

Urban Poverty and Income Inequality: A Demographic Cross-Section Analysis of Malaysian States and Districts

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Abstract: Poverty has long been a topic of conversation in all parts of the world. It is a big worry that one-fifth of the world's population is experiencing multidimensional poverty. According to the World Bank, poverty reduction is a complicated issue that must be addressed prudently and continuously. On that topic, Malaysia has also made great progress since its liberation from British colonialism decades ago. With a suitable strategy in place, the National Economic Planning (NEP) that was implemented from 1971 to 1990 resulted in significant economic growth, which translated into higher household incomes for citizens. Even though the NEP has made significant progress in lowering the poverty line, poverty has become more multidimensional, dividing the problem into a few sectors, such as rural poverty and urban poverty. Many states have removed their forests to establish rubber, oil palm, paddy, coconut, and vegetable crops as their agricultural sectors have expanded. FELDA, RISDA, and FELCRA are just a few of the government entities that are launching initiatives to provide land and employment to citizens. Solving poverty concerns is a difficult endeavor due to the dynamic complexity of demographics, ethnicity, education, and data reliability. Malaysia's government is working tirelessly to eliminate poverty, reduce economic inequality, and develop legislation to address the concerns, yet it is still not sufficient to eradicate poverty as a whole. This article will look at urban poverty among middle-income households (M40) and low-income households (B40) and how they cope with rising prices for necessities such as housing, food, services, health care, and education. The researcher aims to determine why M40 and B40 are the most affected and fall into urban poverty.

Keywords: *Poverty, household income, policy, income inequality, rural-urban migration, urban poverty.*

1. Introduction

As a small country with a population of 33 million, Malaysia has made significant progress toward becoming a high-income nation due to its strong economic growth. The shift from a low-income, agriculture-based economy to a manufacturing-driven one has reshaped the economic landscape, resulting in an average annual GDP growth of 8% over the past 30 years. Efforts to reduce income inequality have improved the quality of life for many citizens. The industrial revolution has boosted employment and job opportunities, attracting rural residents to major cities such as Kuala Lumpur, Shah Alam, Petaling Jaya, Klang, Penang, Melaka, and Johor Bahru. The government has implemented various initiatives to redistribute income, but these measures have shown limited success in reducing poverty and inequality. Despite some achievements, poverty and income inequality remain persistent socio-economic challenges.

Though poverty and income inequality are normally associated with rural populations, the new trend has now changed and widely spread to urban populations, and it has become a worrying socio-economic problem that the caused or urbanization has led to urban poverty. Rapid urbanization has led to urban poverty, creating new difficulties for rural migrants seeking better lives in industrialized cities. Although cities offer more jobs, many still struggle with high living costs. Urban poverty, a socioeconomic issue, prohibited most urban migrants from transferring to the previously stated industrialized cities in pursuit of better living conditions. Even though there are more jobs and opportunities in big cities, people still struggle to make ends meet. As in Table 1, the M40 and B40 income groups, which represent middle-income and low-income households, are the most affected. Urban living expenses are significantly higher, and inflation is unavoidable due to elevated price levels. Previous research on income disparity and poverty has focused on household spending, rural-urban income distribution strata, and ethnicity. In 2022, Malaysia's Poverty Line Income (PLI) was RM 2,560 (Table 1).

Table 1: Income Share, Median, Mean Household Income, and Income Threshold by Household Decile Group, Malaysia, 2022

<i>Decile Group</i>		<i>Income Share (%)</i>	<i>Median Household Income (RM)</i>	<i>Mean Household Income (RM)</i>	<i>Income Threshold (RM)</i>
T20	<i>T2</i>	30.3	20,776	25,719	15,870 and above
	<i>T1</i>	16.0	13,475	13,585	11,820 - 15,869
M40	<i>M4</i>	12.5	10,552	10,577	9,450 - 11,819
	<i>M3</i>	10.1	8,523	8,536	7,690 - 9,449
	<i>M2</i>	8.2	6,979	6,989	6,340 - 7,689
	<i>M1</i>	6.8	5,770	5,782	5,250 - 6,339
B40	<i>B4</i>	5.6	4,764	4,771	4,310 - 5,249
	<i>B3</i>	4.6	3,875	3,874	3,440 - 4,309
	<i>B2</i>	3.6	3,034	3,018	2,560 - 3,439
	<i>B1</i>	2.3	2,012	1,941	Less than 2,560

Previous studies on poverty and inequality have focused on household spending, rural-urban income distribution, and ethnicity. These studies coincided with major national policies: the New Economic Policy (NEP) 1971–1990, the New Development Policy (NDP) 1991–2000, and the New Vision Policy (NVP) 2000–2020. Despite consistent GDP growth over the past 50 years, the Gini coefficient has only slightly improved from 0.513 in 1970 to 0.404 in 2022. Disposable income inequality in 2022 stands at 0.393, as depicted in Table 2.

Table 2: Malaysia's Income Inequality 2016-2022, Gini coefficient by state and type of income, Malaysia, 2016, 2019 and 2022

<i>State</i>	<i>Gross Income</i>			<i>Disposable Income</i>		
	2016	2019	2022	2016	2019	2022
Malaysia	0.399	0.407	0.404	0.391	0.393	0.393
Johor	0.354	0.366	0.366	0.356	0.365	0.364
Kedah	0.393	0.354	0.359	0.400	0.351	0.361
Kelantan	0.389	0.378	0.385	0.396	0.375	0.393
Melaka	0.337	0.383	0.370	0.340	0.379	0.368
Negeri Sembilan	0.380	0.391	0.369	0.374	0.380	0.356
Pahang	0.324	0.330	0.308	0.318	0.321	0.305
Pulau Pinang	0.356	0.359	0.371	0.351	0.354	0.357
Perak	0.362	0.377	0.368	0.365	0.362	0.368
Perlis	0.327	0.334	0.336	0.331	0.331	0.336
Selangor	0.372	0.393	0.361	0.361	0.378	0.352
Terengganu	0.328	0.335	0.326	0.321	0.327	0.322
Sabah	0.402	0.397	0.395	0.405	0.394	0.387
Sarawak	0.386	0.387	0.382	0.384	0.377	0.379
W.P. Kuala Lumpur	0.378	0.350	0.380	0.362	0.342	0.369
W.P. Labuan	0.398	0.333	0.300	0.387	0.323	0.300
W.P. Putrajaya	0.369	0.361	0.368	0.347	0.345	0.346

Source: Department of Statistics Malaysia

The widening gap between the rich and the poor reflects growing inequality. Factors such as income, wealth, gender, education, healthcare, and employment contribute to this divide (Ogbeidi & Agu, 2015). Kuznets (1955) argued that migration from rural to urban industrial areas initially increases inequality, which later declines as economies mature. This study examines income inequality and urban poverty across all 14 Malaysian states and 160 districts. Industrialized states like Selangor, Wilayah Persekutuan, Pulau Pinang, Kedah, and Johor

show significant income gaps, contributing to rising urban poverty. The current economic climate has worsened this issue, especially in highly urbanized areas. The study aims to analyze macroeconomic indicators poverty, household income, and inflation, to assess the impact of income disparity and urban poverty in urbanized districts. Urban poverty has become a major concern in several states due to rapid urbanization.

Thus, the research objectives are as follows;

- To investigate urban poverty that results from income inequality in the urban population.
- To analyze the M40 and B40 household income categories' sustainability in an urban area with a high cost of living.

2. Literature Review

Income inequality

In Malaysia, extensive research has examined income disparity and poverty across different ethnic groups (Khalid & Yang, 2020; Ragayah, 2008), rural-urban inequality (Shari, 2000; Abdul-Hakim, 2001), gender inequality (Lee & Choong, 2019), and state-level inequality (Tey et al., 2019). However, research specifically linking macroeconomic conditions to income inequality remains limited, with mixed results (Deyshappriya, 2017). Many studies focus only on a few macroeconomic indicators, such as exchange rates and inflation (Bulır & Gulde, 1995) or government debt (You & Dutt, 1996), offering inconsistent conclusions

By the same token, some current literature has concluded with mixed findings. Thus, there is no definite agreement on the relationship between macro-exogenous variables and inequality. Kuznets (1955) emphasized the parabolic relationship between income and inequality by presenting the well-known theory called the Kuznets Curve, which is discussed by Bruno et al. (1996), Fishlow (1995) and Deininger and Squire (1997), and concluded that there is no substantial connection between income and inequality. In addition, (Cole and Towe, 1996; Razin, Sadka & Yuen, 1996) majority of studies focus on small group countries and individual countries, such as developing countries, by conducting cross-sectional and conventional methods. There are many disputes vis-à-vis discussing income inequality and its impact on economic growth. The majority of contradicting effects of income inequality on macroeconomic variables continue to show the contradicting aspects of the relationship between the preferred macroeconomic variables and income inequality (Martin, 2023).

Islam et al. (2017) showed that economic growth has reduced poverty and income disparity, though growth alone does not fully explain poverty differences. In Malaysia, manufacturing-led growth has significantly reduced poverty. Wu & Rao (2016) observed an inverted U-shaped relationship between income inequality and urbanization at the provincial level. Their study also found that rural-urban inequality is influenced by inter-provincial migration and wage gaps, raising questions about how each factor contributes. Kuznets (1955) proposed a parabolic relationship between income and inequality, known as the Kuznets Curve. However, subsequent studies by Bruno et al. (1996), Fishlow (1995), and Deininger & Squire (1997) found no strong evidence supporting this relationship. Other research mainly focuses on individual or small groups of developing countries using cross-sectional and traditional methods (Cole & Towe, 1996; Razin et al., 1996).

According to Wang, Pei, Wang and Qin (2024), income inequality is complex and unpredictable, with research often yielding inconclusive results. Political and social dynamics further complicate analysis, and predictions can be disrupted by economic changes, technological shifts, or sudden changes in spending patterns. Future research should adopt cautious and diversified approaches. Despite these efforts, few studies have examined income inequality using demographic or multidimensional macroeconomic variables. This article seeks to explore other explanatory factors. Tey et al. (2019) found that inequality among Malaysian states continues to grow, despite efforts to distribute wealth evenly at both state and district levels. They concluded that disparities in income per capita are closely linked to ethnic and rural-urban population distributions, migration patterns, employment structures, and education levels. These findings underline the gaps in current literature and highlight the need for multidimensional approaches and reassessment in future studies.

Poverty

Nair and Sagarán (2015) argued that urban poverty involves multiple deprivations, which can trigger a domino effect. In developing countries, rising urban poverty is increasingly tied to rapid urbanization and rural-to-

urban migration. Jamil and Mat (2015) emphasized that poverty can be inherited across generations, trapping individuals in a cycle of deprivation. This cycle brings numerous issues, including mental health problems, poor living conditions, inadequate education, and food insecurity, which lead to depression and anxiety (Rudi et al., 2023). Malaysia's multi-ethnic context demands an inclusive approach to defining and addressing poverty. Leng et al. (2018) highlighted the need for multidimensional strategies rather than income-focused definitions to effectively tackle urban poverty. Demographic differences among urban-rural and multiethnic groups must also be considered, particularly when designing financial support tailored to household socioeconomic conditions. Absolute poverty and relative poverty are no longer perfect measurements for poverty level measurement. In 2010, the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Program (UNDP) introduced the Multidimensional Poverty Index (MPI). This new metric incorporates indicators such as education, health, and living standards. According to Alkire & Foster (2011), urban poverty involves overlapping deprivations that worsen with rapid urbanization. The number of urban poverties in developing countries is very alarming and poses unpleasant, perilous problems due to the rapid urbanization of urban-rural migration. Implementing a human rights approach to poverty reduction has gained a deep understanding of the multi-dimensional nature. Furthermore, Alkire et al. (2015) stated that MPI has broadened poverty measurement frameworks. Malaysia adopted MPI in 2015 to complement the PLI, marking a shift toward more inclusive poverty assessments under the 11th Malaysia Plan. The MPI enables more targeted interventions by identifying specific areas of deprivation (Rasool et al., 2011).

H1: Urbanization creates income inequality that leads to urban poverty

Household Income

Ahad et al. (2023) found that low household income affects the well-being of lower-level government employees. Though they receive regular salaries, their income is often insufficient to meet the higher cost of living in cities. Living in a metropolis requires a larger monthly financial commitment than living in rural areas. Most B40 households have little to no savings due to low disposable income. Financial literacy, or financial efficacy, is critical. Those with higher financial efficacy are more likely to use formal financial tools like savings accounts or fixed deposits. In contrast, many B40 households avoid these tools due to income constraints. Some who do save take higher risks, expecting greater returns. Ibrahim et al. (2012) found that many government employees feel secure with their retirement choices, but rising costs, inadequate pensions, and longer life expectancy could make retirement more challenging. Murad et al. (2014) reported higher household incomes in suburban Kuala Lumpur, but many low-income households, particularly Malays and Indians, still reside in these areas. Tan et al. (2018) emphasized that people with low incomes in rural areas remain highly vulnerable, and more must be done to reduce income inequality.

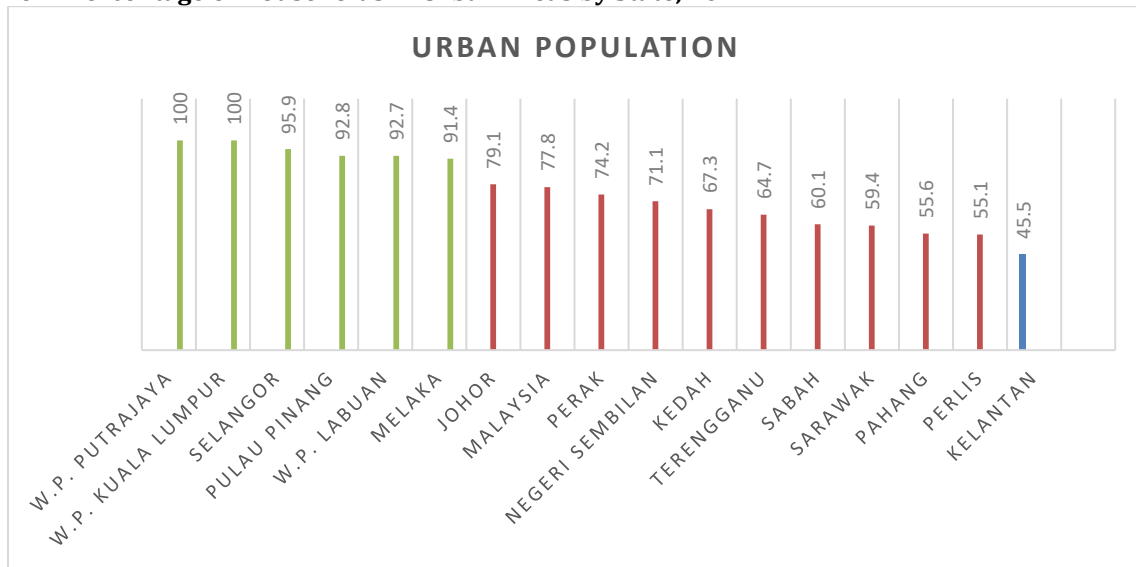
H2: The high cost of living in urban areas significantly reduces the purchasing power of households in the M40 and B40 income categories, limiting their ability to afford essential goods and services.

3. Research Methodology

This report uses data from the Household Income and Basic Amenities Survey 2022, Income Inequality in Malaysia 2022, Poverty in Malaysia 2022, and the Population and Housing Census 2020. The Department of Statistics Malaysia (DOSM) conducted the surveys across all states to assess household distribution, poverty levels, and income disparity, particularly in the post-COVID-19 period. The survey employed probability sampling and represented 7.9 million Malaysian households in 2022. The sample was selected based on household data from the 2020 census.

According to the Household Income Survey 2022, as presented in Figure 1, a total of 77.8% of Malaysian households reside in urban areas. At the state level, the Federal Territories (Kuala Lumpur, Labuan, and Putrajaya), Selangor, Pulau Pinang, Melaka, and Johor recorded urban household percentages ranging from 79.1% to 100%, exceeding the national average. In contrast, Sarawak, Pahang, Perlis, and Kelantan recorded less than 60% urban households.

Figure 1: Percentage of Households in Urban Areas by State, 2022



Note: Urbanization rate refers to the number of households living in urban areas

Source: HIS & BA 2022 Department of Statistics Malaysia

Household income is assessed by both median and mean values. In 2022, the median monthly household income was RM8,479, showing an annual growth of 2.5%. The mean income also rose, growing 2.4%. The survey found that 62.8% of total household income came from paid employment, followed by self-employment (15.2%), property and investment income (12.3%), and current transfers (9.7%). A key objective of the survey is to evaluate the well-being of Malaysians and identify socio-economic differences between urban and rural households. It also provides a database for determining the Poverty Line Income (PLI). In 2022, the PLI was RM2,589, with the absolute poverty rate at 6.22%.

Income inequality is commonly assessed using tools such as the Lorenz Curve, Gini Coefficient, Theil Index, and Atkinson Index. Studies by Sagala, Akita, and Yusuf (2014), Sarabia, Jordá, and Remuzgo (2016), and Wu & Rao (2016) have applied these techniques to examine the relationship between urbanization and income disparity. This article focuses on analyzing the Multidimensional Poverty Index (MPI) and income inequality (measured by the Gini Coefficient), using selected macroeconomic variables. The goal is to explore their impact on the socioeconomic well-being of the population, especially in the context of increasing urbanization. This paper presents a quantitative model assessing the impact of urbanization on income inequality and uses Multiple Linear Regression (MLR) models. There is one dependent variable and four independent variables in this model, as follows:

Dependent variable: Gini Coefficient (Y)

Independent variable: Poverty (X_1), Household Income (X_2), Inflation (X_3), Urban (X_4),

The multiple linear equation of this model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where;

Y = Gini Coefficient

X_1 = Poverty

X_2 = Household Income

X_3 = Inflation

X_4 = Urban

μ = Error

β_0 = Intercept point

$\beta_1, \beta_2, \beta_3, \beta_4$ = Partial coefficients to X_1, X_2, X_3 and X_4

This study analyzes cross-sectional data from 160 districts across 14 states in Peninsular Malaysia, Sabah, and Sarawak for the year 2022. The data is secondary and sourced from the Household Income and Basic Amenities Survey 2022, Income Inequality in Malaysia 2022, Poverty in Malaysia 2022, and the Population and Housing Census 2020. The analysis uses the Gini coefficient as a proxy for income inequality (dependent variable). The independent variables are poverty, household income, and inflation. The main objective is to examine how these macroeconomic factors influence income disparity, especially in relation to urbanization. To explore these relationships, the study employs Descriptive Statistics, Ordinary Least Squares (OLS), Robust Least Squares, Multicollinearity tests, Histograms, and Heteroskedasticity analysis. These methods help determine regression coefficients and standard errors, which indicate the significance of the relationships between variables. The Gini coefficient is widely used in literature as a measure of income inequality (Ha et al., 2019; Deyshappriya, 2017). It ranges from 0 (perfect equality) to 1 (perfect inequality), where lower values represent a more equitable income distribution.

4. Results

Table 3: Descriptive Statistics

	GINI	HOUSEHOLD_I NCOME	POVERTY	INFLATION	URBAN
Mean	0.343717	5973.338	12.10687	2.215625	129588.0
Median	0.346585	5324.500	9.050000	2.100000	32435.50
Maximum	0.448690	13673.00	52.70000	2.900000	1982112.
Minimum	0.225170	3153.000	0.000000	1.800000	0.000000
Std. Dev.	0.039462	2115.765	10.03383	0.296212	253582.3
Skewness	-0.331489	1.787593	1.637667	0.811369	3.751461
Kurtosis	3.232588	6.587862	6.310830	2.860300	21.81645
Jarque-Bera	3.290907	171.0314	144.5961	17.68530	2735.684
Probability	0.192925	0.000000	0.000000	0.000144	0.000000
Sum	54.99475	955734.0	1937.100	354.5000	20734087
Sum Sq. Dev.	0.247602	7.12E+08	16007.76	13.95094	1.02E+13
Observations	160	160	160	160	160

Table 3 presents the descriptive statistics and normality diagnostics for the key variables analyzed in this study. The GINI coefficient, which reflects income inequality, has a mean of 0.3437 and a standard deviation of 0.0395. The skewness value of -0.3315 indicates a slight negative skew, while the kurtosis of 3.2326 suggests a distribution close to normal. The Jarque-Bera test yields a probability of 0.1929, indicating that the null hypothesis of normality cannot be rejected. Thus, the GINI distribution is approximately normal.

The household income variable has a mean of 5973.338 and a standard deviation of 2115.765. It exhibits strong positive skewness (1.7876) and high kurtosis (6.5879), indicating a distribution with a long right tail and pronounced peakedness. The Jarque-Bera test confirms non-normality with a probability of 0.0000. Similarly, the poverty rate shows a mean of 12.1069 and a standard deviation of 10.0338, with positive skewness (1.6377) and elevated kurtosis (6.3108). These values suggest a non-normal distribution characterized by heavy tails. The Jarque-Bera test supports this conclusion, yielding a probability of 0.0000. The inflation variable has a mean of 2.2156 and a standard deviation of 0.2962. It displays slight positive skewness (0.8114) and a kurtosis value of 2.8603, indicating a distribution that is moderately close to normal. However, the Jarque-Bera test result of 0.0001 suggests a minor deviation from the normality assumption. The urban population variable exhibits a mean of 129,588.0 and a notably high standard deviation of 253,582.3, reflecting substantial variability across regions. It is highly positively skewed (3.7515) and demonstrates extreme kurtosis (21.8165), indicating a highly non-normal distribution with a long right tail and significant peakedness. The Jarque-Bera test confirms this with a probability of 0.0000.

In summary, the descriptive statistics reveal that the GINI coefficient is approximately normally distributed with a slight negative skew. In contrast, household income, poverty rate, and urban population exhibit significant positive skewness and high kurtosis, indicating non-normal distributions with heavy tails. Inflation

appears moderately normal but shows slight positive skewness and a minor deviation from normality. The Jarque-Bera test results suggest that, apart from GINI, all other variables significantly deviate from a normal distribution. These findings provide important insights into the central tendency, dispersion, and shape of the variable distributions, which are essential for guiding subsequent statistical analyses and model selection.

Table 4: OLS and RLS

Regression Equation:

$$\text{GINI} = \beta_0 + \beta_1 \text{POVERTY} + \beta_2 \text{HOUSEHOLD_INCOME} + \beta_3 \text{INFLATION} + \beta_4 \text{URBAN} + \epsilon$$

Independent Variable	Dependent Variable: GINI		
	OLS Model (1)	RLS Model (2)	Centered VIF
Constant	0.315280	0.299359	NA
POVERTY	0.002000**	0.002060**	1.505562
HOUSEHOLD INCOME	2.30E-06**	4.16E-06**	2.547976
INFLATION	-0.006868**	-0.003832**	1.326170
URBAN	4.38E-08	3.43E-08**	1.877596
R ²	0.239665	0.215600	-
Adj-R ²	0.220043	0.195357	-
Rw-squared	-	0.288921	-
Adj- Rw-squared	-	0.195357	-
Rn-squared statistic	-	47.77983**	-
F-test	0.000000	0.000000**	-
Durbin-Watson test	1.357599	-	-
Breusch-Godfrey Serial Correlation LM Test	17.71990	-	-
Heteroskedasticity Test	-	7.516613	-

Notes: Figures in parentheses are standard errors. *, ** and *** indicate the 1%, 5% and 10% significance levels, respectively.

From the OLS regression test (Table 2), we can observe that the constant term (C) is 0.315280, indicating the expected GINI value when all independent variables are zero. This is statistically significant with a p-value of 0.0000. The coefficient for POVERTY is 0.002000, which is positive and significant (p-value 0.0000). This suggests that a 1-unit increase in POVERTY is associated with a 0.002 increase in the GINI index, indicating higher income inequality. The coefficient for HOUSEHOLD_INCOME is 2.30E-06, which is positive but not statistically significant (p-value 0.2708). This suggests that changes in household income do not have a significant direct effect on the GINI index in this model. The coefficient for INFLATION is -0.006868, which is negative and not statistically significant (p-value 0.5237). This implies that inflation does not have a significant impact on the GINI index in this model. The coefficient for URBAN is 4.38E-08, which is positive and significant (p-value 0.0039). This indicates that an increase in the urban population is associated with an increase in the GINI index, suggesting higher income inequality in more urbanized areas.

The R-squared value of 0.239665 indicates that approximately 24% of the variability in the GINI index can be explained by the independent variables in the model. The Adjusted R-squared value of 0.220043, slightly lower than the R-squared, adjusts for the number of predictors in the model. The F-statistic with a p-value of 0.000000 indicates that the model is statistically significant overall, meaning that the independent variables, collectively, have a significant effect on the dependent variable. The Durbin-Watson stat of 1.357599 suggests some positive autocorrelation in the residuals, as the value is somewhat lower than the ideal value of 2. In conclusion, the OLS regression model suggests that POVERTY and URBAN population have a significant positive effect on income inequality (GINI), while HOUSEHOLD_INCOME and INFLATION do not have a significant impact within this model. The overall model explains a moderate proportion of the variance in the GINI index.

From the Robust Least Squares (RLS) test (Table 4), we can observe that the constant term (C) is 0.299359, indicating the expected GINI value when all independent variables are zero. This is statistically significant with a p-value of 0.0000. The coefficient for POVERTY is 0.002060, which is positive and significant (p-value 0.0000). This suggests that a 1-unit increase in POVERTY is associated with a 0.00206 increase in the GINI index, indicating higher income inequality. The coefficient for HOUSEHOLD_INCOME is 4.16E-06, which is positive and statistically significant (p-value 0.0451). This suggests that household income has a small but significant positive effect on the GINI index. The coefficient for INFLATION is -0.003832, which is negative and not statistically significant (p-value 0.7203). This implies that inflation does not have a significant impact on the GINI index in this model. The coefficient for URBAN is 3.43E-08, which is positive and significant (p-value 0.0211). This indicates that an increase in the urban population is associated with an increase in the GINI index, suggesting higher income inequality in more urbanized areas.

The R-squared value of 0.215600 indicates that approximately 22% of the variability in the GINI index can be explained by the independent variables in the model. The Adjusted R-squared value of 0.195357 adjusts for the number of predictors in the model. The Rw-squared value of 0.288921 suggests a slightly better fit when using robust measures. The R-squared statistic of 47.77983 with a p-value of 0.000000 indicates that the model is statistically significant overall, meaning that the independent variables, collectively, have a significant effect on the dependent variable. Compared to the OLS model, the RLS model has a slightly lower R-squared value (0.215600 vs. 0.239665 for OLS), indicating a similar but slightly worse fit. The significance of HOUSEHOLD_INCOME in the RLS model (p-value 0.0451) suggests that outliers or leverage points may have been affecting the OLS results, where it was not significant (p-value 0.2708). Both models indicate that POVERTY and URBAN have significant positive effects on GINI, while INFLATION does not. In conclusion, the RLS regression confirms that POVERTY and URBAN population significantly contribute to income inequality (GINI). HOUSEHOLD_INCOME is also significant in the RLS model, indicating a positive effect on GINI. The overall model fit is moderate, explaining about 22-29% of the variance in the GINI index, with robust measures slightly improving the model fit.

Based on the results of the multicollinearity test, as presented in Table 4, the centered VIF for HOUSEHOLD_INCOME is 2.547976, indicating a moderate correlation with other predictors in the model. However, this value remains within acceptable limits and does not suggest serious multicollinearity concerns. The centered VIF for POVERTY is 1.505562, reflecting minimal correlation with other variables. Similarly, the centered VIFs for INFLATION and URBAN are 1.326170 and 1.877596, respectively, both of which indicate negligible multicollinearity. In general, a VIF value of 1 denotes no correlation between a predictor and other variables. Values between 1 and 5 suggest moderate correlation but are typically acceptable. VIF values exceeding 5 may signal problematic multicollinearity, potentially inflating the standard errors of regression coefficients. Given that all centered VIF values for the predictors—HOUSEHOLD_INCOME, POVERTY, INFLATION, and URBAN—are well below the commonly accepted threshold of 5, multicollinearity is not a significant issue in this regression model. This suggests that the coefficient estimates are stable and reliable, and that no strong linear relationships exist among the independent variables.

The Breusch-Godfrey test results, as shown in Table 4, indicate the presence of serial correlation in the residuals. This finding is supported by the Obs*R-squared statistic of 17.71990, also with a p-value of 0.0001, reinforcing the evidence of autocorrelation in the residuals. Overall, the Breusch-Godfrey test confirms the presence of serial correlation at up to two lags, thereby violating one of the key classical linear regression assumptions. This serial correlation can lead to inefficient Ordinary Least Squares (OLS) estimators and may invalidate standard inference procedures. To address this issue, potential remedies include incorporating lagged dependent variables, applying Newey-West standard errors to correct for autocorrelation, or employing alternative model specifications such as the Autoregressive Integrated Moving Average (ARIMA) framework.

The R-squared value is 7.516613 in Table 4, with a p-value of 0.1110, which is also greater than 0.05, further supporting the conclusion that there is no significant heteroskedasticity. The Gleiser test results suggest that there is no significant evidence of heteroskedasticity in the regression model's residuals. The residuals' variance appears to be constant across different levels of the independent variables, which supports the assumption of homoskedasticity. Therefore, the standard errors of the regression coefficients are likely to be reliable, and the results of hypothesis tests in the regression analysis are valid.

Figure 2: Histogram Test

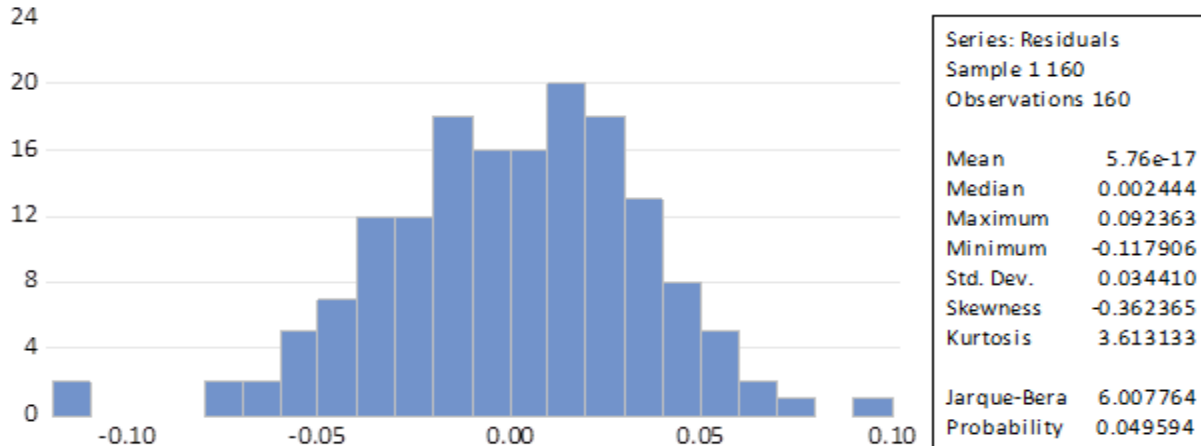


Figure 2 shows that the mean of the residuals is 5.76×10^{-17} , which is essentially zero. This means the residuals are evenly distributed around zero. The median is 0.0024, also close to zero, suggesting the distribution is fairly symmetric. The residuals range from a minimum of -0.118 to a maximum of 0.092, and the standard deviation is 0.034, indicating that most residuals fall within a narrow band around the mean. The skewness of -0.36 shows a slight leftward tilt in the distribution, while the kurtosis of 3.61 is slightly above the normal value of 3, indicating heavier tails than a normal distribution—this is known as leptokurtic behavior. The Jarque-Bera test statistic is 6.01 with a p-value of 0.0496. Since the p-value is just below 0.05, it suggests that the residuals are *slightly* non-normally distributed at the 5% significance level. The histogram of residuals visually supports this, showing a shape close to a bell curve but with minor deviations. In summary, the residuals are approximately normally distributed, with slight asymmetry and heavier tails. The regression model appears to fit reasonably well, but the small departure from normality may hint at the presence of outliers or non-linear patterns. If normality is a key assumption for further analysis, more robust modelling techniques could be explored.

Discussion

The issue of inequality is multifaceted and deeply entrenched, requiring a rigorous examination of its structural underpinnings. Addressing it involves confronting long-standing political, technological, and socio-cultural norms that are often institutionalized at both regional and national levels. Given its complexity, inequality remains a contentious and persistent challenge in policy discourse. To facilitate meaningful dialogue and build trust among stakeholders, it is crucial to approach inequality from a historical perspective. This approach enables a better understanding of how wealth and opportunity have been distributed over time, and how entrenched power dynamics continue to shape contemporary socioeconomic outcomes. A historical lens also creates the foundation for inclusive, transparent discussions on the legitimacy and consequences of current patterns of wealth distribution.

Effectively addressing inequality requires evidence-based strategies. However, the availability and quality of data, particularly disaggregated income data, are often inadequate. Such data are critical to identifying the scale, scope, and sources of inequality, yet in many contexts, they are limited or entirely lacking. What is measured, and conversely what is omitted, reflects national priorities and significantly influences how public policies are designed and how development aid is allocated. Policy interventions to mitigate inequality must be informed by a country's existing knowledge of income distribution, sectoral or demographic priorities, and the sensitivity of various stakeholders to inequality-related issues. These interventions should be both context-specific and evidence-driven. Where reliable data are available, they should be used to guide the design of targeted programs that respond to the needs of vulnerable populations.

The policy recommendations outlined here draw upon traditional poverty alleviation strategies but stress the importance of structural clarity, coherence, and responsiveness. Addressing inequality is not merely a matter of redistributing income; it requires systemic reform that considers the interlinkages between institutional practices, historical legacies, and contemporary economic realities.

5. Managerial Implications and Recommendations

Financial capital plays a pivotal role in poverty alleviation initiatives, particularly within urban contexts. These interventions typically target community groups with entrepreneurial potential, such as micro-enterprises and small-scale hawkers. Classified as part of the urban poor, these groups often face persistent barriers in accessing financial capital and generating sustainable income (Warr, 2004). To address these challenges, financial capital programs are implemented to assist in business development. Funds are expected to be recycled, with returns directed to the organizing agency and reallocated to other eligible groups.

Several government agencies in Malaysia have adopted microcredit strategies to support such efforts, including Bank Negara Malaysia, the Small and Medium Industries Development Corporation (SMIDEC), Tabung Ekonomi Kumpulan Usahawan Niaga (TEKUN), Majlis Amanah Rakyat (MARA), Amanah Ikhtiar Malaysia (AIM), and various federal ministries. These agencies aim to empower micro-enterprises and informal sector entrepreneurs by providing financial resources to stimulate business activities, thereby addressing income inequality and reducing poverty. The success of these programs is contingent upon robust monitoring systems and sustained engagement with recipients to ensure that the intended outcomes of enhanced income generation and narrowing income disparities are realized.

Additionally, entrepreneurial initiatives must incorporate capacity-building elements, such as training in critical thinking, financial literacy, and self-confidence. These components are vital to ensuring business sustainability and economic relevance. Government support should extend beyond financing to include the facilitation of collaborations with industry experts and seasoned entrepreneurs, enabling recipients to gain access to product development knowledge and market strategies. Regular monitoring mechanisms are necessary to mitigate the misuse of funds and ensure alignment with program objectives.

In parallel, development policies such as regional economic corridors have been implemented to stimulate employment and address regional income disparities. As spatial inequality continues to pose policy challenges, it is essential to evaluate the effectiveness of these programs to inform future interventions. Malaysia's urban entrepreneurship programs represent a strategic shift toward eradicating urban poverty, with a focus on extremely disadvantaged households. These initiatives feature no-interest, collateral-free loans, simplified application processes, and mandatory training and supervision to ensure the viability and repayment of funded projects. Policy focus should also prioritize intra-ethnic, urban-rural, and regional inequalities over inter-ethnic disparities, as the former are often more entrenched and impactful. Particular attention should be directed toward the bottom 40% (B40) of income earners, across all ethnic groups, whose economic positions have deteriorated in recent years.

Improving the well-being of urban B40 households necessitates a renewed emphasis on capability-building programs that enhance income and quality of life. This includes skills upgrading, industry-job matching, and lifelong learning. Priority should also be placed on increasing productivity and sustaining agro-based industries such as poultry, livestock, and vegetable farming, which are suitable for rural communities. These initiatives have the potential to create employment and improve household earnings. Similarly, cottage and traditional industries (e.g., handicrafts, carpentry, and food processing) require tailored support in financial aid, marketing, and product development to remain competitive. Basic training in project management and accounting, coupled with quarterly monitoring, can help track educational progress and upskilling outcomes.

Further, technical and vocational education must be strengthened to equip students with the competencies required by the labor market. This approach provides viable alternatives based on individual skills and interests, fostering inclusive development and preventing marginalization. In this context, distributive justice policies should emphasize equal opportunities for all, enabling marginalized communities to enhance their economic resilience.

Religious institutions such as *Baitulmal* and zakat agencies also play a critical role in addressing poverty and income inequality, particularly among Muslim households in rural and urban settings. Data from the Department of Statistics Malaysia (DOSM, 2022) indicates that many rural Muslim households face economic hardships, with significant portions in urban areas qualifying as *asnaf* (eligible zakat recipients). Effective disbursement of zakat requires careful assessment of household needs, ranging from financial aid and

education to housing and business capital. Stronger collaboration among state zakat institutions, the Department of Statistics, the Department of Social Welfare, and the National Registration Department can enhance the effectiveness of targeted interventions, in alignment with the Sustainable Development Goals (SDGs) endorsed by the World Bank.

Sustained engagement and comprehensive monitoring are essential to ensure that assistance is used productively. Past experiences highlight that some microenterprise recipients struggle with business sustainability due to inadequate knowledge of financial management, marketing, and product innovation. Equipping beneficiaries with essential business skills is thus imperative. According to Adnan et al. (2017), zakat recipients who receive productive assistance often strive toward self-sufficiency, ultimately transitioning from aid dependence to economic contributors. Over time, these individuals may even become zakat payers, thereby supporting broader, long-term development goals. In conclusion, a multi-faceted strategy involving financial capital, institutional support, entrepreneurship, skills development, and inclusive policy design is essential for reducing income inequality and alleviating poverty. These efforts must be integrated, context-specific, and closely monitored to ensure sustainable and equitable economic development.

Conclusion

Income inequality and poverty are not singular issues but manifestations of multiple deprivations that impact both urban and rural communities in Malaysia. Often underestimated, these challenges extend beyond material insufficiency to include deficits in education, healthcare, housing, and access to basic services. While the present study highlights these issues, it is limited by the unavailability of disaggregated data on the success rates of existing development policy programs. Future research should prioritize evaluating the outcomes of these initiatives to inform evidence-based policymaking.

Urbanization, while driving economic growth, has also worsened spatial inequality and contributed to the rise of urban poverty in Malaysian cities. Recent estimates by the Department of Statistics Malaysia (DOSM, 2022) show that urban poverty affects approximately 3.8% of urban households, with pronounced disparities in household income, access to employment, and quality of life. This growing divide underscores the urgency of targeted interventions.

To disrupt the persistent cycle of poverty, strategies must ensure a more equitable distribution of wealth that reaches all affected demographics. Poverty in Malaysia is multidimensional, spanning income, education, health, and living standards, and thus requires customized, context-specific interventions. For instance, poor health may hinder educational progress, which in turn limits income-generating opportunities. Recognizing and addressing such interlinkages is critical for designing effective poverty alleviation programs.

This study's urban-rural comparative analysis serves as a foundational step toward this goal. It highlights the need for precision in targeting anti-poverty interventions according to distinct poverty profiles. Effective programs must be tailored not only to geographic location but also to socio-demographic characteristics, such as age, gender, and household composition, to maximize impact.

Despite its limitations, the empirical insights from this study offer valuable guidance to policymakers and practitioners. They underscore the necessity of addressing income, education, vocational training, housing, healthcare, environmental quality, and access to urban infrastructure as interconnected levers for improving the socioeconomic conditions of disadvantaged populations. Policymakers must adopt a holistic, multisectoral approach, supported by robust funding mechanisms, to address poverty and income inequality effectively. At the policy level, federal ministries and agencies must coordinate closely with state-level administrations to implement inclusive programs. Leveraging existing data from DOSM, targeted outreach can be conducted to identify and support vulnerable households more effectively. State-level engagement enables tailored aid delivery, ensuring that interventions respond to localized needs. Importantly, the current approach to poverty reduction, which often lacks coordination and fails to address structural inequalities, must be re-evaluated.

This study contributes to the literature by emphasizing the importance of multidimensional and spatially sensitive approaches to poverty and inequality in Malaysia. It identifies a gap in the empirical evaluation of development policies and calls for future research to measure program effectiveness more rigorously. Policymakers should adopt a data-driven, integrated framework that not only targets income redistribution

but also fosters sustainable human development. Future research should aim to quantify the impacts of specific poverty-reduction programs, identify the most effective policy instruments, and develop localized poverty indices to support more targeted and impactful interventions. A coordinated, evidence-based strategy remains essential to reducing income disparity and achieving equitable socioeconomic progress in both urban and rural areas.

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