

Do economic and non-economic factors determine village fund in the 4.0 industrial revolution regime?

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Abstract

This research aims to identify the economic and non-economic factors which are perceived by the community to be able to determine Village Fund in Central Java. The data were collected from surveys to village governments in 29 regencies in Central Java (with a total of 70 observed respondents), which were then analyzed using AHP and SWOT methods. This research concludes that there are 8 economic and 5 non-economic factors which determine the Village Fund. They are divided into internal and external. The internal factors determining the Village Fund consist of among others: strength (utilization of village's human resource and natural resource potential; village-owned enterprises development; community welfare; active community participation; good economic activity; lack of knowledge and initiative from village officials; lack of village fund governance; and, low allocation for economic and community empowerment). Meanwhile, the external factors determining the Village Fund are opportunities (support from central & regional government, village stakeholders' potential contribution, local products' market expansion, and threats (foreign cultural influences through ICTs), environmental impact, and competition between villages. All those factors are related to the Government's efforts to direct all the villages' resources potential in accordance with the dynamics of the 4.0 Industrial Revolution. The significant contribution of this research is the finding that Village Fund should facilitate woman economic empowerment and family welfare.

Keywords: Economic factors; non-economic factors; village fund; AHP; SWOT

INTRODUCTION

Since 2015 Village Fund has become one of the sources of funding village development after the Government ratified Law No. 6 of 2014 concerning Village. Central Java is one of the provinces which receive a relatively significant amount of Village Fund since Central Java covers 29 regions including 7,809 villages that benefit from the Village Fund allocation. According to the data of Central Bureau of Statistics of Central Java, the Village Fund has increased by 204.54% (IDR 2.2 trillion in 2015 and IDR 6.7 trillion in 2018).

The significant increase of Village Fund that happens annually is expected to stimulate the community welfare through natural resource potential and local economy optimization. Furthermore, the fund can also be allocated to maintain and strengthen local, social and cultural life, which includes village environment quality improvement. In the context of 4.0 Industrial Revolution regime, the village fund can foster the convergence of community's economic and non-economic activities with the support of information and communication technology. For that reason, it is relevant to conduct empirical research that will show the relation between economic and non-economic factors for the management and utilization of Village Fund in the 4.0 Industrial Revolution regime.

This research has two objectives: First, to identify the economic and non-economic factors contribute to the village fund allocation in Central Java Province; Second, to identify the internal and external factors of economic and non-economic factors in the allocation process of village fund. Moreover, this research used the AHP (Analytic Hierarchy Process) and SWOT (Strength, Weakness, Opportunity, and Threat) method as the novelty to differentiate from the previous empirical researches. Meanwhile, this research is intended to contribute as a reference for village fund allocation policy in empowering the economy of community and villages. Hence, the allocation of Village Fund for infrastructure can be reduced because the capacity building of human resource and the empowerment of village economy will be the main element of 4.0 Industrial Revolution at village level.

(Chen, 2010) explained that the village development policy in China has brought positive impact on improving the economic and social activities so that it becomes one of the resilience factors to resist the impact of financial crisis on Chinese economy. Furthermore, (Liu, Zhang, Huang, & Rozelle, 2013) informed that villages in China have different allocation of infrastructure projects since those villages have different governance quality. Meanwhile, (Asni & Budi, 2013) found that the relatively large number of village residents has encouraged the Government to develop the village's economic and social aspects.

Some researchers, such as (Nasution, 2017); (Afifah, 2017); (Yuliana, Yulianita, Muhyiddin, & Bashir, 2017); (Nurdin Nara, Baharuddin, Muhammad Yunus, 2018); (Amalya, Pituringsih, & Mataram, 2017); (Ma, Li, & Chan, 2018); (Baffoe, 2019); (Watts, Tacconi, Irawan, & Wijaya, 2019); and (Uddin, 2019), have conducted empirical studies that relate the economic and non-economic factors to the management and utilization of Village Fund. The economic factors that determine Village Fund are income, income distribution, poverty, economic infrastructure, and local economic growth. In addition, the non-economic factors that support the Village Fund are active community participation, village fund supervision and assistance, quality of human resource, information and technology utilization, village independence, benefits of Village Fund, and environmental and local culture preservation.

METHOD

This research used primary data, which were collected from surveys to village officials in 29 regencies in Central Java. Involving 70 respondents contributing in this research, the survey was focused on identifying the economic and non-economic factors that determine the management and utilization of Village Fund in the 4.0 Industrial Revolution regime. In addition, those surveys also identified the internal and external factors of Village Fund in Central Java. Most of the respondents are experts in utilizing village funds. In this regard, their expertise is required for the AHP (Analytic Hierarchy Process) method. This research also used the SWOT method to identify the internal and external factors.

There were eight economic factors identified: Village-Owned Enterprises Empowerment (VOEE), Street and Bridge Infrastructure (SBI), Business Cluster Empowerment (BCE), One Village One Product (OVOP), Farming/Fishing Community Empowerment (FCE), Village Cooperatives Empowerment (VCE), Farm Irrigation (FI), and Rural Women Economic Empowerment (RWEE). Meanwhile, the non-economic factors identified were Village Youth Organization Empowerment (VYOE), Maternal and Child Health Services (MCHS), Environmental Preservation Counseling (EPC), Family Planning and Contraception Program (FPCP), and Family Health Counseling (FHC). Those factors included the SWOT identification carried out within the 4.0 Industrial Revolution regime framework being promoted by the Indonesian Government.

The steps to collect and process the data comprised of identifying the economic and non-economic factors based on the literature review and interviews of village officials; making AHP and SWOT questionnaires; conducting surveys to the village officials in 29 regencies; making data entry and calculating the AHP score for each factor; and, summarizing the identification of internal and external factors of Village Fund. The researchers carried out all the activities from April – June 2019.

(Saaty, 2008) has formulated a qualitative analysis with a quantitative approach. The approach is called AHP (Analytic Hierarchy Process). The AHP procedure requires respondents who are expert regarding the research issue. The respondents will assess the pairwise comparison of variables (factors) using a scale of 1-9. In addition, the AHP score calculation uses the matrix method. The final result obtained from AHP is a ranking score of each research variable. The variable with the highest score is the one chosen by most of the respondents (priority preference) while the variable with the lowest score is the variable in the lowest ranking. Furthermore, (Alonso & Lamata, 2006) emphasized the important role of consistency in AHP procedure.

The SWOT method is also used to identify internal (strength and weakness) and external factors (opportunities and threats) of the Village Fund in Central Java. The respondents determine those factors based on their experience of managing Village Funds. It means that the SWOT questionnaire is an open questionnaire.

On the other hand, there are 5 non-economic factors which emphasize village social life and environmental empowerment. Those are Village Youth Organization Empowerment (VYOE), Maternal and Child Health Services (MCHS), Environmental Preservation Counseling (EPC), Family Planning and Contraception Program (FPCP), and Family Health Counseling (FHC). It means that The Village Fund will guarantee the social and cultural life, as well as the environmental quality of the village.

Pairwise comparison is used to calculate the value of respondents' perceptions of each pair of economic and non-economic factors. This calculation is the first stage in the AHP analysis process after the respondent fills in their perceptions/assessments on a 1-9 scale. The next stage is the calculation of the weighted value and score of AHP. This calculation process uses a matrix approach that produces eigenvector values. The results of calculations at this stage are then tested for robustness using consistency ratios and indexes. If the AHP calculation is consistent at $\alpha < 10\%$, the researcher can use the results of the AHP score (see Table 1 and 2).

RESULTS AND DISCUSSION

Economic factors and village fund

The results of AHP calculation on the economic factors show that the rural woman economic empowerment is the most important factor in utilizing Village Fund. Furthermore, the Village-Owned Enterprises empowerment is the least important factor in utilizing the fund in Central Java. Other important factors are the village cooperatives and farming/fishing communities empowerment. The results are obtained after the researchers calculate the respondents' perception value on the pairwise comparison of the eight economic factors, as illustrated in Table 1 below.

Table 1. Economic factors that determine village fund in central java

Variables	Weighted Value	AHP Score	Priority Factor
VOEE	0.054	0.054	8
SBI	0.063	0.060	7
BCE	0.085	0.081	6
OVOP	0.092	0.090	5
FI	0.110	0.109	4
FCE	0.145	0.147	3
VCE	0.220	0.226	2
RWEE	0.231	0.234	1

The results of this research are relevant to other previous empirical studies which mention that the active community, including the farming/fishing communities' participation in local economic development is the convergent part of Village Fund utilization. However, the regional government can encourage the development orientation of individual communities to be integrated with the existence and government's efforts to develop and empower Village-Owned enterprises.

Non-economic factors and village fund

The results of AHP calculation on the non-economic factors illustrate that the family planning/contraception program is the respondents' primary choice for Village Fund utilization. It means that the community has started to try to support the family planning program implemented by the Government. The community can also maximize the existing resources to improve their life quality. Meanwhile, the last non-economic factor chosen by respondents is the Village Youth Organization Empowerment (VYOE). It is because the majority of young people in Central Java work in companies and in foreign countries. The AHP calculation of the non-economic factors can be seen in Table 2.

Table 2. Non-economic factors determining village fund in central java

Variables	Weighted Value	AHP Score	Priority Factor
VYOE	0.131	0.129	5
MCHS	0.139	0.137	4
EPC	0.229	0.231	3
FPCP	0.269	0.271	1
FHC	0.232	0.232	2

The calculation results above direct the Government's role in regulating and assisting the allocation of Village Fund for family and village empowerment. It means that the people in Central Java have a relatively high awareness of improving the life quality of their families and village environment through the allocated funds.

Internal and external factors of village fund

The researchers have identified internal and external factors for village fund utilization in Central Java. Based on the identification, the Government can use two approaches in utilizing Village Fund in the future. First, the Village Fund in Central Java should not be dominantly allocated for infrastructure. The Government can study specifically which village can use the allocated Village Fund for infrastructure predominantly and which village can only use a maximum of 50% of the Village Fund allocation in the current year. It is based on the geographical condition of each village and the urgency of economic and community empowerment in advancing village potential.

Second, the 4.0 Industrial Revolution can be used to increase the competence of rural human resources, maximize the market potential of the local product, introduce local culture, and improve the connectivity of community's productive activities in society. It means that the 4.0 Industrial Revolution is part of a strategy to accelerate the independence and empowerment of villages in Central Java.

Table 3. Internal and External Factors of Village Fund Utilization in Central Java

Internal Factors/ External Factors	Strengths (S): - the availability of adequate human resources & natural resources	Weaknesses (W): -lack of knowledge and competence of human resource
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	<ul style="list-style-type: none"> -community welfare improvement -active community participation -good community's economic and social activities - improved infrastructure availability and quality -increased access of information and communication technology - improved connectivity of economic and social activities 	<ul style="list-style-type: none"> - village fund allocations tend to be dominant for infrastructure -lack of village fund governance -lack of labor absorption and village fund
Opportunity (O): <ul style="list-style-type: none"> -facilitate the realization of Village-Owned enterprise as a village economic institution - expansion of local products' market - local social and cultural activities are easily known to the wider community -significant support from the government -many contribution of stakeholders from outside the village 	Strategy S-O: The government should involve universities and NGOs in the framework of economic and village community empowerment through the 4.0 revolution	Strategy W-O: The central government should formulate policies to reduce the village fund allocation in infrastructure projects by increasing the village fund allocation for economic and community empowerment activities.
Threats (T): <ul style="list-style-type: none"> - foreign cultural influences through ICTs; -environmental impacts caused by development activities -competition between villages 	Strategy S-T: The government should formulate policies to protect local products, culture, and environment.	Strategy W-T: The government should formulate policies on the OVOP utilization and increase the competence of village human resources through the 4.0 revolution.

CONCLUSION

The AHP analysis shows the two calculation results. The first result is the economic factors and the second result is non-economic factors. These results refer to the first research objective. The eight economic factors that determine the village fund management and utilization in the 4.0 Industrial Revolution regime in Central Java are Village-Owned Enterprises Empowerment (VOEE), Street and Bridge Infrastructure (SBI), Business Cluster Empowerment (BCE), One Village One Product (OVOP), Farming/Fishing Community Empowerment (FCE), Village Cooperatives Empowerment (VCE), Farm Irrigation (FI), and Rural Women Economic Empowerment (RWEE). Meanwhile, the five non-economic factors that determine the allocation of Village Fund consist of Village Youth Organization empowerment (VYOE), Maternal and Child Health Services (MCHS), Environmental Preservation Counseling (EPC), Family Planning and Contraception program (FPCP), and Family Health Counseling (FHC).

Furthermore, the second research objective is internal and external factors of Village Fund allocation. The internal factors of Village Fund are Strength (utilization of village's human resource and natural resource potential; village-owned enterprises development; community welfare; active community participation; and good economic activity) and Weakness (lack of knowledge & initiative from village officials; lack of village fund governance; and low allocation for economic and community empowerment). Meanwhile, the external factors of village fund are Opportunities (support from central & regional government; village stakeholders' potential contribution; and local products' market expansion) and Threats (foreign cultural influences through ICTs; environmental impact; and competition between villages).

The recommendation for the policy formulated by the Government is that it should allocate more Village Fund for community and economic empowerment by reducing the allocation for infrastructure. This policy can be taken by the Ministry of Finance and the Ministry of Development of Disadvantaged

Regions, and Transmigration of the Republic of Indonesia, which are supported by other technical ministries. This level of policy is a joint ruling of the economic ministers.

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