Research paper

The effect of implementation on successful forest management policy, moderated by actor-network and stakeholder collaboration

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Abstract. Knowing and analyzing the effect of the successful implementation of forest management policies mediated by community empowerment by moderating a network of actors and stakeholder collaborations. This study uses a quantitative approach to examine specific populations and samples. The research instrument is a questionnaire. The sample in this study were 100 people around the KPHP Model Yogjakarta. The analytical tool used Structural Equation Modeling (SEM) WarpPLS and IPA approaches. Communication, resources, environmental conditions, and relationships between organizations have a direct and significant effect on community empowerment, and the empowerment variable has a direct and significant effect on the successful implementation of forest management policies. The variables that do not directly affect the disposition and organizational structure variables do not significantly influence community empowerment. The influence of actor-networks and stakeholder collaborations as moderation which strengthens implementation of community empowerment and successful implementation is a novelty in research.

Key words: communication, resources, disposition, organizational structure, environmental conditions, relationships, community empowerment, policy implementation, actor-networks, stakeholders.

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Introduction

Forests are one of Indonesia's largest natural resources. A forest has an essential role in life; it provides assets for Indonesian development and benefits its people ecologically, socio-culturally, and economically. People receive direct benefits, such as timber and non-timber products from the forest, and indirect benefits such as protecting life's support systems to regulate water management. Consequently, forests have a strategic role and position in national development. Law No. 41 of 1999 concerning Forestry mandated forest resource management by establishing forest management areas at the provincial level. The law was issued for realizing sustainable forest management to maintain balanced production and ecological aspects; it also

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provides maximum benefits for the community's welfare. Regencies/municipalities and management units are called the Forest Management Units abbreviated as FMU (Indonesian: *Kesatuan Pengelolaan Hutan* or KPH). FMU is established following its primary function and designation, for efficient and sustainable management.

Law No. 41 of 1999 defines a forest as a unitary ecosystem in the form of land containing biological natural resources dominated by trees in their natural environment, inseparable from one another. The concept is different from a forest area defined as a specific area designated and/or stipulated by the government to be maintained as a permanent forest. Law No. 41/1999, in article 17, mandates the establishment of forest management areas at the management unit level by taking land characteristics, forest types, forest functions, watershed conditions, socio-culture, economy, community institutions (customary law), and government administrative boundaries into account.

The development of Forest Management Units as a public policy requires full support from all respective parties since 60 percent of a public policy's success is mostly determined by the effectiveness of its implementation (Dwidjowijoto, 2006). Implementation is the most challenging part of a public policy process, compared to formulation, monitoring, and evaluation. In some cases, implementing a public policy has to deal with complex problems that were not found and predicted in the initial concept. However, it is not easy to integrate hierarchies among the respective agencies. The effectiveness of public policy implementation can be seen from its effects on the community; positive effects mean an effective policy implementation is effective, and negative effects or not what the government expects means ineffective implementation (Sunggono, 1994).

Implementation is the most crucial stage in the public policy process to achieve the desired impact or goal (Winarno, 2002). The implementers can use a model as an analytical tool in measuring the success of a public policy. According to Edward III in Nugroho (2012), the four aspects that need to be considered to realize an effective public policy implementation are (1) Communication, regarding how policies are communicated and the responsiveness of the parties involved; (2) Resources, related to the availability of supporting resources; (3) Disposition, concerning the willingness of implementers in carrying out the public policy. (4) Bureaucratic structure, related to the suitability of bureaucratic organizations implementing the public policy.

One of the FMU development problems is that the existing FMU policies are not entirely aligned with other policies, and not all stakeholders are involved. Stakeholder analysis should be performed as early as possible when starting the program to identify variously interested and related groups in FMU development issues. Identifying each stakeholder's views and characteristics are essential for implementing the FMU development advocacy initiative's next stage. The more specific the information is for each stakeholder, the easier it is to provide information, messages, and investments. Stakeholder analysis is crucial in determining advocacy efforts to perform. The success in determining public policies and support for resolving a particular problem depends on the stakeholders involved; it directly affects the FMU development. FMU development is expected to become the rudiment of independent forest management at the site level, with its regional units' various potentials.

In the current forestry decentralization era, a special approach is imperative to develop a successful program, a few of which are identifying and mapping stakeholders involved in FMU development, as well as analyzing several policies related to FMUs. These are carried out to assist the FMU development activities and prevent them from implementing implementation at the field level. The approach encourag-

es democratic participation in building a stakeholder network in any form of public policy, especially at the formulation stage. The network approach in public policy has undergone rapid development with the growth of cluster and quango organizations due to interactions among the government, the private sector, and the public (Alwi, 2012). Policy networks in the policy formulation stage have been widely discussed in agenda-setting theory, policy formulation, coalition advocacy, and iron triangles that have been discussed in Sabatier (1991) and also in Mukherjee & Howlett (2015). At this stage, the policy network contributes to changing goals by the emergence of actors with motivational values and interests.

As Rhodes & Marsh (1992) stated, the network concept focuses on the relationship between government and non-government actors in the policy process and public services. This study's coalition advocacy approach helps explain the change in goals caused by actors' interaction and value systems in the policy network. Policy networks among government, private and public actors, as well as the changing goals, can be the controls for labelling the public interest. Public organizations need to build stakeholder networks or policy networks. Accordingly, this study discussed the successful implementation of policies and programs carried out by the government to support the decentralization of Indonesian forest governance; this study is entitled "The effect of implementation on the successful forest management policy, moderated by actor-network and stakeholder collaboration". As a research novelty, the study also examined the effect of actor-network and stakeholder collaboration as moderation in strengthening the community empowerment and successful implementation.

Literature review

Communication

Communication is a process when a person or several people, groups, organizations, and communities create and use information to connect with the environment and other people. According to Merkl-Davies & Brennan (2017) in their study entitled "A theoretical framework of external accounting communication", communication is carried out verbally and understood by both parties involved.

Resource

A resource is a potential value of a particular material or element in life. Resources are physical and non-physical (intangible). Some resources can change; they can be bigger, permanent (always constant), and disappear. Besides, some of them can be recovered or renewable (renewable resources), such as plants and animals; some are non-renewable resources.

Disposition

A disposition is a brief instruction regarding the follow-up (completion) of an issue or a letter. The leader makes dispositions for staff or subordinates based on his/her area of expertise or authority. A disposition is made for staff to follow up on or complete a meeting or incoming letter as requested by the leader, which can be in the form of a reply letter or other actions to resolve the problem. According to Kuo (1985), a disposition has been a problem in the spotlight for more than two decades.

Organizational structure

Organizational structure is how work is divided into different tasks, achieving coordination (Mintzberg, 1979). The most widespread difference in organizational structure is the vertical (mechanistic) vs. horizontal (organic) structural form (Ambrose & Schminke, 2003; Aryee *et al*., 2008; Burns & Stalker, 1961; Slevin & Covin, 1997). Vertical organizational structures

tend to be rigid, hierarchical, strict, and formal, characterized by centralized power/control/authority and decision-making, rigid communication channels, and requiring strict adherence to formal rules and regulations. In contrast, horizontal organizational structures tend to be more flexible and decentralized; compliance with formal rules and procedures is less emphasized. Managers and subordinates can collaborate to make decisions.

Environmental conditions

The environment is a combination of physical conditions (including the state of natural resources, such as land, water, solar energy, minerals, and flora and fauna on the land and in the oceans) and institutions that include human creation, such as the decision on how to use the environment. The environment can also be interpreted as everything around humans that affects the development of human life; it consists of biotic and abiotic components. The abiotic component is lifeless, such as soil, air, water, climate, humidity, light, and sound. In contrast, the biotic component is every living thing, such as plants, animals, humans, and micro-organisms (viruses and bacteria).

Relations between organizations

Relationships in an organization can be in terms of good communication between the leader and employees; communication is a vital part and the most critical managerial work. Managers must convey their vision and goals to run the organization well. Good communication can reveal what is going on in the environment and how the organization can run effectively. The relationship is the second characteristic of the organization, and only the people in it can create a relationship. The types are personal relationships, social relationships, and task relationships. These relationships will be critical to organizational success. Individuals are aware of their position in the group; thus, it is unethical to work for an individual's interests. Likewise, groups will create an atmosphere of cooperation or good coordination in carrying out activities towards achieving organizational goals. Coordination is the key to organizational success, not fragmented individuals.

Community development

Empowerment theory includes both process and outcome (Swift & Levine, 1987). The theory suggests that actions, activities, or structures may be empowering and that the process results produce a level of empowerment. The empowerment process and outcomes are varied because no standard can fully grasp their meaning for all people and contexts (Rappaport, 1984; Zimmerman, 1995). The behavior of an empowered 16-year-old mother is different from a recently widowed middle-aged man; likewise, empowering these two individuals should not be done in the same way.

Successful implementation of forest management policies

The success of policy implementation is assessed based on the implementation process (process perspective) and the results achieved (results perspective). From a process perspective, a government program is deemed successful if its implementation follows the program maker's guidelines and provisions, including the implementation procedures, agenda, target groups, and program benefits. Meanwhile, the program is considered successful from the results perspective when the program has the desired effect. A program may be successful in its process but may fail in its effect, or vice versa. In other words, policy implementation can be considered successful when the processes and results are consistent. Edward in Widodo (2011) perceives policy implementation as a dynamic process, in which there are many interacting factors affecting policy implementation.

Actor-network

The actor-network is based on Actor-Network Theory (ANT). ANT was developed in the early 1980s at the Centre de Sociologie de l`Innovation (CSI) Paris by Latour (1987), Law (1987), and Callon (1998). The ANT conceptual framework explores sociotechnical collective processes. ANT uses general symmetry principles to explain social phenomena and is not based on social determination approaches (macro and micro). According to Latour (1987), the central topic is not microagents or macrostructures, but the social processes that rotate the entities. In other words, the real focus should be on networks. ANT is not a social theory but a theory of fluid space revolving around the modern situation.

Stakeholder collaborations

Collaboration is cooperation, interaction, and compromise of several related elements between individuals, institutions, or parties involved, directly or indirectly (Lembaga Administrasi Negara, 2017). Collaboration is a mutually beneficial relationship between two or more parties working towards a common goal by sharing responsibility, authority, and accountability to achieve the goal (Wood & Gray, 1991).

Importance Performance Analysis (IPA)

IPA was first proposed by Martilla & James (1977) to measure the importance and performance of service attributes. This measurement is done from the perspective of the customer. The level of importance indicates the expectations of the customer. Meanwhile, the level of performance shows the perception of the empirical state received by the customer. Science results are presented in a graphical form that is easy to interpret, namely in the form of a Cartesian diagram with four quadrants as shown in Figure 1 (Martilla & James, 1977).

The vertical axis shows customer expectations (importance), while the horizontal axis shows customer perceptions (performance). An explanation of each quadrant is presented as follows (Cheng & Tzeng, 2011).

a. Quadrant I: this quadrant indicates that the attribute is considered very important for the respondent, however, the performance level of the attribute is quite low. This suggests that improvement efforts should be concentrated here.

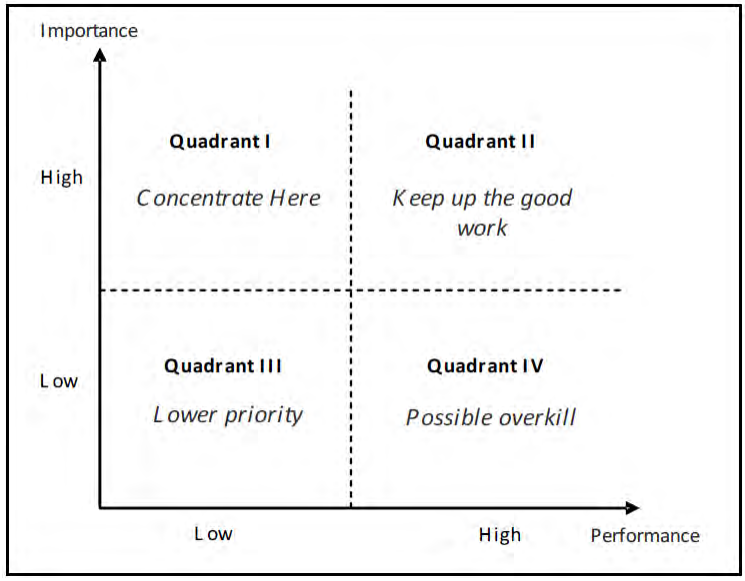


Figure 1. Explanation of the importance–performance analysis quadrant.

b. Quadrant II: this quadrant indicates that the attribute is considered very important for the respondent, and at the same time this attribute has a very good performance. Thus, this performance must be maintained.

c. Quadrant III: this quadrant indicates that the attribute has a low level of importance and its performance is also low. Thus, even though performance is low, this is nothing to be concerned about given that these attributes are not considered very important. Available resources can be used to improve the performance of other, more important attributes.

d. Quadrant IV: this quadrant shows attributes that are less important, but their performance is relatively high. Customers are satisfied with the performance, but excessive use of resources needs to be considered.

Methodology

This study used a quantitative approach to examine specific populations and samples. The data were analyzed using a statistical method to test the research hypothesis. The research instrument was a questionnaire. The sample used in this study was 100 people around the KPHP Model Yogyakarta. The data were collected by distributing questionnaires to several selected communities around the KPHP Model Yogyakarta. Data was collected from Septem-

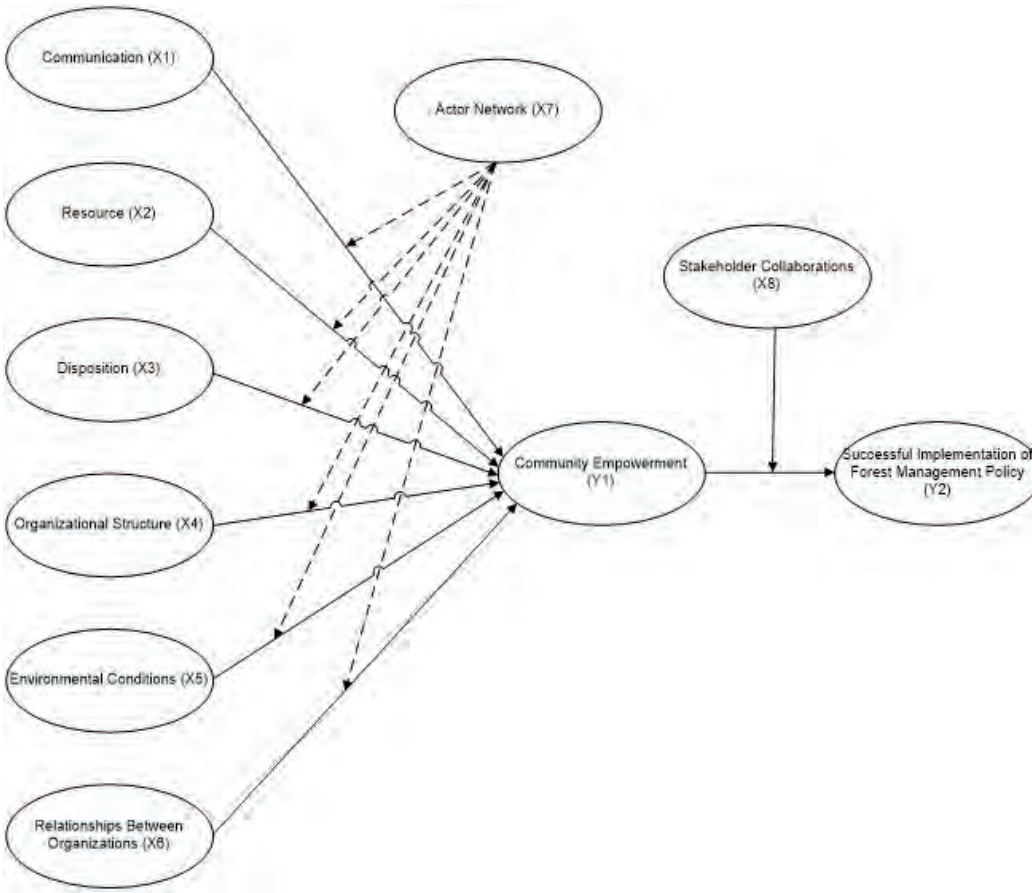


Figure 2. Conceptual framework.

ber to November 2021 using a Likert scale questionnaire. The scope of this research was the forest management policy. The collected data were analyzed using Structural Equation Modelling (SEM) analysis with the WarpPLS and IPA approaches.

Please see the Figure 2 for the conceptual framework of this research.

Based on the conceptual framework, the hypotheses are as follows:

H1: Communication has a significant effect on community empowerment

H2: Resources have a significant effect on community empowerment

H3: Disposition has a significant effect on community empowerment

H4: Organizational structure has a significant effect on community empowerment

H5: Environmental conditions have a significant effect on community empowerment

H6: Relationships between organizations have a significant effect on communityempowerment

H7: Community empowerment has a significant effect on the success of forest management policy implementation

H8: Communication has a significant effect on community empowerment, moderated by actor-network

H9: Resources have a significant effect on community empowerment, moderated by actor-network

H10: Disposition has a significant effect on community empowerment, moderated by actor-network

H11: Organizational structure has a significant effect on community empowerment, moderated by actor-network

H12: Environmental conditions have a significant effect on community empowerment, moderated by actor-network

H13: Relationships between organizations have a significant effect on communityempowerment, moderated by actor-network

H14: Community empowerment has a significant effect on the success of forest management policy implementation, moderated by stakeholder collaboration

In addition, this study also examines the role of mediation in several very important previous studies (Solimun & Fernandes, 2017; Fernandes *et al*., 2014; Purbawangsa *et al*., 2020; Fernandes & Solimun, 2017; Sumardi & Fernandes, 2018) but in this case the focus is on assessing the role of community empowerment as a mediation in realizing the success of forest management policy implementation.

Results and Discussion

The analysis of Structural Equation Modelling (SEM) using the WarpPLS approach

The hypothesis of this study uses a structural model test. Tests in this study were carried out using partial SEM analysis for each variable relationship.

Table 1 shows that nine hypotheses have a p-value less than 0.05, indicating a significant effect. Each effect is explained at length in the discussion of each research hypothesis. A direct effect is shown as several hypotheses produce a p-value less than 0.05, indicating that the variables of communication, resources, environmental conditions, relationships between organizations have a significant effect on community empowerment.

The effect of communication on community empowerment

Table 1 presents the effect of communication (X1) on community empowerment (Y1); a coefficient of 0.325 was obtained with a p-value less than 0.001, meaning that communication has a significant and positive effect on community empowerment. This study is in line with the research conducted by Ding & Haynes (2006), revealing that differences in the telecommunication infrastructure affected regional economic growth in China. Information Technology through the Information Technology

Table 1. Research hypothesis testing.

Structural Model		Coefficient	Std Error	Critical Ratio (CR)	P-value	Remark
Direct Effect						
Communication	Community development	0.325	0.086	3.779	0.000	Significant
Resource	Community development	0.240	0.093	2.581	0.010	Significant
Disposition	Community development	0.064	0.085	0.753	0.451	Not Significant
Organizational structure	Community development	0.060	0.073	0.822	0.411	Not Significant
Environmental conditions	Community development	0.336	0.093	3.613	0.000	Significant
Relations between Organizations	Community development	0.336	0.072	4.667	0.000	Significant
Community development	Successful Implementation of Forest Management Policies	0.326	0.082	3.976	0.000	Significant
Moderation Effect Actor-Network						
Structural Model		Coefficient	Std Error	CR	P-value	Remark
Communication	Community development	0.339	0.079	4.291	0.000	Significant
Resource	Community development	0.226	0.070	3.229	0.001	Significant
Disposition	Community development	0.092	0.087	1.057	0.290	Not Significant
Organizational structure	Community development	0.142	0.093	1.527	0.127	Not Significant
Environmental conditions	Community development	0.120	0.072	1.667	0.096	Not Significant
Relations between Organizations	Community development	0.356	0.098	3.633	0.000	Significant
Moderation Effect Stakeholder Collaborations						
Structural Model		Coefficient	Std Error	CR	P-value	Remark
Community development	Successful Implementation of Forest Management Policies	0.292	0.077	3.792	0.000	Significant

Development Index variable also has a significant effect on human development in Indonesia's provinces (Murtiadi, 2019). Syarif & Saadah (2016) and Obayelu & Ogunlade (2006) disclosed the significant effect of communication on community empowerment. According to Murtiadi (2019), communication is a contributing factor in regional economic growth and community development.

The effect of resources on community empowerment

Table 1 shows the effect of resources (X2) on community empowerment (Y1) and a coefficient of 0.240 with a p-value of less than 0.001. It means that resources have a significant and positive effect on community empowerment. This study is in line with Quiñones *et al.* (2013) indicating that job resources can increase employee empowerment perceptions, which is an essential factor for increasing work engagement. Jonathan & Tarigan (2016) asserted that government empowerment is also affected by other factors such as government policies and the community's cultural economy.

The effect of disposition on community empowerment

Table 1 displays the effect of disposition (X3) on community empowerment (Y1): a coefficient of 0.064 with a p-value of more than 0.001, indicating that disposition does not affect community empowerment. There has not been a study examining the effect of disposition on community empowerment, so it is considered a novelty.

The effect of organizational structure on community empowerment

Table 1 reveals the effect of organizational structure (X4) on community empowerment (Y1): a coefficient of 0.060 with a p-value of more than 0.001; it means that organizational structure does not affect community empowerment. There has not been a study examining the effect of organizational structure on community empowerment, so it is considered a novelty.

The effect of environmental conditions on community empowerment

Table 1 indicates the effect of environmental conditions (X5) on community empowerment (Y1): a coefficient of 0.336 with a p-value less than 0.001, meaning that environmental conditions have a significant and positive effect on community empowerment. There has not been a study examining the effect of environmental conditions on community empowerment, so it is considered a novelty.

The effect of relationships between organizations on community empowerment

Table 1 presents the effect of relationships between organizations (X6) on community empowerment (Y1): a coefficient of 0.336 with a p-value of less than 0.001. This means that relationships between organizations have a significant and positive effect on community empowerment. There has not been a study examining the effect of relationships between organizations on community empowerment, so it is considered a novelty.

The effect of community empowerment on the success of forest management policy implementation

Table 1 displays the effect of community empowerment (Y1) on the success of forest management policy implementation (Y2): a coefficient of 0.326 with a p-value of less than 0.001. This indicates that community empowerment has a significant and positive effect on the successful implementation of forest management policies. There has not been a study examining the effect of community empowerment on the successful implementation of forest management policies, so it is considered a novelty.

The effect of communication on community empowerment moderated by actor-networks

As shown in Table 1, communication significantly and positively affects community empowerment moderated by the actor-network variable, with a coefficient of 0.339. This means that the effect of communication will increase community empowerment, counterbalanced by the actor-network factor. There has not been a study examining the effect of communication on

community empowerment moderated by actor-network, so it is considered a novelty.

The effect of resources on community empowerment moderated by actor-networks

As shown in Table 1, resources significantly and positively affect community empowerment moderated by the actor-network variable, with a coefficient of 0.226. This means that the effect of resources will increase community empowerment, counterbalanced by the actor-network factor. There has not been a study examining the effect of resources on community empowerment moderated by actor-network, so it is considered a novelty.

The effect of disposition on community empowerment moderated by actor-networks

As shown in Table 1, disposition does not affect community empowerment, moderated by the actor-network variable with a coefficient of 0.092. This indicates that the actor-network variable does not strengthen or weaken the effect of disposition on community empowerment. There has not been a study examining the effect of disposition on community empowerment moderated by actor-network, so it is considered a novelty.

The effect of organizational structure on community empowerment moderated by actor-networks

As shown in Table 1, the organizational structure does not affect community empowerment, moderated by the actor-network variable with a coefficient of 0.142. This means that the actor-network variable does not strengthen or weaken the effect of the organizational structure on community empowerment. There has not been a study examining the effect of organizational structure on community empowerment moderated by actor-network, so it is considered a novelty.

The effect of environmental conditions on community empowerment moderated by actor-networks

As shown in Table 1, environmental conditions do not affect community empowerment, moderated by the actor-network variable with a coefficient of 0.120. This means that the actor-network variable does not strengthen or weaken the effect of environmental conditions on community empowerment. There has not been a study examining the effect of environmental conditions on community empowerment moderated by actor-network, so it is considered a novelty.

The effect of relationships between organizations on community empowerment with actor-networks moderated

As shown in Table 1, the relationship between organizations significantly and positively affects community empowerment, moderated by the actor-network variable with a coefficient of 0.356. This means that the effect of relationships between organizations will increase community empowerment, counterbalanced by the actor-network factor. There has not been a study examining the effect of inter-organizational relations on community empowerment moderated by actor-network, so it is considered a novelty.

The effect of community empowerment on the success of forest management policy implementation moderated by stakeholder collaboration

As shown in Table 1, community empowerment significantly affects the successful implementation of forest management policies moderated by the stakeholder collaboration variable, with a coefficient of 0.292. This means that community empowerment will increase the success of the implementation of forest management policies, counterbalanced with the stakeholder collaboration factor. There has not been a study examining the effect of community

empowerment on the successful implementation of forest management policies moderated by stakeholder collaboration, so it is considered a novelty.

IPA (Importance Performance Analysis)

The data analyzed were questionnaire responses obtained from 100 samples of forest communities, processed using the Importance Performance Analysis (IPA) on each variable indicator. Importance Performance Analysis is an analytical technique used to identify the important performance factors an organization must demonstrate. Importance value and performance data for the communication variable (X1) are presented in Table 2.

Table 2 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The communication variable (X1) consists of three indicators: transmission (X11), clarity (X12), and consistency (X13). The IPA results of the three indicators are presented in Figure 3.

Figure 3 shows that the two indicators for the communication variable (X1) in the KPHP Model Yogyakarta area are in quadrant II (recommendation). This means that the respondent has a high-performance communication. The respondents' perception regarding the X11 (transmission) indicator's expectations is relatively high, as seen from the importance value of 60%. In comparison, the performance value is around 59%, which is the actual performance level, as seen from the transmission indicator for communication. This indicates that the transmission performance in communication went well. The X13 indicator has a lower performance value at 65%, while the importance value is 70%.

One indicator for the communication variable (X1) in the KPHP Model Yogyakarta area is quadrant III (recommendation). The X12 indicator reveals respondents' perception that it has an importance value of around 40% and a drastic increase in the performance value of around 48%. Accordingly, the communication has been successful, as seen from the clarity indicator. Furthermore, the IPA results of the the resource variable (X2) can be seen in Table 3.

Table 3 shows the size of the analysis gap concerning the importance and performance values. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The resource variable (X2) consists of

Table 2. The IPA results of the communication variable (X1).

Variable	Indicator	Importance	Performance
Communication (X1)	Transmission (X11)	59.20	58.50
	Clarity (X12)	40.10	48.38
	Consistency (X13)	69.60	65.25



Figure 3. The IPA results of variable X1.

Table 3. The IPA results of the resources variable (X2).

Variable	Indicator	Importance	Performance
Resource (X2)	Member (X21)	52.30	55.25
	Information (X22)	62.60	52.63
	Authority (X23)	63.20	57.75
	Amenities (X24)	55.90	58.00

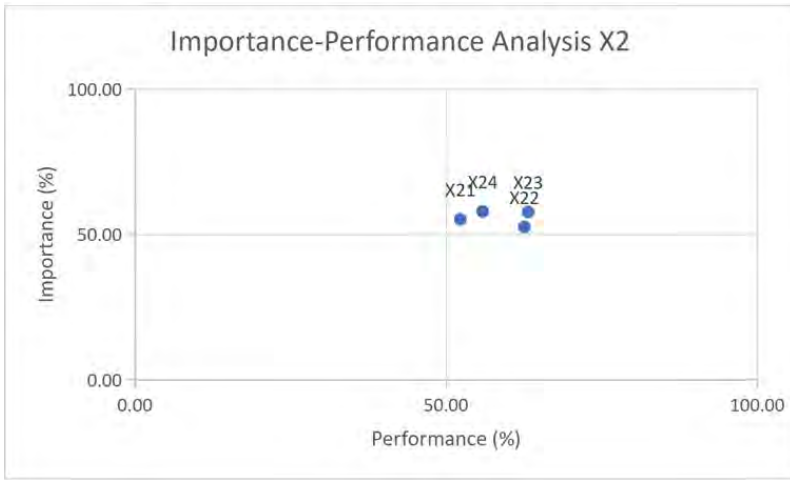


Figure 4. The IPA results of variable X2.

four indicators: member (X21), information (X22), authority (X23), and facilities (X24). The IPA results of the four indicators are presented in Figure 4.

Figure 4 shows that all indicators for the resource variable (X2) in the KPHP Model Yogyakarta are in quadrant II (recommendation), indicating that respondents have

Table 4. The IPA results of the disposition variable (X3).

Variable	Indicator	Importance	Performance
Disposition (X3)	Disposition effects (X31)	59.40	59.00
	Staffing the bureaucracy (X32)	44.60	72.75
	Incentive (X33)	68.90	54.13

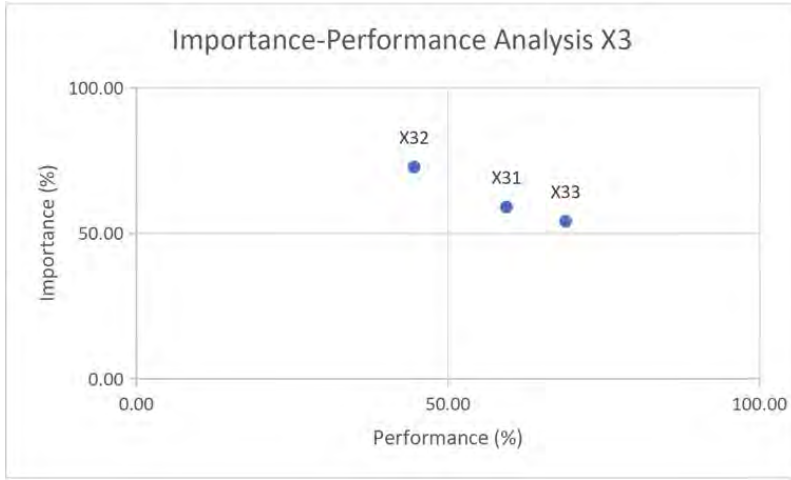


Figure 5. The IPA results of variable X3.

high performance regarding resources. The respondents' perception regarding the X21 indicator (members) expectations is relatively high, which can be seen from the importance value of 52%. In comparison, the performance value is 55%, which is the actual performance level, as seen from the member indicator for resources. The X22 indicator has a lower performance value with 53%, while the importance value is 63%. The X23 indicator has a lower performance value with a value of 58%, while the importance value is 63%. The X24 indicator has a performance value of 58%, while the importance value is 56%. This indicates the good performance of resources. The IPA results of the disposition variable (X3) are presented in Table 4.

Table 4 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher performance level than the importance value or the respondents' expectations for this indicator. Variable disposition (X3) consists of three indicators: disposition effects (X31), staffing the bureaucracy (X32), and incentives (X33). The IPA results of the three indicators are presented in Figure 5.

Figure 5 shows that the two indicators for the disposition variable (X3) in the KPHP Model Yogyakarta are in quadrant II (recommendation). This shows that the respondent has high performance regarding disposition. The respondents' perception regarding the expectations of the X31 indicator (disposition effects) is relatively high, which can be seen from the importance value of 60%. In comparison, the performance value is 59%, which is the actual performance level, as seen from the member indicator for disposition. The X33 indicator has a lower performance value with a value of 54%, while the importance value is 69%. The X32 indicator is in quadrant I; the

Table 5. The IPA results of the organizational structure variable (X4).

Variable	Indicator	Importance	Performance
Organizational structure (X4)	Standard operating procedures (X41)	57.30	58.38
	Fragmentation (X42)	68.00	58.50



Figure 6. The IPA results of variable X4.

Table 6. The IPA results of environmental condition variables (X5).

Variable	Indicator	Importance	Performance
Environmental conditions (X5)	Physical (X51)	53.60	37.75
	Flora and fauna (X52)	55.40	52.88

performance value is higher with a value of 73%, while the importance value is 45%. The IPA results of the organizational structure variable (X4) can be seen in Table 5.

Table 5 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The organizational structure variable (X4) consists of two indicators: standard operating procedures (X41) and fragmentation (X42). The IPA results of the two indicators are presented in Figure 6.

Figure 6 shows that the two indicators for the organizational structure variable (X4) in the KPHP Model Yogyakarta area are in quadrant II (recommendation). This indicates that the respondent has a high performance regarding the organizational structure. The respondents' perception regarding the expectations of indicator X41 (disposition effect) is relatively high, which can be seen from the importance value of 57%. In comparison, the performance value is 58%, which is the actual performance level, as seen from the indicator of disposition effects for organizational structure. The X42 indicator has a lower performance value with a value of 59%, while the importance value is 68%. The IPA results of the environmental condition variable (X5) can be seen in Table 6.

Table 6 shows the size of the analysis

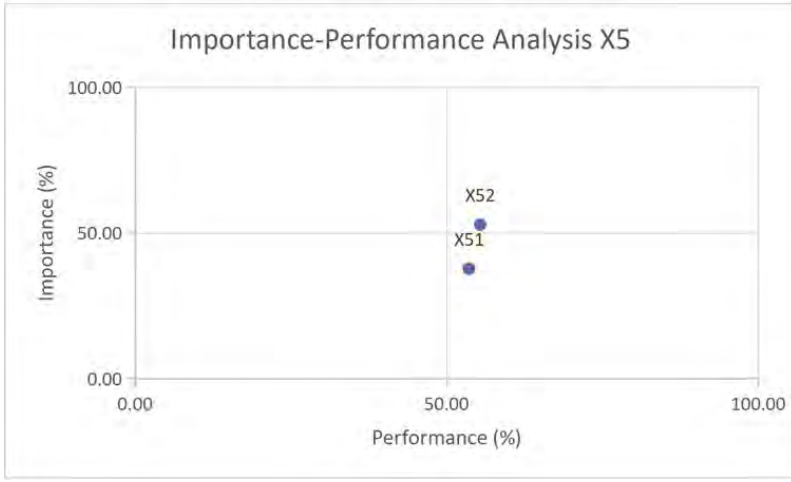


Figure 7. The IPA results of variable X5.

Table 7. The IPA results of the relationship between organizations variable (X6).

Variable	Indicator	Importance	Performance
Relations between organizations (X6)	Organizational culture (X61)	46.40	53.38
	Leadership (X62)	51.60	48.13
	Work motivation (X63)	61.10	72.50

gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the level of respondents' expectations for this indicator. The environmental condition variable (X5) consists of two indicators: physical (X51) and flora and fauna (X52). The IPA results of the two indicators are presented in Figure 7.

Figure 7 shows that one indicator for the environmental condition variable (X5) in the KPHP Model Yogyakarta area is in quadrant II (standard operating procedure). This shows that the respondent has a high performance regarding environmental conditions. The respondents' perception regarding the expectations of the X51 (physical) indicator is relatively high, which can be seen from the importance value of around 54%. In comparison, the performance value is around 38%, which is the actual level of performance. The X52 indicator has a lower performance value with 53%, while the importance value is 55%. The IPA results of the relationship between organizations variable (X6) can be seen in Table 7.

Table 7 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The relationship between organization's variable (X6) consists of three indicators: organizational culture (X61), leadership (X62), and work motivation (X63). The IPA results of the three indicators are presented in Figure 8.

Figure 8 shows that one indicator for the inter-organizational relationship variable (X6) in the KPHP Model Yogyakarta area is quadrant II (standard operating procedure). This indicates that the respondent has a high performance regarding envi-



Figure 8. The IPA results of variable X6.

Table 8. The IPA results of the actor-network variable (X7).

Variable	Indicator	Importance	Performance
Actor-network (X7)	Actor participation (X71)	43.10	45.25
	Actor's perspective (X72)	64.50	57.75
	Actor accessibility (X73)	51.70	54.13
	Determination of action (X74)	41.10	54.75

ronmental conditions. The respondents' perception regarding the indicator of work motivation (X63) expectations is relatively high, which can be seen from the importance value of 61%. In comparison, the performance value is 73%, which is the actual level of performance. The IPA results of the actor-network variable (X7) can be seen in Table 8.

Table 8 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of



Figure 9. The IPA results of variable X7.

Table 9. The IPA results of stakeholder collaboration variable (X8).

Variable	Indicator	Importance	Performance
Stakeholder Collaboration(X8)	Networked structure (X81)	68.10	66.88
	Commitment to a common purpose (X82)	57.20	60.25
	Trust among the participants (X83)	41.70	64.13
	Governance (X84)	52.70	49.50
	Access to authority (X85)	64.60	58.50
	Distributive accountability/responsibility (X86)	51.40	58.25
	Information sharing (X87)	57.10	49.75
	Access to resources (X88)	69.60	65.25



Figure 10. The IPA results of variable X8.

the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The actor-network variable (X7) consists of four indicators: actor participation (X71), actor's perspective (X72), actor accessibility (X73), and determination of action (X74). The IPA results of the four indicators are presented in Figure 9.

Figure 9 shows that the two indicators for the actor-network variable (X7) in the KPHP Model Yogyakarta area are in quadrant II (standard operating procedure). This indicates that the respondent has a high performance regarding the actor-network. The respondents' perception regarding the expectations of the X72 indicator (actor's perspective) is relatively high, which can be seen from the importance value of 65%. In comparison, the performance value is 58%, which is the actual level of performance. The IPA results of the stakeholder collaboration (X8) variable can be seen in Table 9.

Table 9 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The variable stakeholder collaboration (X8) consists of eight indicators: networked structure (X81), commitment to a common purpose (X82), trust among

Table 10. The IPA results of the community development variable (Y1).

Variable	Indicator	Importance	Performance
Community development (Y1)	Human development (Y11)	42.20	51.75
	Business Building (Y12)	45.20	52.63
	Building the Environment (Y13)	42.40	55.25
	Building Institutions (Y14)	41.40	48.88

the participants (X83), governance (X84), access to authority (X85), distributive accountability/responsibility (X86), information sharing (X87) and access to resources (X88). The IPA results of the eight indicators are presented in Figure 10.

Figure 10 shows that most indicators for the stakeholder collaborations (X8) variable in the KPHP Model Yogyakarta area are in quadrant II (standard operating procedures). The IPA analysis results for the community development (Y1) can be seen in Table 10.

Table 10 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The community development (Y1) consists of four indicators: human development (Y11), business development (Y12), environmental development (Y13), and institutional development (Y14). The IPA results of the four indicators are presented in Figure 11.



Figure 11. The IPA results of variable Y1.

Table 11. The IPA results of the successful implementation of forest management policy variable (Y2).

Variable	Indicator	Importance	Performance
Successful Implementation of Forest Management Policy (Y2)	Communication (Y21)	40.90	36.63
	Resources (Y22)	65.60	58.63
	Disposition (Y23)	47.50	64.38
	Bureaucratic structure (Y24)	67.10	72.75



Figure 12. The IPA results of Y2 variable.

Figure 11 shows that all indicators for the community empowerment variable (Y1) in the KPHP Model Yogyakarta are in quadrant IV (overconfidence). The IPA results of the success of forest management policy implementation (Y2) can be seen in Table 11.

Table 11 shows the size of the analysis gap by considering the value of importance and performance. The smaller the value of the gap analysis, the better the indicator; it is because it has a higher level of performance than the importance value or the respondents' expectations for this indicator. The successful implementation of forest management policy (Y2) consists of four indicators: communication (Y21), resources (Y22), disposition (Y23), and bureaucratic structure (Y24). The IPA results of the four indicators are presented in Figure 12.

Research Limitations

The research instrument of this study was a questionnaire using a quantitative approach. There are two limitations of research in this study. First, in filling out the questionnaire, the respondents' degree of honesty was unknown, so even though the data were valid and reliable, this study cannot precisely measure the variables' correct value. The second limitation is that this study only used actor-network and stakeholder collaboration as moderating variables while using community empowerment variables and the success of forest management policy implementation variables as response variables.

Conclusion and Suggestions

Based on the analysis results, it can be concluded that five hypotheses namely H1, H2, H5, H6 and H7 significantly affect each other. The variables directly affecting each other are communication, resources, environmental conditions, and relationships between organizations, affecting community empowerment directly and significantly. The empowerment variable has a direct and significant effect on the successful implementation of forest management policies. Moreover, the disposition and organizational structure variables do not significantly affect community empowerment. Three hypotheses namely H8, H9 and H13 with the actor-network moderating variable significantly affect the other; communication, resources, and relationships between organizations signifi-

cantly affect community empowerment. Furthermore, disposition, organizational structure, and environmental conditions do not affect community empowerment, moderated by the actor-network variable. The stakeholder collaboration variable has a significant moderating effect on the relationship between community empowerment and the successful implementation of forest management policies.

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