

Economic Evaluation of Poverty Alleviation by the National Program for Community Empowerment in Western Part of Rural Indonesia

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This study is aimed to evaluate community empowerment program known as PNPM Mandiri in terms of block grant allocations whether they are proven to impact poverty reduction in Indonesia. It is documented that economic and agriculture allocation play significant role in alleviating poverty as they are deemed as economical investment for rural entities. Another result suggested that transportation, economic, together with agricultural sector have particular relationship as grouped as economic capital that they could not be separated each other which, one treated to be increase, subsequently other sector will tend to increase as well. However, the notion of human capital personified into social, health, and education budget do not show significantly different due to particular reasons comprising elite dominance, poor healthcare delivery, and unequal expenditure of education distribution within family, respectively. The findings is fruitful in order to project more efficient budget allocation either to diversify variety of PNPM program to fasten and optimize poverty eradication

Key words : community empowerment program, PNPM, economic evaluation, poverty alleviation

1. Introduction

In the midst of development world, MDG is avowed as primary goal for developing countries towards millennium era started in 2000 to 2015. In the framework of achieving MDG, Indonesia particularly established the only nation-wide community-driven development (CDD) program named National Program for Community Empowerment (*Program Nasional Pemberdayaan Masyarakat Mandiri: PNPM Mandiri*) initiated in 2007 to alleviate poverty as well as empower marginalized people. Unlike other CDD program applied Nigeria (*Fadama II* Project) which was implemented 12 states (Nkonya et al. [11]) as well as *The KALAH-CIDSS* operated in 42 poorest provinces in the Philippines (Labonne & Chase [8]), The PNPM Program is aggregately all across nations (34 provinces). This study works in rural (PNPM Rural) because rural settlement has greater capacity for community-level collective action as compared with their urban counterparts (Beard & Dasgupta [2]) as it needed to be examined further. This program is reckoned to alleviate poverty (Syukri et al. [15]) as well as increased consumption per capita by 9.1% compare to the control in 2007-2010 (PNPM [13]). Nevertheless, another problem

may exist coming from school enrollment rate that remain low, which suggested that PNPM Rural has shown insignificant effect in mitigating poverty although it helps reduce poverty in some of regions due to it failed to trigger good local and community governance that disadvantaged people couldn't be easily participated (Syukri et al. [15]; PNPM [13]).

The Decision of PNPM budget allocation disbursed in various development programs is processed in local community meeting, where all citizens can have their idea and aspiration to what sort of development activity the fund will be spent with. As the study of Mansuri & Rao [9] and Fritzen [6] noted that an efficient CDD program requires project-initiated accountability as well as enabling institutional environment such as support from external agent and state, therefore in order to sustain PNPM Rural for better improvement, this research is objected to evaluate its budget allocations whether they proven to impact poverty reduction in Indonesia. Moreover the result might be gauged as a proxy to project next budget allocation optimally to those aspects affecting most to poverty mitigation in order to fasten the poverty eradication as well as diversify type of PNPM into various strategic focus.

Knowing the purpose mentioned previously, the hypotheses in this study are to test whether *Economic capital*, together with *Human capital* improve quality of production that in turn will reduce poverty rate. As well as

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to know whether Energy, Economy, Transportation, and Agriculture allocations are correlated each other as a manifest of *Economic Capital*, which can diminish poverty rate. And the last to investigate Social, Education, and Health has closeness each other and therefore grouped into *Human Capital* that may affect poverty alleviation.

2. Data And Methodology

Raw data for poverty headcount ratio per individual backward districts were collected from Statistics Indonesia (*Badan Pusat Statistik: BPS*) collaborated with *PNPM Simpadu*. Budget allocated towards PNPM activity ranged over multi-facets; such as social, Agriculture, Education, Health, Energy, Economy, and Access/ Infrastructure both in 2007 and 2011 respectively. The provincial CPI and Inflation rate data are also taken in order to adjust nominal value of money to the real basis. Eventually, 48 cleaned observations has been ready to be analyzed.

The analysis is performed by Covariance Structure Analysis, also well known as Structural Equation Model. The procedure operates on a simple covariance matrix in which the fixed classes play the role of variables and the random classes correspond to observations (Bock & Bargmann [3]). Here is the formula for the analysis

$$y_i = \mu + A\xi_i + \varepsilon_i \quad (1)$$

y_i is set of p continuous response observed for a sample of subjects $i = 1, 2, \dots, N$. μ is the population mean. ξ_i explain of $m \times 1$ vector of latent scores for subject i , which has multinormal distribution $N_m(\mathbf{0}, \Phi)$. m is number of constructs. A is a $p \times m$, where $m \leq p$, matrix of known constants of rank $l \leq m$. Each element, a_{jk} , measures the contribution of the k th latent component ($k = 1, 2, \dots, m$) to the j th element ($j = 1, 2, \dots, p$). ε_i is the $p \times 1$ vector for subject i as measurement error which assumed to be distributed as multinormal $N_p(\mathbf{0}, \Psi)$, (Thum [16]).

3. Result And Discussion

As one already discussed in the previous chapter, Covariance Structured Analysis is a kind of Multivariate Analysis that represent a mixture between Multiple Regression and Factor analysis. Following all the procedure, eventually this analysis only supported Western Region of Indonesia that loaded 48 ready data. It is casted Sumatera Island, Java Island, and Nusa Tenggara Island. Some transformation of our exogenous is also performed. Instead

of having difference budgets as the explanatory, we managed to find the difference of amount of budget allocation disseminated per capita. This procedure is conducted in order to smoothen the unit problem that inevitably unveiled during estimation. Moreover, the assessment using difference value makes the data easier to be analyzed so that the matrix formed out of ill-conditioned.

Initially the original proposed model could not be executed due to identification problem. The problem is indicated from uneven number of estimates to number of observation that engaged in. Therefore, re-specification is highly potential to be conducted in order to reduce the form into simpler and estimable output. The first specification model to be conducted is by applying two kinds of latent variables; *Human capital* and Business or *Economic capital*. The former is embarked with the notion that Health together with Education and Social are contingent to embodied HDI (human development index) which is used to gauge human capital status of one certain country (McGillivray [10]). Nevertheless engaging both of two latents altogether has shown poorly dissatisfaction since the model is not adequate and estimable enough to yield the valid result.

After all, by eliminating latent construct of human capital, the final hypothesized path of covariance structure analysis is depicted in Figure 1. Covariance structured analysis has performed following result; the partial test of the analysis has shown a good performance. The *Economic capital* factor has negative sign to poverty rate. It means that by increasing the unit of *Economic capital* compound will contribute to decrease poverty level. Inward the factor compound; the investment in energy, economy, and agriculture generally shows logical and consistent interpretation. Through the nexus intra-latent construct, one can notice the causality/ correlation problem facing the variables. For instance in respect of Economic investment by means of microfinance, the increment of 1% budget allotment per capita (in million rupiah) to transportation investment, will probably increase the budget allotment per capita (in million rupiah) to microfinance as much as 0.31%. And so as agriculture, in parallel agriculture per capita spend will increase as much as 0.76% (in million rupiah). These two variables are deemed to have impressive closeness (covariance) that can be explained from the illustration of the farmer and market access instance. Since this empirical study conducted in rural area, that mostly farmer occupied there, the program decision to where the

money will be spent for is decided by acclamation. Number of famers who ever suffer from agriculture pitfall are unsurprisingly vary and proactively will join the program and deliver development program in irrigation system at the first place. When it aligns with transportation program, the farmer will benefit even more since they have a better access to the market (Hussain & Hanjra [7]).

Table 1. Summary of Covariance Structure Analysis

Path	Result			
	Factor loading	S.E	Z-value	P-value
Economic Capital =~				
Diff_Transportation	1.00			
Diff_Economy	0.31	0.04	2.031	0.04.
Diff_Agriculture	0.76	0.03	3.380	0.01*
Diff_Energy	0.07	0.01	0.505	0.61
Diff_Poverty Rate ~				
Economic Capital	-0.32	9.851	-2.115	0.03*
Diff_Health	-0.16	37.75	-1.278	0.20
Diff_Education ~				
Diff_Poverty Rate	-0.01	0.000	0.098	0.92
Diff_Social ~				
Diff_Poverty Rate	-0.09	0.000	0.973	0.33

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Fit indices: $\chi^2(19) = 107(p = 0.00)$, CFI = 0.32, RMSEA = 0.2759, GFI = 0.72

The Economic interpretation is also addressed into account. When the budget per capita (in million rupiah) for transportation allotment increases 1%, it will tend to increase economy provision per capita budget to 0.31% (in million rupiah). The notion of this idea also promote the previous finding that when people have better access to market, they could enhance their production system, and voluntarily escalate and smoothen their production system through employment and income generating (Olivia & Gibson [12]) either provision of the loan by microfinance of PNPM Rural.

The model illustrated in Figure 1 depicted that the right-handed variables shown insignificant result, as the education and health sectors worked in long run fashion that will not directly yield the return to investment in a short time during this time range of observation (2007-2011).

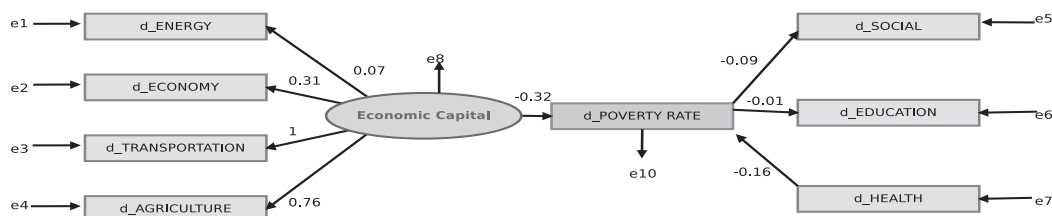


Figure1. Adjusted Covariance Structure Paths with the Factor Loading (e9 is excluded due to specification problem)

Education budget disbursed to the poor did not appear significant that might be rooted from the notion that expenditure for education is not equally distributed to all children in the poor family, since the parents are fond of giving up the money to the smartest kid in favor of higher return to education (Duflo & Banerjee [5]). In term of social aspect, Subejo [14] pinpointed that social capital is formed by information accessibility, proactive coordination for common interest and minimization of optimistic behavior. The phenomena of elite dominance who marginalized the disadvantaged group exacerbated social dynamic within community that resulted in imbalance access of information and violated the value of social capital to combat poverty in rural community itself (Fritzen [6]; Mansuri & Rao [9]). Furthermore, in Health sector, allotment to support public health provider faced such drawbacks in sort of health care delivery and structural barrier to access the service itself. The vulnerable group found difficulty accessing the service while their out of pocket expenditures are higher among other wealthier one. In addition, shortage of medication, absence of doctor, low managerial performance of the staff, are condition that worsen this structural barriers induced insignificance of health development in alleviating poverty (Trani et al. [17])

Albeit Economic capital latent has shown significantly different, however, the energy and transportation extent per se did not sound parallel result. Energy budget allocated to rural electrification need to be implemented with complementary infrastructure as well as educational initiative that enables the poor to diversify their livelihood for productive utility. This initiative is necessary precondition for better and effective electricity power utilization in rural community (Baskoti [1]; Cook [4]). Transportation allotment itself eventhough contribute highest share across other sector, deemed unsuccessful to mitigate poverty. This might be induced with the absence of its supported public transport facility. Rural entities normally rely on scarce and expensive transportation mode named *ojek* that made this inadequate transport mode problem remain unexplained (Syukri et al. [15]).

These findings reveal the appraisal of the program. It

emphasized on the drawbacks and strength of each investment program. To those which have already perform well can be administered efficiently by having its branch single program with specific agenda respect to its concentration (e.g: PNPM Agriculture Respect, etc). While to those which still need revision, this evaluation hopefully can be a guideline to manage more efficient next budgeting strategy in order to mitigate mass poverty.

4. Conclusion

The attempt to evaluate PNPM Rural performance can be summarized on finding that Agriculture and Economic sector perceived to have significant role to reduce poverty level. While the remaining energy, transportation, social, education, and health allocation perceived poor in lowering poverty level due to insufficient complementary-initiative infrastructure, supporting transportation mode, elite dominance, unequal expenditure of education distribution within family, and poor healthcare delivery, respectively.

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