RELATIONSHIP BETWEEN POVERTY AND INEQUALITY: A CASE STUDY OF BUMIPUTERA HOUSEHOLD IN THE NORTHERN STATES OF MALAYSIA

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ABSTRACT: The relationship between poverty and inequality has never been straightforward. While some research found that poverty does not mirror inequality, others found that a change in income inequality definitely affects poverty. Malaysia has been applauded by international organizations for its success in alleviating poverty. However, inequality as measured by Gini coefficient has only shown a marginal drop from 0.46 in 1992 to 0.43 in 2012. This situation is more apparent when inequality is assessed according to ethnic groups. While the ethnic inequality measure has narrowed, the inequality for the Bumiputeras remains high. The Gini coefficient of the Bumiputeras stands at 0.42 in 2012, a drop of 0.02 from 1992. The Bumiputera, which is literally known as the 'son of the soil' is the largest ethnic group in Malaysia. In 2012, there is only 2.2 per cent Bumiputeras living in absolute poverty. This seems a small percentage but pockets of poverty among Bumiputeras remain. At present, there is a lack of research in understanding the relationship between poverty and inequality among the Bumiputeras, particularly in the Northern States of Malaysia. This study assesses the relationship between poverty and inequality of the Bumiputera Household in the Northern States of Malaysia using the Household Income Survey (HIS) data for 2009. A logistic probability function with values of 1 and 0 to represent households living in poverty and household not living in poverty respectively, is employed. Contextual inequality as measured by Theil Index is used as a proxy to inequality. The analysis found that per capita income and education attainment (except for tertiary education) significantly affect poverty. The study found no significant relationship exists between poverty and inequality. This provides an important implication towards policy formulation. Policy to tackle the issues of poverty and inequality need to be addressed separately, rather than pursued simultaneously.
Keywords: poverty, contextual inequality, Theil Index, Bumiputera household, Northern States of Malaysia

INTRODUCTION

World Bank's definition of poverty is the inability to achieve minimum living standards (World Bank 2000). The United Nations Development Program (UNDP) defines poverty as the inability to expand the choices in life. Smith (1776, p.479) proposes a conceptual definition of poverty as missing "not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without". Known as the father of modern economist, Smith sees poverty as more than just problems with access to the basic necessities to support one's life, but also as a social handicap.

However, according to Sen (1983, p.167), poverty is a standard at which one cannot "achieve adequate participation in communal activities and be free from public shame from failure to satisfy conventions". In general, he defines poverty, as the lack of what one needs to live within a society. Sen's more comprehensive definition completes Smith's approach. Townsend (1980) defines poverty as inequities in the distribution of five resources, including income, capital assets, occupational fringe benefits, current public services and current private services. Rowntree (1941) categorised poverty into two, which are primary and secondary poverty. Primary poverty is when an income is too low to buy necessities for the maintenance of physical efficiency, while secondary poverty is when an income, which by itself is sufficient but is unwisely spent.

The relationship between poverty and inequality has never been one that is straightforward. While some research finds that poverty does not mirror inequality, others find that a change in income inequality definitely affects poverty. Malaysia has been applauded by international organizations for

its success in alleviating poverty. However, inequality as measured by Gini coefficient has only shown a marginal drop from 0.46 in 1992 to 0.43 in 2012. This situation is more apparent when inequality is assessed according to ethnic groups. While the ethnic inequality measure has narrowed, the inequality for the Bumiputera remains high. The Bumiputera, which is literally known as the 'son of the soil' is the largest ethnic group in Malaysia. The 'divide and rule' policy adopted by the British during colonisation that placed the Bumiputera in the rural areas has led to high poverty incidence among them. The New Economic Policy (NEP) has been implemented to tackle the issue of income imbalances among all ethnic groups particularly that of the Bumiputera. In 2012, there is only 2.2 per cent Bumiputera living in absolute poverty. This seems a small percentage but pockets of poverty among the Bumiputera remains. At present, there is a lack of research in understanding the relationship between poverty and inequality among the Bumiputera particularly in the Northern States of Malaysia. This study assesses the relationship between poverty and inequality of the Bumiputera Household in the Northern States of Malaysia using the Household Income Survey (HIS) data for 2009.

BRIEF OVERVIEW OF INCOME DISTRIBUTION AND POVERTY IN THE NORTHERN STATES OF MALAYSIA

Malaysia is one of the thirteen countries that successfully sustained growth of more than 7 per cent for at least 25 years since 1950 and is currently classified as an upper middle-income country. The mean income of the nation has doubled in 15 years from RM 2,020 in 1995 to RM 4,025 in 2009. The pattern of income distribution differs according to ethnic groups with the Chinese having the highest income as compared to other ethnic groups. In 2009, mean income of the Chinese was RM 5,011 while the Bumiputera and the Indian's mean income was RM 3,624 and RM 3,999 respectively (Economic Planning Unit, n.d.a). The disparity of income distribution among ethnic groups is highly influenced by economic activities and strata. Most of the Bumiputera live in rural area and are involved in agricultural sector while the Chinese and the Indians dominate the industrial and commercial sectors and live in urban area (Lette, 2007).

In the Northern states of Malaysia, the mean monthly gross household income can be depicted from table 1. Table 1 indicates, there is a clear evidence of unequal distribution of income in the four states in the Northern Region of Malaysia. On the one hand, Penang has the highest mean monthly gross household income which is RM5,055 On the other hand, the other three states: Perlis, Kedah and Perak, have only about RM3,500 mean monthly gross household income and the lowest was Perlis (RM 3,538).

Table 1: Mean Monthly Gross Household Income (RM) and Gini Coefficient (GC) in Northern states of Malaysia, 1976-2012

States	1976		1987		1997		2009		2012	
	GInc (RM)	GC	GInc (RM)	GC	GInc (RM)	GC	GInc (RM)	GC	GInc (RM)	GC
Perlis	338	0.50	711	0.41	1,507	0.41	2,617	0.43	3,538	0.46
Kedah	306	0.50	718	0.43	1,590	0.43	2,667	0.41	3,425	0.39
Penang	589	0.61	1,130	0.42	3,130	0.40	4,004	0.42	5,055	0.37
Perak	436	0.53	863	0.41	1,940	0.38	2,809	0.40	3,548	0.42

Source: Economic Planning Unit (n.d.a, n.d.b)

Penang also has the lowest Gini coefficient, which is 0.37. Even though the mean monthly income for Perlis, Kedah and Perak are close to one another, the three states have different Gini coefficient. The values of Gini coefficient for Kedah is 0.39, Perak is 0.41 and Perlis has the highest value of Gini coefficient, which is 0.46. This situation shows that even though the mean monthly income is almost the same for the three states (Perak, Kedah and Perlis), but the equality of income distribution can differ. .

Table 2: Incidence of Poverty in the Northern States (%) in year 1970-2012

Year	Perlis	Kedah	Penang	Perak	Year	Perlis	Kedah	Penang	Perak
1970	73.9	63.2	43.7	48.6	1997	10.7	11.5	1.7	4.5
1979	63.1	53.8	19.7	30.5	2002	8.9	9.7	1.2	6.2
1984	33.7	36.6	13.4	20.3	2004	6.3	7.0	0.3	4.9
1989	17.4	29.9	8.7	19.2	2009	6.0	5.3	1.2	3.5
1992	19.8	21.2	4.0	10.2	2012	1.9	1.7	0.6	1.5
1995	11.8	12.2	4.0	9.1					

Source: Economic Planning Unit (n.d.c)

From Table 2, all four states in the Northern States of Malaysia have high incidence of poverty in 1970, which are 43.7 per cent in Penang, 63.2 per cent in Kedah, 73.9 per cent in Perlis and 48.6 per cent in Perak and it keeps decreasing every year. Perlis has the highest incidence of poverty in 1970 (73.9 per cent), 1979 (63.1 per cent), 2007 (7.0 per cent), 2009 (6.0 per cent) and 2012 (1.9 per cent) while in the remaining years, Kedah has the highest incidence of poverty. Penang remains the lowest every year. Surprisingly, while other states experienced increase in incidence of poverty from 1997 to 1999 due to financial crisis, the incidence of poverty in Penang decreased from 1.7 per cent to 0.7 per cent.

Table 3: Incidence of Poverty in the Northern States (%) according to ethnicity in year 1970-2012

Year	Bumiputera	Chinese	Indian	Others
1970	64.8	26.0	39.2	44.8
1979	49.2	16.5	19.8	28.9
1984	28.7	7.8	10.1	18.8
1989	23.0	5.4	7.6	22.8
1992	17.5	3.2	4.5	21.7
1995	12.2	2.1	2.6	22.5
1997	9.0	1.1	1.3	13.0
2009	5.3	0.6	2.5	6.7
2012	2.2	0.3	1.8	1.5

Source: Economic Planning Unit (n.d.c)

Table 4: The Gini coefficient development based on ethnicity

Year	Bumiputera	Chinese	Indian	Others
1970	0.47	0.47	0.47	0.67
1974	0.48	0.52	0.45	0.67
1979	0.47	0.47	0.46	0.60
1984	0.46	0.45	0.42	0.57
1989	0.43	0.42	0.39	0.40
1992	0.44	0.42	0.40	0.56
1995	0.44	0.43	0.40	0.41
1997	0.45	0.42	0.41	0.56
2009	0.44	0.43	0.42	0.50
2012	0.42	0.42	0.44	0.44

Source: Economic Planning Unit (n.d.b)

Based on Table 4, the Gini coefficient of the Bumiputeras stands at 0.42 in 2012, a drop of 0.02 from 1992. From Table 4, the pattern of the value of Gini coefficient for the three major ethnic group in Malaysia is almost the same for every years. Comparison between the Bumiputera and the Chinese shows that the Gini coefficient of the Chinese is lower than the Bumiputera for most of the year. However, in year 2002, the value of Gini coefficient of the Bumiputera is lower than the Chinese. There are also years where the value of the Gini coefficient for the Bumiputera and the Chinese are almost the same. In year 1999, 2007 and 2012, the value of Gini coefficient for the Bumiputera and the Chinese are almost the same. Comparison of Bumiputera with Indians also shows that the Gini coefficient for the Indians is lower than the Bumiputera. The patterns are the same for every year expect for year 2012. This shows that the income are distributed more evenly between the Chinese and between the Indian compared to between the Bumiputera. However, if we compare the Indian and Chinese, the Gini coefficient for Indian is lower than Chinese. The patterns are the same except for year 2009 and 2012. This concludes that the income are distributed more evenly between the Indian compared to between Chinese.

METHODOLOGY

The study uses Household Income Survey (HIS) data for the year 2009. The HIS is conducted every five (5) years by the Department of Statistics that cover information on income sources of households throughout Malaysia. The focus of this study concentrates on data collected for the Northern States (Perlis, Kedah, Penang and Perak) of Malaysia. 30 per cent observations of the Northern States data are used. There are a total of 53,199 households in Perlis, 435,504 households in Kedah, 374,601 households in Penang and 557,396 households in Perak. Since the survey reports total income level of household, analysis concentrates on head of households.

We use the 2009 national Poverty Line Income (PLI) to determine household's poverty level as shown in Table 5. During that year, the PLI for Peninsular Malaysia is RM 760. However, if according to strata, the PLI for urban and rural areas are RM 770 and RM 740 respectively.

We use Theil Index as shown below to calculate our inequality

$$T = \sum_{t=1}^{n} \ln (ny_t)$$

We calculate two groups of Theil Index: Theil Index by states, Theil Index among Bumiputera and Theil Index among Bumiputera in different states.
This study adopts logistic probability function that takes the value of 1 and 0 as the dependent variable. The dependent variable for this study is

Y_i = 1 if income of Bumiputera household falls below the PLI hence living in poverty
= 0 if income of Bumiputera household is above the PLI
The logistic regression model is defined as

$$L_i = \ln = Y_i + \alpha_0 + \alpha_1 X_i + \varepsilon_i \qquad (3.1)$$

Where, L_i is the log of the odds ratio and X_i is the set of independent variables. Y_i is the dependent variable taking the values of 1 and 0. If the Bumiputera household records an income above the poverty line income, it is assigned a value of 0. If the Bumiputera household records an income below the poverty line income, it is assigned a value of 1. In other words, $Y_i = 1$ means the household is poor while $Y_i = 0$ means that the household is not poor.

The independent variables investigated are natural logarithm of Theil index (ln THEIL), natural logarithm of household income (ln INC), gender of head of household (Gender with male as the reference category) and education (Secondary, Tertiary, Others and Primary as the reference category). There are limited variables included in the estimated model. Reasons being that inclusion of more variables result in an unstable estimation.

Three separate equations are estimated, one for the whole sample in Northern States, a separate estimation for households in urban areas and another separate estimation for households in rural areas. Separate estimation based on strata is to investigate the regional effects of poverty and inequality.

RESULTS

Table 5 shows the Theil Index for Bumiputera of different socio demographic categories. The Theil index ranges from a low 0.20 to a high 0.33. In regard to strata, the Bumiputera residing in urban area has a higher inequality. Surprisingly, Perlis records the highest inequality with Theil index of 0.33. With regard to education, the Bumiputera receiving other types of education records a high inequality. When gender is compared, female has higher inequality.

Table 5: Theil Index for Bumiputera distribution in the Northern States

Strata	**Bumiputera**
Urban	0.28
Rural	0.26
State	
Kedah	0.27
Penang	0.28
Perak	0.26
Perlis	0.33
Education	
Primary	0.21
Secondary	0.20
Tertiary	0.24
Others	0.28
Gender	
Male	0.27
Female	0.33

Source: Authors own calculation based on HIS 2009 data

Table 6: Logistic probability function of the estimated equations

	Model 1: Overall			**Model 2: Urban**			**Model 3: Rural**		
Variables	**Coefficient**	**Marginal effect**	**p-value**	**Coefficient**	**Marginal effect**	**p-value**	**Coefficient**	**Marginal effect**	**p-value**
ln THEIL	-0.17	-0.003	0.227	-0.35	-0.004	0.214	-0.07	-0.002	0.611
ln INC	-2.16***	-0.41***	0.000	-2.38***	-0.03***	0.000	-2.11***	-0.07***	0.000
Gender	1.79***	0.034***	0.000	1.43***	0.01***	0.002	1.97***	0.07***	0.000
Education									
Secondary	-1.00***	-0.02***	0.000	-1.15***	-0.02***	0.009	-0.97***	-0.03***	0.000
Tertiary	-1.68	-0.03	0.107	0.000	-	-	-1.05	-0.03	0.338
Others	0.84***	0.04***	0.003	1.186	0.06	0.035	0.72***	0.05***	0.027
_cons	9.85		0	11.03		0	9.74***		0

*** significance at 1%
** significance at 5%
* significance at 10%

Source: Authors own calculation based on HIS 2009 data

Table 6 shows the result of the of the estimated equations. logistic probability function For Model 1, income, gender, secondary education and other type of education are found to statistically significantly influence the state of poverty of Bumiputera household. A one-ringgit increase in the Bumiputera household income would reduce the probability of being poor by 41per cent. Household headed by female has a higher probability of living in poverty by 3 per cent as compared to household headed by male. Having received secondary education as compared to those with only primary education results in a lower probability of being poor by 2 per cent. Nevertheless, having other type of

education i.e. informal education, as compared to those with only primary education would result in a higher probability of living in poverty by 4 per cent.

For Model 2, income, gender and secondary education are found to be statistically significantly influence household poverty. If income increases by one-ringgit, the probability of being poor in urban areas reduces by 3 per cent. Household headed by female has a higher probability of living in poverty by 1 per cent as compared to household headed by male. Having at least a secondary education as compared to only primary education lead to a lower probability of being poor by 2 per cent.

For Model 3, income, gender, secondary education and other types of education are found to statistically significantly influences the state of poverty of Bumiputera household. A one-ringgit increase in Bumiputera household income would reduce the probability of being poor by 7 per cent. Household headed by female has a higher probability of living in poverty by 7 per cent as compared to household headed by male. Having received at least secondary education as compared to only received primary education has a lower probability of being poor by 3 per cent. Nevertheless, having received other types of education i.e. informal education, as compared to having received only primary education would result in a higher probability of living in poverty by 5 per cent.

In all three models, it was found that inequality is not statistically significant in influencing Bumiputera household poverty. There is not much difference on the variables affecting poverty between the rural and urban areas. The variables are income, gender and education attainment. Nevertheless the marginal effect is higher for the rural areas as compared to the urban areas.

DISCUSSION

From the results presented in Table 6, it could be deduced that strata does not influence the poverty incidence of Bumiputera. Regardless of where the Bumiputera resides, the factors influencing their poverty are the same: income, gender and education level. It could be concluded that in order to reduce poverty, there is a need to ensure that the head of household receives at least secondary education and that household income is raised. Alam (2011) finds that education plays important role in determining poverty. He mentions that household which has high educational level is not susceptible to live in poverty. This statement is supported by Muleta and Deressa (2014) who mention that high literacy rates (high education) would lower the probability of poverty.

It has been proven by the literature that female constitutes as important factor in influencing poverty (Medeiros and Costa 2008). This is supported by the findings of this study. Given that female head of household would bring the household to higher poverty, it is important that female head is empowered and provided with various channels to increase their income and economic independence. There is a need to provide more assistance to female head of household who is living in poverty for the fact that female poverty is often more severe than male poverty. Often, in many developing countries, works by females are not counted as major income generation. As emphasised by Todaro and Smith (2011), female headed households have limited control over their spouses' income, have less education, involve in many informal-sector employment, lack of social security and are highly dependable on government employment program. As such, this worsens the income disparity between males and females, hence more reason to provide greater accessibility of employment, income and economic opportunities to female head of household to reduce poverty.

A household is said to be poor when the household's resources do not satisfy their needs and the most prevalent causes is related to money (UNESCAP, 2000). Given that income is the major consideration for poverty in this paper, income is a major determinant to come out of, poverty. In fact, income of the Bumiputera is known to be the lowest among all ethnic groups. The Chinese records the highest mean income with RM 5,011 while the Bumiputera and the Indian each records a mean income of RM 3,624 and RM 3,999, respectively. While it is easy to just say that income of the Bumiputera needs to be raised to ensure that they are out of poverty, raising income would either require intervention in the

labour market, regulation on wages as well as individuals suitability for certain kinds of jobs. To ease the burden of the poor, government aids are readily available but prolong dependence would create a bigger vicious cycle of poverty. Hence, there is a need to measure poverty in a larger dimension to include relative poverty or even multidimensional poverty. As such, data needs to be made readily available to measure the trends and changes in poverty incidence, not only among the Bumiputera but also across all ethnic groups.

CONCLUSION AND POLICY IMPLICATION

This paper has provided a simple analysis of poverty incidence among the Bumiputera in the Northern States of Malaysia. Given that Bumiputera constitutes a large population but with low income, it is interesting to investigate factors such as income inequality, strata and other socio demographic factors that affect their poverty. While it is notionally thought that income disparity might influence poverty, especially income disparity between the urban and rural areas, inequality does not seem to statistically significantly influences poverty incidence of Bumiputera in the Northern States of Malaysia. This finding poses a serious policy consideration. All these while, beginning with the New Economic Policy in 1970, the policy target have always been to eradicate poverty and correct the economic imbalances among the ethnic groups. Perhaps, it is time to reconsider the policy and make poverty eradication a priority rather than trying to tackle all problems at once. Given that in mind, Malaysia has been successful in eradicating poverty from 50 per cent in the early 1970s to less than 10 per cent in 2014. Nevertheless, pockets of poverty remain especially among the Bumiputera in rural areas. When policy target focuses on just one issue i.e. poverty, a better policy measure could target appropriate group

Given that income is an important consideration, perhaps, it is time that government be stringent on the enforcement of minimum wage. Minimum wage should be fixed above the poverty line income. In fact, this is what the government has been struggling with, enforcing a minimum wage of RM900 and recently increasing to RM1,000 in the 2016 budget hearing. While this seems a good approach, businesses find alternative by employing more foreign workers to avoid such enforcement. Hence, better incentives for businesses to comply with the minimum wage policy is needed to create higher income and better job opportunities. Minimum wage policy needs to be strongly enforced and practised if Malaysia wants to pursue its aim to be a high-income nation by the year 2020 with a required per capita income of USD17,700. In doing so, the income of the bottom 40 (B40) need to be raised. It is known that 27.2 per cent of the B40 is Bumiputera and if the income of B40 is increased, indirectly, the income of the Bumiputera will also increase. Now that the poverty eradication programs are considered a success, it provides the government better focus on increasing the income of the unfortunate groups.

As mentioned, it is important that females are empowered to be more actively involved in the labour market either as employee or entrepreneur. Current agencies such as Amanah Ikhtiar Malaysia (AIM), Ministry of Women, Family and Community Development, Regional Development Authority (PERDA) and even Zakat institutions need to take more proactive measures to encourage women to partake in entrepreneurial activities. It is common knowledge that female is often paid lower than their counterparts. Reasons quoted for such discrimination are related to gender issues such as pregnancy, child rearing and limited labour ability. Hence, there is a need for a policy measure to be more gender sensitive in the labour market. Some developed countries have taken the initiative to accommodate female in part time work or flexible hours to allow them the opportunity for child rearing and time off from work during pregnancy.

Finally, it is important that the government continues its effort to provide education to all population, not limited to schooling but also higher education. It has been proven that having education would provide a higher chance of receiving high income and thus out of poverty. It has been reported that less than 20 per cent of Malaysian population receives tertiary education although schooling rate is almost 100 per cent. Often, the groups secluded from education are the ones living in the rural areas

due to limited facilities, incentives and moral support. Hence, there is a need to overcome all these challenges to ensure reduction in income disparity and also reduction in poverty.

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