Participation in empowering institutions and influencing factors of rural household income

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Abstract. The major economic activity in rural areas is agriculture, which plays an important role as environmental conservation and natural resource sites. Participatory rural development through empowerment programs is considered to increase rural household income. Bandung District is one of the regions that have implemented empowerment programs due to its relatively high poverty rates. The level of poverty reduction in Bandung District tends to slow down. Therefore, the objective of this study is to analyse the influencing factors of the rural households’ income level under empowerment programs. Research method using the Multiple Regression Model. The results of the study revealed that the household income is significant influenced by the age, education, and participation in the empowering institutions.

1. Introduction

Since the beginning of the reform era, Indonesia has embarked on a new approach to improve the rural development policy. At present, decentralization is present to complement the centralistic approach. This condition indicates a paradigm shift in rural development policy from the holistic to the local approach which emphasizes more on the inductive processes [1]. People-centred development approach, involve the community to participate through, empowerment to create sustainability [2-3]. [4] developed community economics which serves as the basis for rural development in various countries such as China and other developing countries. Community economics and rural development is a multifaceted and comprehensive approach to community transformation involving social aspects, norms, resources (natural, human resources, man-made capital) and also market aspects and decision making at the local level [5].

Economic development under the concept of community empowerment encapsulates social values that are always accompanied by participation [6-7]. Real conditions in the field depict rural communities as an agricultural community group, which mostly relies on natural resource-based activities, both agriculture in the broad sense. Nevertheless, the comparative advantage of rural communities does not make rural areas grow parallel to urban areas, or, in other words, are still poor.

The government has carried out various efforts to reduce the poor by launching a number of programs since the New Order era. Ironically, the empowerment mission that was being carried out actually makes the community become more powerless. The empowerment of rural communities should improve the community capacity.

Since 2007 Indonesia has launched rural empowerment programs since 2007. It includes a more specific program that is oriented towards improving and expanding pro-people programs [8]. One of
the pro-people programs is The National Community Empowerment Program (PNPM) which is based on a community is a flagship program that is currently being implemented [9]. PNPM is intended to provide employment opportunities, drive local economic development, open rural isolation and enhance local empowerment or capacity building. One of the best and most popular programs from a rural perspective is PNPM-Rural. The government has allocated IDR 64.87 trillion for the implementation of this program. The program has reached 5,300 subdistricts, 401 regencies in 33 provinces in Indonesia.

According to [10] community participation will direct rural development planning to be more in line with the needs and potential of the community. Whether these factors affect the income of rural households?

2. Participation in rural empowerment institutions

2.1. Empowerment concept, participation, and increasing rural household income

Rural development is an integral part of national development [10]. Rural development is necessary because the Presidential Regulation No. 7/2005 stated that one of Indonesia's future development agenda is to improve the people’s welfare. Development priorities in this respect are more directed at poverty reduction and agricultural revitalization aspects.

Research conducted by [11] revealed that rural communities are encouraged to invest in forestry and rural business projects due to overcapacity in the agricultural sector. PNPM-Rural is one of the programs launched by the government which serves as an investment in community empowerment, infrastructure, and assistance to improve the productivity of rural communities. According to [12] and [13] in general, the PNPM Rural program has been running well. The decline in poverty rates occurred variably in the study areas. Participation, transparency, and accountability have been running well under PNPM, but not at the village government level. It affects the suitability between the main needs of the poor and the PNPM project. These indicators include the improvement in employment opportunities through its physical activities and the increase in the member household income after joining PNPM-Rural.

2.2. Participation in rural empowerment institutions in Bandung District

West Java is the province has the largest population in the island of Java as well as large rural areas and can represent many general problems in rural areas. The province is the most superior in utilizing PNPM-Rural. Bandung District is one of the regencies in West Java that has received PNPM-Rural fund allocation since 2008. In 2010, the poverty rate in Bandung District reached 296,300 people and in 2012 was 292,200 people. The relatively high poverty rate is a fundamental problem in Bandung District.

According to [14] rural development emphasizes synergy and creates cohesion between activities in rural areas, especially synergies between local and regional activities. [15] in [16-18], said that regional growth could be achieved through endogenous (inside) and exogenous (outside) factors and a combination of both. The endogenous factor is the distribution of production factors such as land, labour, and capital. Meanwhile, the exogenous factor is the level of demand from other regions for commodities produced by the region.

How to increase this capacity so that the people are able to manage their potential optimally? One obstacle is the ability of the community to access everything that is directly related to the development of their economic capacity as well as a conducive climate in their production or work activities. This access is related to the access to economic resources such as capital, the location of business or land, market information, technology, and production facilities and infrastructure which hamper the people’s opportunities to increase their income.

The condition of Bandung District which became the area focus of this study revealed that the increase in per capita income level is still unable to compete with the per capita income level of other regencies/municipals in West Java. It can be seen from the data on Bandung District's per capita income in 2005 of IDR 9,010,200.00 which increased in 2008 to IDR 12,457,600.00 and in 2011 to IDR 15,554,800.00. Although the per capita income of Bandung District continues to increase from year to year, its position is still below the average per capita income of West Java Province. Per capita income
of West Java province in 2005 was IDR 9,824,500.00, in 2008 was IDR 14,359,900.00 and in 2011 was IDR 18,803,300.00. The low level of per capita income of the people complements the relatively high poverty rates.

As a district that receives PNPM-Rural funds, they have full authority to align program planning, implementation, and control. The decision to develop specific policies to deliver this program is in the hands of the community. In other words, PNPM-Rural is a program that focuses on community development [3].

Bandung District has been actively implementing PNPM-Rural and has involved 13 subdistricts. This program is a continuation of the PPK which has been implemented since 1998. Among 13 subdistricts, two of them have been phased out and has switched to PNPM-Urban. Total community direct assistance funds (BLM) disbursed in Bandung District from 2008 until 2013 amounted to IDR 108.75 billion of which IDR 98.9 billion were derived from the state budget and IDR 17.85 billion from the regional budget and IDR 4.46 billion from community-based contributions. The number of beneficiaries of the activities reached 1,184,318 people, including 53.4 percent of poor household members.

This study examines the impact of empowerment programs on the income of the participants of PNPM-Rural empowerment program, in particular, other empowerment programs as well as non-participants.

3. Research Methods

3.1. Sampling method
The location was selected purposively by considering that Bandung District has a lot of economic potentials and has the opportunity to develop its economic structures. Gross Regional Domestic Product of Bandung District increased every year (2010; 48,431 million rupiahs and 2016; 68,797 million rupiahs). In addition, Bandung District is also part of the Bandung metropolitan development area as a hinterland as well as a buffer area of the capital of West Java Province. The research location includes eleven subdistricts that received PNPM-Rural budget allocations consisting of 104 villages. Sampling was carried out in six villages, namely Cikasungka and Sri Rahayu in Cikancung Subdistrict, Ciwidey and Lebak Muncang villages in Ciwidey Subdistrict, and Pangalengan and Margamekar villages in Pangalengan Subdistrict. Fifty samples were randomly collected in each village. Thus, the total sample is 300 respondents, consisting of 100 respondents of each non-participant participant and other empowerment institutions.

3.2. Data analysis methods and approaches
The analysis of the simultaneous influence of determinant factors of the increase in household income of the participants was done using the Multiple Regression Model. In this model, we linked the Y response variable (increased income, rupiah/month) which was examined by several X independent variables [19].

To determine the partial and simultaneous influences of age (X₁), the number of household dependents (X₂), length of stay (X₃), education (D₁), type of business field (D₂), marital status (D₃), and empowerment institution membership (D₄) variables on the increase in the income of participants (Y), regression equation function like the following model was used:

\[ Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 D_1 + \beta_4 D_2 + \beta_5 D_3 + \beta_6 D_4 + \epsilon_i \]  \( (1) \)

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variables on the increase in the income of participants \((Y)\), regression equation function like the following model was used:

\[
Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 D_1 + \beta_5 D_2 + \epsilon_i
\]  

(2)

4. Results and Discussion

The research was conducted on PNPM-Rural member households who engaged in economic activities using Women’s Savings and Loans (SPP) revolving funds and households who are members of other empowerment groups in Bandung District including Joint Business Group (KUB), BUMDES, KUT, KUD, BTPN Cooperative, and the Community Association Savings and Loan Group (KSPRW) which are referred to as participants. The study aims to determine factors that influence the increase in the household income per month after becoming a member of the empowerment program. The simultaneous influence of these determinant factors on the increase in the household income of the participants was analysed using the multiple regression model. The results of this study found that age, education, and empowerment institution membership variables significantly influence the increase in the income of the participants with a significant level of 95 percent (Table 1).

Table 1. The results of linear regression test on the participant household income influencing factors

| Variable                              | Coefficient | Standard Error | P > | t | Beta  |
|---------------------------------------|-------------|----------------|-----|---|-------|
| Age \((X_1)\) [year]                  | 6364.281    | 1958.927       | 0.001|0.22393|
| Marital status \((D_3)\) [1 = married; 0 = others] | -117277.600 | 70037.900       | 0.096|-0.11340|
| Education \((D_1)\) [1 = graduated from elementary school; 0=others] | -126139.700 | 47686.090       | 0.009|-0.18020|
| Business field \((D_2)\) [1 = trading; 0 = others] | 31128.480 | 22586.110       | 0.170|0.08930|
| Number of Household members \((X_2)\) [person] | -16982.810 | 13006.100       | 0.193|-0.08680|
| Institution membership \((D_4)\) [1 = PNPM; 0 = others] | 268435.700 | 42847.220       | 0.000|0.41270|
| Constants \((\beta_0)\)                | 261351.500 | 98713.890       | 0.009         |

The influence of age variable \((X_1)\) on the increase in the household income of the participants was significant reaching 6364.281 with a significant level of 95 percent. It indicates that the higher the age of the respondents, the higher the level of their income. This finding is in line with the findings of the previous research, one of which is [20] findings and [21] opinion, that is starting from a productive age someone will begin saving to meet the needs of their consumption level. Productive age is a starting point when a person starts to be responsible for earning a living, and as they age, their awareness to increase their income will increase too. As they become older and unproductive, the person will begin dissaving because they are unable to generate their own income. The study examines respondents at a productive age.

The influence of education variable \((D_1)\) was also significant on the increase in the household income of the participants amounting to -126139.7 with a significant level of 95 percent. A minus sign indicates that the households of elementary school graduates have lower income compared to households of junior
high, high school, and university graduates. This finding is consistent with the theory in general, but some studies found that education has no influence on the increased income [20].

The influence of empowerment institution membership variable \((D_2)\) was also significant on the increase in the household income of the participants amounting to \(268435.7\) with a significant level of 95 percent. It indicates that PNPM-Rural member households have a higher income than non-members. It is in line with [13] findings on the increased income of households who have participated in PNPM-Rural. The presence of economic activities driving by BLM revolving funds, which was utilized by member households, especially by non-working mothers to expand employment opportunities, has become a factor that significantly influences the increase in the household income per month. Activities that were commonly carried out by these people are still influenced by the background of the dominant business field conditions in their areas.

Institution membership variable \((D_2)\) has greater Standardized Coefficient Beta than other variables. It can be interpreted that the institution membership variable has the most dominant influence in increased income.

Subsequent research was conducted on households who are members of PNPM-Rural who engaged in economic activities using Women's Savings and Loans (SPP) revolving funds and households who are not yet members of the empowerment group. The study aims to determine factors influencing the increase in the household income per month after becoming a member of the empowerment program. The simultaneous influence of these determinant factors on the increase in the household income of the participants was analysed using the multiple regression model. The results of the study found that age, education, and empowerment institution membership variables significantly influence the increase in the income of the participants with a significant level of 95 percent (Table 2).

### Table 2. The results of linear regression test on factors influencing the increase in household income of participants and non-participants

| Variable                      | Coefficient | Standard error | \(P > |t|\) | Beta     |
|-------------------------------|-------------|----------------|-------------|----------|
| Age \((X_1)\)                 | 25888.62    | 8290.348       | 0.002       | 0.2450896|
| Number of household members \((X_2)\) | -46366.50   | 51585.440      | 0.370       | -0.0617071|
| Length of stay \((X_3)\)      | -14853.08   | 5813.185       | 0.011       | -0.1991269|
| Education \((D_1)\)           | -428081.60  | 195601.200     | 0.030       | -0.1634549|
| Institution membership \((D_2)\) | 489893.70   | 166534.500     | 0.004       | 0.2073482 |
| Constants \((\beta_0)\)       | 942215.20   | 348975.200     | 0.008       |          |

\(\text{Prob F} = 0.0001\)

\(R^2 = 0.1222\)

\(\text{Adj R-Squared} = 0.0992\)

The influence of age variable \((X_1)\) on the household income was significant reaching 25888.62 with a significant level of 95 percent. It indicates that the higher the age of the respondent, the higher the level of their income. This finding is in line with the findings in the previous studies.

The influence of length of stay variable \((X_3)\) on the household income was significant reaching -14853.08 with a significant level of 95 percent. It indicates that households who have just recently arrived, or what we call migrants, influence the household income (rupiahs/month). They have a stronger fighting spirit to be able to adapt to a new place and will always try to increase their income.

The influence of education variable \((D_1)\) was also significant on the increase in the household income reaching -428081.6 with a significant level of 95 percent. A minus sign indicates that households of elementary school graduates have lower income compared to households of junior high, high school, and university graduates. This finding is consistent with the theory in general, but some studies found that education does not influence income [20].
The influence of empowerment institution membership variable ($D_2$) was also significant on the increase in the household income of participants reaching 489893.7 with a significant level of 95 percent. It indicates that the income of member households of PNPM-Rural is higher than those who are not yet members of the empowerment program. It is in line with [13] findings on the increased income of households who participated in PNPM-Rural.

Age variable has the most dominant influence on the increased income. It was subsequently followed by institution membership variable.

The findings above indicate that PNPM-Rural is able to improve the household’s welfare. When linked to the findings of the first objective, i.e. suboptimal allocation of PNPM-Rural budget, the fund can be reallocated to expand the beneficiaries in order to reach the poor, especially vulnerable and marginal groups.

Allocated funds of empowerment programs are largely determined by the characteristics of the villages such as in Pangalengan and Margamekar villages, where the dominant business sector in this area is agriculture in accordance with the location of the area which is located in the mountains and hills. We can see that the participants mostly used the funds for agricultural activities. In the villages of Sri Rahayu and Cikasungka, the background of Cikancung Subdistrict is dominated by trade, industry, and services because the location of this subdistrict is also very close to the city of Bandung so that its main economic activity is not the agricultural business sector. It is different from the villages in Ciwidey Subdistrict, namely Lebakmuncang and Ciwidey, where their activities are almost evenly distributed in the trade sector, and strawberry gardens. It is because this location is close to tourist attraction site, namely Kawah Putih which is a tourist destination area. Although the tourist attraction site is actually located in the Rancabali Subdistrict which is the expansion of Ciwidey Subdistrict.

If we look at the educational aspect, we can also link it with the description results which show that villages that have respondents with a higher level of education have a higher average income per month.

5. Conclusions
The social system developed by PNPM-Rural enables villagers to improve their capacity not only in the form of courses and training but also in action with the ways of thinking and how to act for villagers when they carry out their respective roles during the implementation of the program. Community participation is a key driver for empowerment and increased income (Abbotian Hypothesis). Increased household income among members of empowerment institutions who have received revolving fund allocation has had a real impact.

Another note is that the economic program designed by the government may not suit local needs. It will hamper the effectiveness of PNPM-Rural. For example, local communities are very supportive to microfinance programs run by women's groups because it will create more jobs among women's groups in rural communities, and the SPP program is very popular among housewives because it can help increase their household income. The beneficiaries of the revolving fund are still limited. BLM for SPP activities is not allocated to all eligible people. The results of this analysis can be used as a lesson learned in improving the performance of existing programs and in developing future empowerment programs.

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