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Reinforcement Cross-Border Governance Focusing on Commitments Between Bordering Countries: Understanding the Situation of Cross- Border Economic Development of the Republic of Indonesia and Malaysia

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Abstract

This study aims to analyze and strengthen cross-border governance between Indonesia and Malaysia by emphasizing bilateral commitments in supporting economic development in border areas, particularly Aruk, Sambas Regency, West Kalimantan. The research examines economic potential, border management practices, and collaborative approaches to enhance regional trade. A descriptive qualitative method was employed to explore border social dynamics, policy implementation, and institutional-community relations. The study applies the Cross-Border Governance Systems (CBGS) framework by examining Cross-Border Cooperation (CBC) and Cross-Border Integration (CBI). Data were collected through in-depth interviews, participatory observations, and document analysis involving BNPP representatives, local government officials, entrepreneurs, village authorities, and affected communities. Data analysis was conducted using NVivo 12 Plus to identify key themes and governance patterns. The findings indicate that strengthening institutional cooperation, promoting SME digitalization, and increasing community participation can support the development of trade, agriculture, and service sectors in Aruk. This study highlights the importance of adaptive collaborative policies and effective cross-border institutions in creating productive, secure, and competitive border regions. The findings contribute to the development of border governance strategies and provide insights for replicating similar governance models in other Indonesian border areas.

1. INTRODUCTION

Strengthening cross-border governance is a strategic issue in the dynamics of relations between neighbouring countries, especially in the era of globalization that encourages economic integration and cross-border mobility (Bharti & Kumari, 2024). In the Southeast Asian region, economic cooperation between Indonesia and Malaysia has intensified, driven by shared interests in trade, investment and border security (Li, 2022). However, suboptimal bilateral commitments and weak implementation of local governance mean that the border region has yet to develop as a center of economic growth and a symbol of regional synergy.

Globalization has brought significant changes in the world's economic, political and social order, including in Southeast Asia. One of the most obvious impacts of this globalization process is the increasing transnational economic openness manifested through free trade, market integration, foreign investment, and mobility of labour and goods (Deng et al. 2020). In this era, geographical boundaries are no longer the main obstacle in establishing economic cooperation, but rather a bridge between countries. Indonesia and Malaysia, as two allied countries with extensive land and sea borders, have great challenges and opportunities in managing the region in an integrated and productive manner (Hummaira et al 2021; Asmah 2023).

Within Indonesia, this requires a national development policy that not only focuses on growth centers such as Java and Sumatra, but also pays attention to border areas that have a strategic position as a gateway to international relations (Indradinata and Samputra 2023; Setiawan et al 2020). However, these

efforts still face major challenges, especially in building supporting infrastructure, equalizing regulatory standards across countries, and creating synergies between national and local interests (Sari et al., 2023; Siahaan, 2020). Without strong cross-border governance management, this economic openness has the potential to create new vulnerabilities such as smuggling, price inequality, and conflicts of interest between regions, as illustrated in Fig. 1.

Source: https://admin-jdih.bnpp.go.id

Unfortunately, the governance of the Indonesia-Malaysia border region still faces serious challenges, especially related to inter-agency coordination, infrastructure development gaps, unsynchronized regulations, and the rise of the informal economy. Rusdiono et al. (2024) mentioned that the complexity of management that involves many agencies from both countries often leads to overlapping authorities and policies that are not well coordinated, so that responses to cross-border issues such as smuggling and human trafficking become ineffective. On the other hand, Fitri et al. (2017) most border areas, particularly in Kalimantan, still suffer from underdeveloped infrastructure despite the Indonesian government having built a 1,910 km road network; access to reliable transportation, electricity, and clean water remains a major constraint for local communities. The situation is further exacerbated by regulatory gaps in trade and immigration between the two countries, which encourage the growth of informal economic activities. A study by Anuar & Raharjo (2022) noted that in the Entikong area, more than 60% of transactions take place without official records due to complicated export-import procedures and weak monitoring systems. Despite various initiatives such as the implementation of a “soft border” approach, the establishment of the Sosek Malindo platform, as well as increased security patrols and infrastructure development, there are still challenges in harmonizing policies, integrating development between countries, and increasing local community participation. As a result, border areas have not been able to function optimally as motors of regional economic growth and symbols of productive bilateral synergies, but rather remain marginalized and prone to illegal cross-border activities (Rusdiono et al., 2024).

The participation of local communities as the main actors in the socio-economic dynamics of the border is also still very limited. According to Bappenas (2022), only 32% of residents in border areas feel involved in decision-making related to the development of their region (Syaban and Opoku 2023). This inequality creates a sense of marginalization and distrust of the government, both central and local. As a result, many border development policies fail to achieve their targets because they are not in line with local needs and characteristics. On the other hand, the implementation of Indonesia-Malaysia bilateral agreements related to border management such as the Border Trade Agreement (BTA) has also been slow and ineffective due to weak regional institutional capacity and the absence of a concrete regulatory harmonization mechanism (Verico, 2017). Without comprehensive improvement, the border area risks remaining a backward zone and prone to conflicts of interest, even though this area has the potential to become an important node of economic cooperation, security, and socio-cultural integration between two allied countries.

To address the complex challenges in the Indonesia-Malaysia border region, such as development gaps, limited infrastructure, lack of public services, and evolving social and security dynamics, it is necessary to strengthen cross-border governance that is more integrative, adaptive, and oriented towards the welfare of the community. While regional frameworks such as the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) and the Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) have provided important platforms for cross-border collaboration, their implementation is often hampered by weak policy integration between countries, suboptimal coordination between agencies, and low involvement of local communities (Uhaib et al., 2022). Therefore, this study proposes a new approach based on Cross-Border Integration (CBI) and Cross-Border Cooperation (CBC) as an alternative model in managing the border area between Indonesia and Malaysia (Rumbiak et al., 2022). This approach emphasizes the importance of cross-border policy integration that is adaptive to global and regional changes, as well as cooperative in building synergies between various cross-border actors (Ssengooba et al., 2022). CBI aims to create harmonization of development policies in border areas through collaborative mechanisms and integrated planning involving central and local governments from both countries (Benveniste et al. 2020). Meanwhile, the CBC focuses on enhancing concrete cooperation at the grassroots level, such as local economic development based on shared resources, cooperation in environmental management, and socio-cultural exchanges.

The novelty of this research lies in the development of an integrative approach to border governance based on CBI and CBC that has not been explicitly addressed in previous studies. Most previous studies have focused on fragmentary issues such as security, development inequality, or trade regulation issues without building a collaborative model that combines political, social, economic, and institutional aspects holistically. Even in cross-country studies such as those by Saaida & Qawasmi (2023) and Stoffelen & Ioannides (2025), there has been no systematic effort to build a cross-border framework that emphasizes policy integration among local, national, and regional stakeholders in a sustainable manner. By proposing a conceptual model based on CBI and CBC, this research provides a new contribution in the form of an alternative approach to border area management that is more adaptive and collaborative.

The urgency of this research arises from the need to shift the paradigm of border area management, which has tended to focus on sectoral and security approaches, towards a more integrative and collaborative model between countries. To date, inter-agency coordination and bilateral cooperation in border management have not been optimal, leading to inefficient responses to cross-border challenges such as informal trade, smuggling, and development delays. Within this framework, strengthening cross-border governance through policy harmonization and inter-agency synergy is a strategic imperative to ensure the sustainability of overall border area development. Furthermore, border areas play an important role as a reflection of the quality of bilateral relations between countries. Therefore, this study proposes a new approach based on CBI and CBC as an alternative model in managing the border area between Indonesia and Malaysia.This approach emphasizes the importance of cross-border policy integration that is adaptive to global and regional changes, as well as cooperative in building synergies between various cross-border actors. CBI aims to create harmonization of development policies in

border areas through collaborative mechanisms and integrated planning involving central and local governments from both countries.

In general, it aims to understand and strengthen cross-border governance between Indonesia and Malaysia, emphasizing the importance of bilateral commitments in promoting border economic development. While specifically this research aims to: 1) Identify and analyze the management of economic potential in the Indonesia-Malaysia border area, and 2) Analyze the appropriate border management model in increasing the economic potential of the trade sector in the border area.

2. METHODOLOGY

This research uses a descriptive-qualitative approach chosen to provide an in-depth understanding of the dynamics of cross-border governance between Indonesia and Malaysia in the Aruk border area, Sambas Regency, West Kalimantan. This approach is considered appropriate because the focus of the research is not only measuring variables, but exploring social realities, policies, and interactions between actors in the field that are complex and contextual. Using the Cross-Border Governance Systems (CBGS) framework, this research focuses on the dimensions of CBI and CBC.

2.1. Population and Sample

The informants in this study were selected using purposive sampling based on their knowledge, experience, or strategic roles in border-area governance. They consisted of local government officials from the Regional Development Planning Agency (Bappeda), National and Political Unity Agency (Kesbangpol), and Trade Office, representatives of the National Border Management Agency (BNPP), local business actors, border village officials, and community members directly affected by border dynamics. A total of 15 informants participated, with the sample size determined according to the principle of information adequacy in qualitative research. Primary field data involving human participants were collected from 15 April to 30 June 2024, within the period covered by the institutional ethical approval. Data were collected through semi-structured in-depth interviews, participatory observation at the Aruk border post and cross-border market area, and analysis of policy documents, development reports, and archives of cross-border cooperation agreements. Activities not involving direct interaction with participants, including document review, data organization, transcription, coding, analysis, and manuscript preparation, continued after the fieldwork period.

Before data collection, all participants received an oral explanation of the study objectives, research procedures, voluntary nature of participation, confidentiality arrangements, potential risks and benefits, and their right to decline participation or withdraw at any time without consequences. Verbal informed consent was obtained from each participant before the interviews and observations commenced and was documented in the researchers' field notes. The study received ethical approval from the Institute for Research, Institut Pemerintahan Dalam Negeri (IPDN), under approval reference number 400.1/398/IPDN.10. All participant-related records and research data were securely stored and

accessible only to the research team. To ensure data validity, source and method triangulation were conducted by comparing information obtained from different informants and data-collection methods, including interviews, observations, and documents, thereby strengthening the consistency and credibility of the findings.

2.2. Data Analysis Technique

Data were analyzed using NVivo 12 Plus software to facilitate the thematic analysis process. The analysis process was conducted through several systematic stages, starting with data transcription and importation, where all interview data and field notes were transcribed and entered into NVivo. Next, an initial coding process was conducted, where the data was open-coded based on the initial categories of the CBGS framework, such as cross-border economic cooperation, bilateral commitments, policy barriers, and community participation. After that, categorization and data reduction were conducted, where the initial codes were grouped into thematic categories. The next stage was theme derivation and interpretation, where the categories formed were developed into main themes that showed the patterns, dynamics, and relationships between CBI and CBC. Finally, the findings were validated through cross-checking with key informants and then organized into a narrative to explain the strengthening of cross-border governance in the study area.

2.3. Ethical Approval and Informed Consent

This study involved human participants, including local government officials, business actors, and community members. Ethical approval for this non-clinical social science study was granted by the Institute for Research, Institut Pemerintahan Dalam Negeri (IPDN), under approval reference number 400.1/398/IPDN.10, before data collection commenced. The approval was issued on 30 March 2024 and covered the research period from 2 April to 30 June 2024 at the Indonesia–Malaysia border area in Sambas Regency. The complete ethical approval details and supporting certificate were submitted separately to the journal as supplementary material.

Before data collection, all participants received an oral explanation of the study's objectives, procedures, voluntary nature of participation, confidentiality arrangements, potential risks and benefits, and their right to decline participation or withdraw at any time without consequences. Verbal informed consent was obtained from each participant before the interviews and observations commenced and was documented in the researchers' field notes. All responses were treated confidentially, participant identities were anonymized, and access to the research records was restricted to the research team.

3. RESULTS

3.1. Management of Economic Potential in Indonesia-Malaysia Border Areas

Table 1 presents the results of the analysis of economic potential management in the border areas between Indonesia and Malaysia.

Table 1
Results of Analysis of Economic Potential Management in Border Areas

Aspect	Findings
Cross-Border Territorial Flow	• Aruk serves as a cross-border trade hub between Sambas (Indonesia) and Sarawak (Malaysia). • Key sectors in trade: agriculture, fisheries, and marine products. • Labor migration from Indonesia to Malaysia contributes to family income and skill transfer. • Migrant workers bring cultural and social influence back to their communities. • Aruk is designated as a National Strategic Area.
Cross-Border Territorial Convergence	• Cultural and linguistic similarities (Sambas Malay and Sarawak Malay) strengthen social ties. • Social interaction occurs through shared communication, cultural exchange, and education. • Student exchange programs and academic collaboration expand cross-cultural awareness and tolerance. • Territorial convergence promotes regional identity and understanding between nations.
Cross-Border Intervention Agenda	• Focuses on natural resource management, trade, infrastructure, and local economic empowerment. • Presidential Instruction No. 1 of 2021 supports accelerated cross-sector development. • Infrastructure developed: Customs-Immigration-Quarantine building, Indonesia Hall, mosque, church, market, etc. • Enhances connectivity and positions Aruk as a new growth center in the border region. • Aruk has 20,141 active MSMEs, the highest among other border areas. Priority sectors: agriculture, fisheries, and local crafts. • Required support: entrepreneurship training, digitalization, product certification, and financial access. • Bilateral cooperation is essential to strengthen MSMEs' capacity and competitiveness. • MSMEs are key pillars of sustainable local economic development.

Analysis of economic potential management in the Aruk border area shows Aruk's strategic role as a cross-border trade center between Sambas (Indonesia) and Sarawak (Malaysia). The main economic activities in this area are supported by the agriculture, fisheries and marine products sectors which not only support the livelihoods of local communities but also encourage regional trade integration. Labor migration from Indonesia to Malaysia also contributes significantly to household income and encourages the exchange of skills, culture and social norms. An interview with the Paloh sub-district head stated that:

"*The impact of cross-border trade transactions between Indonesia and Malaysia is still classified as a traditional market because the trade infrastructure is not yet optimal. People often use Malaysian ringgit because the exchange rate is more favorable than Rupiah. In addition, the accessibility of national goods is still difficult so many people prefer to get goods from Malaysia, which is faster and cheaper. People also tend to be more interested in exporting their produce due to better infrastructure and high purchasing power there.*"

This cross-border interaction is reinforced by Aruk's designation as a National Strategic Area, signaling its importance in national development planning. An interview with the Head of the Trade Division of the Sambas District Industry and Trade Office (Diskumindag) revealed that:

"The regulation that does not yet exist means that there are no technical guidelines that regulate the connectivity of economic activities, especially the cross-border trade sector at an advanced stage in the border area in Malaysia. Because in Indonesia, it has been assisted and served the completeness of export trade administration but it becomes raw again or is not recognized by the Malaysian Government because it is considered traditional trade."

In addition, findings show that cultural and linguistic similarities between border communities, such as Sambas Malay and Sarawak Malay, strengthen social cohesion and cooperation across regions. Student exchange programs and academic cooperation between countries play a role in increasing cross-cultural understanding and tolerance. An interview with the Paloh sub-district head also emphasized the importance of cultural links that facilitate cross-border social interaction:

"*We really feel the cultural similarities between the people of Sambas and Sarawak. This greatly facilitates our communication and cooperation in trade. Even many local business people know each other, and this makes it easier to export local products.*"

The cross-border intervention agenda guided by Presidential Instruction Number 1 of 2021 prioritizes infrastructure development and local economic empowerment. Aruk is noted to have the highest number of active MSME players compared to other border areas, reflecting great entrepreneurial potential. However, MSMEs need support in the form of entrepreneurship training, digitalization, product certification, and access to financing in order to grow and compete sustainably. An interview with one of the MSME players revealed:

"We still need entrepreneurship training and access to a wider market. Our products are ready for export, but without adequate training and product certification, we struggle to compete in the international market."

Bilateral cooperation is key in strengthening the competitiveness and overall economic resilience of border areas. The head of the Aruk Cross Border Post (PLBN) expressed the importance of cooperation between countries:

"Cooperation with Malaysia is very important to strengthen the border region's economy. We hope for a clearer agreement on cross-border trade so that Indonesian products can be more easily accepted in the Malaysian market."

3.2. Border Governance Model

The Aruk border area has been designated as a National Strategic Activity Center (PKSN) in accordance with Government Regulation No. 26 of 2008 concerning the National Spatial Plan. Based on an analysis of border governance in the Aruk region, using an approach that integrates the concepts of CBC and CBI, the results of this analysis were visualized in the form of a word frequency chart using NVivo 12 Plus software and summarized in the table below:

3.2.1. Cross Border Cooperation (CBC) System

Figure 2 shows the CBC item clusters, while Fig. 3 illustrates the CBC frequency indicator. Table 2 summarizes the results of the analysis of border governance in the Aruk region.

Source: Processed by author’s using NVivo 12

1. Commonalities

Figure 3. Cross Border Cooperation (CBC) Frequency Indicator

Source: Processed by the author using NVivo 12

Table 2
Cross Border Cooperation Effort and Challenge

Indicator	Efforts	Challenges
Commitment	• Development of border areas for economic advancement • Strengthening bilateral cooperation (trade, investment, security) • BCA and BTA agreements between Indonesia and Malaysia	• Need to update agreements in accordance with current trade dynamics • Need for bilateral regulations and SOPs for border trade
Vision	• Revision of cross-border trade agreements • Sambas vision: empowering key economic sectors (agriculture, fisheries, tourism) • Diversification of income sources and promotion of sustainable local products	• Need for a sustainable vision that supports official export-import activities • Reorientation of programs to determine priority sectors
Commonalities	• Historical ties and close cooperation within ASEAN • Increased trade activity at Aruk Border Post (PLBN) during 2022–2023	• Optimization of the economic potential of border areas • Expansion of market access and sustainable development
Relationship	• Institutional structure: NBMA, BAMCA, and local government agencies • Significant role of regional authorities in cross-border relations	• Addressing economic disparity and regional isolation • Maximizing border potential as economic growth hubs
Intervention	• Designation of Aruk and Temajuk as National Strategic Areas • MSME empowerment programs	• Strategy to open sustainable local economic access in Aruk–Sarawak border
Management	• Coordination between central and local governments • Regulatory clarity on roles and responsibilities across agencies • Regional market-oriented development focus	• Reducing inter-agency sectoral egos • Enhancing supervision and enforcement against illegal trade

3.2.2. Cross Border Integration (CBI) System

Figure 4 illustrates the cluster of items related to Cross Border Integration (CBI), while Fig. 5 shows the frequency indicator for CBI.

Source: Processed by author's using NVivo 12

1. Institutional

1. Development

1. Technology

Figure 5. Cross Border Integration (CBI) Frequency Indicator

Source: Processed by the author using NVivo 12

Table 3 presents the efforts and challenges of Cross Border Integration in the region.

Table 3
Cross Border Integration Effort and Challenge

Indicator	Efforts	Challenges
Social Interaction	• Collaboration between government, community, and private sector in managing border potential	• Utilizing kinship ties between traditional leaders in Sambas and Sarawak to support trade
Accessibility	• Road infrastructure development since the inauguration of PLBN Aruk in 2017	• Administrative recognition for Indonesian business actors in Sarawak
Economy	• Trade networks between communities in Sambas and Malaysia • Trade volume increased in 2023	• Need to upgrade trade status to formal export-import • Enhancing product value-added • Revising outdated cross-border trade agreements
Technology	• "TEMAN ARUK" app for border public services • Integrated with CIQ (Customs, Immigration, Quarantine) system	• Integration of technology with local government services • Improved telecommunication networks and packaging technology for export products
Development	• Included in the National Medium-Term Development Plan (RPJMN) • Construction of Aruk Border Post and international cargo terminal	• Requires a dedicated road for export-import and a temporary loading-unloading terminal
Institutional	• Establishment of BNPP (National Border Management Agency) and legal framework for border management • Master Plan as national border management guide	• Needs a holistic and sustainable approach • Strengthening the authority of BNPP • Special regulations for border villages/sub-districts • Lack of dedicated institutions at the local level

Based on the findings in Table 2 and Table 3, it can be concluded that the cross-border governance system between Indonesia and Malaysia, especially in the border areas of Sambas (West Kalimantan) and Sarawak (Malaysia), has shown significant efforts in encouraging regional cooperation oriented towards economic development, social integration, and improving the welfare of border communities. Efforts that have been made include:

1. Bilateral commitment to the development of border areas, including strengthening trade, investment, and security relations. An interview with the Head of the Trade Division of the Sambas Regency Industry and Trade Office stated:

"We have implemented several cooperation initiatives, but the existing regulations are not enough to support legal cross-border trade. This makes our trade activities considered as traditional trade by Malaysia, even though we have completed the administration."

1. Formulation of a regional vision, which relies on local potential-based leading sectors such as agriculture, fisheries and tourism. Paloh sub-district head also added:

"The border area has great potential, especially in the agriculture and tourism sectors. However, a more integrated vision is needed to better support official import-export activities, not just traditional trade."

1. Utilization of digital technology in public services, one of which is through the “TEMAN ARUK” application that accelerates immigration and customs services. The Head of the Aruk Cross Border Post (PLBN) explained:

"The TEMAN ARUK application is very helpful in speeding up the immigration and customs process, but we hope that this technology can be more integrated with the local government to facilitate management and services at the border."

However, the challenges faced are still quite complex, including:

1. Suboptimal coordination between central and local government institutions. The Regional Secretary of Sambas Regency stated:

"Coordination between BNPP, the local government, and other agencies still needs to be improved, because there are often discrepancies in policy implementation that cause some potentials to not be maximized."

1. The cross-border trade agreement has not been updated, which is no longer relevant to current trade dynamics. The Head of PLBN Aruk adds:

"The existing trade agreements are outdated and need to be updated immediately to accommodate more modern and formalized trade activities."

1. Weak integration of policies and regulations between countries, and low community participation in such governance. The Head of the Trade Division of the Sambas District Industry and Trade Office said:

"We need clearer and more coordinated regulations between the two countries, so that trade is no longer considered a limited traditional trade."

Transformation of traditional trade status towards official import-export schemes is also an important homework to increase the legality and economic value of cross-border economic activities. The Regional Secretary of Sambas Regency hopes:

"The central government needs to provide more support in forming clear regulations so that border trade activities can be recognized as export-import trade, which in turn will increase the competitiveness of Indonesian products in the Malaysian market."

Therefore, a more integrated and adaptive approach is needed, through the formulation of bilateral policies based on local needs, strengthening institutional capacity, as well as equitable and sustainable development of supporting infrastructure for the creation of effective and inclusive cross-border governance.

4. DISCUSSION

4.1. Analysis of the Economic Potential of the Indonesia-Malaysia Borderlands

The analysis of economic potential in the Indonesia-Malaysia border region, especially in the Aruk-Sarawak area, is a strategic step in strengthening the development of underdeveloped regions, expanding international trade networks, and encouraging local economic growth. The border region is often considered as an isolated peripheral area, even though geographically this area has a strategic position as the main gate for cross-border economic activities (Nurdin et al 2023) The potential of sectors such as agriculture, fisheries, trade, and tourism in border areas has strategic value that can boost the local and national economy if developed optimally (Sikwan et al., 2023). In addition, the growth of cross-border trade activities at the Aruk Cross Border Post (PLBN) in the last two years shows a great opportunity to encourage exports of local superior products to the Malaysian market (Djuyandi et al 2023). Efforts to strengthen MSMEs, improve infrastructure connectivity, and develop special economic zones based on local potential will have a positive impact on creating a more inclusive and sustainable economic ecosystem in border areas (Fontagné & Schubert, 2023; Wang & Rivera, 2021). A comprehensive analysis of economic potential will assist the government and stakeholders in setting the right direction of development policies, avoiding duplication of programs, and encouraging synergy between the central and regional governments.

This research is in line with the results of a study by Othman et al. (2024) that highlighted the importance of cross-border trade policy integration in strengthening the economy of border areas in West Kalimantan. Their research shows that without mapping of economic potential and strong institutional support, economic opportunities at the border tend not to be optimally utilized. Meanwhile, a study by Villanueva et al. (2022) emphasized that the development of border areas requires a multidimensional approach, involving social, economic, and institutional aspects integrated within the framework of bilateral cooperation. In the context of Aruk-Sarawak, this approach includes updating the Border Trade Agreement, strengthening technical regulations, and empowering communities through entrepreneurship training and digitizing trade services (S. Wang et al. 2024). Therefore, economic potential analysis is not only important in the context of border area development planning, but also as part of Indonesia's economic diplomacy that emphasizes equal partnerships with neighboring countries, in this case Malaysia. With strong data and analysis, border economic potential can be elevated to a new force in national development and regional economic integration.

4.2. Model Cross Border Governance System (CBGS)

A suitable border governance model to increase the economic potential of the trade sector must be designed with a multidimensional approach that includes institutional, social, economic and infrastructure aspects in an integrated manner (AllahRakha, 2024; Cheng, 2022). Border areas have unique characteristics as a space that is not only a state administrative boundary, but also a dynamic space of economic interaction and exchange. In the context of economic management in border areas, a governance system is needed that is able to bridge national interests with local dynamics, and encourage harmonization between domestic regulations and bilateral agreements (Beck, 2022). This is important considering that cross-border trade activities are highly dependent on the extent to which the two countries can coordinate the rules of the game, simplify procedures, and accelerate the service process at entry points such as the Pos Lintas Batas Negara (PLBN) (Sohaimi et al., 2024). In addition, synergies between BNPP, local governments, and other relevant institutions need to be strengthened to ensure effective and sustainable policy implementation. The development of border governance must be in line with efforts to improve the quality of public services and transparency, and utilize digital technology to simplify administrative processes and accelerate inter-agency interactions (Yafie et al., 2024). The long-term development vision of the border region should also be directed towards the development of local wisdom-based leading sectors such as agriculture, fisheries, and creative industries as the driving force of cross-border trade.

Community life in border areas is characterized by close social and cultural ties with neighboring communities, which can be a catalyst for bilateral economic and trade integration (Batyk, 2023). Therefore, border governance strategies must also pay attention to socio-cultural factors that are a strong foundation in building a sense of community and trust between cross-border communities. In this case, strengthening social interaction, cross-border education, and cultural collaboration can create a more conducive climate for cooperation, which in turn contributes to increased trade volume and local economic growth (Zheng et al., 2021). The development of supporting infrastructure such as access

roads, border markets, logistics facilities, and transportation services should be geared towards improving connectivity between hinterland areas and regional markets in neighboring countries (Kolosov & Morachevskaya, 2022). In addition, the use of information technology through digital service systems such as online-based public service applications is an important innovation to improve efficiency, transparency, and service quality in border areas. Capacity building of local human resources through information technology and entrepreneurship training is also a crucial step to ensure that local communities can actively participate in the utilization of economic opportunities in border areas (Uhaib et al., 2022).

To enhance the competitiveness of border areas as centers of new economic growth, inclusive and participatory governance is essential. The government must actively involve local communities, business actors, traditional leaders, and the private sector in the planning and implementation of border economic development programs (Cappellano et al. 2021). One crucial strategy is the empowerment of local MSMEs (Micro, Small, and Medium Enterprises) through entrepreneurship training, business digitalization assistance, product certification facilitation, and expanded access to financing (Bria & Lam, 2022). Support for MSMEs will not only strengthen the local economic base but also increase the added value of products that can compete in international markets. In the context of bilateral cooperation, it is important to encourage the formulation of cross-border trade regulations and standard operating procedures (SOPs) that are more adaptive to current developments, as well as to promote harmonization of export-import policies between the two countries (Hopkins et al., 2023; Rusmiyati et al., 2022). To support this, regional institutional strengthening is needed through specific regulations that grant broader authority in border management and clarify the division of roles between central and local governments. Therefore, the resulting border governance model should not only be administrative and structural in nature, but also reflective of the needs of local communities and responsive to global economic changes, enabling inclusive and sustainable economic growth in border areas.

4.3. Research Implications

The results of the economic potential analysis in the Indonesia–Malaysia border region have significant implications for border management policy. These findings can be applied to formulate more integrative policies focused on strengthening key local sectors, such as agriculture, fisheries, and the creative industries. The development of these sectors should be supported by improved infrastructure connectivity, digitalization of public services, and the empowerment of MSMEs through entrepreneurship training and broader access to financing. Both central and local governments must collaborate to create an environment that facilitates efficient and transparent cross-border trade. In this context, border management policies can optimize the use of technology and accelerate cross-country trade processes.

From an academic perspective, this study provides deeper insight into the importance of a multidimensional approach to border management, encompassing social, economic, and institutional aspects. The findings call for further exploration in developing theories related to border governance and inter-state relations within the context of cross-border economic development. This study also

contributes to the theory of regional economic integration and to a model of governance that is more inclusive and participatory, involving various local and international stakeholders.

4.4. Research Limitations

Although this research has provided a comprehensive picture of the economic potential of the Indonesia-Malaysia border region, there are several limitations that need to be noted. Firstly, the analysis tends to focus more on certain economic sectors (agriculture, fisheries, and creative industries), without giving enough attention to other potential sectors, such as education and health. Secondly, despite taking a multidimensional approach, the study falls short in exploring more in-depth social and cultural challenges, especially in relation to community relations on both sides of the border. Thirdly, this study has not fully addressed the impact of changes in international policies or political dynamics that may affect future border management policies. Therefore, more in-depth follow-up studies are needed to address these shortcomings and further test the implications of the proposed policies.

5. CONCLUSION

The Indonesia-Malaysia border region, particularly the Aruk–Sarawak area, possesses significant economic potential across various sectors such as trade, agriculture, fisheries, and tourism. Although often perceived as peripheral, this region holds a strategic position as a gateway for cross-border economic activities. However, the utilization of this potential still faces several challenges, including weak policy synergy, limited infrastructure, and insufficient empowerment of the local economy. Therefore, a comprehensive analysis of economic potential is essential for formulating targeted and sustainable border development policies, which can also serve as part of Indonesia's economic diplomacy strategy.

To optimize this potential, an integrated and adaptive border governance model is required, such as the Cross-Border Governance System (CBGS) approach. This model emphasizes the importance of bilateral policy harmonization, MSME empowerment, improved connectivity, and the use of digital technology in public services and cross-border trade. The approach must also be sensitive to the socio-cultural aspects of border communities, who often share historical and social ties with neighboring countries. Through inclusive and participatory governance, border regions can be developed into new centers of economic growth that not only strengthen the national economy but also foster equal and sustainable regional cooperation with Malaysia.

Future research is encouraged to explore more deeply the implementation of the Cross-Border Governance System (CBGS) model within the context of Indonesia–Malaysia border area management, particularly in terms of the effectiveness of institutional coordination and bilateral policy harmonization. Further studies should also examine the active role of local communities in border development planning through participatory approaches, and investigate the influence of socio-cultural factors on strengthening cross-border economic diplomacy. The utilization of digital technology in public services and cross-border trade also represents a crucial area for study, in order to assess its impact on

efficiency, transparency, and local economic empowerment. Comparative studies with border management practices in other countries may offer new perspectives and relevant best practices that can be adapted to the Indonesian context.

Declarations

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study involved human participants, including local government officials, business actors, and community members in the Indonesia–Malaysia border area. Ethical approval was obtained from the Institute for Research, Institut Pemerintahan Dalam Negeri (IPDN), under approval reference number 400.1/398/IPDN.10. Before data collection, all participants were informed about the research objectives, procedures, confidentiality arrangements, and their right to participate voluntarily. Informed consent was obtained from all participants prior to interviews and observations.

COMPETING INTEREST DECLARATION

The authors declare that they have no financial or non-financial competing interests related to this research and its publication.

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Author Contribution

I.S. conceived and designed the study, developed the research framework, coordinated the research process, and wrote the main manuscript text. R.L. contributed to the methodology, data interpretation, and critical revision of the manuscript. T.H.S. contributed to data collection, validation, and analysis of the research findings. S.J.P. contributed to data organization, literature review, and preparation of the figures and tables. S.W. contributed to data analysis, manuscript editing, and review of the final version. All authors reviewed and approved the final manuscript.

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Figures



Figure 1

Boundaries of the Unitary State of the Republic of Indonesia

Source: https://admin-jdih.bnpp.go.id

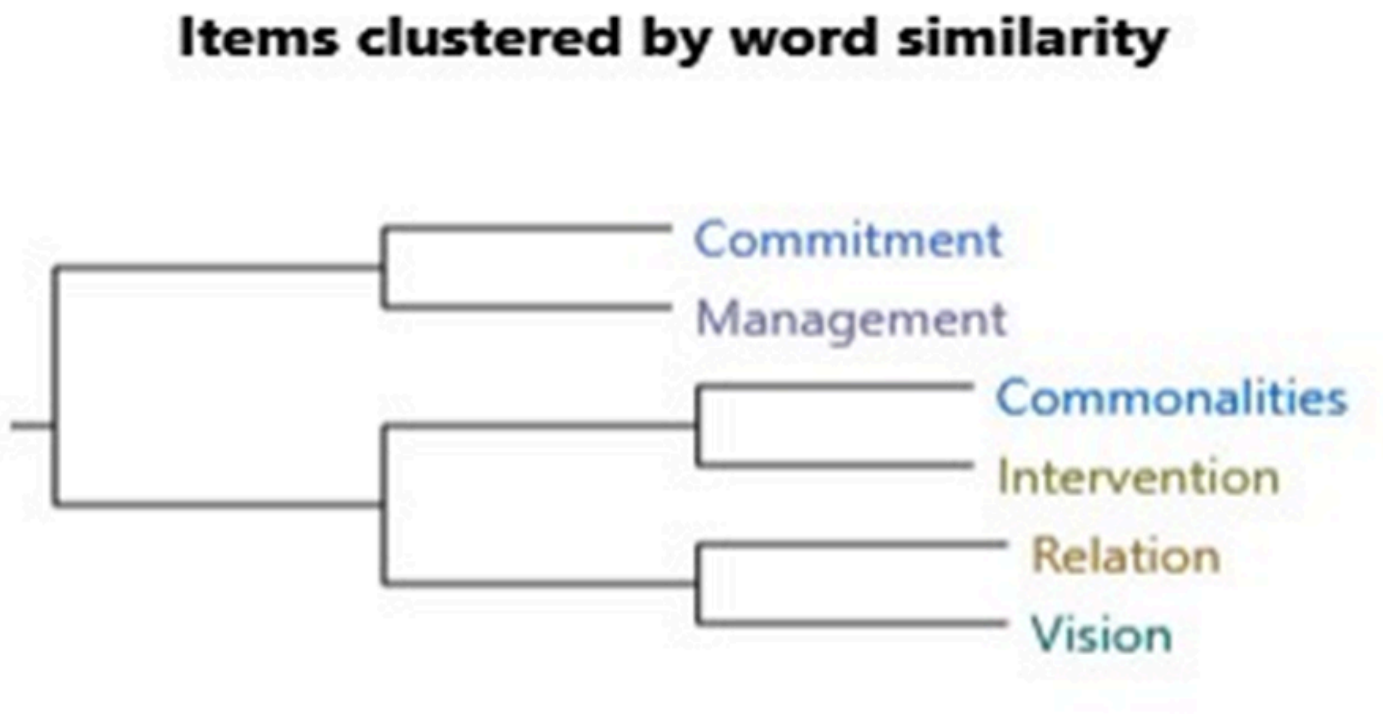
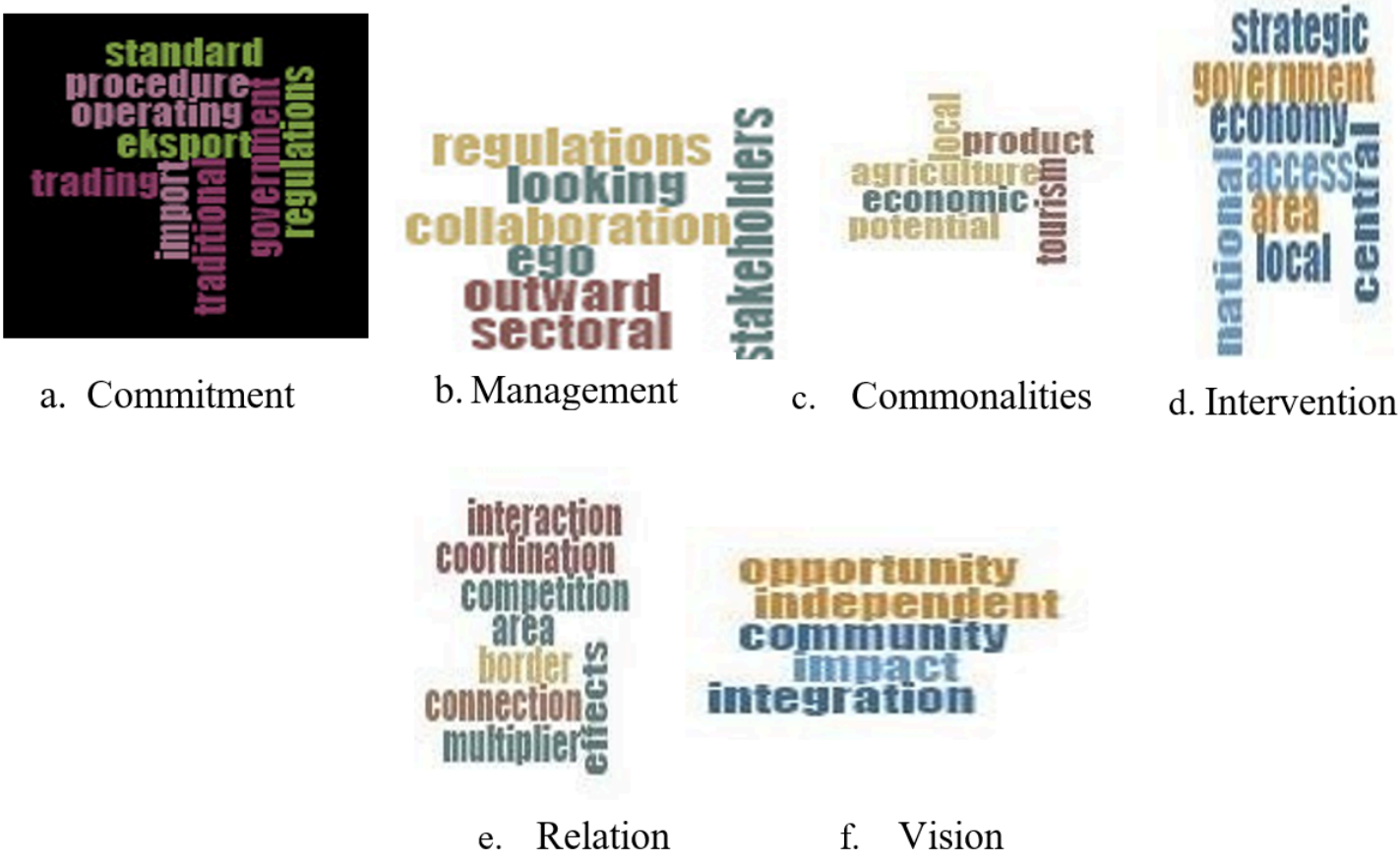


Figure 2

Cluster Item Cross Border Cooperation (CBC)

Source: Processed by author's using NVivo 12



a. Commitment b. Management c. Commonalities d. Intervention

e. Relation f. Vision

Figure 3

Cross Border Cooperation (CBC) Frequency Indicator

Source: Processed by the author using NVivo 12

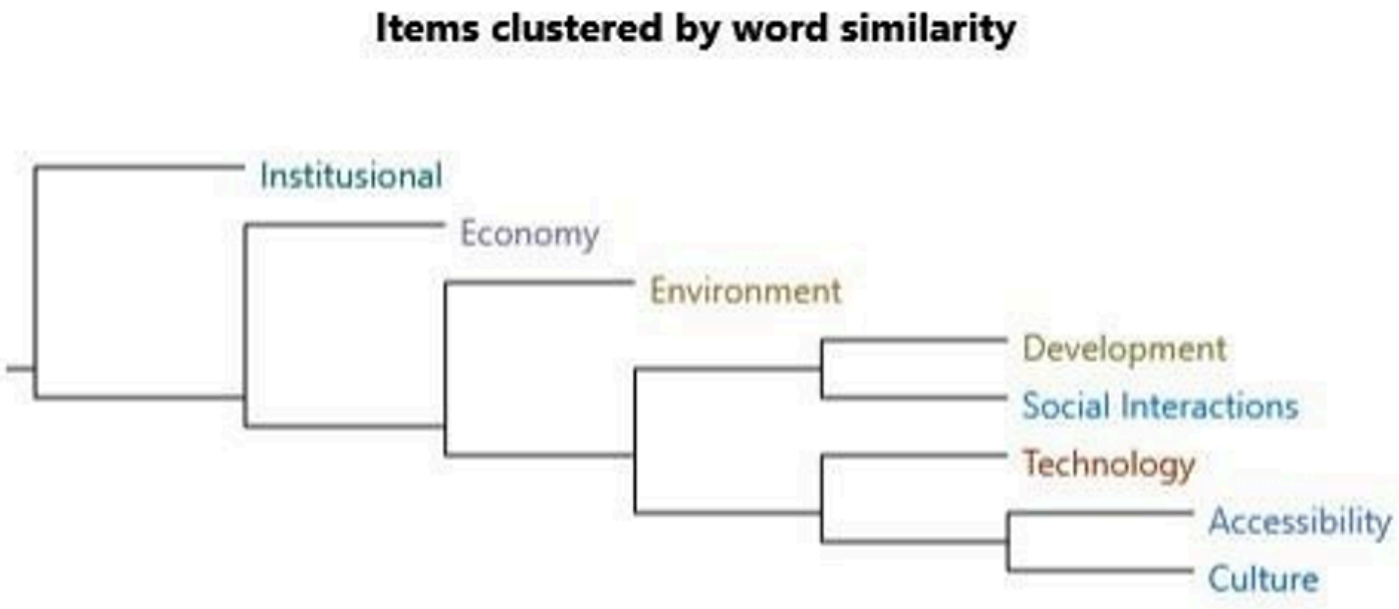
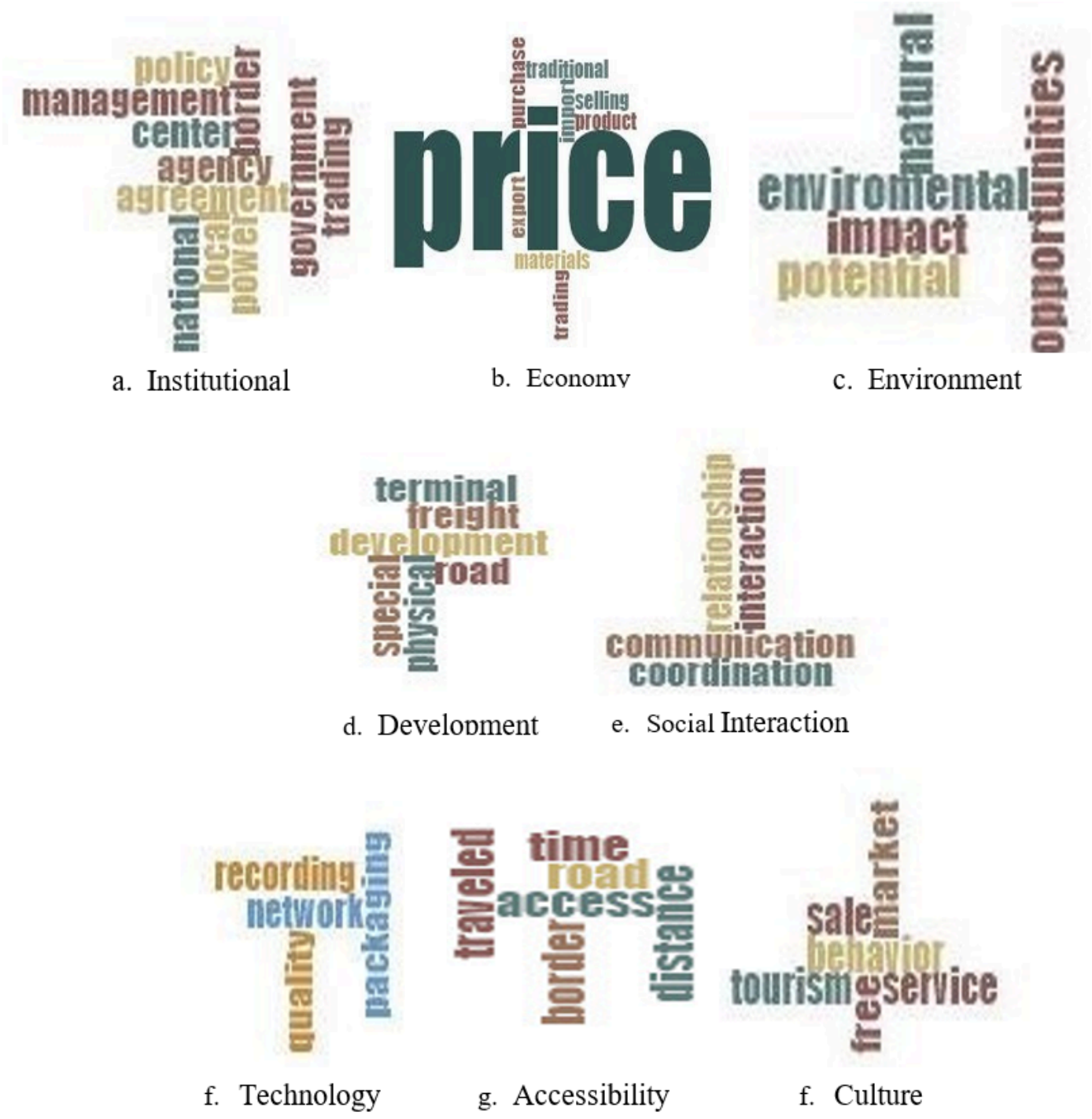


Figure 4

Cluster Item Cross Border Integration (CBI)

Source: Processed by author's using NVivo 12



a. Institutional b. Economy c. Environment

d. Development e. Social Interaction

f. Technology g. Accessibility f. Culture

Figure 5

Cross Border Integration (CBI) Frequency Indicator

Source: Processed by the author using NVivo 12