

## **The Probability to Be Persistent Poor in Malaysia: New Evidence from Panel Data**

**Zunika Mohamed and Rusmawati Said\***

*Faculty of Economics and Management, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia*

### **ABSTRACT**

We examine the demographic characteristics of the poor that influence chances to continue to be poor by applying the binary response variable. It is based on a country representative micro data from two waves of panel household income survey 2004 and 2007. The results show that household's characteristics, present economics and spatial disadvantages significantly influence the chances of continued poverty. The poor are either those with large household and few income earners from East Malaysia or those with low education level. They have higher risks to be trapped in poverty. Interestingly, gender and marital status are insignificant contributing factors. To help the disadvantage group, we propose improvement of the existing programmes and policy revisions to focus on other dimensions of poverty besides income and to address social exclusion issues.

*JEL Classification:* I32, R23

*Keywords:* Poverty, regional disparities, economic development

### **INTRODUCTION**

In the league of developing countries, Malaysia stands out as one of the successful nations in eradicating poverty. The success is evident in the dramatic drop of the overall incidence of income poverty from 49% in 1970 to 3.6% in 2007 (United

Nations Development Program (UNDP, 2007) and a slight increase at 3.8% in 2009 (Economic Planning Unit, 2010). In the case of hardcore or acute poverty, it has shown a successful reduction to 0.7% in 1989. This success is mainly attributed to government's introduction to various socio-economic policies. Malaysian policy related to poverty was first implemented and coordinated in 1971 with the introduction of New Economic Policy (NEP). It has provided coherent economic opportunities for the disadvantage groups (Mc Naab &

#### **ARTICLE INFO**

*Article history:*

Received: 21 May 2012

Accepted: 31 July 2013

*E-mail address:*

[rus\\_said@yahoo.com](mailto:rus_said@yahoo.com) (Rusmawati Said)

\* Corresponding author

Said, 2013). Since then, its basic features are retained, although modifications have been made over the years. Despite the overall success in alleviating poverty, it is important to note that it has not been equally effective across all states or regions in Malaysia. For example, data in 2007 has reported that poor households in the state of Sabah has comprised nearly 41% of the total poor. The data has been considered as relatively higher than other states in Malaysia.

Previous studies on determinant of poverty using country representative data based on a static approach have identified several key factors that influence people to be poor. For instance, the study by UNDP (2007) based on Household Income Survey (HIS) 2004 data shows that being unemployed or living in poor states such as Sabah, Sarawak and Kelantan increases the chances of being poor. In addition, being an ethnic minority from rural areas, particularly those in Sabah, also increases the chances of being poor. A study by Mok *et. al.* (2007) on the determinant of poverty in the urban areas, based on Household Expenditure Survey (HES) data 2004, more or less provides the same conclusion. They highlight that education, region of residence and household size are significant determinants of urban household to be more prone to poverty. Even though the empirical literature on poverty seems to have consensus on keys factors that determine poverty in Malaysia, these studies are done based on a static approach. Study that takes into account the element of time in this aspect is almost non-existence. So

far, we have no information about the extent of persistent or chronic poverty and the determinant factors that draw the poor to be persistently poor.

This paper seeks to fill a significant gap found in previous literature on the approach to poverty study in Malaysia. This study is a timid attempt in approaching poverty analysis from a dynamic perspective. Despite the voluminous studies undertaken on the determinants of poverty in Malaysia, the approach is usually based on a static approach. The dynamic approach to poverty study emerges in the literature partly as consequence of combating hard to reach poverty types such as chronic or persistent poverty that are linked to long duration of poverty spell.

It is important to differentiate the different kinds of poverty to effectively eradicate poverty. According to Hulme and Sheppard (2003), different types of poverty require a different quantum of national resources as well as different kind of programs. For example, when poverty is chronic, a large amount of resources is needed and suitable policies should include asset redistribution, investment for basic physical infrastructure, reduction of social exclusion generated in the markets and from public institutions as well as provision of a long-term social security. Temporary poverty is best addressed through welfare grant such as transfer programs or credit accessibility. While, persistent poverty is best mollified by development programs such as income generating activities (Salehi-Isfahani & Majbouri, 2010). In addition, the dynamic

of poverty affects individual differently in terms of economic disadvantages that might lead to social exclusion (Mendola *et al.* 2009).

Recently, the government has launched the Malaysian Transformation Program in their continuous effort to achieve a developed nation status by 2020. Under this program, the government calls for “inclusive development approach to ensure equitable access to economic participation among all Malaysians in moving towards a fair and socially just society” (Economic Planning Unit, 2010). This approach requires appropriate welfare or development programs to specifically address poverty issues most apt to the needs of specific target groups, currently experiencing serious economic disadvantages. In line with this development, it is critically important that the determinants of poverty be specified further in order to alleviate the poverty group.

The analysis on the underlying causes that trap people into the different types of poverty incidence will be more meaningful if we are able to identify the type of poverty that the poor experience. For example, in Iran, the persistent poverty dominates the characteristic of urban society where employment opportunity depends on the non-agriculture sector. On contrary, rural poverty tends to be temporary due to fluctuation in agricultural output and prices. The persistent poverty or chronic poverty is more prominent among minority compared to other groups (Salehi-Isfahani & Majbouri 2010).

Another key contribution to this paper is to reconcile the data by providing a detailed analysis from the micro perspectives. The analysis uses information at household level that is nationally represented. Previously, lack of country representative sample data constraints most of the studies in Malaysia towards specific case studies based on state and district levels or based on economic activities such as in agriculture or fishery sectors. Deaton (1997) suggests that information at micro level is very useful to inspect policy implication and evaluate welfare benefits of public programs. It reflects the outcomes of policy variables such as income level, educational attainment and health status. These information enables economists to conduct analysis at disaggregate level in various perspective of distributions. The availability of data from panel Household Income Survey (PHIS) from the year 2004 and 2007 allows us, for the first time, to inspect the dynamic of poverty in terms of people moving out or remaining in poverty during the duration of four years. We can only explore factors underlying the incidence of persistent poverty in Malaysia since this set of data does not allow us to investigate the movement and flow of the respondents that characterized temporary poverty. In this study, we define persistent poverty as those households that have been poor for at least four years. As such, a poor household, both in the first and second wave of the PHIS, is considered as persistent poor. Calculation based on data from the PHIS reveals that about one third or 34 %

of the total poor household in 2004 can be categorized as persistently poor in view of the mean income of RM 712 in 2007. It is important to pay special focus on this group since there is a high tendency of persistent poor continues to be poor and to be socially excluded in the future.

The organization of this paper is as follows:

- a. Background and literature review presents some background and studies depicted in previous literature;
- b. Methodology and Data provides a detailed description of the methodology and source of data;
- c. Findings expounds the descriptive statistics and empirical analysis;
- d. Conclusions and policy recommendations concludes with policy implication drawn from this study.

## **BACKGROUND AND LITERATURE REVIEW**

In Malaysia, poverty reduction has remained to be an integral component of major national policies; the NEP, NDP and vision 2020. The national policies reflect its continuous importance and commitment of the government. The current measurement of poverty in Malaysia is based on 'costs of basic needs' approach. This approach identifies the consumption bundle that deemes to be sufficient in meeting the household needs. The amount of income needed to purchase this bundle is set as a benchmark to determine the status of a household, known as the poverty line

income (PLI). In other words, PLI is defined as the minimum monthly household income that enables a household to achieve an adequate standard of living. It can be categorized into two; the overall PLI and the food PLI. While, PLI measures poverty; the latter focuses, on hardcore poor. PLI of Peninsular Malaysia has increased from RM660 per month in 2004 to RM720 in 2007. While, food PLI has increased from RM400 to RM430 during the same period. Two main factors contributing to these differences in PLI are the disparity in retail prices of goods and the average size of household.

Malaysia, a country comprises of 13 states and three Federal Territories, has recorded substantial growth in income with an average growth of more than 5% for the last four decades. It has been reported that Malaysia is recognized as one of the 13 countries in the world with sustained growth of more than 7% over 25 years since 1950. In 2010, the gross national income per capita has reached USD 8,256. Nevertheless, there are wider opportunities for improvement in terms of wealth distribution among the states. Reducing regional disparities continues to top the list as one of the main agenda for growth. In terms of growth, states in the west coast of Peninsular Malaysia continue to dominate as compared to the lagging states in the Borneo Island and north and east coast states of Peninsular. In 2009, states in the Peninsular Malaysia has contributed an enormous 84% of the nation Gross Domestic Product (GDP). While, Sabah, Sarawak and Labuan in the Borneo

Island have only contributed the rest of 16%. There is a correlation between the incidence of poverty and economic growth among the states. Peninsular Malaysia, as a whole has recorded an incidence of poverty at 2% in the same year. While, Sabah has scored up to 19.2% and Sarawak at 5.3%.

There is already an expounding literature on studies of poverty. Originally, these studies are based on spatial horizons that frame the evaluation process at one point in time. The studies, then, focus on the social, economic and structural perspectives that shape people's opportunities or disadvantages (Cotter, 2002). As time progresses, the frame has been expanded to include the element of time by looking at dynamic of poverty.

Under the dynamic approach, people are categorized according to duration of time that they are in a particular situation. In general, dynamic of poverty situation is usually categorized as, either, temporary or long term. Hulme and Shepherds (2003) present a clear definition of poverty dynamic. They categorize poverty into five types:

- a. *the always poor* means poverty score is below a defined poverty line in every period);
- b. *the usually poor* means poverty score over all periods is less than the poverty line but are not poor in every period;
- c. *the churning poor* means poverty score around the poverty line but are poor in some periods but not in others;
- d. *the occasionally poor* means poverty score is above the poverty line but

have experienced at least one period in poverty; and

- e. *the never poor* means poverty scores in all periods above the poverty line.

These categories are then aggregated into three types:

- a. the chronic poor are always poor and usually poor;
- b. the transient poor are churning poor and occasionally poor; and
- c. the non-poor are the-never poor.

Empirically, Bigsten and Shimeles (2008) analyze the persistence of poverty in Ethiopia based on spell approach using a panel data set that covers 10 years (1994–2004) in five waves. Salehi-Isfahani and Majbouri (2010), on the other hand, look at transient and chronic poverty in Iran by defining transient as temporary and chronic as long term.

Previous studies under the static framework have revealed the facts that social demographic matters significantly in determining poverty. Paugam (1995) and Szeles and Tache (2008) highlight the importance of social demographic factors such as education, work experience, marital status, family size, race or ethnic, social assistance dependence and past poverty experience. Szeles and Tache (2008) assert that the most vulnerable groups of population are the young, lowly educated, unemployed, single parents, non-active or mono-active household, single and over-crowded household.

Based on dynamic approach, using panel data of about 1,200 households from Uganda, during the period of 1992 to 2000, Deininger and Okidi (2003) unveil the determinants of growth and poverty reduction lies on a person's initial asset ownership, health status, education and infrastructure. It is interesting to note that the effects of education on human capital are closely interwoven with the accessibility of modern infrastructure. These variables counteract with any convergence effects including income. This finding is parallel with the study by Dekkers (2008) based on 7 waves panel data from 1994 to 2000. The study calculates the probability of a non-poor individual becomes poor after one to seven years, given that it has never happened before. It confirms that health and education are the two important variables in determining poverty. In addition, he stresses that poor health or disability coupled with low education level increases the probability of falling into poverty in Belgium. Other important variables, in the case of Belgium, are ethnicity and the possession of Belgium nationality which significantly determine the chance of getting a job.

From gender perspectives, recent empirical findings (Giang ang Pfau, 2009; Dekkers, 2008; Deininger & Okidi, 2003) suggest that gender is immaterial in determining the likelihood of poverty. On contrary, Betti *et al.* (2003) stresses that gender aspect is indeed significant in determining the poverty risk. Using British Household Panel Survey (BHPS) data set from 1991 to 1997, their results suggest that

households headed by men face lesser risk of poverty. In terms of regional factor, they also report that the risk of poverty is higher in Northern and Western Britain relative to Eastern region.

The empirical works on poverty in Malaysia based on micro perspective are mostly dated back since 1990s. Examples of such studies discussed in Ragayah and Krongkaew (2008) are Jomo, *et al.* (1996); Shireen (1998); Fatimah (1991); Bhalla and Kharas (1992); Ishak (2000); and Roslan (2004). A study by Shireen (1998) identifies education as the main determinant in influencing poverty. Poverty is proxy by either headcount, severity of poverty or Sen Index. Recently, Pramanik *et al.* (2008) has conducted a case study on poverty by looking at the multi-dimensional attributes that help explain poverty in four states in Malaysia. Their results suggest that family having less number of economically active labor forces; female headed household; and family size bigger than seven are among the significant demographic factors that influence poverty. Social factors related to education; owning a house; and access to pipe-water supply are also associated with poverty. They also find that involvement in agriculture without owning physical assets like land as well as having high marginal propensity to consume with low marginal propensity to save, also worsen poverty.

## METHODOLOGY AND DATA

This study continues from the recent study by UNDP (2007) in analyzing the determinants of poverty in Malaysia. We



deviate from the UNDP in considering the time element in our analysis. The analysis uses the panel data from PHIS that covers two waves of 2004 and 2007, instead of only using HIS data. We also apply additional predictors obtained from previous studies on the determinants of poverty. A Logit binary model is employed to investigate the probability that the household will be persistent poor:

$$\begin{aligned} \log it[\theta(x)] &= \log \left[ \frac{\theta(x)}{1-\theta(x)} \right] \\ &= \alpha + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_i x_i \end{aligned} \quad (1)$$

where  $\alpha$  = constant of the equation and,  $\beta$  = the coefficient of the predictor variables  $x_1$  to  $x_i$ . The dependent variables are households that have been assigned with the value of 1, if the household is poor in 2007; and 0 if the household is non-poor.

Predictors  $x_1$  to  $x_i$  are based on characteristics of the head of the household in 2007.

1. *hoh\_age*: Age of the head of household (in years).
2. *dno\_inc*: Dummy for number of income earner: for more than one earners, value=1; for multiple earners, value=0.
3. *hh\_size*: Household size (in unit).
4. *dcert*: Dummy for level of education: for head of household without any type of certificate and / or without primary / secondary education, value=1; for those with at least middle school certificate (form 3), value=0.

5. *dactivity*: Dummy for type of employment activity: for head of household who is employed or self-employed, value=1; where head of household is unemployed, value=0.
6. *dbuminonbumi*: Dummy for race: Native (*Bumiputra*), value=1; for others, value=0.
7. *dmarital*: Dummy for marital status: for single or widow or separated, value=1; for married, value=0.
8. *hoh\_gen*: Dummy for gender difference: male, value=1; for female, value=0.
9. *dregion1*: Dummy for region: Sabah, value=1; other regions, value=0.
10. *dregion2*: Dummy for region: Sarawak, value=1; other regions, value=0.

The states of Sabah and Sarawak are singled out as separate regions to evaluate the factors related to differences in economic structure. People living in less developed region usually possess more economic disadvantages than those in a more advanced region. It is due to the fact that economic activities and employment opportunities are usually concentrated in the latter.

The results of these analyses are in the form of odd ratios since logistic regression calculates the probability of success over the probability of failure. More useful result can be generated from this process such as the predicted probability of the occurrence of an event. In this case, the result predicts the probability that a household shall continue to be poor, given the set of predictors.

Logistic regression makes no assumption about the distribution of the independent variables. Hence, they do not have to be a normal distribution, a linear relation or of equal variance with each other. Problems associated with bias estimation from collinearity of the independent variables are addressed by calculating tolerance and variance inflation factor (VIF). VIF value of greater than 10 indicates the existence of high collinearity (Stata FAQ 2010). We do not foresee other estimating bias caused by the predictors that can significantly affect our estimation. As recommended by Bewick *et al.* (2005), a significant test of the individual co-efficient will be performed using Wald statistic and Likelihood Ratio Test. A Wald test is based on squared Z statistic with *chi*-square distribution. Since the number of observations in this study is fairly large with 2,264 households, there is no problem associated with small sample size in applying the Wald test. The testing for goodness of fit of the model is done using the Hosmer-lemeshow test which allows any numbers of explanatory variables. The Hosmer-lemeshow statistic evaluates the goodness of fit by creating 10 ordered group subjects and comparing the numbers between the observed and the predicted from the regression. The smaller the differences between the observed and the predicted, the better the model fits.

### *Data*

The data Panel Household Income Survey (PHIS) 2007 is derived from a special panel survey of the HIS that is undertaken

by Department of Statistic, in Malaysia, in 2007. The data involves a total of 2,181 households that have been identified as poor and vulnerable in 2004. The poor is defined as income poor according to PLI in 2004. While, the vulnerable is the household whose income is 20 percent above their PLI. The data collection process involves going back to these same households to get their profiling in 2007. The purpose of this panel survey is to supplement the bi-annual HIS survey which is normally done by the department. Specifically, the availability of the data on poor households across time will enable the government to develop a better approach of eradicating poverty in the country. The reference period for this survey is 12 months. It covers only those living in private dwellings. Similar to HIS, the main components of the data include income, sources of income, demographic characteristic of the head of households such as strata, state, age, gender, educational level and marital status. Employment characteristics of each member are divided into types of activities, categories of occupations and types of industries. The unit of measurement for this test is the household and the predictors are referred as the characteristics of the head of household.

The distribution of the respondents for PHIS 2007 is shown in Table 1. About 18 percent of the respondents are from the urban area; while, the rest is from the rural areas. The male headed household constitutes about 85 percent of the respondents. In terms of poverty status, those who are



poor constitute about 86.5 percent of the respondents and 82 percent of them live in the rural area, in 2004. About 65 percent of these poor has escaped poverty in 2007. As such, the focus of this study is on the balance 35 percent of the respondents who have not been able to get out of poverty. In total, this group makes up more than 90 percent of those are poor in 2007.

There are noticeable similarities and differences with respect to other characteristics of the household. The general level of education has improved over the years where the share of household with low education dropped by 3%. Ironically, the poor population below the productive age of 55 is very high, comprising nearly 83% of total poor households in 2007. Family size matters significantly in determining poverty. It shows similar trend in 2004 and 2007. About 72% of poor households have large family size, defined as family members exceeding 5 headcounts, in 2004. The percentage continues to increase to 83% in 2007.

**FINDINGS**

*Testing Goodness of Fit of the Estimates*

Two sets of logit equations are regressed to determine the best fitted model. The results of the two estimates are shown in Table 1. Model 1 consists of all nine predictors set out in Methodology and Data. Overall, the likelihood ratio, chi-square value of 394.4 and p-value of 0 indicate that this model is much better than an empty model. Based on the table of predicted probability, Model 1 provides 74% corrected classified estimate with a 50% cut-off point for predicted probability. The Hosmer-lemeshow statistics show the value of 4.81 with p-value of 0.78. Therefore, it can be concluded that the predicted values from the model are significantly similar to the observed. Model 2 is constructed by using the actual number of income earners without converting it into dummy as an alternative model. Model 2 provides a value of 73.8% corrected classified estimate with a 50% cut off point for predicted probability.

Comparing the two models, the results are based on Hosmer-lemeshow statistics and Bayesian Information Criterion (BIC)

TABLE 1  
Distribution of Respondents by Gender and Poverty Status

Strata	Male	Female	Non_poor 2004	Poor 2004	Non_poor 2007	Poor 2007	Total
Urban	378	83	53	408	333	128	461
%	20.42	25.15	17.97	21.63	22.67	17.98	21.14
Rural	1,473	247	242	1,478	1,136	584	1,720
%	79.58	74.85	82	78	77.33	82.02	78.86
Total	1,851	330	295	1,886	1,469	712	2,181
%	100	100	100	100	100	100	100

indicates that Model 2 is preferred. The value of Hosmer-lemeshow statistics increases by 0.59; while, the McFadden's Adj R<sup>2</sup> improves to 0.168. The BIC has a difference in value of 86.749 which provides a very strong support for Model 2. The problem of collinearity among predictors does not exist as all the values of VIF are less than 10.

Test statistics for each coefficient in Model 1 reveals that eight out of 10 parameters are significantly different from

zero, based on Wald statistic at 5% significant level. Age factor becomes insignificant in Model 2. These factors are directly or indirectly related to the opportunity or ability to earn income. Age is closely linked with experience. The more experience one acquires, the greater opportunity he or she has in securing employment and increasing productivity. In the case of Romania, Molnar *et al.* (2006), young people aged between 15-24 years and children aged between 0-14 years are more frequently

TABLE 2  
Results of the regression

Model 1 Logistic regression				Model 2 Logistic regression		
Number of obs		2264				2264
LR chi2(10)		413.73				500.68
Prob > chi2		0				0
Log likelihood		-1215				-1171.6
Pseudo R2		0.1455				0.1760
povind_1	Coef.	Z	P> z	Coef.	z	P> z
hoh_age	-.0136713	-2.62	0.009 *	-.008486	-1.60	0.109
dno_inc	1.47422	13.18	0*			
no_incr				-1.04316	-14.52	0.0000*
hh_size	.2866388	12.27	0*	0.3712379	14.43	0.002*
dcert	.3100447	2.65	0.008*	.3678757	3.09	0*
dactivity	-.7361022	-3.98	0*	-.8253493	-4.35	0*
dbuminonbumi	.3815818	2.05	0.041*	.3913763	2.07	0.038*
dmarital	-.0512555	-0.25	0.800	-.1836416	-0.90	.369
hoh_gen	.2710113	-1.40	0.160	-.2209443	-1.14	0.255
dregion1	.7724938	6.79	0*	.8639514	7.41	0*
dregion2	.4606124	2.56	0.011*	.6259698	3.42	0.001*
_cons	-2.568273	-4.54	0*	-.7779216	-1.41	-0.157
* Significant at 5%						
Hosmer-Lemeshow chi2(8)			4.23			4.82
Prob > chi2			0.8355			0.7764
BIC'			-423.230			-336.481

exposed to poverty risk with percentage of 31.9% and 29.9%; respectively. The level of education and the status of employment are among the main determinants that affect the income flow of family. Naturally, with better education, the chances of engaging a better paid job will be higher. Having a stable employment, either self-employed or employed, can more or less ensure a steady flow of income for the family. Similar to previous studies (UNDP 2007; Szeles & Tache 2008; Decker 2008), we also find that ethnic background does play an important role in determining poverty. However, a unique finding of this study is that marital status and gender of the household are found not to be statistically significant. It contrasts with studies by Szeles and Tache (2008) that identify single mother with children, single parents and mono-active households as the most vulnerable deprived group. With respect to gender, Bigsten and Shimeless (2008) discover that male headed household have bigger chances to escape transition poverty in Ethiopia. One possible explanation for the different result with respect to gender in Malaysia is that, gender is not a critical issue in this country. Malaysian women labor force participation rate is among the highest in Asia. It reaches as high as 47% in 2000 (ILO, 2003). This is supported by the fact that a total of 34% of women aged 15 years and above complete secondary school in 2000 (Barro and Lee, 2010). The significant of regional dummies indicates the importance of spatial economic factors in Malaysia.

#### *Probability Estimates of the Predictors*

The next step is to interpret the predictors with regard to probability of being poor. It is accomplished by using Model 2 since it scores better. Co-efficient of the model can be interpreted as the log odd of being poor with one unit increase in the value of the predictors. Given the categorical nature of the variables, the direct interpretation does not make much sense. Thus, we proceed to interpret the probability of falling into poverty given the conditions of the predictors.

The probability of the household continues living in poverty for each of the determinants given that the values of other determinants are held at their means is described below. The sign of the probabilities for most of the predictors is consistent with the previous findings. The age of the head of household denotes that, the younger the head of the household, the higher the probability for him or her to be poor. It implies that older head of household has a better opportunity to get out of the poverty spell. As one gets older and more experienced, he or she stands a better chance of earning more income. The probability of remaining poor is predicted to be between 0.38 to 0.29 if the head of household aged between 16 to 40 years. The probability decreases between the range of 0.26 and 0.22 if the head of household aged between 60 to 80 years. This result is not contrary to the higher share of productive age among the poor as stated earlier. The number of income recipients in a household also plays a significant role in determining the

poverty status. For example, the probability is reduced to less than 0.10 when the number of people earning an income in the household is four as compared to 0.50 when there is only a single income earner in the household.

As the number of people living in the house increases, so does the probability of being poor. The predicted value of remaining poor for a household with only one member is 0.05. The value increases to 0.50 when the household has 9 members. The value for a household is almost 0.99 when the household size increases to 21. Bigsten and Shimeles (2008) and Molnar *et al.* (2006) have recorded similar findings. In addition, the household will continue to be poor if there is no improvement in their level of education. This condition is observed where the probability to be poor is as low as 0.23 when the head of household has at least completed secondary school. In comparison, the probability is 0.3 when he or she is without any school certificate. Lanzi (2007) has noted the importance of education in empowering individuals to improve their capabilities. In their analysis, Molnar *et al.* (2006) have pointed that incidence of poverty among head of household without schooling is 55%. As the level of general education among the respondents of this study improved between the years of 2004 to 2007, fewer of them have remained trapped in poverty by 2007. It is also discovered that the employment status of the head of household plays an important determinant of poverty. The probability of

remaining in poor condition decreases when the head of household is either employed or self-employed. The value of being in this category is 0.44 compared to 0.27 if he or she is without any specific employment.

Finally, place of residence has an impact on the probability of being poor. Household located in Peninsular Malaysia has much lesser probability of being poor as compared to those in Sabah or Sarawak. The probability that a household will continue to be in poverty in Sabah and Sarawak is about 0.42. In contrast, households located in other regions have the probability of about 0.2. From spatial perspective, we can relate the reasons to poverty and growth nexus: poverty tends to be higher in poor states. The economic status of Sabah or Sarawak is lower compared to other states in the country. In 2007, the mean monthly household income for each state in East Malaysia has shown various statistical numbers. For example, the mean monthly household income for Sabah reached RM2,866 and RM3,349 for Sarawak. In comparison, states in central region of Peninsular have recorded higher mean income such as RM3,421 for Melaka, RM5,322 for Kuala Lumpur and RM5,580 for Selangor. Both Sabah and Sarawak have lower economic status; thus, provide less employment opportunity.

## **CONCLUSION AND POLICY RECOMMENDATIONS**

The results of this study provide new insights about poverty study that are

related to dynamic of poverty in Malaysia. After taking the element of time into consideration, we can infer that households in this country are prone to be persistently poor due to the key factors related to household characteristics and location of residence. These factors include the number of income recipients in the household, size of household, educational achievement of the head of household and his or her employment status, ethnicity, and the region of household. These findings are consistent with earlier result from the study by UNDP for Malaysia based on static approach in 2007. Thus, some policy recommendations can be drawn from this study. They do not only address the issues of poverty but also facilitate the government objective to achieve robust inclusive development.

First, we would like to propose that government embarks on evaluating poverty from the perspective of multi-dimensional poverty framework as well as looking at the issues of social exclusion. The multi-dimensional poverty evaluates wellbeing of the population. It is directly based on specific dimensions such as education, health and standard of living that focus on strengthening the capability and functions of households. On the other hand, the social exclusion addresses issues that are related to access to household needs from the public and community that can improve capability of the households. This approach will be more meaningful since the persistent poor will also have a high tendency to be poor or deprived in these dimensions as well as being socially excluded. By doing so, the

programs for poverty eradications will be apt to fulfill the government's inclusive development policy.

Second, policy towards achieving regional balance between Peninsular Malaysia and East Malaysia should be given the highest priority since these two states in East Malaysia are in a dire situation with higher occurrence of persistent poverty relative to other states in the country. Parallel to this, more concerted efforts should be directed towards implementing programs and projects that are micro-targeting in nature. Micro-targeting allows the government to look at the distinct features of the socio-economic characteristics of the society in Sabah and Sarawak and how they differ from the rest of the states in Peninsular Malaysia.

Third, with the presence of persistent poverty, we strongly suggest that programs designed to alleviate poverty should be of developmental in nature instead of welfare types of assistance. While the existing programs should be improved and strengthened, new employment generating activities must be created. The launching of the Agropolitan projects in various 'corridor' developments are the strategies into right direction. Related government agencies should undertake these initiatives in delivering a package that includes providing initial capital either direct grant or soft loan, as well as, providing training and support services to the targeted group. The sustainability of these initiatives over a long period of time must be maintained to help the economically disadvantaged groups

secure more stable income overtime; thus, escape out of poverty.

Fourth, there should be specific programmes targeting the young head of household within the age range of 18 to 40 years and with larger number of dependents. This is due to the group's high tendency remaining persistently poor. These programmes should be extended to the members of the household. Provide them with the opportunities to increase the number of income earners in their families.

Finally, among current programmes that need to be improved and further strengthened is skilled training or re-training. Training has huge potential to enable the trained members of poor households to participate effectively in the labor force. In current situation, Malaysia has an influx of cheap foreign labors. These proposed measures are exceptionally crucial and the latest policy revision on the employment of foreign labors in Malaysia must be drawn towards the advantage of domestic labors.

## REFERENCES

- Barro, R., & Lee, J. W., (2010). *A new data set of educational attainment in the world, 1950-2010*. NBER Working Paper No.15902. Cambridge, MA.
- Betti, G., D'Agostino, A., & Neri, L. (2003). Panel regression models for measuring multidimensional poverty dynamics. *Statistical methods and application*, 11,359-369.
- Bewick, V., Cheek, L., & Ball, J. (2005). Statistics review 14: Logistic regression. *Critical care*, 9(1),112-118.
- Bigsten, A., & Shimeles, A. (2008). Poverty transition and persistence in Ethiopia:1994–2004. *World development*, 36(9), 1559–1584.
- Cotter, D. A. (2002). Poor people in poor places: Local opportunity structures and household poverty. *Rural Sociology*, 67(4), 534–555.
- Deaton, A.(1997). *The analysis of household surveys: A microeconomic approach to development policy*. Baltimore: The Johns Hopkins University Press.
- Deininger, K., & Okidi, J. (2003). Growth and poverty reduction in Uganda, 1999-2000: Panel Data Evidence. *Development Policy Review*, 21(4), 481-509.
- Dekkers, G. J. M. (2008). Are you unhappy? Then you are poor! Multi-dimensional poverty in Belgium. *International Journal of Sociology and Social Policy*, 28, 502-515.
- Economic Planning Unit. (2006). *Ninth Malaysia Plan 2006-2010*. Putrajaya, Malaysia: Economic Planning Unit.
- Economic Planning Unit. (2008). *Mid-term review of the ninth Malaysia Plan 2006-2010*. Putrajaya, Malaysia: Economic Planning Unit.
- Economic Planning Unit. (2010). *Tenth Malaysia Plan 2010-2015*. Putrajaya, Malaysia: Economic Planning Unit.
- Giang, L. T., & Pfau, W.D. (2009). Vulnerability of Vietnamese elderly to poverty: Determinants and policy implications. *Asian Economic Journal*, 23(4), 19-437.
- Hulme, D., & Shepherd, A. (2003). Conceptualizing chronic poverty. *World Development*, 31, 403-423.
- ILO. 2003. *Key indicators of the Labour Market 2003-2004*.(Geneva). Retrieved March 05, 2011, from <http://www.ilo.org/kilm> Jalan, J., & Ravallion,



- M. (1998). Transient poverty in post reform rural China. *Journal of Comparative Economics*, 26, 38-357.
- McNabb, R., & Said, R. (2013). Trade Openness and Wage Inequality: Evidence for Malaysia. *The Journal of Development Studies*, 49(8), 1118-1132.
- Mendola, D., Busetta, A., & Milito, A. M. (2009). *The Importance of consecutive spells of poverty: A longitudinal poverty index*. IRISS working paper 2009-21, CEPS/INSTEAD, Differdange, Luxembourg.
- Mok, T. Y., Gan, C., & Sanyal, A. (2007). The determinants of urban household poverty in Malaysia. *Journal of Social Sciences*, 3(4), 190-196.
- Molnar, M., Panduru, F., Vasile, A., & Duma, V.(2006). Multidimensional fuzzy set approach poverty estimates in Romania. In Lemmi, A. and Betti, G.(Ed.), *Fuzzy set approach to multidimensional poverty measurement*, New York, Springer.
- Paugam, S. (1995). The spiral of precariousness: A multidimensional approach to the process of social disqualification in France. In G. Groom (Ed.), *Beyond the threshold: The Measurement and Analysis of Social Exclusion*, pp.49–79, Bristol: Policy Press.
- Pramanik, A. H., Haneef, M. A., Meera, A. K., & Yusoff, W. W. S. (2008), *Poverty with Many Faces: A Case Study of Malaysia*, International Islamic University Malaysia.
- United Nations Development Programme (UNDP). (2007). *Malaysia: measuring and monitoring poverty and inequality*, United Nations Development Programme, Malaysia.
- Ragayah, M. Z., & Krongkaew, M. (2008). *Income distribution and sustainable economic development in East Asia: A comparative analysis*, Penerbit Universiti Kebangsaan Malaysia, Bangi.
- Salehi-Isfahania, D., & Majbouri, M. (2010). Mobility and the dynamics of poverty in Iran: Evidence from the 1992-1995 panel survey. *The quarterly review of economics and finance*, article in press, doi:10.1016/j.qref.2010.04.001
- Shireen, M. H. (1998). *Income Inequality and Poverty in Malaysia*, Rowman and Littlefield Publishers, Lanham, Md.
- Stata FAQ.(2010). *How can I check for collinearity in survey regression*, UCLA, Academic Technology Services, Statistical Consulting Group, Retrieved October 13, 2010 from <http://www.ats.ucla.edu/stat/stata/faq/stata/svycollin.htm>
- Szeles, M. R., & Tache, I. (2008). The forms and determinants of social exclusion in the European Union: The case of Luxemburg. *International Advance Economic Research*, 14, 369-380, published online: 5 August 2008.
- Todaro, M. P., & Smith, S. C. (2009). *Economic Development* (10<sup>th</sup> ed), Pearson Addison Wesley, Essex, England.
- World Bank. (2007). *Poverty manual for poverty analysis course*. World Bank, Washington D.C.

