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Salaries & Wages

To Study the Impact of Minimum Wage Policy on Wage Inequality in Malaysia using Administrative Data

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Abstract:

This paper examines the impact of minimum wage policies on wage inequality in Malaysia. The study applies the Gini coefficient and Lorenz Curve methods to measure wage inequality, utilising 6.5 million records from the Employee Wages Statistics (EWS) Report in Quarter 1 2023 that was compiled using administrative data from the Employees Provident Fund (EPF) and Social Security Organization (SOCSO). The findings show that the increasing of minimum wage policies has a discernible impact on wage inequality, particularly on the lower wage segment. The analysis focuses on different economic sectors, with distinct responses to the policy change. While sectors like Mining and quarrying exhibit minimal impact due to higher median wages, others experience more significant shifts. Overall, the study contributes valuable insights into the impact of minimum wage policies on wage inequality in Malaysia and offers recommendations for future policy adjustments.

Keywords:

Gini Coefficient; Lorenz Curve; Formal Employees; Wage Distribution; Economic Sector

1. Introduction:

Malaysia is situated among the developing countries in the Asia Pacific that implemented minimum wage legislation announced for the first time in July 2012 as a part of its initiatives to support low-income households for a better living. The Minimum Wage Order 2012 was established and enforced this order that applicable to all employers with six employees and above in Malaysia on 1st January 2013, setting a monthly minimum of RM900 per month for Peninsular Malaysia and RM800 in Sabah and Sarawak. Subsequently, this minimum wage order has been reviewed three times during the Eleventh Malaysia Plan (11MP) the first review took effect on 1 July 2016 and the second review in 2018 aimed to standardize the minimum wage across Malaysia at RM1,100 effective from 1st January 2019. Then in 2020, an amendment to the minimum wage was on 1st February which was the third review of this minimum wage order, raising it to RM1,200 after the announcement of the 2020 Budget. In

2022, the Government has approved the implementation of a new minimum wage rate of RM1,500 per month, starting from 1st May 2022 across all states.

The purpose of the minimum wage legislation published by the government is to protect low-wage workers, enabling them to afford an improved quality of life and better access to education. According to the United Nations Human Development Programme (UNHDP) report, the wealthiest 10% in Malaysia control 38.4% of the economic income, in stark contrast to the poorest 10%, who controlled only 1.7% in 2004. This disparity underscores that a significant portion of the economy caters to a small fraction of the population, leaving the majority to contend with a disproportionately smaller share of their earnings. What has changed regarding wage inequality in Malaysia as a result of the minimum wage revision? Does it improve after the latest implementation of the minimum wage in 2022? Therefore, this study aims to examine wage inequality trends in both pre- and post-implementation of the minimum wage policy in 2022 by sector.

2. Methodology:

There are several methods that could be used to measure wage inequality, including Gini, Atkinson, and generalized entropy indices (Mohd Safari et al., 2020). Measures of inequality based on Gini coefficients of gross and net incomes have increased substantially since 1990 in most of the developed world (Kochhar et al., 2015). Specifically, the Gini index is the ratio of the area between the 45° line of equality and the Lorenz curve to the area of the triangle below the 45° line of equality. The Gini Coefficient simplifies variations in the shares of income held by different parts of the income distribution into a single score; 0 representing perfect equality and 1 representing perfect inequality (Muthusamy et al., 2023).

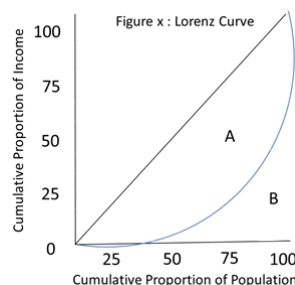


Figure 1: Lorenz Curve

For this paper, we focused on exploring the Gini Coefficient and Lorenz Curve methods for measuring wage inequality using 6.5 million administrative data points from the Employees Provident Fund (EPF) and Social Security Organization (SOCSO) in line with Employee Wages Statistics (Formal Sector) Report (EWS) in Quarter 1 2023 over the period from January 2022 until March 2023. Based on some technique of calculation of the number of samples required, 6.5 million samples are more than enough from the population to know the whole picture of our studies.

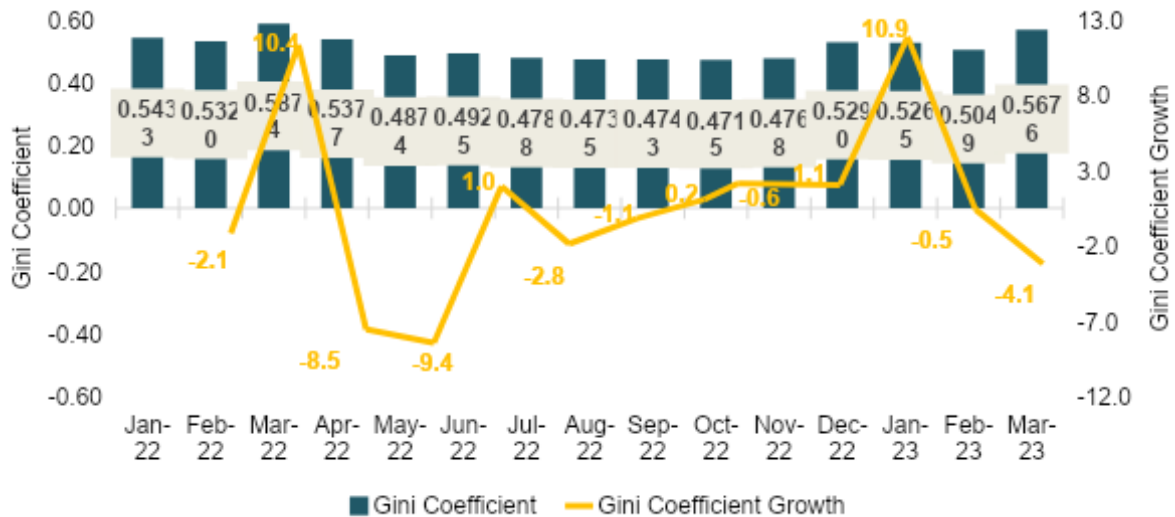
Note that in this distribution, we are ranking the people in ascending order according to the number of tokens assigned (Catalano et al., 2009). This order should be followed before continuing to the next step. As shown in Figure 1, the Lorenz curve is a graphical representation of income distribution developed by Lorenz (1905). The line of equality represents a perfectly even distribution of income, and the Lorenz curve shows the actual distribution of income (Mohd Safari et al., 2020). The more uneven the distribution of income, the more the Lorenz curve deviates from the line of equality (Lorenz, 1905). Based on Sitthiyot, T., & Holasut, K. (2020), the Gini index is

calculated as the ratio of the area between the perfect equality line and the Lorenz curve (A) divided by the total area under the perfect equality line (A + B), or as the formula below:

$$\text{Gini Coefficient} = A/(A+B)$$

3. Result:

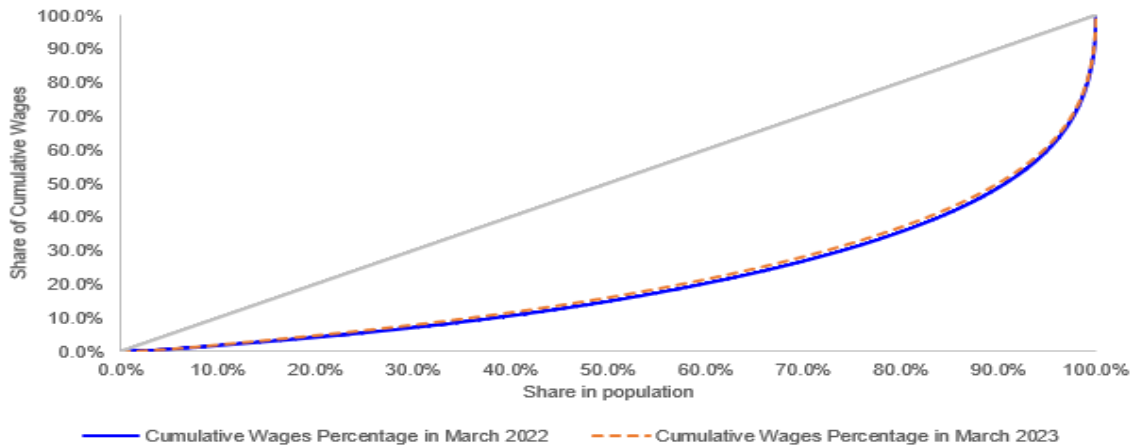
Chart 1:
Gini Coefficient, January 2022-March 2023



Source: Author's calculation from Employee Wages Statistics (Formal Sector) Report, DOSM

The Gini coefficient for formal employees in March 2022 is the highest in 14 months period which is 0.59. This figure is 3.9 per cent higher compared to the coefficient in March 2023 which is 0.57. The figure above also shows that there is negative growth sequentially (shown by the Gini coefficient growth trend) in the first two months April and May of the second quarter of 2022, before constantly up-trending in the next several months and reaching its peak in December 2022, which is 0.53. The average Gini coefficient for formal employees in 2022 is 0.51 which is greater than the Gini coefficient in Malaysia 2022 (0.404) which is based on the Household Income and Expenditure Survey (HIES) 2022. As mentioned earlier, it's important to note that this study specifically concentrates on and makes reference to individual income, aligning with the initial release of the EWS First Quarter Report, in contrast to the household income as discussed in the Income Inequality Report. Quarter-in-quarter comparison observed that the overall Gini coefficient for formal employees is 0.53 in Quarter 1 2023, lower by 3.84 percent compared to the average for the first quarter of 2022, while higher by 5.13 percent compared to the overall average in 2022.

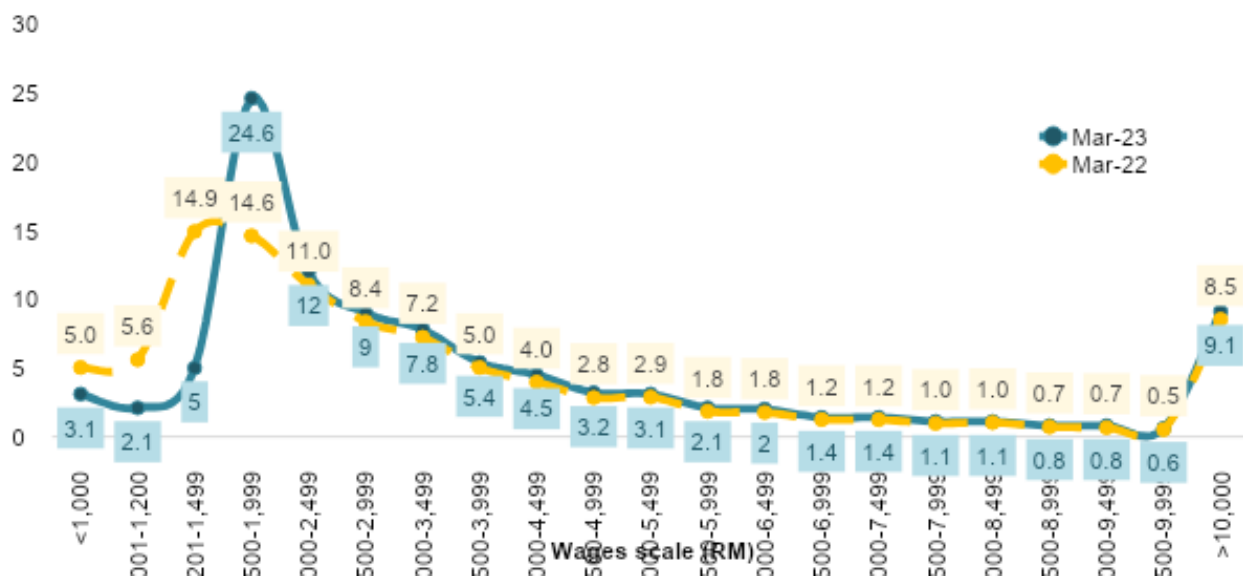
Chart 2:
Lorenz Curve, March 2022 & March 2023



The Lorenz curve is a simple way to present income distribution in a single line. Chart 2 shows a Lorenz curve with Gini Index in March 2023 decreasing 3.38 per cent to 0.5676 when compared to the same month a year before (March 2022: 0.5874). The bottom 50 per cent of the population receives 16.05 per cent of the total wages increased by 1.2 percentage points from March 2022 (14.88%).

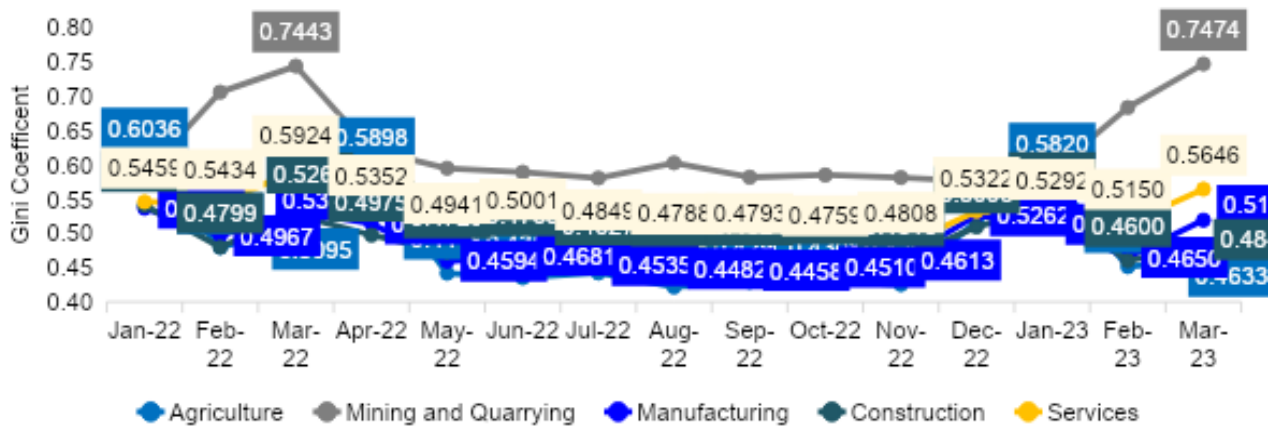
Chart 3:
Distribution of monthly wages of formal employees by wages scale, March 2022 & March 2023

Percentage share (%)



This distribution represented formal employees by wage scale in March 2023 shows that 10.2 per cent of formal employees receive wages less than the minimum wage level (RM1,500) has decreased by 15.3 percentage points compared to March 2022 (25.5%).

Chart 4:
Gini Coefficients by Sector, January 2022-March 2023



Source: Author’s calculation from Employee Wages Statistics (Formal Sector) Report, DOSM

The figure above illustrates the trend in the Gini coefficient trend line for five main sectors including Agriculture, Mining and Quarrying, Manufacturing, Construction, and Services. The Gini coefficient for the Agriculture sector initially remained lower following the implementation of a minimum wage increase to RM1,500 in May 2022, but it gradually increased reaching its peak of 0.58 in January 2023. On average, the Gini coefficient for Agriculture in the first quarter of 2023 (0.50) was lower than the first quarter of 2022 (0.53). Notably, in March 2023 shows that there was a significant decrease in wage inequality of 9.07 percent.

Moving on to the Mining and quarrying sector, the Gini coefficient exhibited fluctuations throughout the preceding year before experiencing a sharp rise in March 2023 reaching its highest point of 0.75. The annual increase in the Gini coefficient was 0.4 per cent reaching 0.75 in March 2023 compared to the same month in the previous year (March 2022: 0.74) while the monthly increase by 9.3 per cent from 0.68 in February 2023.

The Gini coefficient for Manufacturing decreased year on year by 2.46 percent from 0.53 in March 2022 to 0.52 in March 2023, while it slightly increased month on month from 0.47 in February 2023. According to the statistics above, it indicates that inequality for citizen workers in the formal Manufacturing sector reduced especially throughout the second and third quarter of 2022, before rising starting in December 2022.

Furthermore, the Gini coefficient notably declined year-on-year by 8.12 and 4.69 percent for the sectors of Construction and Services in March 2023 respectively. However, after November 2022 both sectors experienced an increase in the Gini coefficient. Notably, the Gini coefficient for the Services sector makes up a large portion of the Malaysian economy overall reached its highest point in March 2022 at 0.59.

4. Discussion and Conclusion:

The findings of this study provide insights into the significant impact of the policy which was effective in May 2022 to increase the minimum wage, using the Gini coefficient as a proxy for measuring wage inequality. For instance, following its adoption in May 2022, the overall Gini coefficient initially decreases and remains lower for the first six

months before showing signs of recovery. Even as the coefficient begins to rebound, year-over-year comparisons of percentages between March 2023 and March 2022 still indicate a favorable trend (negative growth) in reducing wage inequality.

In other words, the implications of an increase in the value of minimum wages have a positive impact on wage inequality (the Gini coefficient decreases). All sectors exhibit a positive impact, with the exception of Mining and quarrying possibly due to their high baseline wages which were unaffected by changes in the minimum wage. In fact, the median wage for the sector with the highest median income, Mining and Quarrying in May 2022, as reported in the EWS in Quarter 1 2023 was RM4,500. The minimum salary that will be effective from May 2022 (RM1,500) is currently three times lower than this wage.

Hence, there are several policy recommendations that the government and related ministries, such as the Ministry of Human Resources and the Ministry of Economy, can consider regarding wage policies. Firstly, there is a need to initiate and conduct further studies on the progressive wage model, given its potential benefits in reducing wage inequality, as highlighted in the EU ERA publication. The EU ERA also points out that the progressive wage model not only addresses wage inequality but can also stimulate economic growth and boost purchasing power. Taking inspiration from the successful implementation of the progressive wage model (PWM) in Singapore, which has been applied across critical sectors and professions with a primary focus on low-wage workers, it is essential to tailor the implementation of the progressive wage model in Malaysia to meet the specific needs of the workforce. A key emphasis should be placed on supporting low-income and middle-income workers.

The second recommendation is to advocate for the private sector, particularly to ensure that bonuses are distributed more equally among all employees. For instance, the incentives should benefit low-income employees more than high-income employees whose gross income is already higher. By ensuring that bonuses are paid fairly we can gather sufficient evidence to support our primary goal of reducing wage inequality, particularly by sector in Malaysia. Recently, Malaysia announced the framework of the MADANI economy where one of the established benchmarks serves as a medium-term goal to be reached within a span of 10 years. This goal involves attaining a labour income percentage of 45.0 percent in relation to the total income, despite the fact that the objective outlined in the 12th Malaysia Plan is set at 40 percent. This policy adjustment could potentially contribute to mitigating wage inequality.

We believe that this analysis offers a fresh perspective on minimum wage laws. The impact and implementation of minimum wages not only affect Malaysia's individual economic growth but are also closely related to wage inequality, as the title suggests. In future research, we are eager to incorporate more inclusive dimensions, such as state, pay group, gender and ethnic, by utilising long-time series data. This development, using administrative data, aligns with the ongoing efforts to establish PADU a new system that will serve as the foundation for future policies and government reforms.

References:

Mohd Safari, M. A., Nurulkamal Masserana, Ibrahim, K. I., & Hussain, S. I. (2020). *Measuring Income Inequality in Malaysia Based on Household Income Survey*, 1–17.

Kochhar, K., Ricka, F., & Suphaphiphat, N. (2015). Causes and consequences of income inequality: A global perspective. International Monetary Fund.

Catalano, Michael T., Tanya L. Leise, and Thomas J. Pfaff. "Measuring Resource Inequality: The Gini Coefficient." Numeracy 2, Iss. 2 (2009): Article 4. DOI: <http://dx.doi.org/10.5038/1936-4660.2.2.4>

Sitthiyot, T., & Holasut, K. (2020). A simple method for measuring inequality.

Muthusamy, N., Khalidi, J. R., & Rahim, M. A. R. A. (2023) The Returns to Malaysian Labour-Part I.

Department of Statistics Malaysia. (2023) Employee Wages Statistics (Formal Sector) Report in Quarter 1 2023.

Department of Statistics Malaysia. (2023) Income Inequality Malaysia, 2022.

Why the progressive wage model? (n.d.).
<https://progressive-wage-hub.euera.org/wp-content/uploads/2023/07/WHY-THE-PROGRESSIVE-WAGE-MODEL.pdf>

