



## THE IMPACT OF REGIONAL EXPANSION ON THE EFFECTIVENESS OF HEALTHCARE SERVICES

Iva Nur Ilmi<sup>1\*</sup>, Suryanto<sup>2</sup>, Retno Widodo Dwi Pramono<sup>2</sup>

<sup>1</sup> Department of Architecture, Faculty of Engineering, Universitas Mataram, Mataram, Indonesia

<sup>2</sup> Department of Architecture and Planning, Faculty of Engineering, Universitas Gadjah Mada, Yogyakarta, Indonesia

### ABSTRACT

The enactment of Law Number 7 of 2002 concerning the Establishment of Penajam Paser Utara (PPU) Regency marked the official formation of this new administrative region, resulting from the separation of four sub-districts from the original twelve in Paser Regency. As a newly established regency, PPU required immediate development in institutional structures, government infrastructure, and development planning. A key indicator of progress lies in healthcare facility improvements, which were previously difficult to access due to reliance on water transport to Balikpapan or Paser. This study aims to analyze healthcare service development in PPU and assess how regional expansion has influenced service effectiveness. The research compares conditions before and after the expansion using a deductive qualitative approach, triangulation, and descriptive methods. Findings indicate that while the number of healthcare facilities declined, service utilization became more efficient, travel distances were reduced, and quality improved. Effective health service delivery depends on availability, accessibility, and continuity. While regional expansion positively affected specific dimensions, its most decisive influence was improved interaction between health workers and patients, disease prevention, and public health education.

### \*Corresponding Author

Iva Nur Ilmi

Universitas Mataram

Email: [ivanurilmi@staff.unram.ac.id](mailto:ivanurilmi@staff.unram.ac.id)

### Keywords:

Regional expansion, health services, effectiveness

### 1. Introduction

Decentralization is one of the socio-political transformations experienced by Indonesia, particularly concerning the formation, criteria, dissolution, and merging of regions. The spirit of regional autonomy is reflected, among other things, in the aspiration of certain areas to undergo territorial expansion to improve public welfare. Regional expansion is considered a national interest and benefits various stakeholders, including the government and local communities. Expanding a region can lead to greater openness, wider development pathways, and more dispersed and productive growth. One of the pressing factors driving the need for territorial expansion is the unequal concentration of development across various sectors in areas deemed competent. As a result, the need for territorial expansion is met by separating certain regions from their parent administrative units.

In response to the growing demands of specific regions and provinces, the central government has accommodated these aspirations by providing ample opportunities for areas to develop their potential and govern by implementing regional autonomy. This policy has allowed

areas to be expanded administratively into new districts, municipalities, or provinces.

One manifestation of regional autonomy is the establishment of Penajam Paser Utara (PPU) Regency, which was formed through the separation of four sub-districts (kecamatan) from the original twelve sub-districts within the parent district, Paser Regency. The formation of the PPU Regency was intended to improve public service delivery by accelerating development to address infrastructure and service provision issues and ultimately enhance the welfare of the local population.

The dynamic development of PPU Regency presents an interesting research subject, as the regency is strategically positioned as a gateway to the South Kalimantan region. Furthermore, PPU has abundant natural resources, particularly oil and gas. Notably, the regency has been designated to absorb the development overflow from the nearby city of Balikpapan. As part of this vision, the construction of the Penajam-Balikpapan Bridge has been planned to improve regional accessibility significantly.

The natural progression of infrastructure development in PPU Regency is evident through the advancement of facilities and utilities, which have subsequently led to the

growth of built-up areas, including public and governmental facilities. Another indicator of successful regional development is establishing and expanding healthcare facilities, including constructing a Regional General Hospital and adding community health centers (Puskesmas). These improvements have substantially impacted public health services in the region, particularly as residents previously faced challenges accessing healthcare, often requiring water transportation to reach referral hospitals in Balikpapan.

Healthcare services are a fundamental component of efforts to improve public welfare. To provide context, PPU Regency covers an area of 3,333.06 square kilometers and has 133,859 people. Healthcare services in the region are currently supported by one Regional General Hospital, one private hospital, eleven Community Health Centers (Puskesmas), thirty Auxiliary Health Centers (Pustu), and eleven Mobile Health Units (Puskesmas Keliling).

Based on the background described, it can be identified that development within the PPU Regency over the past seven years has progressed rapidly and supports the objectives behind the separation of four sub-districts to form a new regency. The core issue addressed in this research is whether the regional expansion policy has affected the effectiveness of healthcare service delivery in PPU Regency, and it is essential to evaluate whether current healthcare services can be considered adequate. This study is motivated by the expectation that regional expansion will help resolve the initial challenges faced by Penajam and improve public service delivery to a broader population.

The general objective of this study is to describe the level of success of the regional expansion policy in the PPU Regency. More specifically, the study aims to analyze the development of the healthcare sector in PPU Regency and to assess the impact of regional expansion on the effectiveness of healthcare service delivery. Nurhaliza (2023) highlights that establishing new service centers reflects a relatively high level of service capacity in educational and healthcare facilities, which are classified as effective. In contrast, economic facilities exhibit a lower level of service effectiveness. The spatial reach of academic and healthcare services is optimal, covering more than 80% of residential areas in Semarang City. Conversely, the spatial reach of economic facilities is classified as suboptimal, serving less than 50% of the settlement areas.

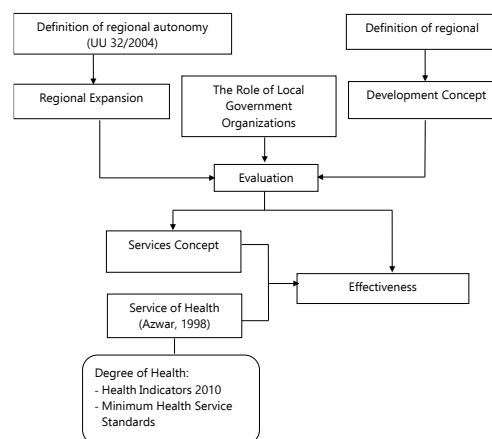
These disparities indicate significant spatial imbalances within Semarang City. Subdistricts such as Gunungpati, Mijen, and Ngaliyan were identified as priority areas for intervention due to their high levels of service inequality. The spatial analysis identified 16 primary service centers and 32 alternative centers to support more balanced urban development. These new service centers were selected based on accumulated population potential analysis, regional hierarchy assessment, and regional interaction analysis. Notably, the proposed service centers are not located within existing government administrative hubs, thereby reflecting a strategic effort to decentralize service provision and promote spatial equity across peripheral urban areas. Siska (2023) posited that village expansion can improve the quality of public service delivery. The study

evaluates service quality using the SERVQUAL model, which comprises five dimensions: tangibles, reliability, responsiveness, assurance, and empathy.

First, regarding tangibles, the physical aspects of service delivery, such as infrastructure and facilities, were insufficient, indicating a need for improved provision of service-related amenities by Suka Negeri Village officials. Second, the reliability dimension was assessed as satisfactory, with village apparatus demonstrating competence and dependability in completing administrative tasks, such as issuing land certificates in less than one month. Third, regarding responsiveness, the community reported moderate satisfaction with how village officials addressed and responded to public complaints. Fourth, in the assurance dimension, officials were perceived to provide dependable service timelines, completing tasks within the promised period. Lastly, the empathy dimension reflected a reasonable degree of understanding and concern by village staff toward the needs and complaints of residents. Overall, the study underscores the potential of village expansion to enhance service quality, although continued improvements, particularly in infrastructure and resource allocation, remain necessary.

## 2. Literature Review

The theory underlying this research is that an autonomous region is a legal community entity with defined territorial boundaries, authorized to regulate and manage governmental affairs and the interests of the local community based on its initiative and the aspirations of the people, within the framework of the Unitary State of the Republic of Indonesia (NKRI).



**Figure 1. Theoretical Framework**

Source: Author's Illustration

There are three types of analysis in analyzing the region (Blair, 1991):

- Functional region, where components interact within and outside the area. This form of the area is often referred to as a nodal region, based on a hierarchical system of relationships between trade nodes.
- Homogeneous region, meaning there is a relative similarity within the area.

- c. The government or other parties form the administrative region for management or organizational interests.

Regional expansion is the division of provinces, districts, and cities into more than one region to improve the community's welfare by enhancing and accelerating the service of democratic life, regional economic development, regional potential management, and maintaining security and order. Meanwhile, according to Siagian (2001), development manifests growth and planned and conscious change undertaken by a nation-state towards modernization as part of national development.

Local government affairs for the district include mandatory and optional affairs. In this research, compulsory government affairs include investigating the handling of healthcare services. Yuan and Li (2024) argued that evaluation is a systematic and continuous process to assess the efficiency of activities and the effectiveness of achieving the goals set in the instructions. According to Makarov and Illarionov (2020) and Jia et al (2024), effectiveness is the measurement of whether the goals or objectives that were previously set have been achieved. This is considered adequate if the goals or objectives are achieved as planned. Therefore, the work is considered ineffective if the goals or objectives do not align with what was previously set.

Portero and Puig (2016) defined service as any activity carried out by another party to meet the needs of the public. According to Gupta and Zeithaml (2006), the performance of services can be measured using the following instruments:

1. Physical appearance (tangible).
2. Competence (competence).
3. Credibility (credibility).
4. Access (access).

Healthcare service is any effort organized individually or collectively within an organization to maintain, improve, prevent, and cure diseases and restore the health of individuals, families, groups, and/or the community (Lee et al., 2006).

The health degree is measured based on the minimum health service standards set by the Minister of Health Regulation No. 741/Menkes/Per/VII/2008 regarding the Minimum Health Service Standards in Districts/Cities. Several recent and relevant research studies include: (1) An Analysis of the Development of New Service Centers as a Preparation for Regional Expansion in Semarang City, and (2) The Impact of Village Expansion on the Quality of Public Services: A Study of Suka Negeri Village, Bangun Rejo Sub-District, Central Lampung Regency (2022).

The first research, Semarang City, is among the regions proposed for administrative expansion to address spatial disparities and improve the quality of public service facilities. Considering this context, this study aims to

identify the levels of service capacity, accessibility, and regional disparities and to determine potential sub-districts (kelurahan) that could serve as new service centers within the city. The analytical methods employed in this research include service capacity analysis based on Indonesian National Standard (SNI) 03-1733-2004, accessibility analysis using network analysis, crosstab analysis, population potential analysis, scalogram analysis, centrality index analysis, and a gravity model based on Geographic Information Systems (GIS).

The findings indicate that the service capacity and accessibility of educational and healthcare facilities are relatively adequate, whereas economic facilities remain less effective. The service capacity and accessibility analyses reveal the presence of spatial disparities across the city. Developing new service centers in Semarang is expected to generate a trickle-down effect, particularly benefiting peripheral areas, thereby fostering a more balanced spatial development within the city.

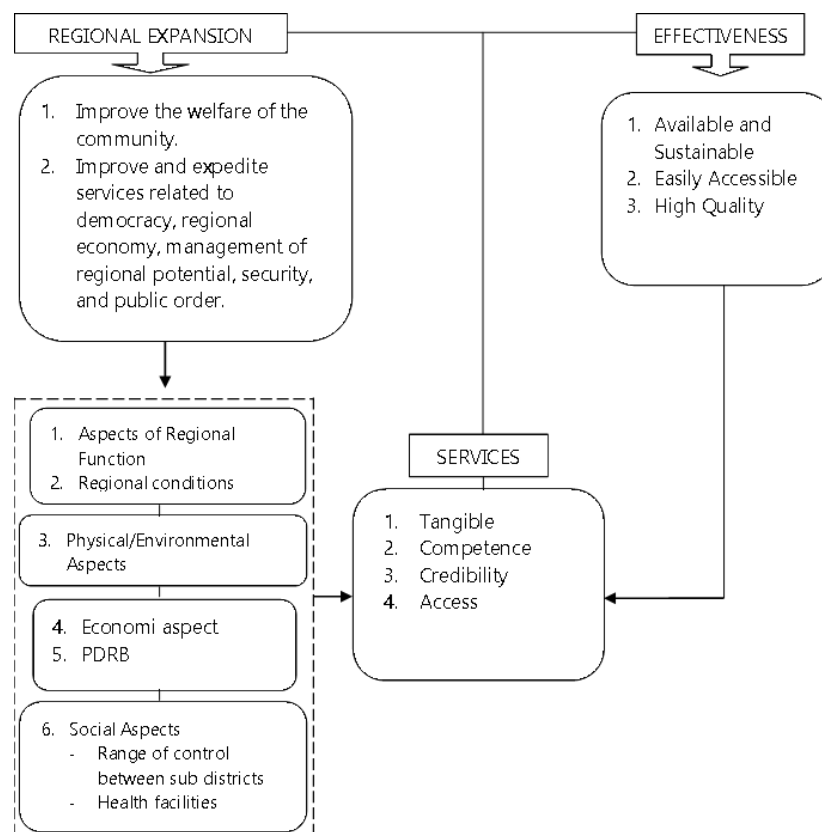
The second research topic is village expansion, a government policy aimed at improving the quality of public services. The issue addressed in this study is the territorial expansion of Suka Negeri Village, which was initiated due to the village's vast area and the need to enhance the effectiveness and efficiency of village governance. The expansion aims to improve community welfare, with the understanding that the quality of public service significantly influences citizen satisfaction in meeting their essential needs.

The research employed data collection techniques, including interviews. Primary data concerning the expansion of Suka Negeri Village was obtained directly from respondents through interviews, while secondary data were gathered from books, journals, theses, and other relevant sources. This research indicates that the expansion of Suka Negeri Village in Bangun Rejo Sub-District has impacted the community. The quality of public services—evaluated through the SERVQUAL dimensions—has shown improvements:

- a. Tangibles: The community receives services from village officials without complicated procedures.
- b. Reliability: Residents perceive that officials adhere to clear service standards, as exemplified by the timely completion of land certificate processing in less than one month.
- c. Responsiveness: Officials are responsive to citizen concerns and provide appropriate feedback.
- d. Assurance: This dimension has not been fully met, as bureaucratic performance remains sluggish in certain areas.
- e. Empathy: Village officials demonstrate good empathy, prioritizing public complaints.

**Table 1.** Summary of Research Theory Dedication

No	Research Objectives	Source of Theory			Theoretical Dedication in the Research Framework
		The Concept of Regional Expansion <sup>1)</sup> , and the Concept of Development <sup>2)</sup>	Theory of Effectiveness <sup>3)</sup>	Theory of Service <sup>4)</sup> , Health Service Concept <sup>5)</sup> , and Level of Health <sup>6)</sup>	
1.	Analyzing the development of health sector infrastructure in Penajam Paser Utara Regency	<b>Concept of Development:</b> Growth and change that are conscious and planned		<b>Health Service Concept:</b> An activity carried out to serve the interests of the public  <b>Measurement of service performance:</b> 1. Physical appearance 2. Competence 3. Credibility 4. Access	1. A region is said to experience development in the health sector if there is an increase and improvement in health services 2. The success of health sector development can be measured by the performance of services provided to the public
2	Analyzing the impact of regional expansion on the level of effectiveness of health services	<b>Concept of Regional Expansion:</b> The division of a regency into more than one area	<b>Theory of Effectiveness:</b> Achievement of the goals or objectives that were previously set  <b>Measurement of health effectiveness:</b> 1. Available and sustainable 2. Easily accessible 3. High quality	<b>Health Service Concept:</b> Efforts made in health improvement  <b>Level of Health:</b> Minimum Health Service Standards	1. Regional expansion affects changes in the span of control. 2. Service will be more effective if the service measurement criteria are met. 3. The effectiveness of health services can be achieved if the health sector development programs are successful

**Figure 2. Theoretical Framework**  
Source: Literature Review

### 3. Research Method

The approach used in this research is a qualitative deductive approach, which means that the process of understanding a social or humanitarian issue is based on efforts to build a complex and comprehensive (holistic) picture, constructed with words or descriptions, by reporting detailed views from informants, and carried out in a natural setting.

The data analysis techniques used in this research involve two models: (1) the Triangulation Model, which, according to Moelong (2001), involves data verification through a continuous flow of checking and rechecking the literature review, interview results, and observations.

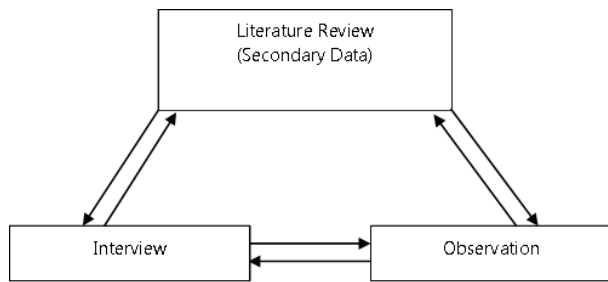


Figure 3. Triangulation Model

(2) Descriptive with content analysis and flow data analysis. The model of data analysis interaction according to Miles and Huberman (1992) is as follows:

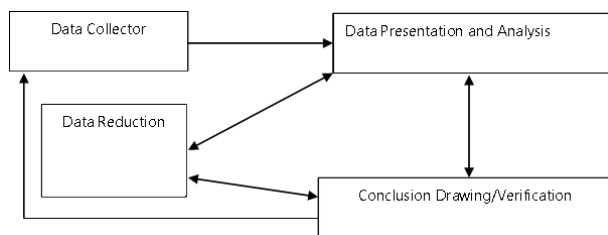


Figure 4. Descriptive

With the understanding that:

1. Data reduction refers to selecting the data necessary for analysis and excluding unnecessary data.
2. Data presentation makes data easier to understand by displaying it in matrices, tables, images, or diagrams to analyze it more easily and accurately.
3. Concluding is done after data reduction and presentation.

The research framework provides a clear overview of this study, starting from the research background, supporting data, and the goals to be achieved through the analysis used in obtaining the final results. Thus, it can be seen in Figure 3. The data collection process in this study

employed a purposive sampling method, whereby subjects were selected based on the researcher's judgment in alignment with the research topic. The researcher deliberately chose subjects as units of analysis according to the study's needs and based on the assumption of their representativeness—these included members of the regional expansion planning team.

The data collection techniques involved primary observation conducted through semi-standardized interviews, following the approach outlined by Berg (2007), in which the interviewer prepares a general outline of key topics and asks questions freely within a guided framework. This approach aligns with what Esterberg (2002) calls semi-structured interviews, allowing for flexibility while ensuring coverage of essential discussion points. Additionally, field observations were carried out to gather first-hand data through direct observation in the study area.

Furthermore, the study also utilized secondary observation, which involved collecting data from existing documents and published literature. These secondary sources included institutional reports, archival records, and scholarly references relevant to the research focus. Outlining the variables, indicators, and benchmarks being studied is necessary to facilitate the research's progress.

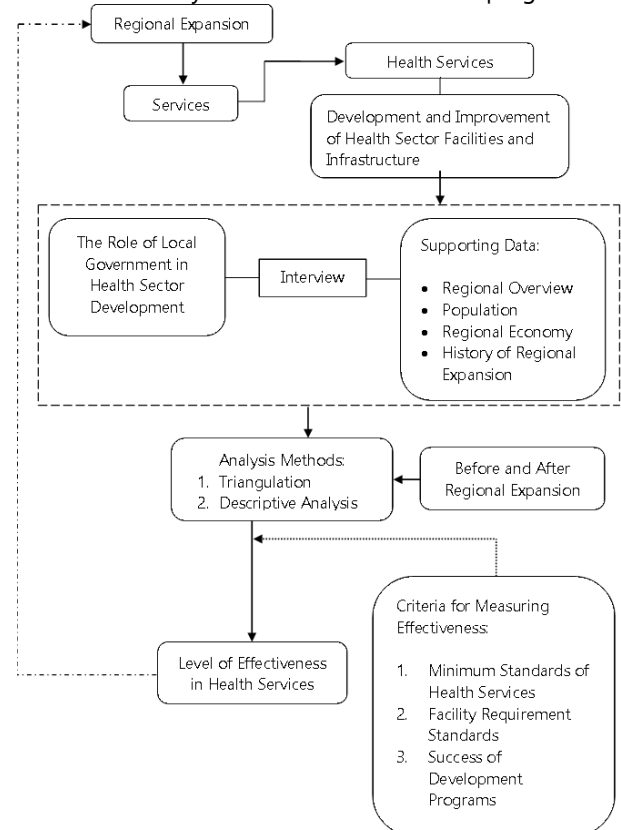


Figure 5. Research Framework

Source: Author's Illustration

**Table 2.** Objectives, Variables, Indicators, and Research Benchmarks

Objectives	Variables	Indicators	Benchmarks
Analyzing the development of the health sector in Penajam Paser Utara Regency	Development of regional expansion	Territorial Area	The area size is getting smaller.
		Population	The population is decreasing.
		Health services	The minimum health service standards are increasingly being met.
		Time	The time to achieve goals is becoming shorter.
Analyzing the impact of regional expansion on the level of effectiveness of health services	Service effectiveness	Availability of health facilities ( <i>Tangible</i> )	1. The availability of health facilities is increasing 2. The number of available facilities is proportional to the population
		Competence	1. The competence of the service providers is improving 2. Improvement in the status of service facilities
		Access	The reach is becoming easier.
		Credibility	1. The number of medical personnel is increasing 2. Service time is becoming more effective
	Effectiveness of health services	Available and sustainable	More facilities are available and more sustainable
		Easily accessible	Service coverage is closer to residential areas.
		High quality	The service is becoming more satisfying.

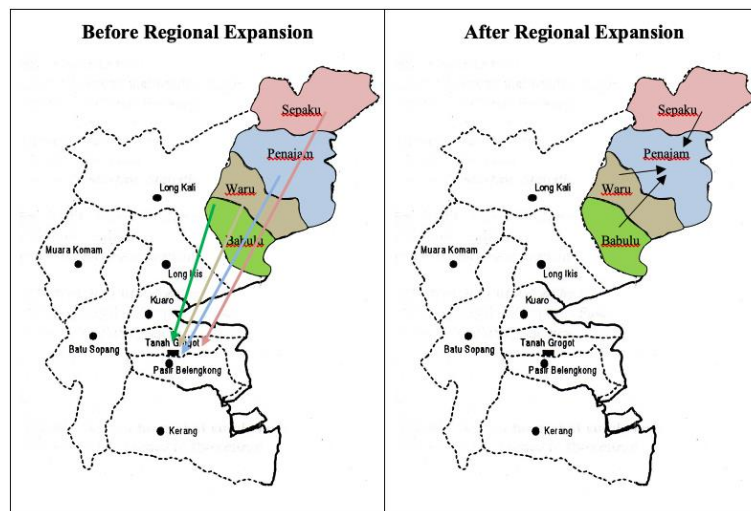
#### 4. Results and Discussions

Referring to the results of the study, interviews, and analysis, the main findings regarding the purpose of regional expansion are as follows:

1. To improve the community's welfare, especially those living far outside the regency's capital.
2. Regional expansion helps shorten the distance and time range, making services more effective and efficient.

The population decreased by 44.83%, from 242,643 to 133,859 people. This decline occurred directly due to the reduced land area and the decreasing number of sub-districts and villages, which automatically affected the total population within the new administrative boundaries. This condition effectively improves public services, as a smaller population allows for more focused and accessible service delivery. The smaller population ratio after the expansion also influenced population density. The average population density increased from 16.20 people/km<sup>2</sup> to 40.16 people/km<sup>2</sup>. While an increase in density might typically

indicate pressure on public services, in this context, it reflects spatial efficiency resulting from a reduced land area. Furthermore, households decreased by 37.07%, from 57,432 to 36,143. This decrease is a logical consequence of the reduced population and land area. In terms of service provision, this situation creates an opportunity to improve service quality, as the existing facilities are more adequate to meet the needs of a smaller number of households. Population growth also declined, from 4.2% to 2.44%. The growth rate of 2.44% is still relatively high. This indicates that the demand for healthcare services and basic infrastructure remains significant. Adjusting the capacity and distribution of public services becomes essential to respond to ongoing demographic dynamics. Overall, the analysis shows that regional expansion directly and indirectly impacts various aspects of the population. The decrease in population and households and changes in density and growth rate signal that public service effectiveness can be enhanced if it is supported by appropriate policy restructuring and resource optimization.



**Figure 6. Map Before and After Regional Expansion**  
Source: Penajam Paser Utara in Figures

**Table 3.** Changes in the Region Before and After Regional Expansion

No.	Variable	Before Regional Expansion	After Regional Expansion	Analysis	Information
1.	Territorial Area	14.937 km <sup>2</sup>	3.333,06 km <sup>2</sup>	<p>a. Regional expansion affects changes in area size; as a result of the expansion, the area becomes smaller. This is because the region separates itself from the parent regency.</p> <p>b. As shown, before the expansion, the area of Pasir Regency, as the parent regency, was 14,937 km<sup>2</sup>. However, after the expansion, the area of Penajam Paser Utara Regency as the expanded region became only 4.45% of the original size.</p>	There was a direct change, which is considered effective in achieving access to facilities.
2.	Number of Districts	12, that is: 1. Batu Sopang 2. Kerang 3. Pasir 4. Belengkong 5. Tanah Grogot 6. Kuaro 7. Longikis 8. Muara Komam 9. Longkali 10. Penajam 11. Waru 12. Sepaku	4, that is: 1. Penajam 2. Waru 3. Babulu 4. Sepaku	<p>a. The smaller area after the regional expansion also affects the number of districts in the parent and newly formed regencies.</p> <p>b. As shown, there were twelve districts in Pasir Regency before the expansion. However, after the regional expansion, the number of districts became four, and these four districts formed the new regency of Penajam Paser Utara.</p>	There was a direct change, which is considered effective in achieving access to health service centers.
3.	Number of Villages	155	47	<p>a. In line with the decreasing area size and the reduced number of districts, the number of villages also decreased. Before the regional expansion, there were 155 villages, but after the expansion, the number dropped to 47</p> <p>b. This is considered a natural and reasonable fact, resulting from dividing a large region into a smaller one.</p>	There was a direct change, which is considered adequate regarding providing facilities.

Source: Region in figures and analysis

**Table 4.** Population Before and After Regional Expansion

No.	Variable	Before Regional Expansion	After Regional Expansion	Analysis	Information
1.	Number of Population	242.643 people	133.859 people	a. The population after the expansion decreased by 108,784 people, which means a decrease of 44.83%. b. This decrease in population is due to the shrinking land area and the decreasing number of sub-districts and villages, which directly leads to a decline in the population.	This change occurred directly and is considered adequate in terms of delivery service.
		Ratio 2 1			
		This means that with a population half the size of the parent regency, services will be perceived as more effective, and service capacity will improve because the number of people being served is smaller.			
2.	Average population per km <sup>2</sup>	16,20 people/km <sup>2</sup>	40,16 people/km <sup>2</sup>	a. The difference in the average population per square kilometer before and after the expansion is 23.96 people/km <sup>2</sup> , with a percentage of 59.66%. b. This is caused by the shrinking land area, which leads to a decrease in the population and directly results in an increase in the average population per square kilometer.	This change occurs indirectly and is effective in terms of service delivery.
		Ratio 1: 2,5			
		This means that if the new regency is larger than the parent regency, it may affect the ease of service delivery and the number of people being served.			
3.	Number of households	57.432 Head of household	36.143 Head of household	a. The number of households after the territorial expansion decreased by 21,289, with a percentage of 37.07%. b. This condition is normal because the reduction in land area leads to a decrease in the population, which in turn causes a decline in the number of households.	This change occurs indirectly and is considered more effective regarding service facilities.
		Ratio 1,5 1			
		This means that with fewer households, the services will be better. This is because the available facilities can already meet the service needs, so there is a need to improve the quality of services.			
4.	Population Growth	4,2%	2,44%	The population density in PPU Regency after the expansion can be considered high, with a value of 2.44%, because before the expansion, it reached 4.2% with a much larger land area and a lower average population per square kilometer.	This change occurred directly and is considered more effective in healthcare service facilities.
		Ratio 2 1			
		This means that a ratio exceeding half of the parent regency's population will affect the quantity and quality of existing health facilities because the higher the population growth rate, the greater the demand for health services.			

Source: Region in figures and analysis

**Table 5.** Analysis of Basic Healthcare Services

No.	Indicator	Benchmarks (%)	Condition (%)
1	Coverage of antenatal visits for pregnant women (K4)	95	72,85
	a. Of the 3,425 pregnant women, 2,495 have completed the K4 antenatal visits. b. This condition can be considered to have met the target fairly well, as it achieved 72.85%, compared to the 95% target set in the Minimum Service Standards (SPM). This is considered an achievement. c. When linked to the effectiveness of services, the high percentage of K4 visits among pregnant women is likely due to the ease of access and availability of healthcare services at the community health centers (Puskesmas) for pregnant women.		
2	Coverage of obstetric complications that were managed	80	100
	a. All 131 high-risk pregnant women were referred. Based on the target percentage set at 80%, PPU Regency achieved a value of 100%. This means the coverage of managed obstetric complications in the PPU Regency has exceeded the standard target. b. This situation may be because the established procedures immediately refer to any form of complication or condition that cannot be handled. c. When linked to service effectiveness, the service is not yet fully effective. This is seen from the area's limited capacity for complication management services.		
3	Coverage of childbirth assistance by healthcare personnel with midwifery competence	90	87,84
	a. Out of 2,517 deliveries, 2,211 were assisted by healthcare personnel. b. This means that 87.84% of the total deliveries were attended. Such a figure can be considered reasonable or adequate, indicating that healthcare workers perform their duties well.		
4	Coverage of Postpartum Care Services	90	99,09



No.	Indicator	Benchmarks (%)	Condition (%)
	99.09% coverage indicates that the target set by the health SPM has been exceeded. This is evidenced by the 2,497 postpartum visits served out of 2,520 births. Service effectiveness can be considered adequate as it demonstrates the ability to deliver postpartum care well.		
5	Coverage of Managed Neonatal Complications	80	3,18
	a. Of the 80% target set by the Health SPM, PPU Regency only achieved 3.18%, since only 80 of 2,517 neonatal cases with complications (especially low birth weight) were handled. b. This condition indicates that handling neonatal complications is ineffective, as it falls far short of the target. c. c. This may be caused by a lack of skilled human resources and limitations in medical equipment.		
6	Coverage of Infant Visits	90	10,21
	a. From the standard coverage target of 90%, PPU Regency only reached 10.21%, with only 268 routine infant visits out of 2,625 babies. b. This condition is considered far from successful and even ineffective. It is likely due to a lack of information and awareness among parents about the importance of infant checkups.		
7	Coverage of Universal Child Immunization (UCI) Villages/Sub-districts	100	87,23
	a. Out of 47 villages/sub-districts in PPU Regency, 41 have achieved UCI status, meaning that the community knows the importance of immunization for their toddlers. b. Indirectly, immunization services for toddlers can be considered adequate with a coverage rate of 87.23%, supported by disseminating information regarding immunization benefits.		
8	Coverage of Toddler Health Services	90	68,61
	a. Out of 13,983 toddlers (ages 6–59 months), 9,594 have received Vitamin A supplements twice. b. This shows good service coverage, but improvements are needed to reach the target. c. It's not yet fully effective because additional efforts are needed to reach optimal service levels for all toddlers.		
9	Coverage of Complementary Feeding (MP-ASI) for 6–24-Month-Olds in Poor Families	100	45,56
	a. Out of 2,520 babies, only 1,148 received complementary feeding, indicating the program is ineffective, as it hasn't reached 50%. b. This is likely due to a lack of maternal knowledge about the importance of complementary feeding after 6 months.		
10	Coverage of Malnourished Toddlers Receiving Treatment	100	25
	a. Out of 16 malnourished toddlers, only four received treatments. This reflects the difficulty in addressing malnutrition, possibly caused by delayed intervention and lack of parental awareness. b. Malnutrition rates must be reduced by increasing the number of treated cases and conducting office health campaigns on the importance of nutrition and healthy eating.		
11	Coverage of Health Screening in Elementary School-Aged Children	100	16,15
	a. Only 16.15% of elementary-level students have received health screenings. For example, of 3,809 children needing dental care, only 615 received treatment. b. This is considered ineffective, as the services are not proportional to the number of children needing care.		
12	Coverage of Active Family Planning Participants	70	63,04
	c. Of 21,817 women of childbearing age, 13,753 participate in the family planning program. This means coverage is close to the target. d. It is considered adequate in terms of achievement.		
13	Coverage of Disease Detection and Treatment	100	92,25
	a. The detection and management of diseases, especially dengue and diarrhea, in the PPU Regency have nearly met the target, indicating effective service delivery. b. Early handling of infectious diseases is crucial to avoid serious outcomes.		
14	Coverage of Basic Health Services for Poor Communities	100	100
	a. Out of 14,987 poor households totaling 49,889 individuals (in 2006), all have received basic health services. b. This shows that 100% of poor communities have been effectively served.		

Source: Health Profile, 2007, and analysis

**Table 6.** Analysis of Referral Health Services

No	Indicator	Benchmarks (%)	Condition (%)
1	Coverage of Referral Health Services for Poor Patients	100	100
	The coverage of referral health services for poor patients in PPU Regency has reached the health SPM target of 100%. This indicates a high concern for public health, especially for the underprivileged. This achievement supports local government efforts to address poor communities' challenges, particularly their limited access to health services.		
2	Coverage of Level 1 Emergency Services Provided by Health Facilities (Hospitals) in the Regency/City	100	85
	85% of health facilities (regional public hospitals) provide level 1 emergency services. This shows that services are being implemented and appropriately offered, although some supporting infrastructure is still under construction.		

Source: Health Profile, 2007, and analysis

**Table 7.** Analysis of Epidemiological Investigation and Extraordinary Events (KLB)

No	Indicator	Benchmarks (%)	Condition (%)
1	Epidemiological Investigation and Handling of Extraordinary Events (KLB) Coverage of Villages/Subdistricts with KLB Investigated within 24 Hours	100	100
The target for PPU Regency to conduct epidemiological investigations and handle extraordinary events (KLB) within 24 hours in affected villages/subdistricts has been fully achieved at 100%. This indicates that the situation is considered adequate. Out of 47 villages/subdistricts in PPU Regency, only four experienced KLBs, and all four were successfully addressed promptly.			

Source: Health Profile, 2007, and analysis

**Table 8.** Analysis of Health Promotion and Community Empowerment

No	Indicator	Benchmarks (%)	Condition (%)
1	Coverage of Active Alert Villages	80	70
The percentage of the target achievement for active alert villages in PPU Regency has reached 70%. This means that health promotion and community empowerment in PPU Regency are progressing well and effectively, even though they have not yet reached the target of 80%. This progress can help extend health development to remote areas and increase public awareness about the importance of health.			

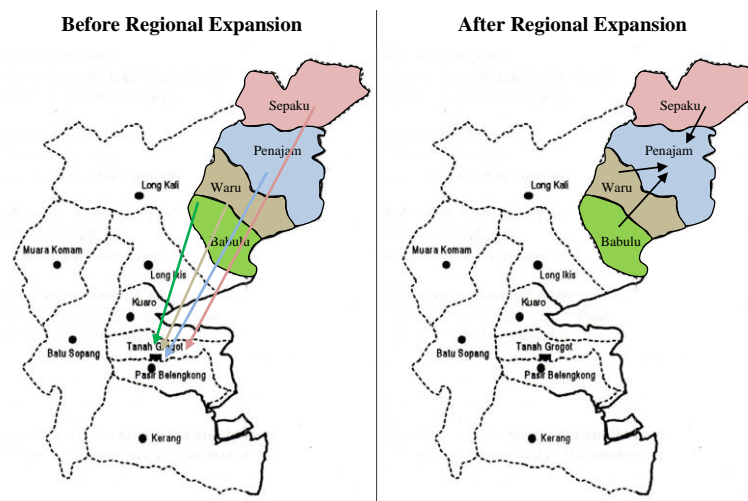
Source: Health Profile, 2007, and analysis

**Table 9.** Recapitulation of Comparative Analysis Results Related to Service Activities and Span of Control

No	Parameter	Before Regional Expansion	After Regional Expansion	Analysis
1.	Territorial Area	14.937 km <sup>2</sup>	3.333,06 km <sup>2</sup>	<ol style="list-style-type: none"> <li>The administrative division (pemekaran) has impacted the region's size, with the total area becoming smaller due to the division. This occurred because part of the region separated itself from the parent regency.</li> <li>Before the division, the area of Paser Regency, the parent regency, was 14,937 km<sup>2</sup>. However, after the division, Penajam Paser Utara Regency, the newly formed region, covers only 4.45% of the total area.</li> </ol>
2.	Distance	Penajam-Tanah Grogot 142km <sup>2</sup> Waru-Tanah Grogot 119km <sup>2</sup> Babulu-Tanah Grogot 87km <sup>2</sup> Sepaku-Tanah Grogot 217km <sup>2</sup>	Penajam-Penajam 8km <sup>2</sup> Waru-Penajam 30km <sup>2</sup> Babulu-Penajam 50km <sup>2</sup> Sepaku-Penajam 87km <sup>2</sup>	The regional division (pemekaran wilayah) can affect distance because separating from the parent regency reduces the distance to reach service centers or facilities. This is evident by observing the difference in distance from the regency capital and each sub-district (kecamatan) capital to access service centers. In fact, in some cases, the distance from a sub-district capital to the regency capital before the division was even greater than the distance between Balikpapan City and Samarinda City.
3.	Travel Time	Penajam-Tanah Grogot mencapai 3 jam Waru-Tanah Grogot mencapai dua jam 30 menit Babulu-Tanah Grogot mencapai satu jam 80 menit Sepaku-Tanah Grogot mencapai empat jam 30 menit	Penajam-Penajam mencapai 10 menit Waru-Penajam mencapai 38 menit Babulu-Penajam mencapai satu jam Sepaku-Penajam mencapai satu jam 80 menit	Regional division (pemekaran wilayah) can lead to a shorter travel time, as the shorter distance results in less time needed to reach a destination, making service delivery more effective and efficient. This situation will also help the community feel more comfortable traveling to service locations, as they no longer have to worry about the journey, especially at night.
4.	Number of Population	242.643 jiwa	133.859 jiwa	After the regional division (pemekaran wilayah), the population has decreased, as evidenced by the reduction of 108,784 people, which means a decrease of 44.83%. This reduction is due to the shrinking land area and the decreasing number of sub-districts (kecamatan) and villages, which decreases the population.
5.	Population Density	16,20 jiwa/km <sup>2</sup>	40,16 jiwa/km <sup>2</sup>	Despite the separation from the parent regency and the decrease in population, the population density did not decrease. This is evident by looking at the condition before and after the division of Penajam Paser Utara Regency, where the difference in the average population per square kilometer was 23.96 people/km <sup>2</sup> , representing a 59.66% increase. This situation could be caused by the shrinking land area, which decreased the population, but directly increased the average population per square kilometer.

No	Parameter	Before Regional Expansion	After Regional Expansion	Analysis
6.	Hospital	It consists of two general hospitals (RSU), namely: a. One public hospital (RSUD) located in the regency capital, Tanah Grogot. b. One private hospital is the ITCI Hospital.	It consists of two general hospitals (RSU), namely: a. One public hospital (RSUD) of PPU Regency is located in the regency capital, Penajam. b. One private hospital is the ITCI Hospital.	a. Before the division, there were two general hospitals (RSU) serving a population of 242,643 people, meaning that each hospital could serve approximately 121,322 people. However, after the division, the number of general hospitals remained the same, with two units, because ITCI Hospital is in the Sepaku Sub-district, which is now part of the PPU Regency. The service coverage has changed with two general hospitals serving a population of 66,930 people. b. With the same number of facilities but a different population served, the ratio is now 1.8, almost double the previous ratio.
7.	Community Health Center	22	11	The Puskesmas (Community Health Centers) are functional units for frontline healthcare services and technical implementation units under the district health office. They carry out health education, disease prevention, and case management within their designated areas in an integrated and coordinated manner. Before the division, there were 22 units with a ratio of 12 sub-districts per unit. However, after the division, there are only 11 Puskesmas. This situation can be considered adequate, as the 11 units now serve four sub-districts, meaning that one sub-district has more than one Puskesmas. This is likely due to the distance between settlements within each sub-district, which can sometimes feel too far for residents to access health services easily.
8.	Auxiliary Community Health Center	110	30	Puskesmas Pembantu (Auxiliary Community Health Centers) are simple healthcare service units that are integral to Puskesmas and carry out some of its tasks. Although the number of Puskesmas Pembantu units has decreased, this has not affected the quality of service, as the 30 units can still provide healthcare within their respective areas. Of the 11 Puskesmas units, there are 30 integral auxiliary units.
9.	Mobile Community Health Center	15	11	Puskesmas Keliling (Mobile Community Health Centers) is an integrated healthcare service program extending beyond the Puskesmas building to remote areas where residents have difficulty accessing nearby health services. The comparison between the situation before and after the regional division shows little difference. Before the division, there were 15 mobile Puskesmas units, meaning that each sub-district could handle the services. However, after the division, the situation became even more effective. With 11 mobile Puskesmas units, the number matches the number of existing Puskesmas, meaning each Puskesmas is now equipped with the necessary facilities to provide services outside of their buildings, allowing them to reach communities in remote areas.
10.	Integrated Health Service Post	The number of Posyandu (Integrated Health Posts) is 476 units  The number of active cadres is 1,516  The ratio of active cadres to Posyandu is 3.18	The number of Posyandu (Integrated Health Posts) is 229 units.  The number of active cadres is 1.148  The ratio of active cadres to Posyandu is 4.8	After the division, the ratio of active cadres to Posyandu has increased. This can be interpreted as more effective in quantity, but cannot yet be said to provide quality service. This is because the active cadres' role significantly impacts the effectiveness of Posyandu services.
11.	Medical Personnel	551	96	In terms of quantity, the availability of medical personnel is considered quite effective, although the number before the division was higher than after. However, because the number of specialists is still fewer than 4, the status of RSUD PPU cannot yet be classified as a Type B hospital.

Source: Result of Analysis



**Figure 7. Map of Travel Distance to RSU before and after the regional division**

Source: Analysis Results

**Table 10. Recap of Healthcare Service Effectiveness**

Indicator	Hospital		Community Health Center		Integrated Health Posts	
	Before Regional Expansion	After Regional Expansion	Before Regional Expansion	After Regional Expansion	Before Regional Expansion	After Regional Expansion
Available and Continuous	X	√	√	√	√	√
<p><u>The meaning is:</u></p> <ol style="list-style-type: none"> <li>Healthcare services are considered of good quality if they are available to the community</li> <li>Healthcare services are considered continuous if they are available at all times</li> </ol>						
<p><u>Analysis:</u></p> <ol style="list-style-type: none"> <li>Availability of Hospital <ol style="list-style-type: none"> <li>For Hospital: Before the expansion, the number of hospitals (RSU) was two units: the RSUD of Pasir Regency and a private hospital (ITCI). After the expansion, the number of RSUs in Penajam Paser Utara (PPU) remained at two units: the RSUD of PPU and the ITCI hospital. The relationship with availability is that the facilities are available, but compared to before the expansion, the ratio of population to hospital facilities is higher after the expansion. This means that healthcare services can be considered more effective.</li> <li>For Puskesmas: Regarding the availability of Puskesmas facilities, both before and after the expansion, Puskesmas were available, making it easier for the community to access healthcare services. With the number of Puskesmas facilities available, services can be said to be more effective.</li> <li>For Posyandu: The availability of posyandu facilities, both before and after the expansion, is considered quite effective because the ratio of available facilities to the population in need of services, especially for mothers and children under five, is sufficiently met.</li> </ol> </li> <li>Sustainability <ol style="list-style-type: none"> <li>For Hospitals: Healthcare services are always available. Although the RSUD facility existed before the expansion in the parent district, it wasn't always available due to the long travel distance, preventing the community from accessing services quickly. However, services will be much better after the expansion, as the distance will be shorter, and emergency services (UGD) will be provided more effectively.</li> <li>For Puskesmas: Before and after the expansion, Puskesmas services can be considered adequate because the community can always access them.</li> <li>For Posyandu: Posyandu services, both before and after the expansion, are considered sustainable because the community can access these services at any time, making them effective.</li> </ol> </li> </ol>						
Easily Achievable	X	√	X	√	√	√
<p><u>The meaning is:</u></p> <p>It can be easily achieved if the healthcare service is close to residential areas or where people live, making it easily accessible for healthcare users.</p>						
<p><u>Analysis:</u></p> <ol style="list-style-type: none"> <li>For Hospitals: Before the regional expansion, the community faced difficulties when visiting the Regional General Hospital (RSUD), located in the capital city of Pasir Regency, which required up to a two-hour road trip. This long travel time led many residents to seek healthcare services at hospitals in Balikpapan (a nearby city), accessible via land and water routes. After the region's expansion, healthcare services improved significantly because a hospital became available closer to residents' settlements, eliminating the need for long travel times.</li> <li>For Puskesmas (Community Health Centers): Although Puskesmas facilities were already available before the regional expansion, there were still some shortcomings in the accessibility and quality of services. Evidence of this is the lack of widespread availability, especially in the sub-district capitals (Kecamatan). However, after the expansion, there was an improvement in service quality, such as the establishment of inpatient services at the Puskesmas. This change greatly helped the community by reducing travel time, energy, and costs associated with accessing healthcare services.</li> </ol>						

Indicator	Hospital		Community Health Center		Integrated Health Posts	
	Before Regional Expansion	After Regional Expansion	Before Regional Expansion	After Regional Expansion	Before Regional Expansion	After Regional Expansion
c.	For Posyandu (Integrated Health Posts): After the regional expansion, the availability of Posyandu facilities was considered sufficient for local communities. This was due to the proximity of Posyandu to residential areas, with some even operating from residents' homes. This development improved healthcare services for mothers and children by allowing regular health checks and monitoring of their well-being.					
Quality	√	√	X	√	√	√
<p><u>The meaning is:</u>  Quality service refers to the healing and safety of actions, which, when successfully achieved, will satisfy the patients</p> <p><u>Analysis:</u>  a. Health Centers (Puskesmas): Before the administrative division, health centers were considered ineffective because they did not have inpatient services. However, after the division, the services at the health centers improved, becoming inpatient care centers with Type A status, meaning they can now refer patients directly to hospitals (RSU).  b. Hospitals and Posyandu: Both hospital and Posyandu services were considered adequate before and after the division. The hospital has been able to provide services focused on healing, while Posyandu has been able to provide regular health monitoring visits.</p>						

Source: Analysis Results

Information: X: Not Effective √: Effective

Based on the author's observations, numerous studies have been conducted on the issue of regional expansion, with most research focusing on political approaches, regional economic development, and the physical development of spatial patterns. Therefore, this study aims to focus more specifically on public service delivery, particularly on the effectiveness of healthcare services. The following section outlines the originality of the current research by comparing it to several previous relevant studies.

Khairullah (2007) employed a quantitative deductive research model using statistical analysis to evaluate the regional expansion policy process. In contrast, Sukanto (2000) utilized a qualitative research model with a descriptive-analytical technique, resulting in findings related to the policy's implementation and its impact on sub-district development.

Meanwhile, Saribi (2004) adopted a qualitative deductive model through descriptive and comparative techniques. His research focused on the expansion process and substance, particularly in the context of watersheds (DAS) and non-watershed-based expansion among several regencies. Lastly, Setiawan (2007) examined spatial development patterns related to expanding administrative boundaries.

## 5. Conclusion

Based on the analysis and discussion results, the conclusions of this study are as follows:

- Overall, the division of the region has led to better health development in the Penajam Paser Utara District. This is evidenced by:
  - In terms of quantity, the number and types of health facilities are increasingly in line with the population service ratio.
  - Regarding quality, health programs have improved and achieved better outcomes.
- The regional division has made health services more effective. This is evidenced by:
  - Available and sustainable health facilities.

- Easier access and achievement of health facilities.
- Health services are increasingly of higher quality.
- Shorter distances and faster travel times make access to service centers more effective and efficient.

Based on these conclusions, the following recommendations can be made:

- With the regional division, the number of existing facilities is expected to be adjusted according to the population's needs to avoid underutilized shortages or excesses. This means that the ratio of quality and population numbers should be appropriate.
- To make health services more effective, service quality improvement after the regional division should be realized by implementing planned health programs. These programs should align with the general public's needs and not just temporary but sustainable ones.
- Nothing is perfect, including this study. Therefore, the researcher recommends a follow-up study titled "The Quality of Services at the Penajam Paser Utara General Hospital as an Effort to Improve Public Health."

## 6. References

- Berg, B. (2007) *Qualitative Research Methods for the Social Sciences* (6th ed.). Boston, MA: Allyn and Bacon.
- Blair, J.P. (1991) *Urban and Regional Economics*. Homewood, IL, USA: Irwin.
- Esterberg, K. (2002) *Qualitative Methods in Social Research*. BOS: McGraw Hill.
- Gupta, S., and Zeithaml, V., (2006). Customer Metrics and Their Impact on Financial Performance. *Marketing Science* 25(6):718-739.
- Jia, Y., Ye, Y., Ma, Z. and Wang, T. (2024) The effect of subnational legal effectiveness and social trust on foreign firm performance: from subnational analysis in emerging economies. *International Journal of Emerging Markets*, Vol. 19 No. 6, pp. 1669-1694.
- Khairullah (2007). *Thesis on evaluating the Regional Division Policy of Lahat District, South Sumatra Province*.
- Lee, P., Khong, P. and Ghista, D.N. (2006) Impact of Deficient Healthcare Service Quality. *The TQM Magazine*, Vol. 18 No. 6,

pp. 563-571.

- Makarov, P.Y. and Illarionov, A.E. (2020). The role of regional administrations in improving place branding effectiveness: An exploratory study. *Journal of Place Management and Development*, Vol. 13 No. 4, pp. 409-427.
- Miles, B. and Huberman, M (1992). *Qualitative Data Analysis: A Sourcebook of New Methods*. Jakarta: UIP.
- Moelong (2001). *Qualitative Research Methods*. Bandung: Remaja Rosdakarya.
- Nurhaliza, A.B. (2023) Analisis Pengembangan Pusat Pelayanan Baru Dalam Rangka Persiapan Pemekaran Wilayah di Kota Semarang. Sarjana thesis, Universitas Gadjah Mada. <https://etd.repository.ugm.ac.id/penelitian/detail/232609>.
- Oktavia, S. (2023) Dampak Pemekaran Desa terhadap Kualitas Pelayanan Publik. Sarjana thesis, UIN Raden Intan Lampung. <https://repository.radenintan.ac.id/id/eprint/32012>.
- Portero, B. and Puig, F. (2016) Do public support services matter in the multilocation process in China?. *International Journal of Emerging Markets*, Vol. 11 No. 3, pp. 357-373.
- Saribi, A.M. (2004) Evaluasi Pemekaran Wilayah Kabupaten di Propinsi Kalimantan Tengah: Studi Kasus Kabupaten berbasis DAS dan Non-DAS. Thesis, Universitas Gadjah Mada. <https://etd.repository.ugm.ac.id/penelitian/detail/22806>
- Setiawan, A. (2007) Perkembangan Pemanfaatan Ruang di Kecamatan Samarinda Utara dan Kecamatan Sungai Kunjang Sebelum dan Sesudah Pemekaran Kecamatan di Kota Samarinda. Thesis, Universitas Gadjah Mada. <https://etd.repository.ugm.ac.id/penelitian/detail/36654>.
- Siagian, S.P. (2001) *Manajemen Sumber Daya Manusia*. Jakarta, Indonesia: Bumi Aksara.
- Sukanto (2000). *Thesis on the Implementation of Regional Division Policy in Kebumen District*.
- Yuan, N. and Li, M. (2025) Exploring Chinese enterprise innovation ecosystem health: a dynamic evaluation method. *Management Decision*, Vol. 63 No. 3, pp. 937-963.