



Regional Development Programmes and Poverty Reduction in East Coast States of Malaysia

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ABSTRACT

Regional disparities can be found in Malaysia. The Central Region can be considered as a developed region; while Sabah and the states in the Eastern Region, the least developed. Such disparities exist not only in the form of income, but also in terms of social welfare. It is then important to highlight the problems related to poverty in the poorer states of Malaysia. Many regional programs which involve a lot of resources have been carried out in every Malaysian plan. One of its aims is to eradicate poverty among the poor. In the same vein, the objective of this paper is to analyze the implication of regional development programs in reducing poverty. This paper made use of the Household Income Survey (HIS) for 1999 and 2004 data to calculate the relevant indexes to trace the changes in poverty incidence, extent and severity. These indexes include the head-count index, poverty gap and income-gap ratio, Sen's index of poverty, as well as the Foster, Greer and Thorbecke (FGT) index. Results revealed that the regional programs conducted between the two periods improved poverty situations in the region; thus, such programs should be continued to increase the economic performance of the so-called poor states of Kelantan, Trengganu and Pahang and reduce their poverty situation.

Keywords: Foster, Greer and Thorbecke (FGT) index, head-count index, Regional disparity, Sen's index of poverty, poverty gap and income-gap ratio

INTRODUCTION

The problems of regional disparities in the level of economic development are almost

universal, but their extent may differ among countries (Dubey, 1964). This phenomenon has been happening in Malaysia. Based on the Development Composite Index (DCI), the Central Region, comprised by Melaka, Negeri Sembilan, Selangor and Wilayah Persekutuan Kuala Lumpur, was the most developed region in 2005. On the other

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hand, Sabah and the states in the Eastern Region consisting of Kelantan, Pahang and Terengganu, were the least developed regions.

Besides DCI, the development gaps between regions and states were identified in terms of the level of gross domestic product (GDP), GDP per capita, and its growth. The per capita GDP by state is shown in Table 1. Based on the said Table, all states recorded an increase in GDP per capita; however, most developed states had higher per capita GDP as compared to the least developed ones. Nevertheless, in 2006, Pahang recorded an increase in its GDP per capita and performed better than Johor, a developed state. This

may have been due to the government's many development programmes aimed at improving the economic performance of less developed states.

The existence of regional disparities can be illustrated through the economic structure of the states. For example, the richer states such as Selangor, Penang and the Federal Territory of Kuala Lumpur tend to have a higher percentage of GDP in the secondary sector and a lower percentage in the primary sector. Such rapid expansion of industrial and service activities contribute to higher per capita growth in these states. The least developed states have a greater share in primary activities, with the exception

TABLE 1
Gross Domestic Per capita by State, Malaysia in 1995 – 2010

States	RM million							
	1995	2000	2005	2006	2007	2008	2009	2010
Northern Region								
Kedah	6,391	8,918	12,132	10,525	11,901	13,225	12,630	13,294
Perak	9,290	13,183	18,616	12,521	14,010	15,599	14,769	16,088
Perlis	7,634	10,802	15,166	14,125	13,561	14,510	14,457	15,296
Pulau Pinang	15,054	21,469	28,581	29,748	31,039	33,257	29,569	33,456
Central Region								
Melaka	11,305	15,723	21,410	20,472	22,174	24,619	22,761	24,697
Negeri Sembilan	9,034	12,791	17,555	22,757	23,704	26,803	23,600	27,485
Selangor	14,168	17,363	21,286	23,377	25,481	28,544	27,609	31,363
W/P Kuala Lumpur	22,799	30,727	39,283	40,868	44,801	49,996	51,197	55,951
Southern Region								
Johor	10,007	13,954	18,773	16,181	18,726	19,930	18,458	20,911
Eastern Region								
Kelantan	4,484	6,241	8,638	5,919	6,943	7,662	7,585	8,273
Pahang	7,548	10,370	14,549	17,319	18,930	21,793	19,974	22,743
Terengganu	16,553	22,994	29,516	15,241	17,284	19,194	16,994	19,255
Sabah	7,206	9,123	11,323	10,645	13,067	16,843	14,830	17,424
Sarawak	9,287	12,755	16,861	26,984	29,562	34,855	30,318	33,307
Malaysia	10,756	14,584	19,189	21,411	23,617	26,902	24,366	27,113

Source: Department of Statistics Malaysia, Eighth Malaysia Plan

of Terengganu, due to the discovery of off-shore oil. Services form the highest component of GDP for all states and this truly reflects the overall economy of the state. Another interesting structure is the share of urban population in richer states being higher than in its poorer counterparts. Moreover, the depth of such disparities exists not only in the form of income but also in social welfare.

Aside from all these disparities, another important point to be highlighted is the difference in the level of poverty between the states. It has been shown that the situation of poverty in the states of Kelantan, Terengganu, Kedah and Perlis has been

higher than in the richer states (e.g. Selangor, Penang and the Federal Territory of Kuala Lumpur) as shown in Table 2.

The development of any country will not be sustainable if the growth process does not contribute to the poverty reduction. For instance, when one of the countries achieves higher growth rate in Gross Domestic Product (GDP) and, at the same time, the poverty incidence is also high, the growth of development for that country is considered as unsustainable.

In Malaysia, the incidence of absolute poverty has traditionally been determined with reference to a threshold poverty line income (PLI), (Cheng *et al.*, 1976). This

TABLE 2
Incidence of Poverty by State, Malaysia, 1995 - 2009

State	Incidence of Poverty (%)			
	1995	1999	2004	2009
Malaysia	8.7	8.5	5.7	3.8
Johor	4.2	3.1	2.0	1.3
Kedah	12.2	14.2	7.0	5.3
Kelantan	22.9	25.2	10.6	4.8
Melaka	5.3	2.9	1.8	0.5
N.Sembilan	4.9	4.1	1.4	0.7
Pahang	6.8	9.8	4.0	2.1
Perak	9.1	6.8	4.9	3.5
Perlis	11.8	13.6	6.3	6.0
Pulau Pinang	4.0	0.7	0.3	1.2
Sabah	22.4	23.4	24.2	19.7
Sarawak	10.0	10.9	7.5	5.3
Selangor	2.2	1.9	1.0	0.7
Terengganu	23.4	22.7	15.4	4.0
WP Kuala Lumpur	0.5	0.4	1.5	0.7
WP Labuan			2.7	4.3

Source: Department of Statistics Malaysia
Eighth Malaysia Plan
Ninth Malaysia Plan

PLI is based on what is considered to be the minimum consumption requirements of a household for food, clothing, and other non-food items, such as rent, fuel, and power. Whilst, the concept of hardcore poverty was first used by the Malaysian government in 1989 to help identify and target poor households whose income is less than half of the PLI.

To ensure higher economic growth among states, measures have been undertaken to focus development efforts in growth centers of respective states as well as in trans-border areas involving two or more states. One of the trans-border areas is the Northern Terengganu-Southern Kelantan-Western Pahang Zone, which has been identified as a new focus area of development for the Eastern Corridor Region.

For the eastern region states, a total of RM22.3 billion or 11.2% has been allocated for development in the Ninth Plan compared with RM14.3 billion in the Eighth Plan. Infrastructure projects have been the focus of the development for the region. Among the projects is the Simpang Pulai-Gua Musang-Kuala Terengganu Road, which has provided the third trunk road link to the Eastern Corridor, and the East Coast Highway Phase 2 in Terengganu. In addition, the Kuala Terengganu airport has been upgraded to handle wide-bodied aircrafts that will boost tourism and industrial development.

To further spur the development in northern Terengganu, as well as provide more educational opportunities, the main campus of a new university will be located in Besut. In addition, a new university will

be established in Kelantan during the Plan period. For Pahang, development projects will include permanent food production parks, a palm oil industrial cluster and an integrated halal hub.

The analysis of the poverty situation is meant to ensure the success of this regional development plan in eradicating poverty problems in the targeted areas (Damery, et al., 1991). Therefore, it is the objective of this study to analyze the implication of regional development programmes in reducing poverty in terms of its incidence, extent and severity.

There are several techniques used to identify the situation in term of incidence, extent and the severity of poverty. Therefore, this analysis is aimed to capture the real situation of poverty in each state and to likewise help the government in giving more attention to the reallocation of sources for development programmes.

LITERATURE REVIEW

Poverty has absolute and relative contexts. Worldwide, people living in absolute poverty are those who do not have adequate nutrition, housing and access to basic health and education. As standards of living rises and absolute poverty recedes, social concerns focus on those living in what is recognized as poverty relative to a country's average standards of living.

In 1977, Anand explored the extent and nature of poverty in Malaysia, so that policy measures for its alleviation might be considered. For this purpose, he examined data generated by the 1970 Post Enumeration Survey (PES). He adopted

various types of poverty measures, which include poverty incidence (head count ratio), average poverty gap, the Sen's Index of Poverty (P), modified Sen's Index (M) and index F (after Fishlow). He found that the percentage of the population in poverty was calculated as 40.2%, and the average poverty gap was RM9.05 per month. The poverty gap, as a fraction of the total income needed to support everyone in the population at the poverty level, is 14.5%. The index M for the country was estimated at 0.073, which implies that the poverty gap in Malaysia stands at 7.3% of the total personal income. If poverty were to be eliminated by a transfer of income from the non-poor to the poor (index F), the non-poor would need to sacrifice 8.3% of their income (or 12.7 percent of their income in excess of the poverty line income). These indices for expressing the poverty gap have also been computed separately for each ethnic group.

Ginneken (1980) adopted three types of poverty measures for his study, which are poverty incidence, poverty gaps, and Sen's Index that will be applied to Household Expenditure data from the 1975-1976 survey carried out by the Statistical Center of Iran. The data estimated the extent of poverty for households of different sizes in Iran. Ginneken appraised the number of poor based on poverty lines for households of different sizes. In his findings, he came up with a poverty map of Iran, which categorized seven different characteristics of the head of households, namely by area, region, sector of employment, occupation,

employment position, level of education and, finally, by age.

METHODOLOGY

The study analyzed the regional development programmes that have been successful in reducing poverty in the East Coast Region or not. As mentioned earlier, there were three important aspects examined in relation to poverty. These include poverty incidence, poverty extend and severity of poverty. Comparisons were made between these measurements in 1999 and 2004.

There are three steps needed for measuring poverty (Foster *et al.*, 1984), these are:

1. Defining an indicator of welfare;
2. Establishing a minimum acceptable standard of that indicator to separate the poor from the non-poor, and;
3. Generating a summary statistic to aggregate the information from the distribution of this welfare indicator relative to the poverty line.

The population was relabeled as a vector of household incomes in increasing order so that $y_1 \leq y_2 \leq \dots \leq y_n$ and it could be supposed that $z > 0$ is the predetermined poverty line. Following Sen (1976), this study chose the rank-order weighting scheme, in which the weight on the income gap of a poor household was simply ranked in the income ordering below the poverty line. This weighting scheme was expected to yield the Gini coefficient of the income distribution of the poor,

$$G_p = \frac{q+1}{q} - \frac{2}{q^2 m} \sum_{i=1}^q (q+1-i)y_i \quad (1)$$

To answer the first question of how many are poor, the head-count index (H) was used. This ratio is called the *head-count (household-count) ratio*, H

$$H = \frac{q}{n} \quad (2)$$

Where q = number of household those below poverty line income, n = total population size.

The extent or depth of poverty was measured by using the poverty gap and income-gap ratio. The poverty gap is

$$P_1 = \sum_{i=1}^q g_i \quad (3)$$

where $g_i = z - y_i$ is the income gap of household i . Therefore, the average poverty gap is $(z - m)$.

The income-gap ratio,

$$I = \sum_{i \in S(z)} g_i / qz \quad (4)$$

was a per-person percentage gap, based on the poverty deficit of the poor from the poverty line. However, both the poverty gap and the income-gap ratio ignored the distribution of income among the poor. The severity of poverty, which includes the income distribution in the society, was measured by Sen's index of poverty (P_2) and the Foster, Greer and Thorbecke index known as FGT index FGT index (P_3). Sen's index is a complete poverty measure, which incorporates the information on the number of poor (H), the extent of poverty, measured

by income gap (I), and the Gini coefficient (G), as an indicator of income distribution among the poor. Sen's poverty index is expressed as

$$P_2 = H[I + (1-I)G_p] \quad (5)$$

where;

G_p = Gini coefficient of the poor.

The measure is made up of the head-count ratio H multiplied by the income gap ratio I , increased by the Gini coefficient G of the distribution of income among the poor weighted by $[(1-I)]$, i.e. weighted by the ratio of the mean income of the poor to the poverty-line income level. The value of P_2 lies in the closed interval $[0,1]$, with $P_2=0$ if everyone has income greater than z , and $P_2=1$ if everyone has zero income. G will be equal to zero ($G=0$), when all the poor share the same income.

The FGT index (P_3), is a poverty gap-based measure. This measure is additively decomposable in the sense that total poverty is a weighted average of the subgroup poverty levels. The subgroup population can be defined either along ethnic, geographical, or other lines. P_3 was defined by:

$$P_3(y : z) = \frac{1}{n} \sum_{i=1}^q \left(\frac{g_i}{z} \right)^\alpha \quad (6)$$

where; $g_i = z - y_i$, is the income short-fall of the i^{th} poor, z : poverty line, q : number of people whose income is below the poverty line.

“ α ” is a parameter which takes on a value greater than or equal to zero ($\alpha \geq 0$). The parameter α can be viewed as a measure of poverty aversion. As α gets larger, the

measure becomes more sensitive to the income circumstances of the “poorest poor”. The measure P_3 was obtained by setting $\alpha = 2$.

The data for this study was gathered from published and unpublished materials, with the main source coming from the unpublished Household Income Survey (HIS) for 1999 and 2004. These surveys were conducted and processed by the Malaysian Department of Statistics (DOS). For this study, we were provided with the data of income, where the income included earnings from paid employment, income from self-employment, rental income, property income, transfer payments. Apart from that, data on poverty in Malaysia from previous Malaysia Plans, the Malaysia Outline Perspective Plans, and other relevant publications were also explored.

The estimation of poverty indices was done using the Microsoft Excel program as well as the STATA program.

RESULTS AND ANALYSIS

The overall results showed significant improvements in poverty incidence, poverty extent and also poverty severity

in the area being studied. Nevertheless, the improvements changed the ranking of the states involved. For example, in 1999 Kelantan was the poorest states among the three states; nevertheless in 2004, Terengganu occupied the lowest position in terms of poverty incidence, extent, as well as severity (Table 3). Pahang showed the best position among the three states.

Poverty Incidence (H)

The overall poverty incidence in East Coast has reduced significantly from 33 percent in 1999 to 13 percent in 2004. This trend is shown in Table 3. In 1999, poverty incidence in Kelantan was the highest, followed by Terengganu and Pahang. However, their positions changed in 2004, when Terengganu obtained a 17% poverty incidence while Kelantan got 15%. Pahang's position was still considered best among these three states as poverty incidence was reduced from 15% to only 4% in 2004.

The extent or depth of poverty was measured using the average poverty gap (P_1) and income-gap ratio, (I). For the year 2004, the extent of poverty in East Coast was reduced. The average poverty gap became

TABLE 3
East Coast Poverty Measures by States, 1999 and 2004

States	1999					2004				
	H	P_1 (RM)	I	P_2	P_3	H	P_1 (RM)	I	P_2	P_3
Kelantan	0.43	2732	0.45	0.12	0.11	0.15	2008	0.25	0.02	0.02
Terengganu	0.38	2711	0.44	0.11	0.10	0.17	2465	0.31	0.03	0.02
Pahang	0.15	1965	0.32	0.03	0.02	0.04	1627	0.21	0.004	0.00
East Coast	0.33	2605	0.43	0.09	0.08	0.13	2163	0.27	0.02	0.01

Note: H: Household-count ratio (poverty incidence) P_2 : Sen's Index of poverty
 P_1 : Average poverty gap P_3 : FGT index of poverty
 I : Income gap

smaller, from RM 2605 in 1999 to RM 2163 in 2004. Income gap ratio also declined from 0.43 to 0.27.

The Extent of Poverty

At the state level, the extent of poverty has improved for every state. For the year 1999, the level of poverty was highest in Kelantan with an average poverty gap of RM 2732 and 0.45 income gap ratio. However, in 2004, the extent of poverty in Kelantan was reduced. This implies that, in 2004, the improvement in economic condition reduced the poverty gap of the poor Kelantan, increased their income and brought them closer to the poverty line.

On the other hand, the depth of poverty is now highest in Terengganu, with RM 2465 average poverty gap and 0.31 income gap ratio. Pahang showed improvements with the reduction of the poverty gap and the income gap ratio.

The Severity of Poverty

Table 3 shows that the severity of poverty in East Coast was reduced between 1999 and 2004. Both the Sen's Index and the FGT's index showed an improvement in the severity of poverty for the said periods. There was an improvement in the Sen's index from 0.09 to 0.02. The FGT index also recorded an improvement from 0.08 at 1999, to 0.01 in 2004.

This study found out that poverty was more severe in the Kelantan as compared to Terengganu in 1999. Results showed that the severity of poverty in Kelantan improved with 0.02 of Sen's index and 0.02 of FGT

in 2004. Terengganu experienced about the same effect in 2004 with 0.03 in Sen's index and 0.02 FGT index. As in the case of poverty incidence and poverty extent, Pahang showed the largest improvement in poverty severity among the three states. This proves that the improvement in economic conditions helped to reduce the severe effects of poverty.

SUMMARY AND CONCLUSIONS

We analyzed five major poverty indices, namely the Household-count ratio (H), poverty gap (P_1), income gap (I), Sen's Index (P_2) and FGT index (P_3) to tackle three major issues: how many are poor, the extent or depth of poverty, and the severity of poverty.

Results showed that poverty incidence in East Coast reduced significantly from 33 percent to 13 percent. The average poverty gap became smaller, from RM2605 in 1999 to RM2163 in 2004. Income gap ratio also declined from 0.43 to 0.27. Furthermore, this study found that the severity of poverty in the East Coast reduced in 2004. We can then conclude that the regional development programmes contributed to the increase in household income, reduction in poverty incidence, decrease in depth of poverty, as well as diminished severity of poverty in the areas studied. Government regional development programmes such as the East Coast Economic Region must then be continued to further develop the three states (Kelantan, Terengganu and Pahang) to catch up with the other developed states in the country.

REFERENCES

- Anand, S. (1977). Aspects of poverty in Malaysia. *Review of Income and Wealth*, 23(1), 1-16.
- Cheong, K. C., & Fredericks, L. J. (1976). *Theory and measurement of poverty: Tentative views on an amorphous topic*. Kuala Lumpur: Universiti Malaya.
- Demery, L., & Demery, D. (1991). Poverty and macroeconomic policy in Malaysia, 1979-1987. *World Development*, 19(11), 1615-1632.
- Dubey, V. (1964). The definition of regional economics. *Journal of Regional Science*, 5, 25-29.
- Foster, J., Greer, J., & Thorbecke, E. (1984). Notes and comments: A class of decomposable poverty measures. *Econometrica*, 53(3), 761-766.
- Malaysia: *Eighth Malaysia Plan 2001-2005*. (2001). Kuala Lumpur: Government Printers.
- Malaysia: *Ninth Malaysia Plan 2006-2010*. (2006). Kuala Lumpur: Government Printers

