

Border governance through local community empowerment: insights from Indonesia-Papua New Guinea borderline

Usman Pakasi^{1*)}, Muhammad Faridz², Hasbi Majid³, Susilawati Susilawati⁴

^{1,2} Department of Government Studies, Universitas YAPIS Papua, Indonesia

^{3,4} Department of Public Administration, Universitas YAPIS Papua, Indonesia

Abstract

This research explored the empowerment of local communities in governing the border areas between Indonesia and Papua New Guinea. The research aims at strategies to improve community livelihoods through the development of agricultural infrastructure, increased productivity, food security, and community participation in decision-making. The research methodology used was a qualitative case study conducted in Kampung Mosso, on the Indonesia-Papua New Guinea borderline. Data was collected through interviews with local leaders and local residents, complemented by a review of government reports and policies, NGO documents, and other academic sources. Analysis will utilize NVivo software for systematic coding and evaluation. Research findings showed that agricultural infrastructure development receives the highest allocation in community empowerment efforts, followed by education and training, and community participation. The research emphasizes the importance of a holistic approach that does not simply address direct outcomes such as increased productivity, but also focuses on sustainable human and institutional capacity building. The research highlights that effectively empowering local communities in border governance involves strategic investments in complementary infrastructure, education and participatory processes. Adopting a comprehensive approach, policymakers are able to empower border communities to sustainably process their resources, improve their livelihoods, and contribute positively to sustainable development goals in the border area.

Keywords: border governance, border area, local empowerment, agriculture community

*)corresponding author

email: usmanpakasi@gmail.com

Introduction

The development of border regions plays a strategic role in the context of national sovereignty and the welfare of local communities (Diener & Hagen, 2024; Eilenberg, 2014; Scott, 2015; Sohn, 2014). Indonesia's border area with Papua New Guinea (PNG) is a particularly unique and complex region, both in terms of geopolitics and economics (Hayward-Jones, 2017; Norotouw, 2017; Singh, 2017). These two countries not only share a long territorial border but also exhibit different social, cultural, and economic dynamics that influence the management of their border areas (Bangun Tambunan & Lantang, 2024; Firth, 2019; Purwanto & Mangku, 2016). The concept of border area governance based on local community empowerment has become increasingly relevant in this era of globalization (Ogbonna et al., 2023; Xue-lian & Ji-xin, 2017; Zumbusch & Scherer, 2015). Local community empowerment refers to efforts to provide autonomy to local communities in managing resources and influencing development in their regions (Prianto, 2012; Salaputa et al, 2013; Ahmad &

Abu Talib, 2015; Ojha et al., 2016; Wali et al., 2017). This approach emphasizes the importance of active community participation in decision-making processes that affect their daily lives (Prianto, 2013; Haris et al., 2014; Dolezal & Novelli, 2022; Park & Kim, 2016; Purnomo et al., 2020; Steiner & Farmer, 2018).

The theoretical foundation of border governance emphasizes the balance between security, economic development, and social inclusion, while community empowerment focuses on enhancing local agency in decision-making and resource management. Transnational border governance theories, such as Sohn's (2014) model of cross-border integration and Ackleson and Lapid's (2014) framework for regional governance, provide valuable insights into how borders can serve as both barriers and connectors. These frameworks emphasize the role of local autonomy in creating adaptive governance structures that address the unique challenges of border regions.

In the Indonesia-Papua New Guinea context, these theories highlight critical issues such as the geopolitical complexity of managing borders that intersect indigenous territories, resource-rich areas, and zones of socio-political tension (Pakasi, 2016, 2021). For example, the application of local autonomy theories underscores the importance of granting Papuan communities more authority in resource management and infrastructure development. This is particularly relevant given the region's history of limited administrative capacity and the need for culturally sensitive approaches to governance.

The border area between Indonesia and Papua New Guinea (PNG) represents one of the outermost and foremost regions in national defense strategy (Ohoiwutun et al., 2023; Pakasi, 2016; Subagiyo et al., 2017). Geographically, this border traverses small islands, dense tropical rainforests, large rivers, and mountainous terrains that are difficult to access (Rumbiak et al., 2021). These geographical features pose unique challenges in managing and surveilling the region (Chotim, 2019). Geopolitically, Indonesia shares a land border with Papua New Guinea in Papua and West Papua provinces (Korwa & Rumabar, 2017; Maturan et al., 2020; Silambi, 2019). This border stretches over 800 kilometers, passing through areas renowned for their natural resources, such as gold, copper, and natural gas mines (Filer & Sekhran, 2018; Kuo, 2022; Wu, 2020). Both countries have maintained strong diplomatic relations since Papua New Guinea gained independence in 1975 (Wangge & Lawson, 2023). However, challenges such as illegal trade, uncontrolled migration, and armed groups remain significant security issues in the border area (Firth, 2014; Purwanto & Mangku, 2017).

Economically, the potential exploitation of abundant natural resources in the border region is a major attraction for investment and infrastructure development (Gill et al., 2014; Sibtain et al., 2021; Zhang et al., 2019). However, utilizing these resources also raises land rights and environmental issues that must be wisely managed to prevent serious ecological damage (Andriansyah et al., 2021; Martinez, 2022; Maruf, 2021). Empowering local communities in the Indonesia-Papua New Guinea border region is about granting autonomy to local residents and building their capacity to take an active role in regional development (Buiney & Wambrauw, 2024; Christawan et al., 2023; Hadian, 2019). The active participation of local communities in the decision-making process enhances the legitimacy of public policies and ensures that local needs and indigenous knowledge are accommodated during every developmental step (Eglin

& Ngamlana, 2015; Mamokhere & Meyer, 2022; Poto & Fornabaio, 2017). In many border areas, local communities often face challenges accessing basic services such as education, healthcare, and infrastructure (Bochaton, 2015; Pollozek & Passoth, 2019; Ziguras & McBurnie, 2014). Their presence, usually dispersed across hard-to-reach areas, adds to the complexity of providing equitable and sustainable public services (Andersen et al., 2016; Varadarajan, 2014). Therefore, efforts to improve access to basic services and enhance the quality of life for these communities must be a priority in developing border area governance policies (Ackleson & Lapid, 2014; Aman et al., 2022; Dupeyron et al., 2023; Medeiros, 2014; Rodić & Wilson, 2017).

One approach that has been adopted in some cases is strengthening the role of local institutions, such as traditional councils or local communities, in managing natural resources and regional development (Donnan & Wilson, 2021; Krasner & Risse, 2014; Sousa, 2013). By leveraging existing social structures, the government can enhance the efficiency and effectiveness of development programs, and ensure that the policies implemented consider cultural values and local wisdom (Kohsaka & Rogel, 2021; Olaopa & Ayodele, 2022; Sassen, 2020). However, the main challenge in empowering local communities in border areas is the disparity in administrative and technical capacities to manage resources sustainably (Apriani, 2023; Frank & Idris, 2022). Education and training are key to addressing this challenge and building local capabilities in planning, financial management, and information technology to support sound decision-making (Idris et al., 2021; Siahay et al., 2014; Sulistiani, 2024).

The implementation of border region governance policies between Indonesia and Papua New Guinea faces a series of complex challenges (Mandibondibo et al., 2022). One of the main challenges is the coordination between various levels of government and related institutions in both countries (Farneubun, 2016; Metherall et al., 2022). Despite efforts to enhance cross-border cooperation, effective coordination is often hampered by differences in development priorities, limited administrative capacity, and even internal political issues within each country (Aedah & Muchsin, 2021; Bangun Tambunan & Lantang, 2024). In Indonesia, for example, policy implementation in border areas is often constrained by minimal infrastructure and limited access to basic services such as education and healthcare (Metherall et al., 2022; Ohoiwutun et al., 2023; Purwanto & Mangku, 2017). These limitations not only slow down the development process but also hinder the economic and social potential of local communities (Prihandoko, 2021; Samingun & Kalalo, 2020; Syarif, 2022). Meanwhile, in Papua New Guinea, similar challenges are encountered, with issues of accessibility and resource management often becoming sources of tension and conflict (Allen & Monson, 2014; Banks, 2021). Additionally, the presence of indigenous and local communities along the border adds complexity to the management of these regions (Christawan et al., 2023). Recognition of their rights to land and natural resources is key to creating social justice and sustainable environmental management (Sulaiman et al., 2023). However, these rights are often not formally recognized or well-implemented in national or local policies, resulting in conflicts and legal uncertainty (Hananto et al., 2022).

In this context, border region governance policies need to consider ways to strengthen the role of indigenous communities in decision-making processes and

resource management (Rumbiak et al., 2022). These communities possess essential local knowledge about the environment and sustainability, which can provide significant added value in the development of border areas (Pugu et al., 2020). Beyond internal factors within each country, regional geopolitical dynamics also influence the implementation of border governance policies (Pakasi, 2021). Changes in foreign policy, for instance, can affect bilateral relations between Indonesia and Papua New Guinea, which in turn can impact cross-border cooperation in managing the border region (Wirapranatha & Saputro, 2022; Wiyono & Supriyanto, 2024). Furthermore, regional issues such as cross-border trade, border security, and economic cooperation also have direct impacts on development policies in border areas (Fadila, 2024).

This study will focus on the governance of the Indonesia-Papua New Guinea border region. Papua New Guinea, as a country with a highly diverse ethnic and cultural population, faces its own challenges in managing the shared border area with Indonesia. Meanwhile, Indonesia also encounters unique challenges in building infrastructure, strengthening security, and improving welfare in remote and hard-to-access border areas. Previous research indicates that effective and inclusive management in border regions can bring significant benefits to local communities and contribute positively to national development (Mamokhere & Meyer, 2022; Purwanto & Mangku, 2016; Scholten & Penninx, 2016). However, challenges such as lacking basic infrastructure, administrative weaknesses, and cultural differences between countries are major obstacles to achieving sustainable development goals in border areas (Hananto et al., 2022). Therefore, the primary aim of this research is to analyze the implementation of border governance policies based on local community empowerment between Indonesia and Papua New Guinea. This study will include an evaluation of the success of existing policies, identification of challenges faced in their implementation, and the impact of these policies on the welfare and development of border regions.

The study of border governance, particularly in the context of local community empowerment, has gained significant attention in recent years due to its implications for national security, economic development, and regional stability. Existing literature on border governance often emphasizes the role of state institutions in managing cross-border issues such as security, trade, and migration. However, there is limited exploration of the potential for empowering local communities to play an active role in these governance processes. For instance, studies in Europe and North America have extensively documented formalized mechanisms of cross-border governance (Ackleson & Lapid, 2014; Zumbusch & Scherer, 2015), yet these frameworks often overlook the unique socio-political dynamics present in regions with substantial indigenous or marginalized populations.

In the context of Southeast Asia, and specifically the Indonesia-Papua New Guinea border region, research predominantly focuses on geopolitical and security dimensions (Pakasi, 2021; Norotouw, 2017). Few studies examine how local empowerment initiatives can address persistent challenges such as infrastructure deficits, limited access to basic services, and socio-economic disparities. This research fills this gap by analyzing how community-led approaches can complement state-led

governance efforts, providing a more inclusive and sustainable model for border management.

The purpose of this study is to evaluate the effectiveness of local community empowerment as a strategic approach to border governance. By focusing on Kampung Mosso as a case study, this research aims to provide actionable insights into how such approaches can enhance regional development, improve the welfare of border communities, and contribute to national policy objectives.

By delving deeper into the practical experiences of implementing border region governance policies, this research aims to provide concrete and sustainable policy recommendations. These recommendations can assist the governments of Indonesia, Papua New Guinea, and relevant international actors in enhancing cross-border cooperation, strengthening regional security, and improving the welfare of local communities in the border regions. Overall, this research not only aims to fill the knowledge gap in the literature on border region governance but also to make a tangible contribution to designing more effective and inclusive policies in the future. Thus, the findings of this research are expected to serve as a foundation for improving public policy and efforts to promote peace and sustainable development in the Indonesia-Papua New Guinea border regions.

Research Methods

This research employs a qualitative approach to explore the dynamics of border governance through the lens of local community empowerment at the Indonesia-Papua New Guinea border. The qualitative approach was chosen to gain profound insights into the experiences, perspectives, and interactions of local communities involved in border governance. The study utilizes a case study design focusing on specific communities along the Indonesia-Papua New Guinea borderline. The case study method allows for a comprehensive examination of the border area's unique socio-political and cultural context, providing rich and detailed data. Data will be collected through interviews with various stakeholders, including local community leaders and regional residents. Additionally, data will be obtained through a review of relevant documents, including government reports, policy documents, NGO reports, and academic literature. Data analysis will be conducted using NVivo, a qualitative data analysis software, to manage, code, and analyze the collected data systematically.

Transcripts from interviews and relevant documents will be imported into NVivo. Initial coding will identify key themes and categories pertinent to border governance and community empowerment. Codes will be organized into broader themes to uncover patterns and relationships in the data. Thematic analysis will be employed to interpret findings in relation to the research questions. NVivo tools such as word clouds, cluster analysis, and matrix coding queries will be used to visualize data and identify connections among various themes and participant groups. Visual representations will aid in summarizing and presenting findings clearly, emphasizing the most significant insights. By utilizing a qualitative case study approach and NVivo for data analysis, this research aims to provide a comprehensive understanding of how local community empowerment influences border governance at the Indonesia-Papua New Guinea border.

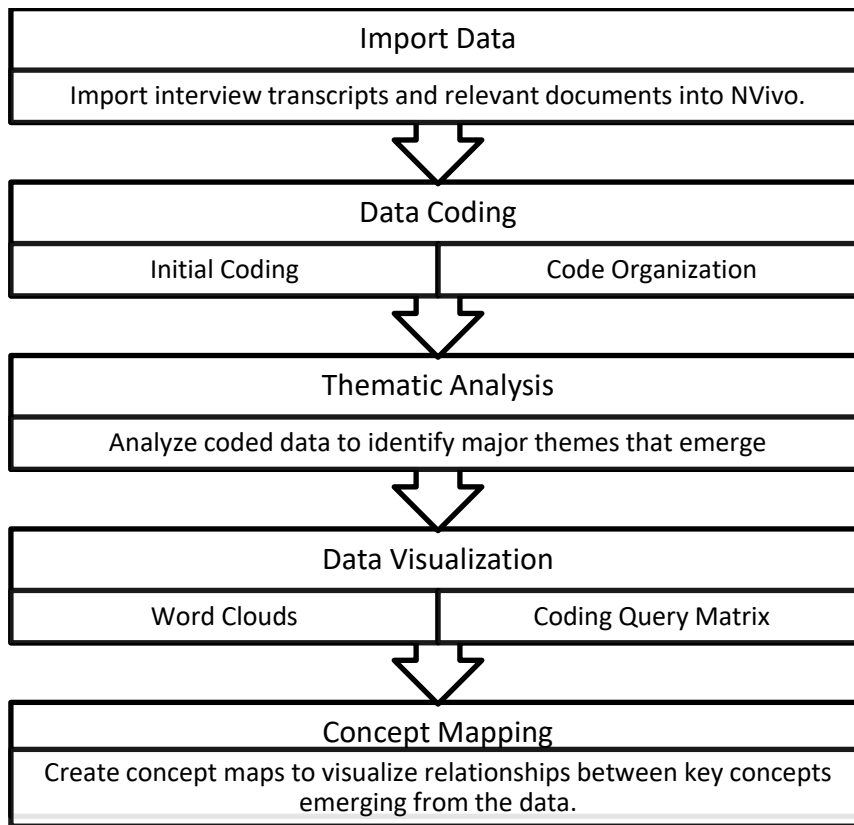


Figure 1. Data Analysis Process Using Nvivo Software
 Source: processed by author, 2024

Results and Discussion

Understanding the Context of Borders and Empowerment as a Key Element

The word cloud presented is an insightful visualization for the topic "Border Governance through Local Community Empowerment: A Case Study in Indonesia-Papua New Guinea." This word cloud highlights the key themes and concepts that emerge from the analysis of border governance in this specific context.



Figure 2. Word Cloud on Border Governance Based on Local Community Empowerment
 Source: processed by author, 2024

At the center of the word cloud, the most prominent words such as "Governance," "Community," "Border," "Local," and "Empowerment" are displayed in larger fonts. This prominence indicates their frequent occurrence and significance in the

context of border governance and community empowerment. The term "Governance" refers to the overarching framework and processes involved in managing and regulating the border area. It encompasses the structures, policies, and practices that ensure the effective and equitable management of border regions. Effective governance is crucial in maintaining order, security, and development in these areas, which often face unique challenges due to their geographical and political positioning. The term "Community" signifies the central role of local populations in the governance process. Empowering communities means involving them actively in decision-making, planning, and implementation of policies that affect their lives. It highlights the shift from top-down approaches to more inclusive and participatory models of governance. Engaging local communities ensures that policies are more responsive to their needs and challenges, fostering a sense of ownership and responsibility among the inhabitants.

The word "Border" itself signifies the geographical focus of this study. Borders are not just physical demarcations; they are zones of interaction, trade, and sometimes conflict. Effective border governance requires a nuanced understanding of these dynamics, balancing security concerns with the need for economic and social exchanges. The management of borders involves various stakeholders, including local communities, government agencies, and international bodies. Each of these stakeholders plays a crucial role in ensuring that the borders are secure, yet permeable enough to allow for beneficial interactions. The term "Local" underscores the importance of local contexts and knowledge in governance processes. Local communities possess a deep understanding of their environment, challenges, and opportunities. Their involvement is crucial for the sustainability and effectiveness of governance initiatives. By leveraging local knowledge and resources, governance can be more adaptive and resilient to changes and crises. This term also emphasizes the importance of decentralization, where decision-making powers are distributed closer to the affected communities rather than being concentrated at a national or regional level.

"Empowerment" is a critical concept in this context, highlighting efforts to enhance the capacity of local communities to participate in governance processes. Empowerment involves providing communities with the necessary tools, knowledge, and authority to influence decisions that impact their lives. It is about creating an enabling environment where communities can voice their concerns, propose solutions, and collaborate with authorities and other stakeholders. Empowerment is not just a goal but a continuous process that strengthens communities and improves governance outcomes. Words such as "Management," "Administration," and "Leadership" appear prominently, indicating their relevance to the effective governance of border areas. "Management" and "Administration" refer to the practical aspects of implementing governance policies and programs. This includes everything from resource allocation to the day-to-day operations of border control and community services. Efficient management ensures that policies are translated into tangible benefits for the community, while sound administration maintains the integrity and accountability of governance processes.

"Leadership" is essential in driving the vision and direction of governance initiatives. Effective leaders inspire trust and mobilize resources and support from various stakeholders. Leadership at different levels, including local leaders, community organizers, and government officials, plays a pivotal role in fostering collaboration and innovation in governance practices. The word "Authority" is also significant, pointing to the need for recognized and respected governance structures. Authority in governance

provides the legitimacy needed to enforce laws, mediate conflicts, and ensure compliance with regulations. It also involves the balance of power between different governance levels, ensuring that local authorities have sufficient autonomy to address local issues while aligning with national and international frameworks. "Autonomy" and "Self-governance" are closely related terms that emphasize the importance of local control over governance processes. These concepts advocate for a governance model where local communities have the freedom to make decisions that directly affect them, reducing dependency on centralized authorities. This autonomy can lead to more tailored and effective solutions to local problems, as communities have the flexibility to adapt policies to their specific needs and contexts.

The term "Participation" signifies the active involvement of communities in governance processes. Participation goes beyond mere consultation; it involves communities in every stage of governance, from planning to implementation and monitoring. Active participation ensures that governance is more democratic, transparent, and accountable. It also fosters a sense of ownership and commitment among community members, leading to more sustainable outcomes. "Collaboration" and "Cooperation" highlight the importance of working together across different sectors and levels of governance. Effective border governance often requires the collaboration of multiple stakeholders, including local communities, government agencies, NGOs, and international organizations. Collaboration ensures that resources, knowledge, and efforts are pooled together, leading to more comprehensive and effective solutions to governance challenges. "Engagement" and "Involvement" are terms that underscore the need for continuous interaction between communities and governance structures. Engagement involves regular communication, feedback, and active participation in governance activities. It ensures that governance is responsive to the evolving needs and concerns of the community. Involvement, on the other hand, refers to the depth of community participation in governance processes. It involves community members taking on active roles in governance, such as serving on advisory boards, participating in planning committees, and being part of implementation teams.

The terms "Activation," "Mobilization," and "Enfranchisement" suggest the dynamic processes involved in empowering communities. "Activation" refers to the initial steps of engaging communities and encouraging them to participate in governance processes. "Mobilization" involves organizing and rallying community members to take collective action towards common goals. "Enfranchisement" is about granting communities the rights and privileges to participate fully in governance processes, including voting, holding office, and influencing policy decisions. "Sovereignty" is a crucial concept in border governance, referring to the authority of a state to govern itself and control its borders. In the context of local community empowerment, sovereignty also pertains to the recognition and respect for the autonomy of local communities in managing their affairs. Balancing national sovereignty with local autonomy is a key challenge in border governance, requiring careful negotiation and collaboration between different levels of governance. In summary, the word cloud provides a comprehensive overview of the key themes and concepts that are central to this topic. It highlights the importance of governance structures, community participation, local autonomy, and collaborative efforts in managing border regions effectively. By focusing on these themes, the study aims to enhance the capacity of local communities to participate in governance processes, thereby improving the overall governance outcomes in border areas. The visualisation serves as a powerful tool to understand the complex dynamics of border governance

and the critical role of community empowerment in achieving sustainable and effective governance.

Analysis of Governance in the Indonesia-Papua New Guinea Border Region

The border regions between Indonesia and Papua New Guinea (PNG) play a crucial role in Indonesia's national interests due to their proximity to neighboring countries and abundant natural resources. This makes the area highly significant economically, socially, as well as in terms of defense and security. The Indonesian government has given special attention to managing these border regions, evident through various policies and development programs. One concrete step was the establishment of the National Border Management Agency (BNPP) in 2010, tasked with overseeing and managing development in these areas. Kampung Mosso, located in the Muara Tami District of Jayapura City, exemplifies a region situated directly on the border between Indonesia and PNG. This village serves not only as a primary gateway between the two nations but also reflects the challenges and potential of border communities.

The implementation of special autonomy in Papua Province has brought significant changes in governance and development programs, including in border regions like Jayapura City. Special autonomy grants greater authority to local governments to manage resources and plan development tailored to local needs. This policy aims to reduce development disparities between Papua and other Indonesian regions and enhance the welfare of indigenous Papuan communities. One positive impact of special autonomy is increased budget allocations for infrastructure development in border areas. Basic infrastructure such as roads, bridges, and public facilities has been constructed to improve community mobility and trade accessibility. In Kampung Mosso, these infrastructure developments are evident through improved road networks connecting the village to Jayapura City center, facilitating transportation and commerce.

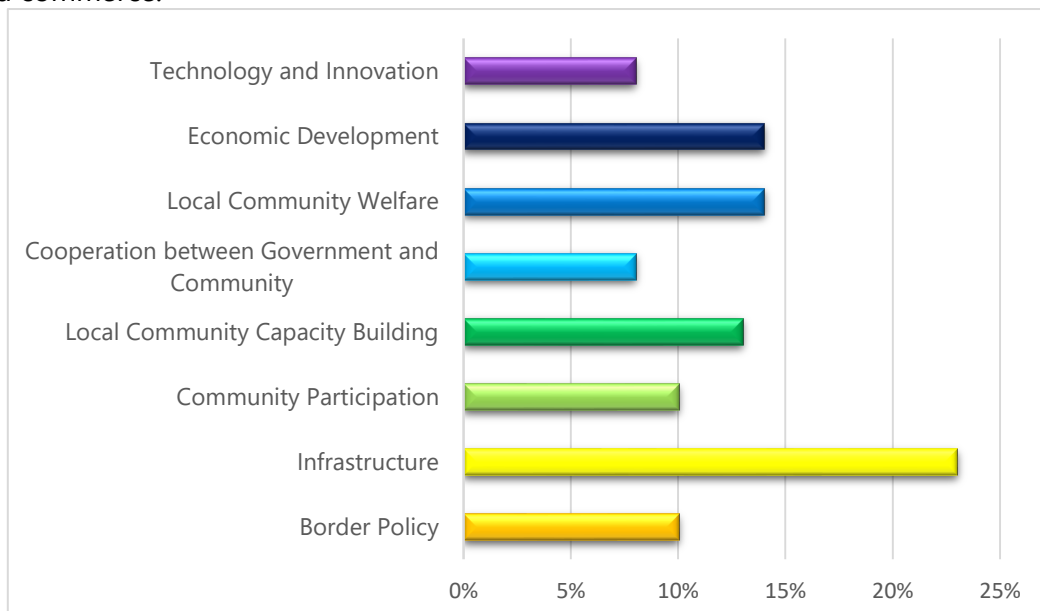


Figure 3. The Analysis of the Critical Aspects in Border Governance

Source: processed by author, 2024

However, despite progress in infrastructure development, human resource development remains suboptimal, with low welfare levels prevailing among communities, particularly below the poverty line. Data from 2021 indicates that 11.49%

of Jayapura's population lives in poverty, predominantly in rural areas like Kampung Mosso. Challenges persist in accessing adequate education and healthcare services for communities in these areas. Empowerment programs focused on enhancing community capacity and skills need further enhancement to achieve more optimal outcomes.

An analysis of border governance in the Indonesia-Papua New Guinea region highlights several critical aspects prioritized by communities based on their needs. Based on data presented in graphs and tables, several important categories with varying percentages can be identified, providing an overview of community priorities in the context of border governance. Infrastructure emerges as the dominant category, with the highest percentage reaching 23%. This underscores the paramount need for adequate infrastructure as the top priority for border communities. Well-functioning infrastructure is crucial for improving connectivity, accessibility, and quality of life, encompassing the construction of roads, bridges, healthcare facilities, schools, as well as basic utilities like clean water and electricity. Adequate infrastructure also supports local economic development and integrates border regions with other areas.

Border policy holds a 10% share, indicating that clear and effective regulations and policies in border governance are a significant priority for communities. Border policies encompass aspects such as security, migration, trade, and cross-border cooperation. Effective policies can address various challenges faced by border communities, including security issues, illegal trade, and natural resource management. Community participation holds an equal 10% share, emphasizing the high value placed on active community involvement in border governance activities. Community participation includes various forms of engagement in planning, implementation, and evaluation of development programs. This involvement is crucial to ensure that implemented programs align with community needs and priorities, enhancing transparency and accountability in border governance.

Enhancing local community capacity holds a 13% share, indicating community awareness of the importance of capacity building to effectively participate in border governance. Capacity building programs may include skills training, education, and economic empowerment initiatives that enable local communities to better manage their resources and actively contribute to regional development. Government-community cooperation holds an 8% share, underscoring the importance of collaboration in border governance. Effective collaboration between government and local communities can expedite development program implementation and ensure that policies align with local needs and aspirations. This includes active community participation in decision-making processes and policy implementation, fostering ownership and shared responsibility.

The welfare of local communities is also a significant concern, comprising 14% of the priorities. Community welfare includes access to healthcare, education, and social protection services. Ensuring adequate access to basic services is crucial in border contexts to improve quality of life and reduce disparities between border areas and urban centers. Economic development shares the same percentage at 14%, indicating substantial community focus on this aspect. Economic development initiatives encompass various efforts such as job creation, micro, small, and medium enterprise (MSME) development, and programs aimed at improving economic welfare. Border communities often face unique economic challenges such as limited market access and resources, making economic development a critical priority to enhance their quality of life. Lastly, technology and innovation hold an 8% share, indicating that border

communities may not yet prioritize these aspects extensively in governance contexts. This could be due to factors such as limited access to advanced technology and innovation, insufficient supporting infrastructure, and other perceived pressing priorities. However, in the long run, technology and innovation development remains crucial to improving efficiency and effectiveness in border governance.

Empowerment of Border Communities through Agriculture-Based Initiatives

Border regions between Indonesia and PNG, including Kampung Mosso, face various complex challenges. One of the primary challenges is the utilization of traditional agricultural technology. The majority of Kampung Mosso's population depends on agriculture as their main livelihood source, yet the farming methods used are mostly conventional and inefficient. This results in low agricultural productivity and overall low welfare among farmers. Additionally, border areas are vulnerable to security and law enforcement issues. Being directly adjacent to PNG makes them susceptible to illegal activities such as smuggling and human trafficking. Therefore, surveillance and security measures in border areas are crucial to ensure order and safety. In Kampung Mosso, increased patrols and monitoring by security forces have been implemented to address these issues, but more intensive efforts are still required.

On the other hand, border regions also possess significant potential, particularly in natural resources. For instance, Kampung Mosso boasts fertile land and abundant fisheries potential. Proper management of these resources can enhance the local community's welfare significantly. Empowering communities through the adoption of modern agricultural and fisheries technologies can optimize these potentials. Support programs and training focused on modern technology use in agriculture and fisheries have shown promising results in Kampung Mosso.

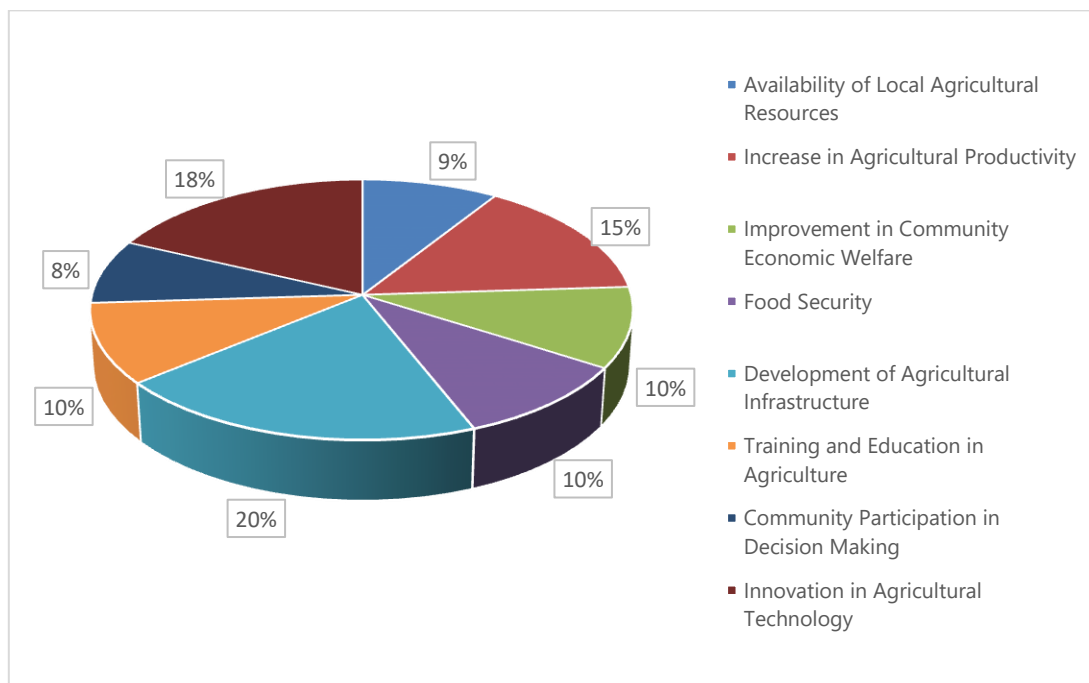


Figure 4. The Analysis of Various Challenges in the Empowerment Process
Source: Processed By Author Using Nvivo

The chart above visually represents the various challenges faced in efforts to empower the community in Kampung Mosso through agricultural initiatives. This pie chart delineates significant aspects contributing to the effectiveness of this

empowerment. Each segment of the pie chart indicates a specific percentage of attention or resources allocated to these aspects. The segment labeled "Availability of Local Agricultural Resources" is allocated 9%, indicating that, while local resources are important, the community in Kampung Mosso may face limitations in accessing or utilizing these resources. These limitations could include inadequate agricultural land, restricted access to irrigation water, or a lack of quality seeds and fertilizers. These factors inevitably impact agricultural productivity and the overall welfare of the community.

Increasing agricultural productivity is allocated 15%, signifying a primary focus in community empowerment. Enhancing productivity is crucial as higher crop yields support food security and economic well-being. Various measures can be implemented to boost productivity, such as the adoption of modern agricultural technologies, effective use of fertilizers and pesticides, and more efficient farming techniques. Additionally, education and training for farmers are essential to ensure they can adopt more productive agricultural practices. Improving the community's economic welfare is allocated 10%. The economic well-being of the community is closely linked to agricultural output. By increasing agricultural productivity, it is anticipated that the community's income will rise. However, this depends not only on production but also on other aspects such as market access, product pricing, and the community's ability to manage their finances effectively. Therefore, empowerment programs that focus on economic management and income diversification are also vital.

Food security is also allocated 10%. Food security is defined as the condition where all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. In Kampung Mosso, improving agricultural productivity is expected to ensure adequate food availability for the entire community. However, challenges such as climate change, pests, and plant diseases can threaten food security, necessitating effective strategies to address these issues. Development of agricultural infrastructure is the highest allocation at 20%. Agricultural infrastructure includes everything that supports the agricultural process, from access roads to farmland, irrigation systems, storage facilities for crops, to processing facilities. Adequate infrastructure is crucial for enhancing agricultural efficiency and productivity. For example, with proper irrigation, farmers are not solely dependent on rainfall, allowing them to optimize planting and harvesting schedules. Similarly, good roads facilitate farmers' access to markets to sell their produce.

Training and education in agriculture receive a 10% allocation. Education and training are crucial to ensure farmers have the knowledge and skills necessary to adopt modern and sustainable agricultural practices. This can include training in the use of agricultural technology, pest and disease management, efficient irrigation practices, and innovative crop cultivation techniques. With proper education, farmers can not only increase productivity but also maintain the sustainability of their agricultural environment. Community participation in decision-making is allocated 8%. Although it appears small, community participation is vital to ensure that the implemented empowerment programs truly align with local needs and conditions. Participation can be facilitated through village meetings, farmers' groups, or other community forums where residents can voice their opinions and suggestions. By involving the community in decision-making, it is hoped that a sense of ownership and commitment to the success of the empowerment programs will be fostered.

An analysis of this chart reveals that the empowerment efforts in Kampung Mosso focus on various interrelated aspects. The significant attention to agricultural infrastructure development suggests that adequate infrastructure is considered a fundamental basis for supporting other sectors such as productivity, food security, and economic welfare. However, other aspects such as education and training, as well as community participation, also receive significant attention. This indicates a holistic approach to community empowerment, where the focus is not only on direct outcomes like productivity increases but also on sustainable human and social capacity building. The near-equal attention to increasing agricultural productivity and economic welfare is logical, as higher productivity typically leads to increased income. However, it is also essential to ensure that this productivity improvement is achieved sustainably without harming the environment or depleting natural resources excessively. Facing various challenges in agriculture-based empowerment, several strategies can be implemented. First, infrastructure development must be conducted in an integrated and sustainable manner, considering long-term needs and environmental impacts. Second, education and training must be designed to empower farmers to adapt to technological changes and market conditions. Third, food security must be ensured not only through increased production but also through crop diversification and effective risk management. Fourth, community participation in decision-making must be strengthened to ensure that all voices are heard and the programs implemented truly address the community's needs.

Conclusion

This research concludes that empowering local communities in the Indonesia-Papua New Guinea border region requires an integrative and sustainable approach. Adequate agricultural infrastructure development serves as a critical foundation to support other sectors such as productivity enhancement, food security, and economic welfare. This infrastructure development includes not only the improvement of irrigation networks and adequate road access to connect farms to markets but also the provision of necessary storage facilities to maintain the quality of agricultural produce. In addition to infrastructure, education and training specifically designed to empower farmers to adapt to technological advancements and market conditions are crucial. These programs not only enhance practical skills in modern agricultural practices and business management but also facilitate the innovation necessary to address climate change challenges and dynamic global markets. Food security is also a key focus of this research. Efforts to ensure food security do not only focus on increasing production but also involve crop diversification and effective risk management. Crop diversification enhances food resilience and provides farmers with diverse alternatives to address environmental and market challenges. Community participation in decision-making is also crucial in ensuring the success of development programs. Involving local communities in the planning, implementation, and evaluation of programs not only enhances program effectiveness and relevance but also strengthens community ownership and shared responsibility towards regional development. Overall, community empowerment aims not only to improve economic welfare but also to build sustainable social capacities. By integrating robust agricultural infrastructure, appropriate education and training, guaranteed food security, and strong community participation, the Indonesia-Papua New Guinea border region can optimize its potential and achieve inclusive and sustainable development.

References

- Ackleson, J., & Lapid, Y. (2014). New Directions in North American Border Security Governance. In *Regional Governance in Post-NAFTA North America* (pp. 49–73). Routledge.
- Aedah, N., & Muchsin, M. (2021). Implementation of Transboundary Policy in the Republic of Indonesia-Papua New Guinea Border Area in Keerom Regency. *International Journal of Multicultural and Multireligious Understanding*, 8(10), 58–64.
- Ahmad, M. S., & Abu Talib, N. B. (2015). Empowering local communities: decentralization, empowerment and community driven development. *Quality & Quantity*, 49, 827–838.
- Allen, M., & Monson, R. (2014). Land and conflict in Papua New Guinea: the role of land mediation. *Security Challenges*, 10(2), 1–14.
- Aman, J., Abbas, J., Shi, G., Ain, N. U., & Gu, L. (2022). Community wellbeing under China-Pakistan economic corridor: role of social, economic, cultural, and educational factors in improving residents' quality of life. *Frontiers in Psychology*, 12, 816592.
- Andersen, D. J., Klatt, M., & Sandberg, M. (2016). *The border multiple: The practicing of borders between public policy and everyday life in a re-scaling Europe*. Routledge.
- Andriansyah, A., Sulastri, E., & Satispi, E. (2021). The role of government policies in environmental management. *Research Horizon*, 1(3), 86–93.
- Apriani, A. (2023). The Dissemination of Development of Economic Potential in the Perspective of Community Empowerment-Based Entrepreneurship in Mosso Village the Papua-PNG Border. *Madani: Jurnal Pengabdian Masyarakat Dan Kewirausahaan*, 1(4), 175–182.
- Bangun Tambunan, E. M., & Lantang, F. (2024). the Pandemic Challenges for Traditional Communities At the Cross-Border Post Areas of the Republic of Indonesia-Papua New Guinea. *International Journal of Asia-Pacific Studies*, 20(1), 99–124. <https://doi.org/10.21315/ijaps2024.20.1.5>
- Banks, G. (2021). Resource security in Papua New Guinea: Linking resources, development and security. *DEVELOPMENT BULLETIN*, 82.
- Bochaton, A. (2015). Cross-border mobility and social networks: Laotians seeking medical treatment along the Thai border. *Social Science & Medicine*, 124, 364–373.
- Buiney, M. E., & Wambrauw, M. S. F. (2024). Indonesia's Interests in the Pacific Region. *Jurnal Multidisiplin Madani*, 4(3), 376–390.
- Chotim, E. E. (2019). Subsistence economy and the Papua women trader marginalization in the Indonesia-Papua New Guinea border trade region. *Jurnal Ilmu Sosial Mamangan*, 9(1), 26–38.
- Christawan, E., Perwita, A. A. B., Midhio, I. W., Hendra, A., & Sumertha, I. G. (2023). *Papua as the Window of Indonesia's Spirit for the Melanesian Communities*.
- Diener, A. C., & Hagen, J. (2024). *Borders: A very short introduction*. Oxford University Press.
- Dolezal, C., & Novelli, M. (2022). Power in community-based tourism: empowerment and partnership in Bali. *Journal of Sustainable Tourism*, 30(10), 2352–2370. <https://doi.org/10.1080/09669582.2020.1838527>
- Donnan, H., & Wilson, T. M. (2021). *Borders: Frontiers of identity, nation and state*. Routledge.
- Dupeyron, B., Noferini, A., & Payan, T. (2023). *Agents and Structures in Cross-Border Governance: North American and European Perspectives*. University of Toronto

- Press.
- Eglin, R., & Ngamlana, N. (2015). Responsive planning and responsible implementation: improving good local governance in the Integrated Development Planning process. In *Pursuit Of Responsible and Responsive Local Governance*. Cape Town: Good Governance Learning Network, 34–45.
- Eilenberg, M. (2014). Frontier constellations: agrarian expansion and sovereignty on the Indonesian-Malaysian border. *Journal of Peasant Studies*, 41(2), 157–182. <https://doi.org/10.1080/03066150.2014.885433>
- Fadila, S. F. (2024). Analysis Of Regulatory Quality Worldwide Governance Indicators In Asia Pacific Case Study: Indonesia-Papua New Guinea 2019-2021. *Journal of Political Issues*, 5(2), 172–186.
- Farneubun, P. K. (2016). Indonesia-PNG Cooperation: Papua Strategic Roles. *KnE Social Sciences*, 154–161.
- Filer, C., & Sekhran, N. (2018). *Loggers, Donors and Resource Owners (in Papua New Guinea)*. Citeseer.
- Firth, S. (2014). Security in Papua New Guinea: The military and diplomatic dimensions. *Security Challenges*, 10(2), 97–114.
- Firth, S. (2019). Geo-political overview of Melanesia. In *The Melanesian World* (pp. 95–109). Routledge.
- Frank, S. A. K., & Idris, U. (2022). Cultures of Nyao People at Mosso Village in Borderland of Papua Indonesia and Papua New Guinea. *Proceeding International Conference On Language, Literature And Culture*, 1, 22.
- Gill, I. S., Izvorski, I., Van Eeghen, W., & De Rosa, D. (2014). *Diversified development: making the most of natural resources in Eurasia*. World Bank Publications.
- Hadian, Y. (2019). *Decentralization and Human Development in Indonesia: A Case Study of Special Autonomy of Papua Province*. Flinders University, College of Business, Government and Law.
- Hananto, P. W., Prananda, R. R., Herawati, R., & Irawati, I. (2022). the Effectiveness of Special Arrangements and Basic Agreements in Overcoming Statelessness Issues At the Border Between Indonesia and Papua New Guinea. *Masalah-Masalah Hukum*, 51(2), 117–129. <https://doi.org/10.14710/mmh.51.2.2022.117-129>
- Haris, A., Adys, A. K., & Prianto, A. L. (2014). Pengelolaan Corporate Social Responsibility PT. Lonsum di Kecamatan Ujung Loe Kabupaten Bulukumba. *Otoritas: Jurnal Ilmu Pemerintahan*, 4(1), 15-29
- Idris, U., Frank, S. A. K., Hindom, R. F., & Nurung, J. (2021). Family planning (KB) practices and the impact on Papuan women reproductive health. *Gaceta Sanitaria*, 35, S479–S482.
- Joyce Rayel, E. K. P. P. and P. M. (2012). Tourism in Papua New Guinea: Its Economic Contributions for Sustainable Development. *Экономика Региона*, 1–26.
- Kohsaka, R., & Rogel, M. (2021). Traditional and local knowledge for sustainable development: Empowering the indigenous and local communities of the world. In *Partnerships for the Goals* (pp. 1261–1273). Springer.
- Korwa, J. R. V, & Rumabar, B. (2017). Examining border-crossers at the Indonesia–PNG border post in Skouw, Jayapura, Papua. *DPA In Brief*, 35.
- Krasner, S., & Risse, T. (2014). External actors, state-building, and service provision in areas of limited statehood. *Domestic Politics and Norm Diffusion in International Relations*, 197–217.
- Kuo, I.-C. (2022). *Manufacturing compromise: a study of gendered labour processes at a Chinese nickel refinery in Papua New Guinea*. The Australian National University

- (Australia).
- Mamokhere, J., & Meyer, D. F. (2022). Including the excluded in the integrated development planning process for improved community participation. *International Journal of Research in Business and Social Science (2147-4478)*, 11(4), 286–299.
- Mandibondibo, P., Wanggai, S., Korwa, J., Lada, Y., Utami, G. P., Rumabar, B., & Hardiansyah, D. (2022). State Borders as Center of Economic Growth: Case Study of the East Arso District in the Indonesia-Papua New Guinea Border. *Papua Journal of Diplomacy and International Relations*, 2(1), 35–58.
- Martinez, O. J. (2022). *Troublesome border*. University of Arizona Press.
- Maruf, A. (2021). Legal aspects of environment in Indonesia: An efforts to prevent environmental damage and pollution. *Journal of Human Rights, Culture and Legal System*, 1(1).
- Maturan, A. Y., Laiyan, D., & Betaubun, W. L. (2020). Implementation of Education Improvement Policies for the Indonesia-Papua New Guinea Border Area in Sota District, Merauke Regency. *3rd International Conference on Social Sciences (ICSS 2020)*, 497–500.
- Medeiros, E. (2014). Is there a new 'trust'in inner scandinavia? evidence from cross-border planning and governance. *Geografiska Annaler: Series B, Human Geography*, 96(4), 363–386.
- Metherall, N., Fretes, D. R. De, Mandibondibo, F., & Caucau, T. (2022). Assessing the Development Impact of the Sota Border Post Connecting Indonesia and Papua New Guinea. *Papua Journal of Diplomacy and International Relations*, 2(2), 95–122.
- Norotouw, P. (2017). *Indonesia-PNG border security*. University of Waikato.
- Ogbonna, C. N., Lenshie, N. E., & Nwangwu, C. (2023). Border governance, migration securitisation, and security challenges in Nigeria. *Society*, 60(3), 297–309.
- Ohoiwutun, Y., Muttaqin, Z., Tebay, V., Ilham, I., & Renyaan, D. (2023). The Role of the Central and Regional Governments of Indonesia in the Indonesia-Papua New Guinea Border Development Policy. *Revista Brasileira de Políticas Públicas*, 13(3), 40–52. <https://doi.org/10.5102/rbpp.v13i3.8851>
- Ojha, H. R., Ford, R., Keenan, R. J., Race, D., Carias Vega, D., Baral, H., & Sapkota, P. (2016). Delocalizing Communities: Changing Forms of Community Engagement in Natural Resources Governance. *World Development*, 87, 274–290. <https://doi.org/10.1016/j.worlddev.2016.06.017>
- Olaopa, O. R., & Ayodele, O. A. (2022). Building on the strengths of African indigenous knowledge and innovation (AIK&I) for sustainable development in Africa. *African Journal of Science, Technology, Innovation and Development*, 14(5), 1313–1326.
- Pakasi, U. (2016). Conflict in the Border Region between Indonesia and Papua New Guinea. *International Conference on Ethics in Governance (ICONEG 2016)*, 166–169.
- Pakasi, U. (2021). Conflict Handling Model in Border Areas Republic of Indonesia-Papua New Guinea (Case Study in the Skow Border Area–Wutung Muara Tami District, Jayapura City, Papua Province). *Linguistica Antverpiensia*, 2021(3), 933–943.
- Park, E., & Kim, S. (2016). The potential of Cittaslow for sustainable tourism development: enhancing local community's empowerment. *Tourism Planning and Development*, 13(3), 351–369. <https://doi.org/10.1080/21568316.2015.1114015>
- Pollozek, S., & Passoth, J. H. (2019). Infrastructuring European migration and border control: The logistics of registration and identification at Moria hotspot. *Environment and Planning D: Society and Space*, 37(4), 606–624.
- Poto, M. P., & Fornabaio, L. (2017). Participation as the Essence of Good Governance.

- Arctic Review on Law and Politics*, 8, 139–159.
- Prianto, A. L. (2012). Kepentingan Politik dan Ekonomi Kepala Daerah dalam Reformasi Birokrasi: Kasus Reformasi Pelayanan Perizinan Di1kabupaten Gowa dan Kabupaten Takalar. *Jurnal Borneo Administrator*, 8(3), 361-382
- Prianto, A. L. (2013). Model of advocacy coalitions in the formulation of spatial plan policy of Makassar in 2010-2030. *Bisnis & Birokrasi*, 20(3), 163-170
- Prihandoko, L. (2021). Self-Assessment on Information Literacy Competency of Students in Indonesia-Papua New Guinea Border Area During The COVID-19 Epidemic. *Proceedings of the 2nd International Conference on Progressive Education, ICOPE 2020, 16-17 October 2020, Universitas Lampung, Bandar Lampung, Indonesia*.
- Pugu, M. R., Yani, Y. M., Dharmawan, W. B., & Wanggai, V. V. (2020). Coordination and Cooperation in Managing the Border of Indonesia and Papua New Guinea (An Overview of the RI-PNG Border Liaison Meeting Implementation). *Talent Development & Excellence*, 12(2).
- Purnomo, S., Rahayu, E. S., Riani, A. L., Suminah, S., & Udin, U. (2020). Empowerment model for sustainable tourism village in an emerging country. *Journal of Asian Finance, Economics and Business*, 7(2), 261–270.
- Purwanto, H., & Mangku, D. G. S. (2016). Legal Instruments of the Republic of Indonesia in Border Management Using the Perspective of Archipelagic State. *International Journal of Business, Economics and Law*, 11(4), 51–59. <https://www.ijbel.com/wp-content/uploads/2017/01/LAW-112.pdf>
- Purwanto, H., & Mangku, D. G. S. (2017). Border Security in Indonesia and Papua New Guinea. *South East Asia Journal of Contemporary Business, Economics and Law*, 12(4), 92–97.
- Rodić, L., & Wilson, D. C. (2017). Resolving governance issues to achieve priority sustainable development goals related to solid waste management in developing countries. *Sustainability*, 9(3), 404.
- Rumbiak, M. M. G., Fauzi, A., Hakim, D. B., & Kolopaking, L. (2022). Analysis of Strategic Variabel for Development of the Indonesia–Papua New Guinea Border Area. *MIMBAR: Jurnal Sosial Dan Pembangunan*, 59–68.
- Rumbiak, M. M. G., Fauzi, A., Hakim, D. B., & Kolopaking, L. M. (2021). Evaluation of Outranking Border Region Sustainable Development in Papua Province - Papua New Guinea Using PROMETHEE. *International Journal of Sustainable Development and Planning*, 16(7), 1393–1402. <https://doi.org/10.18280/ijstdp.160720>
- Salaputa, I., Madani, M., & Prianto, A. L. (2013). Peran aktor dalam penyusunan agenda kebijakan pemekaran wilayah kecamatan di Kabupaten Maluku Tengah. *Otoritas: Jurnal Ilmu Pemerintahan*, 3(1), 35-47
- Samingun, S., & Kalalo, J. J. J. (2020). Immigration Law Regulations Against Traditional Border Crossers in the Border Area of Merauke Regency. *Musamus Law Review*, 3(1), 36–48.
- Sassen, S. (2020). When territory deborders territoriality. In *The Confines of Territory* (pp. 83–106). Routledge.
- Scholten, P., & Penninx, R. (2016). The Multilevel Governance of Migration and Integration. In *IMISCOE Research Series* (pp. 91–108). library.oapen.org. https://doi.org/10.1007/978-3-319-21674-4_6
- Scott, J. W. (2015). Bordering, border politics and cross-border cooperation in Europe. *Neighbourhood Policy and the Construction of the European External Borders*, 27–44.
- SHayward-Jone, J. (2017). Changing Geopolitical Dynamics for Papua New Guinea. *Lowy*

- Institute, PNG Country Assessment, 87–98.*
<http://interactives.lowyinstitute.org/publications/PNGin2017/png-in-2017-changing-geopolitical-dynamics-for-papua-new-guinea.html>
- Siahay, A. Z. D., Hadiwidjojo, D., & Rofiaty, D. (2014). Budgetary Participation and Village Development Performance (Study at Jayapura City). *European Journal of Business and Management Wwww.liste.Org ISSN, 6(33)*. www.iiste.org
- Sibtain, M., Li, X., Bashir, H., & Azam, M. I. (2021). Hydropower exploitation for Pakistan's sustainable development: A SWOT analysis considering current situation, challenges, and prospects. *Energy Strategy Reviews, 38*, 100728.
- Silambi, E. D. (2019). Immigration Supervision of Traditional Border Crossers in the Border Areas of the Republic of Indonesia and Papua New Guinea. *Research on Humanities and Social Sciences, 1*, 1. <https://doi.org/10.7176/rhss/9-6-09>
- Singh, B. (2017). *Papua: Geopolitics and the quest for nationhood*. Routledge.
- Sohn, C. (2014). Modelling Cross-Border Integration: The Role of Borders as a Resource. *Geopolitics, 19(3)*, 587–608. <https://doi.org/10.1080/14650045.2014.913029>
- Sousa, L. De. (2013). Understanding European cross-border cooperation: A framework for analysis. *Journal of European Integration, 35(6)*, 669–687.
- Steiner, A. A., & Farmer, J. (2018). Engage, participate, empower: Modelling power transfer in disadvantaged rural communities. *Environment and Planning C: Politics and Space, 36(1)*, 118–138.
- Subagiyo, A., Dwiproborini, F., & Sari, N. (2017). Development of Indonesia-Papua New Guinea border, Muara Tami District, Jayapura City through agropolitan concept. *IOP Conference Series: Earth and Environmental Science, 70(1)*, 12032. <https://doi.org/10.1088/1755-1315/70/1/012032>
- Sulaiman, A., Dwilaksana, C., & Muta'ali, A. (2023). Synergy between the Police, TNI, Local Government, and the Community to Promote Diversity and Improve Security and National Unity in the Papua Region. *International Journal of Social Science Research and Review, 6(5)*, 436–448.
- Sulistiani, I. (2024). Communication Participatory in Community Empowerment Programs at the Indonesia-Papua New Guinea Border. *Migration Letters, 21(4)*, 995–1011.
- Syarif, Z. A. (2022). Peran RRI Boven Digoel Dalam Penyebaran Informasi Di Wilayah Perbatasan Indonesia Papua Nugini'. *Ultimacomm: Jurnal Ilmu Komunikasi, 14(1)*, 52–66. <https://doi.org/10.31937/ultimacomm.v14i1.2500>
- Varadarajan, R. (2014). Toward sustainability: Public policy, global social innovations for base-of-the-pyramid markets, and demarketing for a better world. *Journal of International Marketing, 22(2)*, 1–20.
- Wali, A., Alvira, D., Tallman, P. S., Ravikumar, A., & Macedo, M. O. (2017). A new approach to conservation: using community empowerment for sustainable well-being. *Ecology & Society, 22(4)*.
- Wangge, H. R., & Lawson, S. (2023). The West Papua issue in Pacific regional politics: explaining Indonesia's foreign policy failure. *The Pacific Review, 36(1)*, 61–89.
- Wirapranatha, A., & Saputro, G. E. (2022). Analysis Of The Development Of Economic Cooperation Between Indonesia And Papua New Guinea After The Covid-19 Pandemic. *GPH-International Journal of Business Management, 5(07)*, 9–15.
- Wiyono, W., & Supriyanto, T. (2024). Implications of the PNG-US Defense Pact for Indonesia's Sovereignty and National Interests. *Indonesian Journal of Interdisciplinary Research in Science and Technology, 2(5)*, 531–544.
- Wu, M.-J. (2020). *Sago and Kago: The History and Memory of Hiri on the Southeast Coast*

- of Papua New Guinea*. University of Hawai'i at Manoa.
- Xue-lian, L., & Ji-xin, L. (2017). From Frontier Governance to Border Governance-Border Governance Issues from the Perspective of Global Governance. *Teaching and Research*, 51(2), 58.
- Zhang, S., Zhong, L., Ju, H., & Wang, Y. (2019). Land border tourism resources in China: spatial patterns and tourism management. *Sustainability*, 11(1), 236.
- Ziguras, C., & McBurnie, G. (2014). *Governing cross-border higher education*. Routledge.
- Zumbusch, K., & Scherer, R. (2015). Cross-border governance: Balancing formalized and less formalized co-operations. *Social Sciences*, 4(3), 499–519. <https://doi.org/10.3390/socsci4030499>