A Performance Analysis of National Programme for Community Empowerment in Rural Indonesia

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Abstract

Rural empowerment programs have been widely used in Indonesia as a means to accelerate rural development from the human capital perspective. One such rural empowerment program is the Program Nasional Pemberdayaan Masyarakat Perdesaan (PNPM) [National Program for Community Empowerment]. As much as Rp 64.87 trillion (US $4.8 billion) has been spent delivering this program across the country. Nevertheless, very few assessments have been conducted to assess the effectiveness of this national program. This study attempts to evaluate the program in Bandung Regency in Indonesia. Using data envelopment analysis (DEA), this study explores the effectiveness of the empowerment program by measuring its inputs and outputs. Using data from sub districts and villages, the low efficiency score of the program reveals inefficiencies of input and misallocation of budget. This paper also describes some lessons learned for rural development program in Indonesia.

Keywords: rural development, data envelopment analysis (DEA), efficiency, rural empowerment program.

Introduction

The early 2000s marked the beginning of the reform era in Indonesia. Since then, the country has embarked on a new approach in its rural development policy. The centralistic or top-down approach that was practiced during Soeharto’s administration has now been replaced by a decentralistic or bottom-up approach. Even though the centralistic approach might have advantages in terms of management control and uniformity (Besley and Coate, 2003), it also has drawbacks due to the lack of local participation. Besley and Coate (2003) further argue that a centralized system suffers drawbacks from a ‘one size fits all’ syndrome that does not reflect local needs. In addition, the top-down approach might widen the regional disparity among regions and poverty levels (Demaziere and Wilson, 1995; Baylis and Smith, 2005).

The bottom-up approach could be considered the role model of rural development. It has shifted the development process from a holistic one to a localized one, and it emphasizes an inductive process (Mohan and Stokke, 2000). Additionally, the bottom-up approach places people at the centre of development or makes it ‘people
Various mechanisms to implement the bottom-up approach have been put in place. One such mechanism is through the development of an empowerment programme both for human resource capacity building and regarding financial resources. Even though some authors such as White (2004) argue that an empowerment programme should be viewed in a broader context, others such as Schenck and Louw (1995) and Mohan and Stokke (2000) agree that an empowerment programme could deliver a better output in terms of rural development (Prato and Longo, 2012; Rahimi, 2015; Rappaport, 1981).

Empowerment is the process by which people increase their personal power in order to achieve their expected needs and improve their condition (Solomon, 1976; Staples, 1990; Mohapatra, 2016; Medatwal, 2015). Abbott (1995) extends the notion of empowerment by stating that empowerment is often accompanied by participation. These two concepts could be used as a twin strategy to promote people-centred development (Samah and Aref, 2009). From these perspectives, empowerment is an effective tool to enhance rural development and it is considered the bottom-up approach to development.

Given this advantage of empowerment approach, the Indonesian government launched a rural empowerment programme in 2007 through various schemes. Among these schemes, the 'Programme Nasional Pemberdayaan Masyarakat (PNPM) Mandiri Perdesaan' (National Programme for Community Empowerment in Rural Areas) has been widely implemented (Programme Nasional Pemberdayaan Masyarakat Mandiri Perdesaan, 2009). The programme later was strengthened by Ministerial regulations in 2007 and 2008. In 2007, the Ministry of Home Affairs issued Ministerial Regulation Number 66/2007 on rural development planning. This regulation was then followed by a circular titled Home Affair Ministry Number 414.2/1408/PMD of 2008 about the guidelines of rural development using a participatory approach. This circular, along with the Ministerial decree, have become the legal foundation of PNPM Mandiri in Indonesia.

In order to implement the policy of rural empowerment, the central government has allocated as much as Rp 64.87 trillion ($4.8 billion) to execute the programme (Ditjen PMD, 2014). Despite this large allocation of funds and the fact that policy makers need some feedback to evaluate the programme so that it can be scaled up to encompass a wider geographic area, evaluations on the effectiveness of this programme are few. In addition, the evaluation of empowerment and other rural development programmes is required in order to allocate resources better (Vennesland, 2005; Bartik, 2002). Furthermore, even though the programme had been formally terminated by the new administration in 2014, the impact as well as consequences of the programme in the field cannot be ignored. Several issues such as accountability and transparency of state funds, assets management from PNPM, and other crucial issues such as unemployment urgently need to be addressed. It is within the objective of this paper to address such critical questions.

**Literature Review**

**Brief Overview of the National Programme for Community Empowerment in Rural Areas Introduction**

The rural community empowerment programme in Indonesia was developed from a series of poverty alleviation and rural development programmes. In 1994, the central government launched the ‘Programme Inpres Desa Tertinggal’ (Rural Disadvantage Instructions Presidential Programme) (BAPPENAS, 1994; Akita and Szeto, 2000). This programme was then transformed into more specific programmes such as rural supporting infrastructure programmes, subdistrict development programmes, rural infrastructure programmes, community empowerment and
regional government projects, and interregional integrated development programmes (BAPPENAS, 2013). All of these programmes were part of a government effort to accelerate rural development, and at the same time, invest in human development through empowerment of the rural community.

Among other rural development programmes, the community self-empowerment programme known as ‘PNPM Mandiri’ is the most popular from the rural perspective. This scheme was a further development of the Subdistricts Development Programme (PPK), which was established in 1998 (PNPM Mandiri Perdesaan, 2009). Launched on April 30, 2007, by the President of the Republic of Indonesia in the city of Palu, Central Sulawesi, the PNPM Mandiri programme was designed to provide job opportunities and local economic development, open up rural isolation, and enhance local capacity or empowerment (PNPM Mandiri Perdesaan, 2009).

The various types of PNPM Mandiri include Rural PNPM Mandiri, Urban PNPM Mandiri, Agribusiness PNPM Mandiri, and Tourism PNPM Mandiri. Rural PNPM Mandiri was implemented through the provision of financial resources by the means of revolving funds and micro credits to develop economic activities for poor people (PNPM Mandiri Perdesaan, 2009). The Indonesian rural PNPMs, as of 2014, had covered 5,300 subdistricts and 401 districts in 33 provinces (BPMPD, 2014).

One of the reasons why the PNPM Mandiri is popular in Indonesia is that it establishes the subdistricts as the centres of authority (Landa et al., 2012). They have full authority to harmonize the planning, execution, and control of the programme. The community makes the decision to develop a specific policy to deliver the programme. In other words, the rural PNPM is a people-centred programme of rural development (Schenck and Louw, 1995). The rural PNPM upholds the universal values of human rights, local wisdom, local culture, and participation in the process, and it accommodates local knowledge and local characteristics programme (World Bank, 2012). The principles of accountability and transparency are adopted in the programme so that every activity is accountable to the public (World Bank, 2012). Thus, the rural PNPM serves as an example regarding how or how not to run a development programme at a lower level programme.

Various qualitative assessments have been carried out regarding rural PNPM Mandiri in Indonesia. Syukri et al. (2013), for example, show that, even though rural PNPMs in East Java, West Sumatera, and South Sulawesi could generally be categorized as well performed open menu programmes (‘open menu’ means the community can choose the programme according to their own need), the programmes did not significantly address poverty issues in rural areas. Not all rural areas in the regions indicated reduction in the number of poor people. Similarly, transparency and accountability in rural governance were lacking.

Another study by Witasari (2012) shows that the rural PNPM programme tends to be spatial and programme biased, meaning that the programme tends to concentrate in certain areas or certain types of programmes have been deliberately chosen by authorities. In addition, in their study of rural PNPM in South Borneo, Ridwan and Nasrpani (2014) criticized the programme regarding the lack of communication to increase local participation and capacity building.

Rural PNPM Bandung Regency in West Java is an active rural PNPM project that involves 13 subdistricts (Figure 1). The programme is essentially a continuation of the previous PPK subdistrict development programme. Among the 13 subdistricts, two have been classified as advanced rural, so their programmes have been transferred to the city PNPM (BPMPD Bandung Regency, 2014). The remaining subdistricts currently involved in the rural PNPM project received more than Rp 21 billion from 2008 to 2013 (US $1.6 million in total) (BPMPD Bandung Regency,
The breakdown of activities related to funding from the programme is shown in Table 1.

Table 1. Details of the PNPM Rural Fund Allocation by Type of Activity

<table>
<thead>
<tr>
<th>No.</th>
<th>Programme</th>
<th>Fiscal Year 2008-2012 (Rp)</th>
<th>Fiscal Year 2013 (Rp)</th>
<th>Total (Rp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Public infrastructure</td>
<td>37,643,935,600</td>
<td>7,913,699,850</td>
<td>45,557,635,450</td>
</tr>
<tr>
<td>2</td>
<td>Education</td>
<td>16,912,110,450</td>
<td>5,680,222,850</td>
<td>22,592,333,300</td>
</tr>
<tr>
<td>3</td>
<td>Health</td>
<td>15,130,057,550</td>
<td>4,441,282,500</td>
<td>19,571,340,050</td>
</tr>
<tr>
<td>4</td>
<td>Economic</td>
<td>17,463,896,400</td>
<td>3,561,487,800</td>
<td>21,025,384,200</td>
</tr>
</tbody>
</table>

Note. Information from Badan Pemberdayaan Masyarakat dan Pemerintahan Desa (BPMPD) (Agency of Rural Empowerment and Government), Bandung Regency 2014.

For the purpose of the study, the Bandung PNPM programme was selected for various reasons. First, Bandung is the capital city of West Java Province, which is the most populated province in Indonesia and is home to 43 million inhabitants. The city’s proximity to the capital city of Jakarta makes this site selection interesting and raises the question whether adjacency to the capital city, or to the centre of administration, makes the PNPM programme run effectively. Second, compared with other areas such Sumatera, East Java, Sulawesi, and Borneo, the PNPM Mandiri in Bandung West Java has never been assessed. Hence, the effectiveness of this programme requires evaluation. Third, the Bandung Regency has been the recipient of various government programmes. Therefore, it is interesting to know whether the PNPM programme would run better in this region.

Research Method

Various methods to assess or evaluate rural development programmes exist. Terluin and Roza (2010) outline several methods including the tally approach, the econometric approach, the modelling approach, and the mixed case study approach. The latter is a diverse group of evaluations, which includes the qualitative and quantitative analysis of the direct and indirect results of rural development programmes. This study uses this mixed case study approach by means of a
quantitative assessment using data envelope analysis (DEA) (Charnes et al., 1994; Banker et al., 1984). Even though DEA has been used in various areas of rural development, most applications concern the effectiveness of micro-credit programmes. Several authors such as Ahmad et al. (2014), Ahmad (2011), and Pal (2010) use the DEA technique to assess the efficiency of micro-credit programmes among regions in India and Pakistan. Their aim is to find which micro-credit programmes run efficiently in the region. In the context of rural development, very few applications of DEA have been used. Vennesland (2005) is among the few authors who have used the DEA technique to assess rural development programmes in Sweden. This study follows Vennesland (2005) and Byrden (2011) to evaluate the effectiveness of rural development programmes.

Data envelope analysis is a non-parametric approach designed to measure the efficiency of input and output. It is a further implementation of Farrell’s linear programming (Farrell, 1957; Fare et al., 1994; Vennesland, 2005). One of the advantages of DEA is that it does not require an assumption about the input-output function. It also does not require assumptions that are normally needed by the econometric technique. Data envelope analysis is data driven, so it is expected to be objective and unbiased. Such advantages fit to assess the effectiveness of PNPM with such limited time series data and only the variables of input and output available. In addition, DEA allows multi inputs and outputs without a weight restriction. In the DEA, a model can be assumed to be a constant return to scale (CRS) or a variable return to scale (VRS) (Banker et al., 1984). Since DEA is a performance measure, it requires input and output components. In its simple form, DEA measures the weighted ratio of outputs relative to weighted inputs. Mathematically, Charnes et al. (1978) provide a formal method of measuring efficiency using DEA:

\[
\text{Max } \sum_{r=1}^{S} u_{r}y_{ro} \\
\text{Subject to: } \sum_{r=1}^{S} u_{r}y_{rj} - \sum_{i=1}^{m} v_{i}y_{ij} \leq 0 \\
\sum_{i=1}^{m} v_{i}x_{i0} = 1; \quad -u_{r} \leq -\varepsilon \\
-v_{i} \leq -\varepsilon
\]

where \( y_{rj} \) and \( x_{ij} \) are the outputs and inputs of the jth decision-making unit, respectively. Variables \( u_{r} \) and \( v_{i} \) represent weights associated with the outputs and inputs that will be calculated by solving Eq. 1. The term \( \sum_{i=1}^{m} v_{i}x_{i0} = 1 \) is used when one is willing to switch from ratio form to linear programming form.

Equation (1) represents the CRS form of DEA. Analyzing efficiency under the CRS assumption is rather restricted. The CRS assumption holds good only when all units are operating at an optimum level. Several factors (such as imperfect competition and limited accessibility to funds) might influence the DMU not to operate at an optimum level (Coelli, 1998). Recognizing these deficiencies, Banker et al. (1984) provide the DEA formula for the VRS assumption, as shown in Eq. (2):

\[
\text{Max } \sum_{r=1}^{S} u_{r}y_{r0} - u_{o} \\
\text{Subject } \sum_{r=1}^{S} u_{r}y_{rj} - \sum_{i=1}^{m} v_{i}y_{ij} - u_{o} \leq 0 \\
\sum_{i=1}^{m} v_{i}x_{i0} = 1; \quad -u_{r} \leq -\varepsilon \\
-v_{i} \leq -\varepsilon
\]

where \( u^{*} \) indicates the return to scale possibilities, \( u^{*} < 0 \) implies an increasing return to scale, and \( u^{*} > 0 \) implies a decreasing return to scale.
Running DEA under the assumption of VRS allows us to investigate the effect of relaxing the assumption that the inputs could be considered a fixed component. This is in line with the PNPM programme where the inputs used to run the programme, such as members of the population and the funding received, vary in nature. Data envelopment analysis using VRS also allows us to determine the scale efficiency (SE) of the PNPM programme among subdistricts.

In this study, following Vennesland (2005), the input and output variables are described in Figure 2 where $x_1$, $x_2$, and $x_3$ represent the input components, $k_1$,...,$k_n$ represents the subdistrict or decision making unit (DMU), and $y_1$ and $y_2$ represent the output components. Income is a proxy for rural empowerment as measured by village revenue. It also represents the institutional aspect, while employment is a proxy for empowerment in terms of the individual aspect.

The assessment of PNPM performance is carried out for 11 subdistricts in Bandung Regency over the period 2009-2013. The input and output data are presented in Table 2.

### Table 2. Input and Output Data.

<table>
<thead>
<tr>
<th>Sub-district</th>
<th>Total PNPM Funding (Rp000)</th>
<th>Population</th>
<th>Number of Village Institutions</th>
<th>Village Income (Rp000)</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arjasari</td>
<td>1 619 814</td>
<td>95 846</td>
<td>829</td>
<td>760 334</td>
<td>52 458</td>
</tr>
<tr>
<td>Cicalengka</td>
<td>1 465 405</td>
<td>117 324</td>
<td>787</td>
<td>872 000</td>
<td>41 262</td>
</tr>
<tr>
<td>Cikancung</td>
<td>3 226 771</td>
<td>84 780</td>
<td>538</td>
<td>414 000</td>
<td>29 971</td>
</tr>
<tr>
<td>Cimaung</td>
<td>1 469 911</td>
<td>75 051</td>
<td>589</td>
<td>241 884</td>
<td>29 400</td>
</tr>
<tr>
<td>Ciwidey</td>
<td>1 537 647</td>
<td>75 447</td>
<td>695</td>
<td>535 000</td>
<td>43 497</td>
</tr>
<tr>
<td>Ibun</td>
<td>1 499 349</td>
<td>82 087</td>
<td>616</td>
<td>685 000</td>
<td>25 272</td>
</tr>
<tr>
<td>Kertasari</td>
<td>3 257 593</td>
<td>67 234</td>
<td>681</td>
<td>580 425</td>
<td>29 518</td>
</tr>
<tr>
<td>Nagreg</td>
<td>1 231 176</td>
<td>51 260</td>
<td>550</td>
<td>314 000</td>
<td>18 285</td>
</tr>
<tr>
<td>Pacet</td>
<td>3 343 581</td>
<td>109 546</td>
<td>806</td>
<td>596 323</td>
<td>30 889</td>
</tr>
<tr>
<td>Pangalengan</td>
<td>484 457</td>
<td>145 540</td>
<td>1 416</td>
<td>1 762 481</td>
<td>57 483</td>
</tr>
<tr>
<td>Rancabali</td>
<td>1 244 529</td>
<td>49 164</td>
<td>399</td>
<td>383 000</td>
<td>36 728</td>
</tr>
</tbody>
</table>


### Results and Discussion

Since our goal is to assess the effectiveness of using PNPM funding, we used input orientation DEA with the assumption that subdistricts could produce the same level
of output with fewer inputs. The results from running the DEA model under the CRS and VRS assumptions are presented in Table 3.

**Table 3. Results of data envelopment analysis under CRS and VRS and its SE Score.**

<table>
<thead>
<tr>
<th>Sub-districts</th>
<th>TE CRS</th>
<th>TE VRS</th>
<th>SE</th>
<th>Return to Scale (RTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arjasari</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Constant</td>
</tr>
<tr>
<td>Cicalengka</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Constant</td>
</tr>
<tr>
<td>Cikancung</td>
<td>0.734</td>
<td>0.783</td>
<td>0.937</td>
<td>Increasing</td>
</tr>
<tr>
<td>Cimaung</td>
<td>0.693</td>
<td>0.859</td>
<td>0.807</td>
<td>Increasing</td>
</tr>
<tr>
<td>Ciwidey</td>
<td>0.913</td>
<td>0.914</td>
<td>0.999</td>
<td>Increasing</td>
</tr>
<tr>
<td>Ibun</td>
<td>0.911</td>
<td>1</td>
<td>0.911</td>
<td>Increasing</td>
</tr>
<tr>
<td>Kertasari</td>
<td>0.827</td>
<td>0.936</td>
<td>0.883</td>
<td>Increasing</td>
</tr>
<tr>
<td>Nagreg</td>
<td>0.619</td>
<td>1</td>
<td>0.619</td>
<td>Increasing</td>
</tr>
<tr>
<td>Pacet</td>
<td>0.648</td>
<td>0.686</td>
<td>0.941</td>
<td>Increasing</td>
</tr>
<tr>
<td>Pangalengan</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Constant</td>
</tr>
<tr>
<td>Rancabali</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Constant</td>
</tr>
<tr>
<td>Mean</td>
<td>0.850</td>
<td>0.925</td>
<td>0.918</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen from Table 3, under the CRS assumption, only four subdistricts are efficient in using the PNPM rural funding, while the rest are indicated as inefficient. The efficiency ranges from 10% to 61% of the optimal solution. Under the VRS assumption, there is a slight increase in the average efficiency scores from 0.850 to 0.925. This means that, under the VRS assumption, subdistricts are close to efficient in running their PNPM programme. A subdistrict such as Nagreg, which previously had a low efficiency score under the CRS assumption (0.619), has reached efficiency under the VRS assumption. Similarly, the Ibun subdistrict that previously had a 0.91 score under the CRS assumption has now reached full efficiency under the VRS assumption. Overall, although only four subdistricts under the CRS assumption have full efficient scores, six have a full efficiency score under the VRS assumption (more than 50%). Nevertheless, the results still indicate that, on average, all subdistricts are less efficient in running their PNPM programme (TE 0.850 and TE 0.925, which are less than 1 under both CRS and VRS assumptions).

The efficiency scores under the CRS assumption for each subdistrict are mapped in Figure 3 to provide a spatial feature of the distribution of the efficiency scores. This practice follows a similar technique by Vannesland (2005) to find whether there are specific patterns of rural development programmes in terms of their efficiency. As shown in Figure 4, there is no conclusive agreement in terms of spatial pattern regarding whether the western or eastern subdistricts are efficient in running their PNPM programmes. This result is quite different from Vennesland’s (2005) results in which there is a tendency for spatial differences among regions in terms of the efficiency of a rural development programme. Consequently, other socioeconomic and institutional contexts might play a greater role in determining the efficiency of the rural PNPM programme.
Data envelopment analysis might help to identify which subdistricts serve as reference points for the efficiency of rural PNPM funding. The subdistrict Pangalengan, for example, is the district most referred to for efficiency followed by Rancabali and Arjasari (Figure 4). This might be attributed to the fact that Pangalengan is the ‘hub’ subdistrict for economic activities in Bandung and is adjacent to other subdistricts in the area. Pangalengan is well-known for tourism and plantations (tea and coffee) in the Bandung Regency (BPS Bandung Regency, 2014). This area is also home to one of the oldest co-ops for milk production in Indonesia (KPBS Pangalengan, 2011). Given these features, its economic activities are relatively vibrant, and consequently, provide a positive spillover effect to local capacity.

Table 3 also indicates the scale efficiency (SE), which is the ratio between the CRS and VRS assumptions. It shows that most subdistricts indicate economic scale under increasing return to scale (IRS). This implies that the outputs delivered from the programme have a tendency to be more responsive to the inputs. If the inputs of
the PNPM doubled, for example, the outputs of the programme could more than double. This could also be attributed to the multiplier effect of income and employment levels within subdistricts derived from the programme.

The next stage of analysis is to assess the optimal allocation of input (in this case, allocated funds) among subdistricts based on the CRS and VRS assumptions. The assessment is based on efficiency scores obtained from Stage 1 of the DEA. It aims to determine the misallocation of PNPM funds to achieve the effectiveness of the rural PNPM programme. The results from the assessment are presented in Table 4.

### Table 4. Optimal funding allocation based on DEA Scores.

<table>
<thead>
<tr>
<th>Sub-districts</th>
<th>Initial Allocation (Rp000)</th>
<th>Optimal Allocation CRS (Rp000)</th>
<th>Optimal Allocation VRS (Rp000)</th>
<th>Re-adjustment CRS (Rp000)</th>
<th>Re-adjustment VRS (Rp000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arjasari</td>
<td>1,619 814.00</td>
<td>1,619 814.00</td>
<td>1,619 814.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Cicalengka</td>
<td>1,465 405.00</td>
<td>1,465 405.00</td>
<td>1,465 405.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Cikancung</td>
<td>3,226 771.00</td>
<td>1,062 383.77</td>
<td>1,270 686.00</td>
<td>-2,164 387.24</td>
<td>-1,956 085.00</td>
</tr>
<tr>
<td>Cimaung</td>
<td>1,469 911.00</td>
<td>1,018 614.25</td>
<td>1,262 092.00</td>
<td>-451,296.75</td>
<td>-207,819.00</td>
</tr>
<tr>
<td>Ciwidey</td>
<td>1,537 647.00</td>
<td>1,403 894.04</td>
<td>1,405 104.00</td>
<td>-133,752.97</td>
<td>-132,543.00</td>
</tr>
<tr>
<td>Ibun</td>
<td>1,499 349.00</td>
<td>1,050 810.54</td>
<td>1,499 349.00</td>
<td>-448,538.46</td>
<td>0.00</td>
</tr>
<tr>
<td>Kertasari</td>
<td>3,257 593.00</td>
<td>1,126 004.05</td>
<td>1,421 981.00</td>
<td>-2,131 588.96</td>
<td>-1,835 612.00</td>
</tr>
<tr>
<td>Nagreg</td>
<td>1,231 176.00</td>
<td>676 490.70</td>
<td>1,231 176.00</td>
<td>-554,685.30</td>
<td>0.00</td>
</tr>
<tr>
<td>Pacet</td>
<td>3,343 581.00</td>
<td>1,173 199.22</td>
<td>1,426 867.00</td>
<td>-2,170 381.78</td>
<td>1,916,714.00</td>
</tr>
<tr>
<td>Pangalengan</td>
<td>2,484 457.00</td>
<td>2,484 457.00</td>
<td>2,484 457.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Rancabali</td>
<td>1,244 529.00</td>
<td>1,244 529.00</td>
<td>1,244 529.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>22,380 233.00</td>
<td>14,325 601.56</td>
<td>16,331 460.00</td>
<td>-8,054 631.44</td>
<td>-6,048 773.00</td>
</tr>
</tbody>
</table>

The results from Table 4 indicate that the inefficiency of the rural PNPM programme among subdistricts could be inferred from their inefficiency in using input components (i.e., source of funds). As can be seen from Table 5, budget inefficiency ranging from Rp 133 million to Rp 2.17 billion exists under the CRS assumption and from Rp 132 million to Rp 1.9 billion under the VRS assumption. This excess funding could be re-allocated for other productive programmes or could be used more efficiently within a subdistrict programme to achieve better outputs.

From the DEA, it seems obvious that the efficiency of PNPM programme is very much determined by how the input variables were used efficiently. The inefficiency of using these inputs would lead to non-optimal outcomes of the programme. However, these variables provide only a partial explanation of the effectiveness of the rural empowerment programme as a whole.

It is worth emphasizing that the policy framework derived by the government plays a large role in determining the effectiveness of the PNPM programme. Clark et al. (2007), for example, shows that the structure of rural governance is an important factor in determining how rural development is directed. Similarly, in our case, the central government is still playing a critical role in determining the use of the funds
allocated for the programme. Even though the programme has been decentralized to the local government, the central government still informs the local government how the funds should be allocated. The central government, for example, believes that the need for infrastructure is a major part of rural development. Consequently, the majority of the funds from the direct assistance programme for rural development (75%) are allocated to infrastructure development. Only 25% of the fund disbursed to a region is allocated to economic activities. Of this 25%, only between 17-19% is absorbed into the region. In fact, in Bandung, the absorption of direct assistance is only 19%.

Several factors also reduce the effectiveness of the PNPM programme. First, it is acknowledged that dissemination of this programme to poor people is lacking. Many people in rural communities are unaware of this programme; therefore, they are not fully touched by the programme. Second, the community perceives the PNPM programme as a grant programme from the central government. Thus, they do not feel obligated to repay the assistance. Yet the PNPM programme is a typical revolving fund aimed to increase the livelihood of community. Once the fund is rolling, it is expected to generate an income multiplier to the community to generate more economic activities for rural households. Like other micro credits, revolving funds involve repayment to the lender, which in this case are the local institutions. This finding suggests that the participation of people in the community is a critical factor for successful rural development. As stated by Abbott (1995), Burkey (1993), and Wallerstein (1993), rural development cannot be separated from local participation. Ignoring the participation of people would likely mean that a rural development project ends in failure since they are the main actors of local development.

Other non-technical aspects of the programme also contribute to the effectiveness of the PNPM. In Indonesia, most rural development programme implementation should be carried out with help from trained assistants. These assistants are recruited mostly from fresh graduate and vocational programmes. However, it was found that such designated assistants for the programme are often incapable of delivering their duties. The assistants, for example, do not know how to deal with sick cattle or other agricultural issues. This has huge implications for the deliverability of the PNPM as a whole.

One final note: the economic programme designed by the government might not be compatible with local needs. This may impede the effectiveness of the PNPM programme. For example, local people are very much in favour of a micro-financing programme run by a women’s group since it will create more jobs within the woman’s group in the community. Moyle et al. (2006) studied the positive effect of involving women in rural development. They found that empowering women’s groups leads to a more proactive attitude, higher self-esteem, and a collective cause within a women’s group. These factors contribute to more effective rural development. In Bandung Regency, the government’s preference to create infrastructure projects such as building village roads and bridges involves mostly men, and therefore, the spillover effect to women’s groups of such projects is minimal.

Conclusions
Indonesia’s Rural Development Programme has embarked on a new approach through a more decentralized scheme. This approach is through a rural employment programme such as the rural self-empowerment programme launched in 1997. Even though 64.87 trillion rupiah (US $4.8 billion) have been spent on delivering the programme, one question remains concerning how effective the programme is viewed from the resources inputted or spent and the output that it is expected to achieve. Using the DEA framework, this study shows that only several subdistricts
could be considered as efficient in running their PNPM programme. The inefficiency of the programme could lead to budget misallocation, which represents opportunity costs of the financial resources. These funds could be allocated to more productive economic activities such as building economic infrastructure, empowering women's groups, or setting up micro-financial schemes. This study also reveals that, spatial wise, there is no tendency for the spillover effect of the effectiveness of the PNPM from adjacent regencies. This implies that the effectiveness of the PNPM could be determined by factors within a region (i.e. subdistricts) and other socioeconomic factors that might be unique to that region.

In terms of policy at the national level, even though, technically speaking, PNPM programmes have been restructured in the Joko Widodo administration with the establishment of Rural Act Number 6/2014, this programme is still needed during the transition period. The new regulation (Rural Act) mandated that funds should be allocated in the rural budget. Since Rural Act 2014 is still in early implementation, the results from this study could be used to assess the effective implementation of the rural budget in the future, so that the rural funds will be well spent. The consequences of restructuring the programme within the new Rural Act 2014 cannot be ignored. As of the end of 2014, of Rp 9.4 trillion in rural funds that was allocated in the state budget of 2014, Rp 1 trillion has not been allocated to rural development due to the gap of the legal basis of rural PNPM programmes. In addition, more than 14,000 people formerly working as facilitators have now been unemployed. As such, the termination of the programme in the midst of the ongoing PNPM programme will create a vacuum in rural development. This study could be used as a platform to evaluate the past and existing empowerment programmes as well as to provide crucial information to improve rural development in the new administration.

This study also draws a lesson learned that, even though the empowerment programme could be considered one of the best approaches for rural development, it might fail to recognize the inefficiency of using public resources to achieve the goal of the programme. It is important, therefore, to assess this feature for the future development of rural programmes on both the local and national scales.

References


