

SPATIAL APPROACH IN OPTIMIZING HUMAN RESOURCES OF IMMIGRATION PPNS FOR ORGANIZATIONAL RESILIENCE IN IMMIGRATION LAW ENFORCEMENT

Muhammad Aditya Majdi¹, Eva Achjani Zulfa², Riska Sri Handayani³

Universitas Indonesia, Indonesia

Email: majdiaditya@gmail.com, eachjani@gmail.com, riska.sri@ui.ac.id

ABSTRACT

Immigration law enforcement in Indonesia requires human resources (HR) that are optimally distributed throughout the region to face increasingly complex dynamics and challenges. This article aims to explore the strategy of optimizing human resources in the Immigration Civil Servant Investigator Officer (PPNS) using a spatial approach, in order to increase organizational resilience in immigration law enforcement. A spatial approach was applied to analyze the distribution of PPNS Immigration human resources in various regions by considering geographical factors, population density, as well as the intensity of immigration activities and potential violations of the law. By utilizing spatial analysis, this study identifies areas that need to increase the number or quality of human resources, as well as formulate a more effective human resource distribution strategy. The findings of this study are expected to provide strategic recommendations for the government to strengthen organizational resilience and the effectiveness of immigration law enforcement through more efficient and spatial data-based human resource management. an abstract must accompany each manuscript; This abstract must be completely consistent on its own (eg, without numbers, tables, equations or reference citation), not exceeding 250 words and written as a paragraph. The abstract should include research objectives, methodology, and findings.

KEYWORDS *human Resources PPNS immigration, spatial approach, optimization, organizational resilience, immigration law enforcement.*



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INTRODUCTION

Globalization has brought significant changes in the dynamics of transnational human movement. This phenomenon not only brings a positive impact but also new challenges in the context of national security and immigration law enforcement. As revealed by the Minister of Law and Human Rights for the 2019–2024 period, Yasonna H. Laoly, international partnerships are the key to facing global challenges in the field of immigration (Koval, 2023; Ni Luh Putu Cintya Devi et al., 2023; Razin, 2022; Ripsman & Paul, 2005; Shah & Khan, 2023). This statement affirms the importance of a collaborative approach in managing increasingly complex international migration flows.

Immigration is one of the most important aspects of country management, given its vital role in regulating the flow of foreign people, goods, and labor entering Indonesian territory. Every year, there is an increase in the number of immigrants entering Indonesia, both for tourism, business, and temporary residence purposes. This creates new challenges in immigration law enforcement. One of the major challenges faced is the enforcement of the law against immigration violations, which involve various actors, both domestic and foreign.

With the large amount of traffic occurring both from within and outside the country, as well as the interactions between Indonesian citizens and foreigners, a spatial approach is

important in immigration studies. The spatial approach in geography studies space as a place of human activity. According to Yunus (2010), the spatial approach is a method to understand certain phenomena more deeply through the medium of space, where spatial variables play a major role in each analysis. In the context of immigration, this approach helps in understanding migration patterns and the distribution of immigrants in Indonesia, as well as their impact on national security and policy.

The Directorate General of Immigration, as the institution responsible for the implementation of immigration policies, has a strategic role in maintaining state sovereignty and national security. In accordance with Article 1, Number 3 of Law No. 6 of 2011, the function of immigration is defined as "part of the affairs of the state government in providing immigration services, law enforcement, state security, and facilitators of community welfare development." This definition affirms the multidimensionality of immigration's role, which is not only limited to administrative aspects but also includes dimensions of national security and development. In the context of immigration law enforcement, the role of the Immigration Civil Servant Investigator (*Pegawai Negeri Sipil* or *PPNS*) is very vital.

As stipulated in Article 105 of Law No. 6 of 2011, the Immigration *PPNS* is authorized as an investigator of immigration crimes. This authority covers various aspects, ranging from receiving reports, seeking evidence, to arresting suspected perpetrators of immigration crimes (Article 106 of Law No. 6 of 2011). The effectiveness of the implementation of this investigative function is highly dependent on the availability and distribution of adequate investigative human resources throughout Indonesia.

PPNS Immigration is an immigration official authorized by law to investigate criminal acts in the field of immigration. According to Article 105 of Law Number 6 of 2011 concerning Immigration, the Immigration *PPNS* has the authority to conduct investigations in accordance with applicable legal provisions (Angraeni & Ahyar, 2023; Desiaz Zein et al., 2022; Iwan et al., 2022; Laluraa, 2020; Sumolang, 2020). The main difference between the Immigration *PPNS* and ordinary civil servants (*Pegawai Negeri Sipil* or *PNS*) lies in their functions and authorities. *PNS* are state civil servants who carry out general government duties in accordance with their fields, while Immigration *PPNS* have special duties in enforcing immigration laws, including conducting investigations into violations of immigration laws.

In the Indonesian legal system, only the Immigration Civil Servant Investigator (*PPNS*) has the authority to act as an immigration investigator because immigration is a specialized field requiring an in-depth understanding of immigration laws and procedures. This is based on the concept of *lex specialis*, which provides a special mandate for the Immigration *PPNS* to handle criminal acts in this field. The Immigration *PPNS* also has the authority to carry out actions such as summoning, examining, searching, arresting, or detaining individuals suspected of committing immigration crimes. This distinguishes them from civil servants in general, who do not have a special investigative or law enforcement function.

On the other hand, the distribution of Civil Servant Investigators in Indonesia is not always proportional to field needs. Some areas with high volumes of immigration flows often lack officers, while others may have an excess. This imbalance hinders the effectiveness of law enforcement and organizational resilience, as the suboptimal distribution of human resources can reduce the quality of supervision and investigations. The reality in the field shows that there is an uneven distribution of civil servant investigators at the Directorate General of

Immigration. According to research by Lestari, (2021), the uneven distribution of Immigration *PPNS* causes some areas to lack competent investigators, making immigration law enforcement less than optimal.

This has led to an increase in cases of immigration violations in certain areas. Additionally, research by Setiawan (2018) shows that this inequality is caused by a lack of strategic planning in the placement of Immigration *PPNS*, as well as insufficient coordination between central and regional governments in determining investigator needs in each region. As a result, some regions have an excess of *PPNS*, while others experience shortages. Another study by Rahmawati (2020) emphasizes that overcoming this inequality requires a thorough evaluation of the Immigration *PPNS* recruitment and placement system, as well as improved coordination between relevant agencies to ensure a fairer and more effective distribution.

Thus, the uneven distribution of Immigration *PPNS* is a challenge that needs immediate resolution to enhance the effectiveness of immigration law enforcement in Indonesia. This condition risks creating disparities in the quality and quantity of law enforcement between regions. As revealed by Syahrin (2019), common immigration violations, such as the abuse of residence permits by foreign workers, require swift and effective handling. However, the limited number of Immigration *PPNS* and inadequate budgets often hinder the investigation process.

Some of the main challenges in immigration law enforcement in Indonesia include limited resources, suboptimal inter-agency coordination, and bureaucratic and legal obstacles. These challenges are further exacerbated by Indonesia's vast and hard-to-reach geography, particularly in border areas. This situation creates loopholes that may be exploited by transnational criminals, including human smuggling and trafficking. Therefore, optimizing the role of the Immigration *PPNS* is increasingly urgent in addressing these challenges.

RESEARCH METHOD

This study adopts a normative-qualitative approach with a descriptive-analytical type of research. The qualitative approach was chosen because the phenomenon studied—namely the equitable distribution strategy of Human Resources (HR) of Civil Servant Investigators (*PPNS*) at the Directorate General of Immigration and its implications for national resilience—is a complex social phenomenon that requires a deep understanding (Creswell, 2014; Creswell & Creswell, 2017). This type of descriptive-analytical research is used to describe phenomena as well as analyze the relationships between variables and interpret the implications of the findings. This study will adopt a case study design, which allows an in-depth exploration of the programs, activities, and processes of equitable distribution of human resources for civil servant investigators at the Directorate General of Immigration.

This research was conducted at the Directorate General of Immigration, Ministry of Law and Human Rights, Jakarta, due to the institution's strategic role in immigration law enforcement and the management of human resources for civil servant investigators. The data obtained reflect the real conditions of the distribution and management of human resources for immigration investigators. The study was conducted over six months, from January to June 2024, to ensure comprehensive data collection and analysis.

Primary and secondary data sources were used, with data collected through literature studies, observations, and interviews. Literature studies examined books, scientific journals, government reports, and policy documents related to immigration, human resource management, and national security. Law No. 6 of 2011 concerning Immigration and related regulations formed the foundational framework for this research.

RESULTS AND DISCUSSION

Spatial Approach in Indonesian Immigration Supervision

Each region of Indonesia has different characteristics, both in terms of distance, accessibility, and social complexity. Sea border areas, for example, are areas with a wide scope of surveillance, but often the lack of surveillance infrastructure makes it difficult to detect illegal activity. Surveillance at the sea border relies heavily on advanced technologies, such as radar, satellites, and drones, to monitor the movement of ships and detect suspicious activity. On the other hand, land border areas are more open and densely populated, but have their own challenges in terms of coordination between agencies, given the limited access and communication.

In addition, the pattern of movement of people and goods through strategic areas such as the Strait of Malacca, which is an international trade route, requires special attention. This area is often a route for smuggling goods and people, and supervision of these movements must be carried out more strictly. Efficient monitoring technologies, such as biometric systems for individual identification and the use of radar to monitor the waters, are key in ensuring effective surveillance at these strategic points. The spatial approach in this case helps to map the critical points that are the main focus in surveillance.

The spatial approach also helps to design policies that are not uniform across Indonesia, given the geographical diversity that exists. For example, more remote border areas such as Papua or Kalimantan, which have a long distance from government centers and surveillance facilities, require strategies that are more in line with local conditions. In the region, limited infrastructure and lack of human resources to carry out direct supervision make technology an indispensable tool. Satellite-based communication systems, for example, are one of the solutions to overcome these limitations, so that information can be disseminated faster and coordination between institutions is more integrated.

In addition, in more developed border areas, such as along the border with Malaysia, immigration surveillance can be more easily implemented by leveraging improved infrastructure. Here, technologies such as biometric surveillance systems at immigration posts or the use of surveillance cameras (CCTV) connected to data centers in Jakarta can be optimized. The spatial approach helps to tailor policy implementation to the specific needs of the region, taking into account the availability of technology, as well as the readiness of human resources in each location.

Surveillance based on spatial mapping makes it possible to design more targeted policies, such as the deployment of immigration officers or the strengthening of surveillance posts at border points that are vulnerable to violations. This mapping also involves identifying points prone to smuggling or other illegal activities that may occur, both at land and sea borders. By using geospatial data-driven technologies, governments can more efficiently determine

priorities in surveillance, as well as allocate limited resources to areas that need the most attention.

Surveillance that is tailored to the spatial conditions in each region also has a positive impact on the effectiveness of preventing immigration threats. By understanding the geographical characteristics of each region, for example, on the maritime border, appropriate preventive measures can be taken, such as increasing maritime patrols or utilizing surveillance technologies such as drones and radar to detect suspicious vessels. On the other hand, at land borders, surveillance can be carried out in ways that are more based on direct interaction, such as tightening checks at immigration posts and involving local communities in surveillance.

A spatial approach that prioritizes adaptation to local conditions also has an impact on strengthening cooperation between institutions. In immigration supervision, success depends heavily on good coordination between various institutions, such as Immigration, Police, TNI, and other related institutions. Each of these institutions has different powers and functions, but within the framework of spatial oversight, they must work together to maximize results. For example, in dealing with human smuggling, the Immigration must cooperate with the Police and the TNI to conduct investigations and prosecutions, especially in hard-to-reach areas.

In addition, the spatial approach allows Indonesia to develop a supervisory policy that is more responsive to changes in dynamics on the ground. For example, in a region where little was previously known about its illegal activities, a spatial approach will help to identify suspicious movement patterns and formulate more adaptive policies. Advanced technologies, such as geospatial data-based monitoring and the use of app-based reporting systems, can speed up the detection process and allow authorities to take immediate action.

Inter-Agency Coordination and Implementation of Spatial Approaches

The spatial approach to Indonesian immigration supervision not only involves an analysis of geographical conditions, but also emphasizes the importance of synergistic coordination between the institutions involved in supervision. Indonesia has various institutions that are directly involved in immigration supervision, such as Immigration, Police, Military, and the National Narcotics Agency (BNN). Each of these institutions has different duties and authorities, but must collaborate effectively in maintaining state security. With a spatial approach, each agency can identify vulnerable points or border areas that require special attention, so that surveillance can be carried out in a more targeted and targeted manner.

The application of a spatial approach allows for a more efficient division of roles between the institutions involved, based on the geographical conditions and level of vulnerability of each region. For example, at the land border directly bordering Malaysia or Timor Leste, surveillance will involve Immigration and Police working together to prevent human smuggling, smuggling of illegal goods, or illegal immigration. Good coordination between these two agencies is important to ensure that information regarding the movement of people and goods can be handled quickly and appropriately. A clear division of duties between institutions will minimize the occurrence of overlap in supervision.

On the wider and open maritime border, surveillance based on a spatial approach leverages advanced technologies, such as drones and radar scanners, to monitor the movements of suspicious ships or boats. This technology is very effective for monitoring areas that are

difficult for ground officers to reach. Using geospatial data, the agencies involved can map strategic points and allocate resources according to the level of vulnerability of the region. The use of this technology increases the efficiency and effectiveness of surveillance, as it can detect threats that cannot be reached directly.

Coordination between agencies also needs to pay attention to the condition of infrastructure and accessibility in border areas. In remote areas, such as the Papuan border, which have limited communication networks, surveillance requires more adaptive technology. Satellite-based communication systems or radio communication can overcome existing geographical constraints, so that officers on duty in the field can still coordinate with surveillance centers in real-time. This is important to avoid delays in decision-making that could result in missed opportunities to prevent crimes or immigration violations.

In addition, the spatial approach also involves cross-border relations in terms of international border surveillance. Given Indonesia's position as an archipelagic country bordering several neighboring countries, cooperation between countries is essential in addressing transnational issues, such as human smuggling and illegal trade. One concrete example is the cooperation between Indonesia and Malaysia in monitoring the maritime border, where the two countries share intelligence data and information on suspicious ship movements. The spatial approach allows for easier coordination between countries by mapping vulnerable points on international borders.

Cooperation with other neighboring countries, such as Malaysia, Singapore, Timor Leste and Papua New Guinea, is also part of the surveillance strategy based on a spatial approach. In this case, land border surveillance becomes more effective if it is carried out jointly with countries that directly border it. The spatial approach allows Indonesia to take into account critical locations that require cross-border surveillance, as well as more accurate and faster intelligence data sharing. This kind of cooperation is essential to ensure that surveillance is not limited to national territorial boundaries, but also involves joint efforts with neighboring countries to maintain common security.

The use of geospatial data in immigration supervision also allows each institution to work more efficiently in planning supervision strategies. By using maps and geographic information systems (GIS), agencies can determine border points that require more attention, both land and sea borders (Burrough et al., 2015; Chang, 2018; Kirby et al., 2017; Kurowksa et al., 2021; Lü et al., 2019). This technology helps in mapping vulnerable points that need to be prioritized in surveillance. For example, areas that are vulnerable to smuggling or other illegal movements can be given more attention by increasing the number of officers or installing technology-based monitoring systems.

An integrated coordination system between institutions can also minimize potential conflicts in handling problems in the field. For example, in the case of human smuggling involving land and sea borders, effective coordination between Immigration, the Police, and the TNI is essential to solve the problem together. Each institution will take a role according to its areas of expertise and authority, but optimal results can only be achieved if there is solid cooperation between these institutions. With a spatial approach, each agency can know exactly what its duties and authorities are at each vulnerable border point.

In this case, the spatial approach also allows mapping of immigration vulnerabilities based on the types of threats that exist in each region. In some areas, such as border areas close to

economic zones or international trade routes, the threats faced may be more related to the smuggling of goods or the flow of illegal human beings. In other areas, such as remote areas far from economic centers, the main threat could be more related to the presence of separatist groups or social conflicts affecting security. Spatial mapping helps to formulate the right strategy according to local conditions.

The importance of a spatial approach in immigration supervision is also not only limited to border surveillance. Domestically, this approach is also useful for mapping potential threats that occur within the country's administrative area. For example, surveillance of illegal immigrants or undocumented migrant workers can be more efficient if it is done by mapping areas that have a high concentration of foreign workers.

Use of Technology and Capacity Building of Supervision

The use of advanced technology in immigration surveillance with a spatial approach has a significant impact on the effectiveness of surveillance at various border points. The technology used focuses not only on monitoring, but also on faster and more accurate detection and identification processes. One of the technologies that is very helpful is the biometric system used at immigration checkpoints. With this technology, the identity verification process can be carried out more efficiently, reducing the potential for human error and speeding up the process of checking passers-by. The system also reduces the chances of identity spoofing and improves security.

On the other hand, drone and satellite-based monitoring technology is also a solution for surveillance of vast and hard-to-reach marine border areas by officers in the field. Using drones, authorities can monitor the movements of suspicious vessels or boats in areas of waters that are not reached by land monitoring. Meanwhile, satellites can provide a broader and more accurate picture of movements in more remote areas. This technology allows for more effective supervision without having to physically place officers at each vulnerable point, which of course reduces the risk of human error in monitoring.

In more densely populated land borders, biometric technology can also be applied effectively, for example at certain vehicle checkpoints or entry points. By using biometric data, officers can more easily identify anyone who crosses, whether they are involved in illegal activities or not. Additionally, data-driven surveillance systems can provide reports in real-time, allowing authorities to take immediate action in the event of suspicious movements. This is essential to increase the speed of response in the face of threats that can appear suddenly.

Increased surveillance capacity also relies heavily on understanding the geographic challenges faced by immigration officers and other supervisors. Border areas, be they in sea, land, or more remote areas, have very diverse geographical characteristics and require different approaches in surveillance. Therefore, in addition to relying on technology, officers must also understand local geographical conditions. For example, in border areas that are directly adjacent to neighboring countries that have illegal trade routes, officers must be more vigilant against the potential for smuggling of goods or people.

To increase the capacity of officers to deal with these geographical challenges, appropriate training is essential. This training not only covers the use of advanced technology, but also an understanding of the geographical conditions that exist in the field. Investigators

and surveillance officers need to get simulations involving borders with different characteristics. For example, simulations in sea border areas that have their own challenges in supervising the movement of ships or boats, as well as in land border areas that have dense populations and illegal routes that must be watched out.

This kind of simulation can help officers be better prepared to face challenges in the field. In addition, this training is also important to improve understanding of how to integrate data obtained from technology with real-world situations on the ground. This can speed up the decision-making process and improve coordination between the agencies involved. With intensive training and a deep understanding of geographical conditions, officers will be able to carry out their duties more efficiently and effectively, reducing the potential for errors in threat handling.

Effective immigration surveillance also requires the support of a strong communication system, especially in remote border areas. With efficient communication between the surveillance center and officers in the field, decision-making can be done faster. This becomes especially important when there are situations that require an immediate response, such as the arrest of smugglers or other violations of the law. The use of technology that can connect officers in the field with surveillance centers in real time, such as using satellites or radio communication systems, is one of the important aspects in strengthening surveillance capacity.

CONCLUSION

The application of a spatial approach in Indonesian immigration surveillance significantly enhances border monitoring effectiveness both land and sea through advanced technologies (e.g., biometrics, drones, satellites, and radar) that improve threat detection, reduce human error, and overcome geographical barriers. Strengthened inter-agency coordination and officer training on geographic challenges further optimize data integration and threat response. This approach enables Indonesia to better combat illegal activities like human and goods smuggling while bolstering national security. Future research should explore the cost-benefit analysis of deploying these technologies across Indonesia's diverse border regions, as well as the socio-political implications of heightened surveillance on local border communities.

REFERENCES

- Angraeni, A., & Ahyar, M. (2023). Analisis Fikih Siyasah Terhadap Undang-Undang Nomor 6 Tahun 2011 Tentang Keimigrasian. *Qonun: Jurnal Hukum Islam Dan Perundang-Undangan*, 7(1). <https://doi.org/10.21093/Qj.V7i1.6223>
- Burrough, P. A., McDonnell, R. A., & Lloyd, C. D. (2015). *Principles Of Geographical Information Systems*. Oxford University Press, Usa.
- Chang, K. T. (2018). *Introduction To Geographic Information Systems* (9th Ed.). Mcgraw-Hill.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, And Mixed Methods Approaches* (4, Ed.). Sage Publications.
- Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, And Mixed Methods Approaches*. Sage Publications.
- Desiaz Zein, F. F., Syahrin, M. A., & Mirwanto, T. (2022). Reformulasi Sanksi Pidana Dalam Pasal 116 Juncto Pasal 71 Huruf B Undang-Undang Nomor 6 Tahun 2011 Tentang Keimigrasian. *Jurnal Ilmiah Kajian Keimigrasian*, 5(1). <https://doi.org/10.52617/Jikk.V5i1.326>
- Iwan, I. S., Agustino, L., & Riswanda, R. (2022). Implementasi Undang-Undang Nomor 6 Tahun 2011 Tentang Keimigrasian. *Jdkp Jurnal Desentralisasi Dan Kebijakan Publik*, 3(1). <https://doi.org/10.30656/Jdkp.V3i1.4046>
- Kirby, R. S., Delmelle, E., & Eberth, J. M. (2017). Advances In Spatial Epidemiology And Geographic Information Systems. *Annals Of Epidemiology*, 27(1). <https://doi.org/10.1016/J.Annepidem.2016.12.001>
- Koval, Y. (2023). Directions Management Of Economic Security Of The State In The Context Of Globalization Processes. *Public Administration And Law Review*, 3. <https://doi.org/10.36690/2674-5216-2023-3-39-48>
- Kurowksa, K., Marks-Bielska, R., Bielski, S., Aleknavičius, A., & Kowalczyk, C. (2021). Geographic Information Systems And The Sustainable Development Of Rural Areas. In *Land* (Vol. 10, Issue 1). <https://doi.org/10.3390/Land10010006>
- Laluraa, S. (2020). Pengaturan Hukum Mengenai Dokumen Perjalanan Menurut Undang-Undang Nomor 6 Tahun 2011 Tentang Keimigrasian. *Lex Et Societatis*, 8(4). <https://doi.org/10.35796/Les.V8i4.31112>
- Lü, G., Batty, M., Strobl, J., Lin, H., Zhu, A. X., & Chen, M. (2019). Reflections And Speculations On The Progress In Geographic Information Systems (Gis): A Geographic Perspective. In *International Journal Of Geographical Information Science* (Vol. 33, Issue 2). <https://doi.org/10.1080/13658816.2018.1533136>
- Ni Luh Putu Cintya Devi, I Made Anom Wiranata, & Gek Dian Kencana Asih. (2023). Analisis Globalisasi Terhadap Keamanan Negara. *Economic Military And Geographically Business Review*, 1(1). <https://doi.org/10.61511/Emagrap.V1i1.2023.110>
- Razin, A. (2022). Understanding National-Government Policies Regarding Globalization: A Trade-Finance Analysis. *Journal Of Government And Economics*, 8. <https://doi.org/10.1016/J.Jge.2023.100060>

- Ripsman, N. M., & Paul, T. V. (2005). Globalization And The National Security State: A Framework For Analysis. In *International Studies Review* (Vol. 7, Issue 2). <https://doi.org/10.1111/J.1468-2486.2005.00481.X>
- Shah, H. J., & Khan, A. (2023). Globalization And Nation States – Challenges And Opportunities For Pakistan. In *Social Sciences And Humanities Open* (Vol. 8, Issue 1). <https://doi.org/10.1016/J.Ssaho.2023.100621>
- Sumolang, A. Z. Z. (2020). Penanganan Terhadap Korban Perdagangan Orang Dan Penyelundupan Manusia Menurut Undang-Undang Nomor 6 Tahun 2011 Tentang Keimigrasian. *Lex Et Societatis*, 8(2). <https://doi.org/10.35796/Les.V8i2.28486>
- Syahrin, M. A. (2019). The Polarization Of Contemporary Immigration Law Enforcement: Normative-Empirical Axiology. *National Law Magazine*, 49(1), 59-89. <https://doi.org/10.33331/Mhn.V49i1.93>