

Analyzing Stakeholder Roles and Collaboration in the Development of Village-Owned Enterprises in Indonesia

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A B S T R A C T

The development of Village-Owned Enterprises (VoE) has emerged as a strategic instrument in Indonesia's rural transformation. However, its effectiveness and success remain uneven. This study employed a mixed-methods approach, incorporating stakeholder analysis using the MACTOR (Matrix of Alliances and Conflicts, Tactics, Objectives, and Recommendations) method. Primary data were collected through in-depth interviews with ten actors representing the pentahelix collaboration, comprising government, academics, business sector, community, and media representatives. The analysis showed that government actors served as the main drivers. Pioneering VoEs and their communities still rely on external support, while advanced VoEs were more independent and influential. The most supported key objectives among actors were the improvement of managerial skills and the dissemination of best practices in VoE management, while green business initiatives still received limited attention. These findings confirm that the success of VoE development depends on institutional capacity and effective collaboration among actors involved in achieving village economic independence. They also highlight the importance of strengthening stakeholder collaboration to accelerate rural development by aligning economic empowerment with social welfare and environmental responsibility.

A B S T R A K

Pengembangan Badan Usaha Milik Desa (BUM Desa) telah menjadi instrumen strategis dalam transformasi pedesaan di Indonesia. Namun, efektivitas dan keberhasilannya masih belum merata. Penelitian ini menggunakan pendekatan campuran (*mixed method*) dengan analisis pemangku kepentingan (*stakeholder analysis*) melalui metode MACTOR (*Matrix of Alliances and Conflicts, Tactics, Objectives, and Recommendations*). Data primer diperoleh melalui wawancara mendalam terhadap sepuluh aktor yang merepresentasikan kolaborasi pentahelix, yang terdiri dari unsur pemerintah, akademisi, sektor bisnis, masyarakat, dan media. Hasil analisis menunjukkan bahwa aktor pemerintah berperan sebagai penggerak utama. BUM Desa perintis dan masyarakatnya masih bergantung pada dukungan eksternal, sedangkan BUM Desa maju lebih mandiri dan berpengaruh. Tujuan utama yang paling banyak didukung oleh para aktor adalah peningkatan kapasitas manajerial dan publikasi praktik terbaik pengelolaan BUM Desa, sementara inisiatif bisnis hijau masih mendapat perhatian terbatas. Temuan ini menegaskan bahwa keberhasilan pengembangan BUM Desa sangat bergantung pada kapasitas kelembagaan dan efektivitas kolaborasi antar aktor dalam mewujudkan kemandirian ekonomi desa. Selain itu, hasil penelitian juga menyoroti pentingnya penguatan kolaborasi pemangku kepentingan untuk mempercepat pembangunan pedesaan melalui penyelarasan antara pemberdayaan ekonomi, kesejahteraan sosial, dan tanggung jawab lingkungan.

1. Introduction

Village development, as an effort to achieve an equitable distribution of community welfare, is one of the national priorities of the Government of Indonesia, as outlined in the National Long-Term Development Plan (RPJPN) 2025-2045. Several policies and programs have been implemented to support this initiative, including the establishment of Village-Owned Enterprises (VoE) in every village. VoEs have been recognized as a strategic instrument for strengthening village economic independence and

maintaining environmental sustainability through effective local potential management [1], [2]. VoE is part of the so-called rural social enterprise, which is an organization that undertakes social and economic missions rooted in rural communities, contributing to social innovation and local development [3]. VoE exists as an entity that is not only oriented towards financial gains and the utilization of village economic potential, but also aims to provide social and environmental benefits [4], [5].

Since its implementation in 2014, VoEs have demonstrated a positive impact on rural communities in Indonesia, including increasing the income of rural communities [6], managing food security [7], and supporting gender equality through the involvement of women in their businesses [8]. However, most of the VoEs' development still faces various obstacles, such as weak capital [9], and high dependence on government assistance [10]. The effectiveness of VoE performance remains debated, but research shows that mature units can contribute to economic and social empowerment [1], [5], [7]. Conversely, other studies have indicated that the existence of VoEs has not always been accompanied by improvements in village development outcomes [11], [12].

This performance disparity is also shown by the VoE Institutional Ranking data issued by the Ministry of Villages of the Republic of Indonesia in 2024, as shown in Table 1 [13]. Only 6 percent of VoE has been successfully categorized as Advanced VoE, the rest are still Developing, Beginners, and Pioneers.

Table 1. VoE Ranking Data for 2024

No.	Category	Amount of VoE	Percentage (%)
1.	Advanced	1,677	6
2.	Developing	9,114	34
3.	Beginner	4,543	17
4.	Pioneer	11,676	43
Amount		27,010	100

To optimize the benefits of VoE across social, economic, and environmental fields, it is essential to foster collaboration between stakeholders within a mutually beneficial synergy framework. This is because the involvement of stakeholders is an important aspect in the development process, they are the parties who influence or are influenced either directly or indirectly on a program/policy [14]. In addition, the main problem in rural business management is the overlapping interests between parties that hinder the potential for collaboration and joint decision-making processes [15], [16]. Therefore, an analysis of the role of stakeholders is needed to understand their interaction, influences, and attitudes towards the existence of VoE. Without this understanding, the VoE development strategy will struggle to achieve its goals, ultimately hindering Indonesia's development targets. The strengthening of VoE can also be viewed as a strategic pathway for achieving the Sustainable Development Goals (SDGs), particularly Goals 1 (No Poverty), 8 (Decent Work and Economic Growth), and 12 (Responsible Consumption and Production), by integrating economic empowerment with social inclusion and environmental responsibility.

This research was conducted to analyze the relationships between actors within the pentahelix collaboration involved in the development of VoE to achieve optimal social, economic, and environmental

benefits. The concept of multi-stakeholder collaboration with the pentahelix model was chosen because it is considered a collaborative strategy that can optimize VoE development more effectively [17], [18]. In it, there are elements of academics as drafters, business as executors, community as accelerators, government as regulators, and media as expanders.

This study also aimed to describe the map of influence and dependency between stakeholders and identify potential areas for collaboration on strategic goals related to VoE development. The findings of this study provide the basis for formulating a more targeted policy strategy to strengthen the role of VoE in social, economic, and rural environmental development.

2. Research Method

The study employed a mixed-methods analysis that combined qualitative and quantitative methods. The data used were primary data from in-depth interviews. The interviews were conducted in 2025, involving two or three representatives from each stakeholder category classified based on the pentahelix approach.

The stakeholders analysis method using MACTOR (Matrix of Alliances and Conflicts: Tactics, Objectives, and Recommendations) was employed to determine the level of influence, dependence, and convergence among inter-stakeholder goals. This approach allowed for empirical analysis of influence relations and collaboration networks [14], so it could serve as a basis for formulating data-driven VoE development strategies. MACTOR version 5.3 was used as a tool. The steps of MACTOR analysis follow the explanation from the previous study [14], [19], as follows:

- a. Identified the stakeholders (hereinafter referred to as the “actors”)
- b. Identified key objectives/strategic issues to be achieved
- c. Collected data through in-depth interviews
- d. Prepared the Matrix of Direct and Indirect Influence (MDII) by analyzing the level of influence between one actor on another using a scale of 0 (no influence) to 4 (very high influence)
- e. Prepared the Matrix of Actor Objectives (2MAO) to find out how each actor's attitude or implication towards the set goals is, measured by a scale of supportive (positive number), neutral (zero), and against (negative number).

3. Result and Discussion

3.1. Actors and Objectives

The actor analysis was used to identify the involvement of relevant parties in the development of VoE. This research involved 10 actors from the pentahelix collaboration, as detailed in Table 2.

Table 2. Actors in VoE Development

No.	Category	Actor	Code	Description
1.	Academics	Academic in Rural Economics	A_RURAL	Academics with expertise in socio-economic analysis of rural communities who had been involved in research projects or village community empowerment initiatives in VoE.
2.	Academics	Academic in Environmental Studies	A_ENVI	Academics who focus on the study of human interaction with the environment, particularly rural areas, and had been involved in research/projects with VoE.
3.	Business	Pioneer Village-Owned Enterprise	B_BASIC	VoE managers whose status was still Pioneer.
4.	Business	Advanced Village-Owned Enterprise	B_ADV	VoE managers whose status was Advanced.
5.	Community	Residents in Villages with Pioneer VoE	C_BASIC	People who lived in the village, where the village manages VoE with the status of a Pioneer.
6.	Community	Residents in Villages with Advanced VoE	C_ADV	People who lived in villages where the village manages VoE with an Advanced status.
7.	Community	Environmental Concern Community (Non-Profit Organization)	C_NPO	A non-profit organization community, based on volunteerism, one of its activities was the empowerment of the village environment.
8.	Government	Jakarta Village Community Training and Empowerment Center (BBPPM Jakarta)	G_BBPPM	Central government technical agencies that had functions in the field of training and empowerment, including technical facilitation of VoE management.
9.	Government	Directorate General of Village and Rural Development	G_PDP	A work unit under the Ministry of Villages with the main task of managing village development, village community empowerment, and accelerating growth in disadvantaged regions.
10.	Media	Media Practitioner	M_ADM	Parties that played a role in documenting, disseminating, and publishing information and success stories of VoE management.

Table 3. List of Key Objectives

No.	Objectives	Code
1.	Development of environmentally friendly VoE businesses	Green business
2.	Partnerships with the private sector to expand market access	Partnership
3.	VoE's benefits for the community and environmental sustainability	Impact
4.	Enhancement of managerial skills among VoE managers	Managerial
5.	Sustainable utilization of local potential	Resource
6.	Publication of best practices in VoE management	Publication

The MACTOR analysis in this study also explored stakeholder relationships and strategic issues/objectives related to VoE development. Table 3 presented the objectives or strategic issues analyzed in this study.

3.2. Influence and Dependence Between Actors

The Matrix of Direct and Indirect Influences (MDII) in Table 4 showed the analysis results of the influence and dependence of the actors involved. This table is an output of MACTOR. The rightmost column (column Ii) showed direct and indirect influences, while the bottom row (row Di) indicated the number of direct and indirect dependencies.

Table 4. Matrix of Direct and Indirect Influences (MDII)

MDII	A_RURAL	A_ENVI	B_BASIC	B_ADV	C_BASIC	C_ADV	C_NPO	G_BBPPM	G_PDP	M_ADM	Ii
A_RURAL	24	22	25	21	23	18	22	22	20	21	194
A_ENVI	24	22	23	20	22	18	21	21	20	21	190
B_BASIC	23	21	23	18	22	18	20	22	19	20	183
B_ADV	24	21	24	24	23	20	21	23	23	24	203
C_BASIC	18	18	17	16	18	15	16	16	17	17	150
C_ADV	16	16	16	16	14	17	15	16	15	17	141
C_NPO	21	20	21	19	19	17	21	21	18	20	176
G_BBPPM	27	24	27	24	25	20	23	25	23	25	218
G_PDP	26	23	26	24	23	21	22	25	23	25	215
M_ADM	23	21	24	23	20	20	20	23	22	23	196
Di	202	186	203	181	191	167	180	189	177	190	1866

The actors with the highest influence, as shown in Table 4, were two government entities, namely the Empowerment Center (G_BBPPM) with a score of 218, and the Directorate General of Village and Rural Development (G_PDP) with a score of 215. This

explains that the government had a dominant role in influencing other actors through its role as a regulator and facilitator.

Jakarta Village Community Training and Empowerment Center is a technical agency specializing in rural empowerment and development. Through their civil servants, who actively engaged in the field, that entity provides assistance and support to local communities counseling, including for VoE, ensuring its activities have a significant impact on various parties. The Directorate General of Village and Rural Development played a role in formulating and implementing village development policies. The resulting policy products are closely related to the management and development of VoE, and therefore

have a significant influence on the activities of other actors.

Table 4 also showed that actors highly dependent on others are Pioneer VoE (B_BASIC) with a score of 203 and rural economic science academics (A_RURAL) with a score of 202. Pioneer VoE still relied on external support, including capital, government coaching, and academic assistance. Rural economics researchers required partnerships with the VoE and the community, government funding, and media support to disseminate their work. This indicates a high dependence level.

Furthermore, the influence and dependence scores between actors were combined and analyzed through the map, which divided actors into four quadrants as shown in Figure 1.

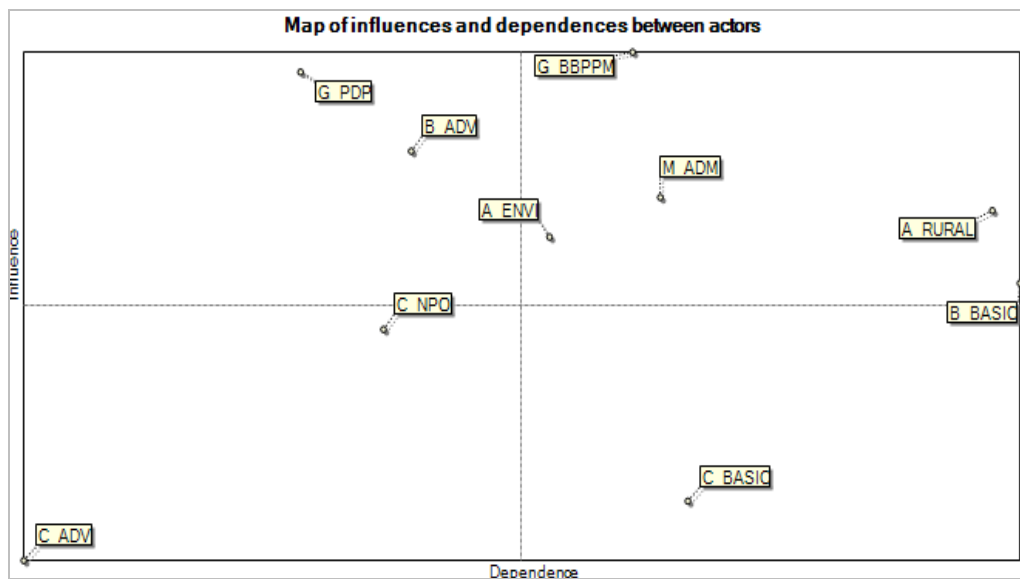


Figure 1. Map of Influence and Dependence Between Actors

Quadrant I (Top left) showed actors with high influence but low dependence on other actors, and is referred to as the dominant actor [14]. Their active involvement was crucial in the development of VoE. Quadrant I was occupied by the Directorate General of Village and Rural Development of the Ministry of Villages (G_PDP) and Advanced VoE (B_ADV). The Directorate General of Village and Rural Development produces policy products that directly affect the direction and procedures of VoE management, which serve as guidelines for other actors. Its position made this agency less dependent on external support to carry out its regulatory functions.

The second dominant actor is the Advanced VoE, in this study represented by the VoE "Karya Usaha Bersama" in Karanganyar Regency, Central Java Province, which is engaged in tourism and contributes a profit of IDR 340,000,000.00 to the village income in 2023. Advanced VoE was included in Quadrant I because they already had mature institutions, are quite independent in managing their business, and therefore do not depend heavily on the help of other actors. The

success and best practices of Advanced VoE were actually able to influence other VoEs that are still in the Developing or Pioneering stage, becoming an object of research for academics, and even an evidence-based policy for the government.

Quadrant II (top right) was occupied by academics in the field of rural economics (A_RURAL), academics in the field of environmental science (A_ENVI), Pioneer VoE (B_BASIC), the Jakarta Village Community Training and Empowerment Center (G_BBPPM), and Media Actors (M_ADM). They are actors with high influence but also high dependency. Academics played a major role through field research and concept formulation that can influence the direction of policies and VoE management practices, but require government funding support and the involvement of VoE and the community as objects of research and service.

Pioneer VoE has a significant impact on the community by creating jobs and utilizing local potential. Although their level of independence is still low, they depend on capital and assistance from other

actors. The Jakarta Village Community Training and Empowerment Center improved VoE and village empowerment through training, counseling, and initiatives. Their efforts rely on government policies, budgets, and cooperation with VoE as beneficiaries. Media actors played a strategic role in disseminating information, but they also need content, data, and collaboration from other actors.

Quadrant III (bottom right) was a position for actors who have low influence but high dependency on others. People in villages with Pioneer VoE (C_BASIC) were located in this quadrant because they lack sufficient space and capacity to influence VoE management, and their participation in village development remains low. The lack of independence led them to remain highly dependent on VoE and other stakeholders, including the government and academics.

Quadrant IV (bottom left) was filled by communities in villages with Advanced VoE (C_ADV) and village environmental care communities (C_NPO). They were not dominant in influencing the direction of policies or the running of VoE programs, but also did not depend significantly on other actors to carry out their activities. People in villages with Advanced VoE were generally

more independent, because the existence of Advanced VoE can boost their welfare, so they are not dependent on the help of other actors, even though their influence on other actors is also small. The community cares for the environment, plays a role in supporting social activities, and the village environment, but it is more of a supporter than the main driver, so it does not have a great influence.

3.3. Competitiveness of Actors

Competitiveness between actors described the intensity of an actor's influence on other actors, determined by direct and indirect impacts and direct and indirect dependencies [14]. Figure 2 showed the competitiveness of actors in VoE development. The government elements, the Directorate General of Village and Rural Development and Jakarta Village Community Training and Empowerment Center, had the highest competitiveness (score 1.3), confirming their dominance as the main drivers with the greatest authority and responsibility. Media and Advanced VoE actors also exhibited high competitiveness, influencing VoE development, but to a lesser extent than government actors.

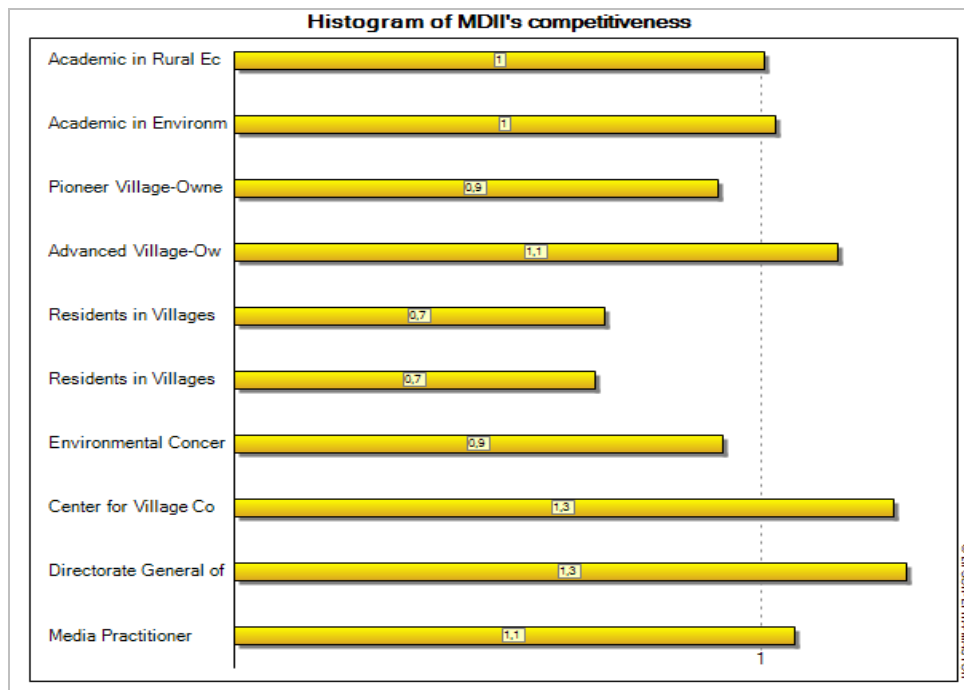


Figure 2. Graph of Competitiveness Between Actors

Academics in rural economics and the environment were in a moderate position (score of 1.0), indicating that they were making an impact through research and mentoring, but still relied on government, VoE, and community support. Environmental care communities, Pioneer VoE, and village communities, both with Advanced and Pioneer status, had low competitiveness. The implication of Figure 2 was to show the need for an empowerment strategy for low-competitive groups to increase their contribution to VoE development.

3.4. Actors' Attitudes towards Objectives

This research involved five key objectives to analyze the attitudes of actors towards these goals, including whether they agreed with or support them, and the level of support they provide. The data processing results in Figure 3 indicated the absence of blue on the goal bar graph, which suggested that the actors responded positively or agreed with all objectives in the development of VoE.

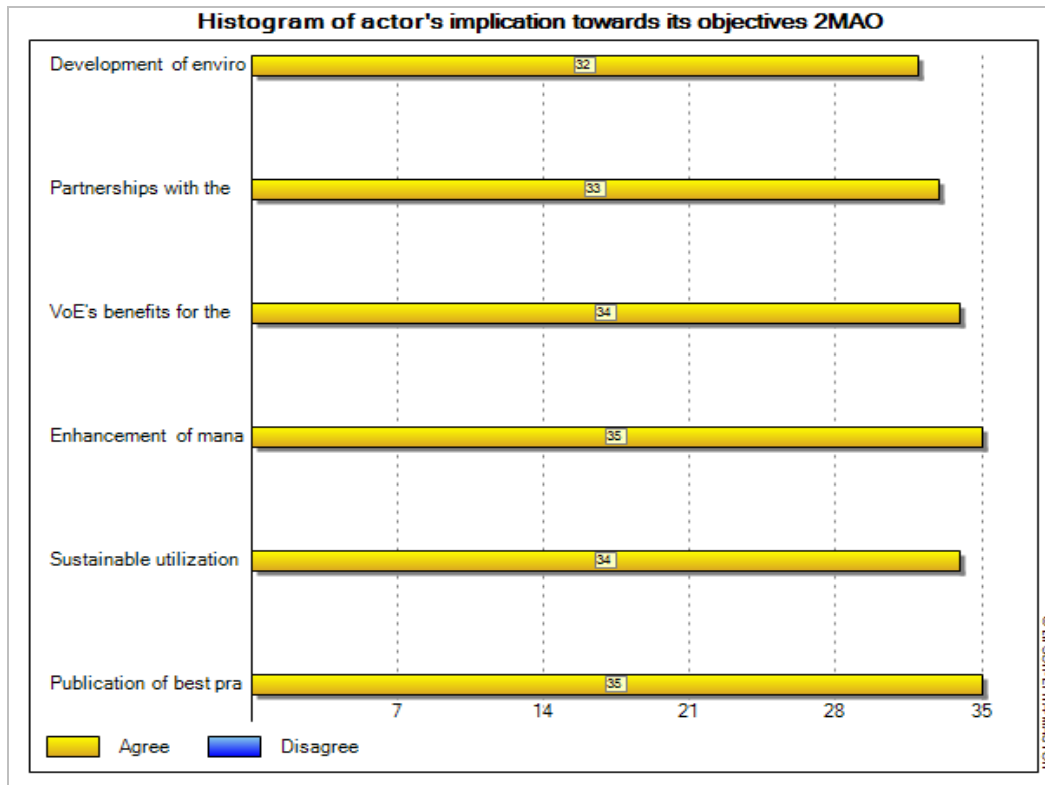


Figure 3. Implications of Objectives for Actors

The objectives with the highest intensity of support were the “Managerial Skills Improvement of VoE Managers” and the “Publication of Best Practices in VoE Management”, both of which earned scores of 35. This meant that the actors assessed that human resource development and the dissemination of best practices in VoE management are key to the success of strengthening VoE.

VoE often failed to develop due to weak management and governance [20]. Through human resource development, VoE could manage business processes more optimally. All actors placed the objective named “Improvement of Managerial Skills of VoE Managers” as important and a priority because the government needed VoE human resources who are ready to implement policies, academics need partners with good governance for research, and the community needs professional managers so that VoE can provide benefits.

Publications could be a tool for knowledge sharing and collaboration between development actors, thereby accelerating the occurrence of social change [21]. Actors viewed the best practice publication as a means of broadening impact, managing public opinion, and disseminating the results of programs or policies. Therefore, it was natural that high support was given to this goal. The publication of best practices was necessary as a means of knowledge transfer to other VoEs that are still in the Pioneering stage. The

widespread information on the success of VoE was also expected to attract support from the private sector.

The objective named “Development of an Environmentally Friendly VoE Business” was also considered important by the actors, but it received the smallest score compared to the other objectives. This could be interpreted as saying that some actors still see environmental aspects as complementary, not a top priority. This condition was in line with the priority regulation of the use of village funds, where the climate and environmental agenda have not been placed as development priorities [22]. The lack of government commitment regarding this funding source had led to environmental-based businesses not being prioritized. Different study also explained that the limited human resources and lack of infrastructure had caused the implementation of green business in rural areas not to run optimally [23].

3.5. Convergence Analysis

The following result of the analysis was the convergence of actors, as shown in Figure 4. The convergence of actors reflected the similarity in the attitudes of actors towards their objectives or issues. This analysis aimed to identify potential points of alliance among actors [19]. Convergence maps could be used to determine which actors can collaborate while avoiding potential conflicts.

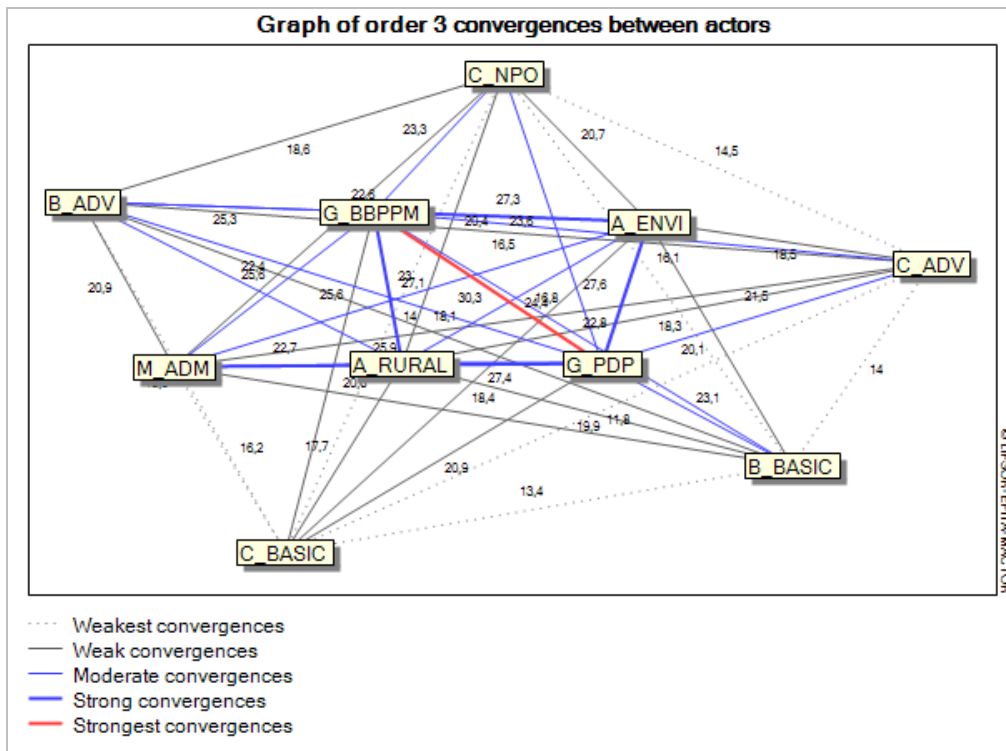


Figure 4. Actors Convergence Map

Figure 4 showed that the strongest convergence relationship occurs between the Jakarta Village Community Training and Empowerment Center (G_BBPPM) and the Directorate General of Village and Rural Development of the Ministry of Villages (G_PDP). Both originated from elements of the central government, serving in different but complementary roles. The Jakarta Village Community Training and Empowerment Center focused on rural development through technical training. At the same time, the Directorate General of Village and Rural Development had the primary task of formulating policies for village and rural development. The similarity in orientation allowed these two actors to form a strong convergence relationship. This was in line with the government's position as a regulator, as well as the main coordinator in the implementation of village development [18], so that its role was very dominant in determining the policy direction and strategy of VoE development, academic actors in the field of rural economics and the environment also showed high convergence with the two government actors. These findings showed that there are good opportunities for collaboration between the government and academia. This was in line with the previous research, which emphasizes that the involvement of academics is important to provide research-based input, so that village development policies can be more targeted [17], [24].

3.6. Implications for VoE Development

The results of the MACTOR analysis conducted on ten pentahelix actors yielded several implications that served as the basis for VoE development interventions

aimed at achieving optimal social, economic, and environmental benefits. First, the influence analysis (MDI) revealed that two government category actors, namely the Jakarta Village Community Training and Empowerment Center and the Directorate General of Village and Rural Development, have the highest influence on the network of actors and have the potential to be a driving force in the VoE development program. The role of the two institutions as providers of technical training, mentoring, and policy making supported other actors when carrying out their activities in supporting VoE governance.

Second, the analysis results showed that the Pioneer VoE and its community had a high dependence on other actors, whereas the Advanced VoE had a more independent community and could even play an influential role. The implication of these findings was that VoE's performance would affect the independence of its people. A good VoE capacity would create an independent community, as mandated by the Village Law, to foster strong, advanced, and independent villages. Therefore, creating community independence needed to be sought, one of which is through the development of VoE.

Third, the results of the objectives analysis (2MAO) indicated that the key objectives with the highest actor support were Managerial Skills Improvement of VoE Managers and "Publication of Best Practices in VoE Management". This implied that the priority of the VoE development program should focus on enhancing managerial skills and disseminating best practices in VoE. The development of Eco-Friendly VoE Business

had the lowest score compared to other objectives, so there was a need for mutual support and commitment to start an environmentally-based business process.

Fourth, the role of academics, the media, and the community needed to be optimized. Academics were in an influential position, but depending on resources, they had the potential to collaborate on research-based training and program evaluation. Media actors played a strategic role in publishing best practices, but they require content and data. Therefore, it was necessary to establish collaborative mechanisms with other stakeholders. The Environmental Community could be driven as agents of sustainable practices in VoE.

These implications demonstrated that VoE development aligned with the three pillars of sustainable development. Strengthening stakeholder collaboration within the pentahelix framework not only enhanced VoE performance but also supported the achievement of village-level SDGs by meeting the objectives.

4. Conclusion

The analysis of actor relationships showed that the development of VoE is influenced by the role of pentahelix actors, with the government as the main driver. Pioneer VoE and its communities still have a high level of dependence, whereas Advanced VoE is more independent and able to play a more influential role. This condition demonstrates that the institutional capacity of VoE is a key factor in determining the level of community independence. The objectives that received the most support from actors were the improvement of managerial skills and the publication of best practices in VoE management. Therefore, the priority for strengthening VoE should focus on human resource development and the dissemination of success stories. Support for environmentally friendly businesses remains minimal, so it requires a joint commitment among stakeholders. The roles of academics, media, and communities need to be optimized to maximize the benefits of VoE, thereby encouraging social, economic, and environmental development in rural areas.

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