dependent variables.

Table 1 summarises the characteristics of the random effect and fixed effect models. Equation 3, the random effect model, is expected to be the best model for use in this study.

Table 1. Random effect and fixed effect models.

Items	Random effect model	Fixed effect model
Functional form	$y_{it} = \alpha + X_{it}\beta + (u_i + \varepsilon_{it})$	$y_{it} = (\alpha + u_i) + X_{it}\beta + v_{it}$
Intercept	Vary across groups and time	Constant
Slope	Constant	Constant
Error variance	Constant	Vary across groups and time
Estimation	Generalised least squares (GLS)	Least squares dummy variable (LSDV), within groups fixed effect

3. RESULTS

The study's findings were categorised into two periods: the pre-minimum wage period (2008-2012) and the minimum wage period (2013-2017). The panel data for each period were analysed independently to investigate the impact of minimum wage on productivity. Diagnostic tests, including tests for multicollinearity, heteroskedasticity and serial correlation, were performed after verifying linearity and normality. Additional analyses were performed using pooled OLS, random effects and fixed effects models. The panel data were analysed using the STATA software application.

3.1. Descriptive Statistics

Descriptive statistics provide an overview of the variables used in the model, which included productivity, minimum wage, firm size, profit, age and location. This section describes each variable in terms of the number of observations, mean, median, standard deviation, minimum and maximum values. Tables 2 and 3 present the descriptive statistics for the 2008-2012 and 2013-2017 data periods, respectively.

Table 2. Descriptive statistics of determinants and productivity for the 2008-2012 period.

Variable	Obs.	Mean	Std. deviation	Min.	Max.
PROD	1485	30.68	109.81	0.86	2711.46
MW	1485	692.20	78.43	500	880
SIZE	1485	1.42	0.49	1	2
PROFIT	1485	6326612	4.32e+07	2880.26	1.17e+09
AGE	1485	27.21	11.12	2	81
LOC	1485	2.36	1.29	1	4

Note: e indicates exponential notation, which multiplies the preceding number by 10 to the nth power.

Table 3. Descriptive statistics of determinants and productivity for the 2013-2017 period.

Variable	Obs.	Mean	Std. deviation	Min.	Max.
PROD	1485	38.78	126.93	1.3	3125
MW	1485	950	47.66	900	1000
SIZE	1485	1.42	0.49	1	2
PROFIT	1485	8232106	4.92e+07	2286.33	1.09e+09
AGE	1485	32.21	11.12	7	86
LOC	1485	2.36	1.29	1	4

Note: e indicates exponential notation, which multiplies the preceding number by 10 to the nth power.

Table 2 presents the statistics for the variables during the 2008-2012 period, with 1485 observations recorded for all variables. Productivity and minimum wage had means of 30.68 and 692.20, respectively. Profit had the highest mean and standard deviation of 6326612 and 4.32e+07, while size had the lowest mean and standard

deviation of 1.42 and 0.49. Age and location had standard deviations of 11.12 and 1.29, respectively. In terms of maximum and minimum values, profit had the highest maximum value of 1.17e+09 and the highest minimum value of 28880.26. Firm size had the lowest maximum and minimum values of 2 and 1, respectively. The maximum values for productivity and minimum wage were 2711.46 and 880, while their minimum values were 0.86 and 500.

Table 3 reports the variables' statistics for the period of 2013-2017. In total, there were 1485 observations for all variables. The means of productivity and minimum wage were 38.78 and 950, respectively. The highest mean and standard deviation were recorded by profit with values of 8232106 and 4.92e+07, respectively. Additionally, profit had the highest maximum and minimum values of 1.09e+09 and 2286.33. The mean, standard deviation, maximum and minimum values for size and location were the same as those in the 2008-2012 period. However, the maximum and minimum values for age were 86 and 7, respectively. Productivity and minimum wage had maximum values of 3125 and 1000, respectively. Meanwhile, their minimum values were 1.3 and 900.

3.2. Regression Analysis

Diagnostic checks were conducted to identify potential issues of multicollinearity, heteroskedasticity and serial correlation. In addition, the pooled OLS model, random effect model and fixed effect model were analysed. To determine the appropriate model for the study, the Breusch-Pagan LM test and Hausman test were performed. The results of the Breusch-Pagan LM test were significant (p-value < 0.05), while the Hausman test results were not significant (p-value > 0.05) for both periods of 2008-2012 and 2013-2017. Therefore, the random effect model was selected as the appropriate model for both periods. Tables 4 and 5 present the output of the regression results for the periods of 2008-2012 and 2013-2017, respectively, using the random effect model.

Table 4. Random effect results with dependent variable PROD for the 2008-2012 period.

Variable	Coefficients	T-stats
MW	0.009	0.003***
SIZE	-5.131	1.972***
PROFIT	0.001	0.000***
AGE	0.208	0.086
LOC	-12.090	0.751
Constant	-27.372	4.389
R^2	0.315	-
N	1355	-
Breusch-Pagan LM test	1588.860	0.000
Hausman test	32.800	0.859
Multicollinearity (VIF)	1.240	-
Heteroskedasticity (x^2 – stat)	3.1e+05	0.000
Serial correlation (F - stat)	114.140	0.000

Note: *** indicates significance at the 1% level.
e indicates exponential notation, which multiplies the preceding number by 10 to the nth power.

For the diagnostic tests, the variance inflation factor (VIF) was used to detect multicollinearity, which was found to be absent since the VIF value was 1.24, below the threshold of 10. The modified Wald statistic was utilised to check the presence of heteroskedasticity, with a significant p-value indicating a non-constant variance. The Wooldridge test was used to detect serial correlation, and the significant p-value of the F-stat indicated the presence of this problem. Since heteroskedasticity and serial correlation problems were found for the 2008-2012 period, the standard errors in the model were estimated using the Rogers (1993) method, which clusters the data at the firm level. Clustering at the firm level results in a robust estimator for both cross-sectional heteroskedasticity and within-panel correlation.

The results from the random effect model depicted in the above table demonstrate that the impact of minimum wage on productivity is statistically significant (with a p-value < 0.01). The positive correlation between the two variables, with an estimated coefficient of .0094, suggests that a MYR100 increase in the minimum wage would

result in a 1-unit increase in productivity. Even though there was no minimum wage policy during the 2008-2012 period, the productivity of firms still increased when the wages of the workers increased. This is because the workers are more motivated when they receive higher wages. The results support the argument of Ouimet and Simintzi (2015) that wages play an important role in firms' productivity. Consistent with the prediction of the efficiency wage model, higher wages cause workers to be more effective and produce more outputs. As output is the main determinant of productivity, an increase in wages will increase productivity.

In terms of the control variables, the result of the random effect model indicates that the effects of a firm's size and profit are significant to its productivity (p-value < 0.01). Larger and more profitable firms require more workers to expand their businesses. With the high profit generated by the firms, the workers' contributions are rewarded by an increase in wages. As workers are more productive when they receive higher wages, the effects of size and profit are significant to the firms' productivity. Meanwhile, the effects of the firm's age and location on productivity are not significant in this study. The productivity of manufacturing firms is not determined by how long the firms have operated or where they are located.

Table 5. Random effect results with dependent variable PROD for the 2013-2017 period.

Variable	Coefficients	T-stats
MW	0.044	0.047***
SIZE	-14.705	3.662***
PROFIT	0.041	0.000***
AGE	0.177	0.137
LOC	-1.885	1.403
Constant	-11.269	7.281
R^2	0.557	-
N	1310	-
Breusch-Pagan LM test	2234.660	0.000
Hausman test	24.700	0.055
Multicollinearity (VIF)	1.090	-
Heteroskedasticity (x^2 – stat)	4.1e+06	0.000
Serial correlation (F - stat)	105.490	0.000

Note: *** indicates significance at the 1% level.
e indicates exponential notation, which multiplies the preceding number by 10 to the nth power.

The period of 2013-2017 also exhibited problems of heteroskedasticity and serial correlation, as indicated by the diagnostic tests. Thus, to address these issues, the standard errors in the model were clustered at the firm level using the method proposed by Rogers (1993).

According to the findings from the random effect model presented in Table 5, the minimum wage has a significant influence on productivity (with a p-value < 0.01). The positive relationship between these variables is reflected in the estimated coefficient of .0438, indicating that a MYR100 increase in the minimum wage would lead to a productivity increase of 4 units. This could be attributed to the implementation of the minimum wage policy in 2013, which required employers to pay their workers higher wages. The happiness gained by the higher wages had the effect of making the workers more motivated and effective in producing outputs. The results support the argument by Horton (2017) that employers hire more productive workers in response to a higher minimum wage.

As employers incur higher labour costs, employing more productive workers reduces their costs by increasing their sales. Meanwhile, a wage is the main reason for a worker to secure a job. In fact, money is the best tool to trigger a person's performance. Hence, when the minimum wage increases, workers become more enthusiastic and productive when performing their jobs.

Concerning the control variables, the results of the random effect model suggest that the size and profit of the firm have significant effects on productivity (with a p-value < 0.01). There is a negative correlation between size and productivity, indicating that larger firms tend to exhibit higher productivity levels than smaller ones.

Conversely, profit has a positive correlation with productivity, indicating that firms with higher profits tend to incentivise their employees to be more productive to stay competitive in their respective industries.

4. DISCUSSION

The relationship between minimum wage and productivity has been the subject of considerable debate among researchers. Some argue that raising the minimum wage can increase productivity by reducing turnover and increasing worker morale, while others contend that higher wages could lead to decreased employment and reduced competitiveness for businesses.

Based on the empirical findings of this study, derived from the random effect model, there is a significant relationship between the minimum wage and productivity for both the pre-minimum wage period and the minimum wage period.

The ultimate goal for a worker to be involved in the workforce is to receive wages. That is why workers' excitement is triggered when they receive higher wages. The implementation of the minimum wage policy by the government has caused most employers to pay more for their workers, especially low-skilled workers. However, although employers have been burdened with an increase in labour costs, the minimum wage also has caused an increase in productivity. Workers are more motivated and effective when performing their jobs when they receive higher wages. As more outputs are produced, the findings suggest that an increase in the minimum wage also increases productivity.

The research findings are in agreement with the results of a study conducted by Horton and Wozniak (2020). Their study on the US fast-food industry found that increasing the minimum wage had the potential to enhance the productivity of the labour force. Horton and Wozniak (2020) suggested that raising the minimum wage led to an increase in productivity by reducing employee turnover and increasing worker effort. Their results suggested that a 10% increase in the minimum wage led to a 1.9% reduction in turnover, which in turn led to a 4.4% increase in productivity.

Based on these findings, it is conceivable that the positive effects of a minimum wage increase on productivity result from the fact that higher wages lead to increased motivation and effort among workers, as well as a reduction in absenteeism and tardiness. Additionally, higher wages can reduce employee turnover, leading to more experienced and productive workers.

However, it is important to consider that the effects of a minimum wage increase on productivity may depend on a variety of factors, including the specific industry and the size of the wage increase. The positive effects of a minimum wage increase on productivity may be limited to industries with high turnover rates and low profit margins.

The results of this study support the arguments by Horton (2017) and Ouimet and Simintzi (2015) that a minimum wage boosts labour productivity. As the workers, especially the low-pay workers, receive higher wages, the minimum wage increase motivates them to be more effective and productive. Moreover, higher wages that reduce employee turnover and absenteeism will increase productivity in turn.

Additionally, the Ministry of Human Resources' implementation of more stringent standards and requirements for worker employment, coupled with the increased labour costs resulting from the minimum wage policy, has led employers to reduce non-performing workers and concentrate on those who are productive, especially in low-skilled jobs.

Overall, this study suggests that raising the minimum wage can have positive effects on productivity. Policymakers should consider these findings when deciding whether to increase the minimum wage; also, they should consider implementing other policies, such as job training programmes, to help boost productivity and support workers. It is imperative for companies to devise strategies to ensure all employees are productive and capable of contributing to the firm's overall performance. In light of the current industrial revolution, training

programmes and comprehensive business plans are crucial for firms to maintain their competitiveness in the industry.

5. CONCLUSION AND RECOMMENDATIONS

This study has analysed the impact of the national minimum wage on productivity in the manufacturing sector of Malaysia. Based on panel data analysis spanning the period of 2008 to 2017, the results indicate a significant positive relationship between the minimum wage and productivity. Workers become more motivated and effective in performing their jobs when they receive higher wages. As this causes more output to be produced, the findings suggest that an increase in the minimum wage increases productivity.

Based on the results, the study recommends that firms closely monitor their wages and outputs. Even though an increase in wages results in higher labour costs for employers, employees who benefit from higher wages become more motivated and effective in contributing to the firms' productivity. Moreover, employers should be more effective in providing sufficient training and education to their workers, thus increasing the productivity of the company.

In addition, it is recommended that both regulators and business players collaborate and plan more efficiently to improve the minimum wage system to ensure both business players and the community benefit from it and thus contribute to the Malaysian economy. Finally, as this study focused solely on the effect of the minimum wage on productivity, future research should consider other economic policies or factors (such as inflation, exchange rate, tax rate and governmental activity), which may have direct or indirect effects on the dependent variables.

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