

Poverty Measurement and Choice of Poverty Reduction Strategy: The Importance of Poverty Measurement in Determining the Right Strategy*Rudy Badrudin¹, Ari Warokka²¹STIE YKPN School of Business Yogyakarta, Indonesia²Universiti Utara Malaysia, Malaysia

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Abstract: This study aimed at testing the poverty measurement and the choice of poverty reduction strategy by using the data in four regencies and one municipal in Special Province of Yogyakarta (Indonesia). The study observed the number of poor people in those regions for eight-year periods (2001-2008) after the Law of Local Government Autonomy was in force in 2000. By using averagely 140 observations for each regency and municipal and employing ANOVA 2-Ways Analysis, the empirical results surprisingly revealed that only one regency and municipal produced nearly correct measurement on poverty. As to inter-temporal comparisons of the poverty number for each region, the statistical testing validated the inconsistency of poverty measure used. It gave evidence that the choice of poverty lines and poverty measures was a product of local government's arbitrary decision, and of course, based on the finding; it called for robustness analysis of the poverty measurement used by the local government. To this respect, the choice of poverty reduction strategy should be seen as the free-vested interest decision in determining the poverty measurement. It needs a customization strategy based on the measure taken.

Key Words: *Poverty Measurement, Poverty Reduction Strategy, Local Government Autonomy, Poverty Policy*

1. Introduction

As the poverty reduction is one of the principal objectives of development and becomes the objective of development in most developing countries, the need to understand what it means, how to measure it, and how it relates to development patterns and policy choices is an underlying matter (Laderchi, Saith & Stewart, 2003). It is important to refer the justification of Ravallion (1998), who argues, "A credible measure of poverty can be a powerful instrument for focusing the attention of policy makers on the living conditions of the poor." Back to the successful story of Indonesia's transformation process during the period 1975-1995, the Indonesian government's formulation of a "two-part strategy" of labor-demanding growth and social service provisioning, in which the labor demanding growth driven by rural productivity increases and expansion of labor-intensive manufacturing, effected pro-agricultural policies, openness and infrastructure, was a big influence of World Bank poverty reduction policies. However, the failures in reducing poverty after the Asian financial crisis 1997 and the implementation of local autonomy programs 2004 had made poverty measurement and its reduction strategies a centre of questions. The recent situation reveals that the poverty panorama just exposes the numbers' poverty measurement basing on solely income or economic problem. Furthermore, the poverty problems need to be viewed from the aspects of failure in the fulfillment of basic rights, as well as injustice and inequality. Those problems mostly derived from the prior one, such as lack of adequate and proper food, limited access and low quality of health services, education, job opportunities, housing services, clean water and sanitation, lack of certainty of ownership and control of land, natural resources and the deterioration of the environment, and lack of participation. In the context of practice, the measurement of poverty has become confused with the meaning of poverty (Atkinson, 1987). The proposed and taken policy seems to have lost sight of the fact that the income at point-in-time is a proxy for poverty rather than necessarily the reality of poverty (Alkire, 2008). The focus for poverty strategies and poverty targets has become the dividing-line for those households, which fall beneath the income threshold. Consequently, the solution is read as lifting those people over the income threshold to affect a transition from poverty to non-poverty (Osberg & Xu, 2008). Therefore, in referring to prior studies, it is important to review and reformulate the measurement of poverty into the contextual analysis (Eccles & Pyburn, 1992) by studying whether the common characteristics used to determine the poverty level still take account or not. Indonesia, the most inhabited developing country in Southeast Asian, becomes a suitable place to re-study the determinants of poverty that becomes the base for dividing the poverty line. In the prior studies, a densely populated

developing country is identical with poverty (Chen & Ravallion, 2003). By using the poverty measurement used in four regencies and one municipal in Special Province of Yogyakarta (Indonesia), this study is predominantly to take a closer look on the concepts and theories of poverty and its reduction strategies. The survey here is to analyze the differential effect of proposed characteristics of each region and explore whether the poverty criteria play important role or not. It will compare the empirical findings from the prior studies, which generally do not take into account the common characteristic used and poverty criteria when analyzing the effect of poverty reduction strategies as stated by Sandbrook (2000). If those characteristics and criteria significantly differentiate and determine the strategies, thus, the implemented program should be successful, unless, it could be reversed. Therefore, the remainder of the paper is organized around two prominent hypotheses about the differentiating effect of poverty characteristics and criteria. The methodology and research model is described in Section 3, followed by the research results and discussion in Section 4. We provide some concluding remarks in Section 5.

2. Literature Review

World Bank (2005) defines “poverty as the deprivation in well-being.” The concept of well-being itself can be measured by an individual’s possession of income, health, nutrition, education, assets, housing, and certain rights in a society such as freedom of speech. It is also a lack of opportunities, powerlessness, and vulnerability. However, in analyzing and fighting poverty, the determination of causes of poverty is the key (World Bank, 2005). We need to find out who is poor and examine why they are poor. In order to determine the factors behind poverty it is necessary to examine in a more critical manner the nature of poverty, which is known as poverty profile.

Poverty Profile: A poverty profile describes the pattern of poverty, but is not principally concerned with explaining its causes (World Bank Institute, 2005). However, there are some key causes or characteristics, which are in the prior studies believed as the roots of poverty:

- Regional-level characteristics, these include vulnerability to flooding or typhoons; remoteness; quality of governance; property rights and their enforcement.
- Community level characteristics, these include the availability of infrastructure (roads, water, and electricity) and services (health, education), proximity to markets, and social relationships.
- Household and individual characteristics, among the most important are:
 - ✓ Demographic: household size, age structure, dependency ratio, gender of the household head.
 - ✓ Economic: employment status, hours worked, property owned.
 - ✓ Social: health and nutritional status, education, shelter.

At the regional level, there are numerous characteristics that might be associated with poverty, and the relationship of these characteristics is country-specific (Anh, 1997). In general, however, poverty is high in areas characterized by geographical isolation, a despicable resource base, low rainfall, and other inhospitable climatic conditions (Kilkenny, 2004). In many parts of the world, the remoteness of agricultural areas – which lower the price farmers get for their goods and raise the price they pay for purchases, due to lofty transport costs – is responsible for generating food insecurity among the poor (Dao, 2004). Inadequate public services, weak communications and infrastructure, as well as underdeveloped markets are dominant features of life in rural developing countries, as in many other parts of the world, and clearly contribute to poverty. At the community-level characteristics, there are varied determinants that may be associated with poverty for households in that community, mainly infrastructure is the major one (Briceno-Garmendia, Antonio, & Shafik, 2004). Indicators of infrastructure development that have often been used in econometric exercises include proximity to paved roads, whether or not the community has electricity, proximity to large markets, availability of schools and medical clinics in the area, and distance to local administrative centres. Other indicators of community-level characteristics include average human-resource development, access to employment, social mobility and representation, and land distribution (Kalirajan & Singh, 2009). Meanwhile, in household and individual-level characteristics, some of the important characteristics in this category would include the age structure of household members, education, gender of the household head, and the extent of participation in the labour force. In recent times, other components that fall under this category have included domestic violence prevention, and gender-based, anti-discrimination policies. In relating to those characteristics, there are two main ways of presenting a poverty profile. The first (“type A”) gives the incidence of poverty or other poverty measure(s) for each sub-group defined in terms of some

characteristic, such as place of residence. The second ("type B") gives the incidence of characteristics among sub-groups defined in terms of their poverty status, such as "poor" and "non-poor".

Poverty Reduction Policies and Strategies: To understand the poverty profile is the prerequisite in formulating and planning the poverty reduction policies and strategies. If a policy-maker ignores the nature of poverty in his region, he will be soon in nowhere situation. Poverty profile is the basis for dividing the poor people into the target groups. In this paper, we follow the World Bank's guideline on poverty reduction strategy. The World Bank (2005) classifies its anti-poverty activities into three groups:

- ✓ Fostering opportunity – through well functioning and internationally open markets, and investments in infrastructure and education.
- ✓ Facilitating empowerment, which is the extent to including people in the decision-making process. This requires government accountability, a strong media, local organizational capacity, and mechanisms for participation in making decisions.
- ✓ Addressing income security, which it tackles the problem of vulnerability? This calls for insurance programs, disaster-relief procedures, and a solid public health infrastructure.

The World Bank (2005) believes that well-functioning markets are important in generating sustainable growth and expanding an opportunity for poor people because poor people rely on formal and informal markets to sell their labor and products, to finance their investments, and to insure against risks. For example, recent studies have examined the impact of market-friendly policies – such as openness to international trade, low inflation, a moderate-size government, and strong rule of law – on the incomes of poor people in a large cross-country sample. The World Bank (2005) argues that creating more opportunities involves complementary actions to stimulate overall growth, make markets work for poor people, and build their assets, including addressing inequalities in the distribution of endowments such as education. Meanwhile, in the empowerment, the underlying premise is that a lack of representation in the process of policy-making, due to social and institutional barriers, has impeded indigent people's access to market opportunities and to public sector services. It follows that empowerment – defined succinctly as "including people, who were previously excluded, in the decision-making process" – should help. To empower poor people, at least, there are three policies needed to facilitate active collaboration among poor and other groups in society (Anand & Ravallion, 1993). First, it is the strengthening the participation of poor people in political processes and local decision-making. Second, it supports the changes in governance that make public administration, legal institutions, and public service delivery more efficient and accountable for all citizens. Third, it should remove the social barriers that result from distinctions of gender, ethnicity, race, and social status. To tackle the vulnerability problem in which poor people are exposed to a wide array of risks that makes them vulnerable to income shocks and losses of well-being, it is important to support policies that reduce indigent people's vulnerability to ill health, economic shocks, natural disasters, and violence (Alderman & Paxson, 1994). At the same time, it enhances well-being on its own and encourages investment in human capital and in higher-risk, higher-return activities as well.

According to the World Bank (2005), national programs to manage economy-wide shocks and effective mechanisms to reduce the risks faced by poor people, as well as helping them cope with adverse shocks when they occur, are useful. Appropriate measures might include:

- Formulating programs to helping poor people manage risk. Micro-insurance programs, public works programs and food transfer programs may be mixed with other mechanisms to deliver more effective risk management.
- Developing national programs to prevent and respond to macro shocks—financial or natural.
- Supporting minority rights and providing the institutional basis for peaceful conflict resolution, to help prevent civil conflict and mobilize more resources for productive activities.
- Tackling health problems, including widespread illnesses such as malaria and tuberculosis, as well as moderately common but serious conditions such as HIV/AIDS.

Therefore, any governments, which intend to conduct its poverty reduction strategies, should consider the suggested measures in classifying the poor people, and adjust it correspondingly. An appropriate classification is the prerequisite for better strategies.

The Sample's Poverty Profile and Hypotheses Development: The Yogyakarta Special Province's poverty profile, as the sample data set, reveals the same pattern between Gini's ratio and World Bank's inequality indicators, in which the gap of income inequality becomes wider. If the Gini coefficient is 0, it corresponds with perfect equality (where everyone has the same income), and if it is 1, it corresponds

with perfect inequality (where one person has all the income—and everyone else has zero incomes). According to the Oshima's Gini Index (Oshima, 1998), the Yogyakarta Special Province's Gini coefficient indicates a moderated income inequality, which is laid in the range of 0.3 to 0.5 (Table 1).

Table 1: The Yogyakarta Special Province's Gini Coefficient (2003-2008)

Year	Gini Ratio
2003	0,3440
2004	0,3727
2005	0,3867
2006	0,3684
2007	0,3263
2008	0,3159

Source: Indonesian Central Agency on Statistic.
Notes: low ≤ 0.3 ; moderate = 0.3–0.5; high $\geq 0, 5$

In March 2008, the poverty profile revealed that the poor people distribution between rural and urban areas are neatly equal, which are 52.60% and 47.40% respectively (BPS Yogyakarta Special Province, 2008). Most of the poor people or 472.082 households (80.29%) are farmers with micro-scale land ownership. In comparing to the national poverty level, the poverty rate in the Yogyakarta Special Province is still higher than the national one. This condition could be observed starting in 2002, in which the number of Yogyakarta's poor people reaches 20.14% of the population, while at the domestic level is only 18.20%. Until March 2008, the poverty rate in the province is still higher, namely 18.32% compared to the national average is 15.42%. Refer to the geographical profile of the province of Yogyakarta; its regencies and municipal are located in different characteristics. For example, the regency of Sleman is located in on the slopes of fiery Mount Merapi to the North; the regency of Bantul is all the way to the sea to the South; the hill parts of Gunung Kidul regency is to the East, and the low lands of Kulon Progo regency are to the West. The southeastern and southwestern parts are the difficult areas for farmers and contributes to considerable poverty, such as Gunung Kidul regency and Bantul regency. For instance, the Gunung Kidul area in earlier times was heavily forested. However, most of the teak forests have now been removed, and many reforestation projects occur on the western edge of the regency. The regency has been subject to extensive drought and famine within the last hundred years. Water shortages and poverty remain serious problems in the region. Meanwhile, Sleman is heavily agrarian and due to the ash fall from Mount Merapi and easy irrigation, the land in Sleman is very fertile. The soil is thick, with a favorable moisture capacity level; therefore, rice yields are considerably high. We argued that the geographical characteristic played significant role on the poverty level in each regency and municipal of Yogyakarta as revealed in the similar prior studies. Thus, hypothesis 1 is proposed as below:

Hypothesis 1: There is a significant poverty level's difference of each regency and municipal based on the regional characteristic.

To stratify the level of poverty in each region in Indonesia, the Central Agency on Statistic (BPS Indonesia, 2008) divided the poor households into three groups, i.e. chronically poor, transiently poor, and nearly poor. This stratification was adopted by the province government of Yogyakarta to determine the poverty line. The poverty profile based on this category for four regencies and one municipal in Yogyakarta is shown in Table 2.

Table 2: The Poor Households – Regencies and Municipal in Yogyakarta

Regency/ Municipal	District	Category						Total
		Nearly Poor	%	Transiently Poor	%	Chronically Poor	%	
Kulon Progo	88	16,136	37.23%	20,581	47.48%	6,628	15.29%	43,345
Sleman	86	14,185	26.78%	30,571	57.71%	8,220	15.52%	52,976
Gunung Kidul	161	46,300	49.06%	31,091	32.95%	16,980	17.99%	94,371
Bantul	75	21,488	33.37%	35,697	55.44%	7,201	11.18%	64,386
Yogyakarta	45	8,482	43.10%	10,789	54.82%	410	2.08%	19,681
Province of Yogyakarta	455	106,591	38.79%	128,729	46.85%	39,439	14.35%	274,759

Source: Indonesian Central Agency on Statistic (2008).

The Indonesian government in formulating and implementing the Poverty Reduction Policy and Strategy uses this category. The rural poverty lines used to indicate that locating at a mountainous or minority area, lacking better irrigation conditions, a big family size, few physical capital assets, and few lands owned, or making a living only on agriculture would make an agricultural household more susceptible to poverty. Gunung Kidul and Bantul are the examples. Meanwhile, those households whose members are better educated or better trained, as laborers would statistically be less likely to fall into poverty. The municipal of Yogyakarta and Sleman represent this more favorable condition. We argued that the poverty line used by the government to determine the groups of poor households is significant to differentiate the poverty level of each regency and municipal. Thus, hypothesis 2 is proposed as below:

Hypothesis 2: There is a significant poverty level's difference of each regency and municipal based on the poor households' category.

Therefore, by having adequate information on the differences of poverty level of each regency and municipal, the study can contribute to analyze the appropriateness of poverty line determination and the related poverty reduction policies and strategies taken by the local government. If there is no difference in region's poverty level, consequently, the local government has made a mistake in their poverty reduction policies and strategies. The local administrator has ignored the special characteristics of each region, i.e. poverty profile, as the basis for the poverty line that leads to the poverty reduction strategies taken.

3. Results and Research Model

In this paper, the hypotheses' test was done by using ANOVA 2-Ways Analysis, in which 455 districts were observed based on its regional characteristics and the poor households' category used. Firstly, we grouped the characteristics of poverty into regional characteristics and poor households' category. It was to classify each district based on the geographical, economy, and infrastructure facilities. The poor households' category was the number of poor people based on the Indonesian Central Agency on Statistic's classification. Secondly, to test whether there was a significant poverty level's difference of each regency and municipal or not, we employed ANOVA 2-Ways Analysis. This test was to examine the effect category or characteristic used. The results are presented in Table 3.

Table 3: ANOVA 2-Ways Analysis Kulon Progo Regency

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Regional Ch	4728896.991	35	135111.3426	1.000986509	0.485649612	1.590645406
Poor HC	34547565.69	2	17273782.84	127.9746263	4.15128E-24	3.127675601
Error	9448472.981	70	134978.1854			
Total	48724935.66	107				

Sleman Regency

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Regional Ch	7925136.562	50	158502.7312	0.998194087	0.492052957	1.477231314
Poor HC	36299494.21	2	18149747.1	114.3006818	1.46734E-26	3.087295893
Error	15878949.12	100	158789.4912			
Total	60103579.9	152				

Gunung Kidul Regency

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Regional Ch	17698615.11	53	333936.1342	1.002868911	0.484648001	1.461182126
Poor HC	109228403.4	2	54614201.72	164.016048	3.56905E-33	3.082014501
Error	35295969.22	106	332980.8417			
Total	162222987.8	161				

Bantul Regency

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Regional Ch	13324593.57	50	266491.8714	1.002909316	0.484407528	1.477231314
Poor HC	53720401.53	2	26860200.76	101.0850554	9.7146E-25	3.087295893
Error	26571881.14	100	265718.8114			
Total	93616876.24	152				

The Municipal of Yogyakarta

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Regional Ch	2236747.873	41	54554.82617	0.995080315	0.495219287	1.536882272
Poor HC	6024902.587	2	3012451.294	54.94712735	7.25817E-16	3.107891302
Error	4495612.746	82	54824.54568			
Total	12757263.21	125				

Source: Elaborated data from SPSS.

Notes: Regional Ch = Regional Characteristic; Poor HC: Poor Households' Category

The results reveal that there does not exist a significant and different poverty among regencies and municipal in Yogyakarta based on the regional characteristics, which not all F-values are significant. Meanwhile, the poor households' category can differentiate the poverty level in each region, which all F-values are significant. These two poverty stratifications are subject to a common but important drawback: namely, the estimates use the same poverty line for the whole country. Poverty incidence thus may have been underestimated in the rich districts and overestimated in the poor regions because the prices of food and other daily necessities are usually positively related with per-capita incomes. The different poverty lines directly affect the estimates of Yogyakarta's rural and urban population and these in turn may involve different policy implications to fight against Yogyakarta's rural and urban poverty. It implies that the poverty reduction strategy in the province of Yogyakarta cannot be implemented uniformly and massively into all poor households' categories (Behn, 2003; Malina & Selto, 2004; Martinez, 2005; Moullin, 2003). The empirical findings have questioned the poverty reduction strategy (PRS) taken by the government since the Asian Financial Crisis 1997 and the implementation of local autonomy programs. Most of the policies are focused on one aspect of poverty reduction, i.e. household consumption. It does not concern the regional characteristics and poor households' category. Such an approach does not fully comprehend the multi-dimensional problems faced by the poor and miss the root causes of poverty. Poverty reduction programmes and policies are not process-oriented and based on the target's environment. Especially, there is a lack of participation by stakeholders. Therefore, it is not surprised that many poverty reduction programs do not achieve what have been targeted. In this case, the most important stakeholders are the poor themselves, but they are not consulted in programme planning, development, implementation, and monitoring. As a result, ownership is low for the programs and projects. It becomes worse when there are minimal coordination and linkages amongst programs. For example, the links between poverty and the state of the environment are not examined when the government creates the programs. In referring to prior studies, stakeholder participation in the formulation of poverty reduction strategies is increasingly seeing practice; and although there was generally more broadly based engagement than in previous approaches, and most stakeholders involved in the process viewed this as a significant improvement. However, the participatory processes are typically not designed to strengthen existing domestic institutional processes for policy formulation and accountability (e.g. through local authority).

Thus, the next logical consideration would be to develop a set of indicators that measure the contribution and impact of stakeholder engagement in relation to the PRS initiative outcomes. For example, a set of indicators could be developed around:

- Procedural quality, which is measured by evidence/indicators of how the stakeholder engagement was undertaken, and whether it was consistent with its declared process.
- Responsiveness, which is measured by evidence/indicators which demonstrate the organization has learnt from the process of engagement and, crucially, that the learning is put into practice, e.g. through policies and decisions, and

- Quality of outcomes. It measures the indicators/evidence of resulting costs and benefits to the organization and its stakeholders.

Policy implications: Improvements in poverty measurement and public expenditure policy and management are critical for increasing the overall effectiveness of development programs, strengthening governance in general, and increasing transparency and accountability with regard to the use of external assistance, including debt relief (see Pollitt & Bouckaert, 2004). The government should highlight the program's role in ensuring efficient use of public resources, and indicate the extent to which poverty and social impact analysis (PSIA) have affected the authorities' policy choices. The strategy should formulate carefully designed domestic policy reforms that alleviate the obstacles to growth and, together with finer aid flows and the more conducive policies for trade and market access can help countries to achieve more rapid growth and greater poverty reduction.

4. Conclusion

Generally, the ANOVA 2-Ways' results support the proposed hypothesis, where the poor households' stratification can differentiate significantly the poverty level of each district in Yogyakarta. Meanwhile, the regional characteristics do not play a significant role to be discriminate whether the poverty level set by the government takes account or not. The results inform us implicitly the failure of the government's poverty reduction strategy set based on the latter one. The prior poverty reduction strategy, which was massive and uniformly implemented to all districts, had been only led to failure. It was because the strategy had ignored appropriate and specified poverty measurements based on certain factors, such as the region's economic performance as measured by GDP and its socio-cultural factors. At the same time, the results tell us the need of improvements in poverty measurement and public expenditure policy and management. Those determinants are critical for increasing the overall effectiveness of development programs. These findings have opened some opportunities for further studies, by expanding and testing the proposed indicators developed by the World Bank in determining the poverty line, including decentralization and local autonomy as the determinants, and developing models and measurements for poverty reduction strategies that involve the suggested factors.

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