

Identifying Critical Infrastructure for Local Economic Development in Rapidly Growing Small Towns

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ABSTRACT

Brebes Regency, Indonesia, exhibits significant economic growth but also the highest poverty rate in Pekalongan Residency, indicating uneven development. This study identifies local economic potential and prioritizes infrastructure needs for sustainable economic growth in rapidly developing small towns within Brebes Regency, Indonesia. Data were collected through Focus Group Discussions (FGDs) and supplemented by secondary data from relevant Local Government Agencies (OPDs), providing insights on existing infrastructure, potential economic activities, and necessary facilities for local development. The analysis utilized qualitative descriptive methods, regression to assess economic growth trends, and Klassen's typology to classify economic activities. Findings indicate significant opportunities in key sectors such as agriculture and fisheries, highlighting the urgent need for targeted infrastructure investments, including rice mills, fish hatcheries, and vocational training centers, to bolster these sectors. The study concludes that strategic infrastructure development, informed by both primary and secondary data sources, is essential for maximizing economic potential and fostering sustainable growth in Brebes Regency's small towns. This research supports informed policy decisions regarding resource allocation and infrastructure planning, contributing to equitable development and enhanced economic resilience in the region.

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1.Introduction

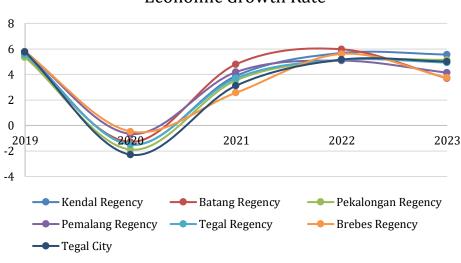
Developing a thriving local economy is a key strategy for improving community well-being and fostering sustainable economic growth (Iriyanti & Munandar, 2023). A crucial factor in achieving this success is the availability of adequate infrastructure. Well-developed infrastructure plays a vital role in connecting essential aspects of the economic development process, such as connectivity, accessibility, and efficiency (Nuraini et al., 2021).

The presence of robust infrastructure, including transportation, energy, telecommunications, water and sanitation, as well as education and health, creates a conducive environment for economic growth (Kusumawardhani et al., 2016). Efficient transportation systems facilitate the movement of goods and services, enhance market access, and streamline supply chain operations (Supriyatin et al., 2020). Reliable and affordable energy sources boost business productivity and competitiveness, while advanced telecommunications infrastructure opens doors for digital economic development (Yusri, 2020). Adequate water and sanitation systems improve community living standards and workforce productivity, while quality education and healthcare infrastructure enhance human resource quality (Sagala, 2024).

Economic growth through local economic development goes beyond simply increasing income and job opportunities; it focuses on enhancing community well-being (Azizah et al., 2021). Adequate infrastructure provides access to quality education, healthcare, and public services, ultimately improving living standards for all (Wijayanto et al., 2023). Moreover, well-developed infrastructure stimulates the creation of new jobs, increases community income, and helps reduce socioeconomic disparities (Adil et al., 2022). Brebes Regency, known for its agricultural sector, possesses significant potential for sustainable local economic development (Ningsih et al., 2016). The region is recognized as a center for shallot production, indicating substantial potential within the agricultural sector. However, the local economic structure in Brebes is dominated by small-scale farmers and retail traders, who generally have limited access to resources and technology (Ikhsani, 2016). This situation highlights the need for strategic approaches to enhance community well-being and drive inclusive economic growth in Brebes.

Brebes Regency presents a compelling case study due to its paradoxical economic landscape. While exhibiting similar economic growth (Figure 1) compared to other regencies within the former Pekalongan Residency, it simultaneously grapples with the highest poverty rate in the region (Table 1). This stark contrast underscores a significant disparity in development across Brebes' various districts, highlighting the urgent need for targeted interventions to ensure inclusive and equitable growth. The high economic growth figures mask a reality of uneven distribution of benefits, making it crucial to understand the underlying factors driving this disparity and to implement strategies that address the needs of the most vulnerable populations. Identifying and analyzing the specific economic potential of each region within Brebes Regency, coupled with a detailed assessment of the necessary supporting infrastructure, is essential for ensuring equitable economic growth. This targeted approach allows for the strategic allocation of resources

and infrastructure development to areas with high potential but currently limited access, thereby promoting a more balanced distribution of economic benefits across the entire regency.



Economic Growth Rate

Figure 1. Economic Growth Rate in Pekalongan Residenceny Source: Processed Data, 2024

Dogongy	Year				
Regency	2018	2019	2020	2021	2022
Kendal Regency	9.84	9.41	9.99	10.24	9.48
Batang Regency	8.69	8.35	9.13	9.68	8.98
Pekalongan Regency	10.06	9.71	10.19	10.57	9.67
Pemalang Regency	16.04	15.41	16.02	16.56	15.06
Tegal Regency	7.94	7.64	8.14	8.60	7.90
Brebes Regency	17.17	16.22	17.03	17.43	16.05
Tegal City	7.81	7.47	7.80	8.12	7.91
Indeks Williamson	0.33	0.33	0.34	0.34	0.34

Table 1. Disparity value of poverty between regency/city in Pekalongan Residency

Source: Processed Data, 2024

Local economic development in Brebes, particularly in the agricultural and retail sectors, requires adequate infrastructure support (Febrayanto & Kurniasih, 2022). Well-developed infrastructure, such as transportation, energy, telecommunications, water and sanitation, as well as education and health, can enhance connectivity, accessibility, and efficiency, ultimately driving economic growth and improving community well-being (Baperlitbangda Kabupaten Brebes, 2023). Adequate transportation infrastructure facilitates the movement of goods and services, enhances market accessibility, and drives supply chain efficiency. Reliable and affordable energy boosts business productivity and competitiveness, while advanced telecommunication infrastructure opens up opportunities for digital economic development.

Brebes Regency, with its significant economic potential, features diverse regional characteristics, divided into six statuses: rapidly growing large cities, moderately growing large cities, rapidly growing small cities, slowly growing large cities, moderately growing small cities, and slowly growing small cities (Adil et al., 2022). This study focuses on rapidly growing small cities in Brebes Regency, as this area has substantial potential to drive rapid local economic growth. Rapidly growing small cities in Brebes Regency have unique characteristics that make them the primary focus of this study. These areas typically experience high population growth rates, underutilized economic potential, and urgent infrastructure needs to support sustainable economic growth. The focus on these areas is expected to provide specific and effective recommendations to drive sustainable local economic development in Brebes Regency.

Therefore, research on identifying infrastructure development in rapidly growing small cities to support local economic development in Brebes Regency is crucial. This study is expected to provide comprehensive recommendations on priority infrastructure needs that can drive economic growth and improve community living standards in Brebes. By understanding specific infrastructure needs, the government and stakeholders can formulate targeted and effective infrastructure development strategies to support sustainable local economic development in Brebes Regency. The objectives of this research are (1) to identify the local potential in rapidly growing small town in Brebes Regency and (2) to identify the priority infrastructure needed for local economic development in Brebes Regency.

2. Literature Review

Local Economic Development (LED) is a dynamic and increasingly vital approach to fostering community well-being and sustainable economic growth (Haridison et al., 2022). It moves beyond simply increasing income and job opportunities, focusing on a holistic improvement in the quality of life through enhanced access to education, healthcare, and essential infrastructure (Hariyoko, 2021). This approach prioritizes the empowerment of local resources – natural assets, human capital, and cultural heritage – to build a robust and resilient regional economy (Adhistian et al., 2020). The core principle is to create a thriving community where economic prosperity is interwoven with social well-being.

LED is not a one-size-fits-all solution but rather a flexible framework encompassing various strategies tailored to specific regional contexts. At its heart lies a planned and systematic effort to boost economic activity by strategically utilizing local resources and actively engaging the community (Asnuryati, 2023). This community-centric approach, often described as "bottom-up," places local residents at the forefront of the development process, ensuring that initiatives are relevant, sustainable, and truly benefit those they are intended to serve (Rustam & Subarkah, 2021). The aim is to achieve inclusive and sustainable growth, improving not only income levels but also the overall quality of life and well-being.

One common strategy is the region-based approach, which focuses on developing specific areas such as industrial zones, tourism hubs, or special economic zones (Yamani et al., 2019). This approach emphasizes integrating economic sectors, building necessary infrastructure, and improving access to public services within the targeted region. Another effective strategy is the group-based approach, which centers on empowering specific community groups, such as cooperatives, business collectives, or farmers' associations (Kusuma & Tomyagistyawan, 2023). This approach aims to strengthen group capacities, foster sustainable business development, and facilitate access to crucial resources like capital and technology. Underlying all these approaches is the need for effective synergy and collaboration among government, the private sector, and the community itself. This collaborative spirit is paramount to the success of any LED initiative.

The success of LED initiatives hinges on the collaborative efforts of key stakeholders, each playing a crucial role in driving sustainable economic growth and improving community welfare. Government plays a pivotal role in creating a supportive policy environment, providing essential infrastructure, and facilitating access to resources and technology (Nanga & Widjaja, 2024). This includes developing investmentfriendly policies, streamlining regulations, and investing in infrastructure projects that directly support local economic activities. The private sector acts as a key driver of economic growth, creating jobs, attracting investment, and fostering innovation (Rusdiarti & Fafurida, 2016). Businesses are essential for developing new products and services, expanding markets, and creating employment opportunities within the community. Local communities are integral partners, possessing invaluable knowledge of local resources, cultural heritage, and social dynamics. Their active participation ensures that development initiatives are relevant, sustainable, and truly beneficial. They are also crucial for environmental stewardship and preserving local traditions. The synergistic relationship between these three key players—government, private sector, and community—is essential for maximizing the impact of LED initiatives and ensuring their long-term success. Effective communication, shared goals, and a commitment to collaboration are paramount.

The development of a local economy is influenced by a complex interplay of internal and external factors (Safitri & Aliasuddin, 2016). Understanding these factors is crucial for developing effective strategies that promote sustainable economic progress (Nizar & Sholeh, 2021). Internal factors are inherent to the region itself. These include the potential of local resources—natural assets, skilled labor, and cultural heritage—which are fundamental drivers of economic growth (Astuti et al., 2017; Siwi, 2017; Ariyani et al., 2020; Haridison et al., 2022). The quality of human capital—education levels, skills, and health—significantly impacts productivity and competitiveness (Kusuma & Tomyagistyawan, 2023). A diverse and resilient economic structure reduces dependence on single sectors, while leveraging local culture can create unique, marketable products and services (Bahri et al., 2021; Helmiati, 2023; Kusumaningdyah, 2022). External factors originate outside the region and include supportive government policies (Yuniarti & Imaningsih, 2022), robust infrastructure—transportation, energy, telecommunications, water and sanitation, education, and healthcare—which is essential for connecting various aspects of the economic development process (Juantoro et al., 2020; Adil et al., 2022), broad market access, and global economic conditions (Ramadani, 2019). These external factors can significantly impact a region's ability to achieve its LED goals.

Adequate infrastructure is not merely a supporting element in LED; it is the very foundation upon which sustainable economic growth is built (Aji et al., 2024). It serves as the connective tissue, linking various aspects of the economic development process and ensuring connectivity, accessibility, and efficiency. Without sufficient infrastructure, a region's economic potential remains largely untapped (Adil et al., 2022).

Different types of infrastructure play distinct yet equally crucial roles. Efficient transportation networks—highways, railways, ports—facilitate the movement of goods and services, improving market access and supply chain efficiency (Azizah et al., 2021; Juniati, 2017). Reliable and affordable energy sources—electricity and natural gas—are essential for boosting business productivity and competitiveness (Wahyudin, 2018; Hasibuan et al., 2022). Advanced telecommunications infrastructure—internet and cellular networks—enables access to information, communication, and business transactions, opening doors for digital economic development (Octoviani & Puspita, 2023). Improved water and sanitation systems enhance community well-being and workforce productivity (Utami, 2020; Nugroho, 2023), while quality education and healthcare infrastructure strengthen human capital (Nurlaeli et al., 2021; Marinda et al., 2020).

Investing in robust infrastructure is therefore a critical step towards achieving sustainable local economic development. It creates a favorable environment for inclusive and sustainable economic growth, ultimately enhancing community welfare and driving regional economic progress. The benefits extend far beyond mere economic gains, contributing to a more equitable, resilient, and prosperous community. This investment is not simply an expense but a strategic investment in the long-term well-being and prosperity of the region. It is crucial to consider the specific needs of the community and the region's unique characteristics when planning and implementing infrastructure projects. A well-planned infrastructure strategy will consider factors such as population density, existing infrastructure, and future growth projections. The goal is to create a sustainable infrastructure system that can support the long-term economic development of the region. This requires a long-term vision and a commitment to ongoing maintenance and upgrades. By prioritizing infrastructure development, communities can create a strong foundation for sustainable economic growth and improved quality of life for all residents.

While extensive research exists on infrastructure's role in supporting economic growth, a significant gap remains in understanding the specific infrastructure priorities for rapidly growing small towns characterized by uneven economic development.

Numerous studies have examined the general relationship between infrastructure and economic progress (Asnuryati, 2023; Hariyoko, 2021; Yusri, 2020), but few have focused on the unique challenges and opportunities presented by rapidly growing small towns experiencing uneven distribution of economic benefits. This research directly addresses this critical gap by focusing on rapidly growing small towns within Brebes Regency, a region characterized by both high economic growth and high poverty rates, highlighting the urgent need for targeted interventions to ensure inclusive and equitable growth. By identifying priority infrastructure needs within this specific context, this study will contribute significantly to the existing body of knowledge and provide valuable insights for policymakers and stakeholders seeking to promote sustainable and equitable economic development in similar regions. The findings will not only inform targeted infrastructure investments but also contribute to the development of effective strategies for addressing the disparities in economic growth often observed in rapidly developing areas. This research is therefore crucial for bridging the knowledge gap and informing evidence-based policy decisions aimed at promoting equitable and sustainable economic development.

3. Research Method

This research, conducted from June to December 2023 in Brebes Regency, Central Java Province, utilized both primary and secondary data. Primary data was gathered through Focus Group Discussions (FGDs) with key stakeholders, including two representatives from each of the following agencies: Regional Development Planning Agency, Public Works Department, Water Resources Management Agency, Environmental Agency, Transportation Department, and Investment and Integrated One-Stop Service Agency, as well as other relevant agencies. This resulted in a total of 14 FGD participants. These agencies were essential for gathering comprehensive information on existing infrastructure and identifying priority infrastructure needs for sustainable local economic activities suitable for development within the research area, as well as an inventory of existing infrastructure, both of which were essential for identifying priority infrastructure needs for sustainable local economic development.

Secondary data for this research was obtained from relevant Local Government Agencies (OPDs), remote sensing results, and related institutional websites. Documents from OPDs, acquired through official written correspondence, included data on population size, economic growth rates, poverty rates, and targeted Gross Regional Domestic Product (GRDP) per sector. This secondary data was used to conduct regression analysis to assess the relationship between targeted and achieved GRDP and to analyze trends in key variables. Remote sensing data utilized freely available high-resolution satellite imagery from platforms such as Google Earth. Data from institutional websites, accessed and documented accordingly, supplemented the OPD data. The analytical methods employed included content analysis, quantitative descriptive analysis, and spatial analysis (Baperlitbangda Kabupaten Brebes, 2023).

Data analysis employed regression analysis to assess the relationship between targeted and achieved GRDP and to analyze trends in key variables, providing insights into the effectiveness of current economic strategies. To determine infrastructure priorities, Klassen's typology was utilized, allowing for a systematic classification of economic activities and identifying key sectors for infrastructure development. This approach helped to prioritize infrastructure needs based on their contribution to sustainable economic growth within the context of Brebes Regency. The identification of growth trends in Brebes Regency's leading sectors was conducted using simple linear regression analysis with the following model:

 $Y = aX + b \tag{1}$

The Klassen Typology Analysis was employed to identify the position of Brebes Regency's economic sectors, taking into account the economic sectors of Central Java as a reference region. The Klassen Typology Analysis resulted in four classifications of sectors with distinct characteristics as follows: (Rajab & Rusli, 2019)

- Developed Sector (Quadrant I): This quadrant represents sectors where the growth rate of a particular sector in the GRDP (si) is higher than the growth rate of the same sector in the reference region's GRDP (s), and the sector's contribution to the GRDP (gi) is higher than its contribution to the reference region's GRDP (g). This classification is symbolized by si > s and gi > g.
- Stagnant Sector (Quadrant II): This quadrant represents sectors where the growth rate of a particular sector in the GRDP (si) is lower than the growth rate of the same sector in the reference region's GRDP (s), but the sector's contribution to the GRDP (gi) is higher than its contribution to the reference region's GRDP (g). This classification is symbolized by si < s and gi > g.
- 3. Developing Sector (Quadrant III): This quadrant represents sectors where the growth rate of a particular sector in the GRDP (si) is higher than the growth rate of the same sector in the reference region's GRDP (s), but the sector's contribution to the GRDP (gi) is lower than its contribution to the reference region's GRDP (g). This classification is symbolized by si > s and gi < g.
- 4. Underdeveloped Sector (Quadrant IV): This quadrant represents sectors where the growth rate of a particular sector in the GRDP (si) is lower than the growth rate of the same sector in the reference region's GRDP (s) and also has a lower contribution to the GRDP (gi) compared to its contribution to the reference region's GRDP (g). This classification is symbolized by si < s and gi < g.

4. Results and Discussion

Brebes Regency has a strategic location and is traversed by important routes on the island of Java. The process of industrialization and the planned development of large-scale and capital-intensive industrial areas represent a significant potential for economic

development. The local government has initiatives to develop new economic centers, thereby driving urban growth in Brebes Regency. Based on the analysis results, the main urban areas of Brebes Regency consist of four zones: Brebes, Bumiayu, Ketanggungan-Kersana, and Bulakamba, which functionally comprise three or more urban status villages. According to the Brebes Regency Spatial Planning (RTRW) documents, these four zones are also Local Activity Centers (PKL) within the spatial structure (Baperlitbangda Kabupaten Brebes, 2023).

Population size is one parameter in determining the size of urban areas (BPS, 2024). The highest urban population is in Brebes with 111,846 inhabitants, followed by Bumiayu with a population of 56,024 in 2020. Although Brebes urban area has the highest population, the highest population growth is in the Bulakamba area with a 36.74% urban population growth rate. The lowest population growth is in the Sirampog area with a rate of 0.21% and a population of 9,250 in 2020 (Table 2).

	Popula	$C_{\text{max}} \rightarrow (0/)$		
Urban —	2000	2010	2020	Growth (%)
Brebes	90.892	97.808	111.846	23,05
Bumiayu	47.808	50.127	56.024	17,19
Ketanggungan-Kersana	40.853	44.100	49.544	21,27
Bulakamba	25.413	30.326	34.751	36,74
Wanasari	25.085	29.714	33.641	34,11
Jatibarang	23.392	26.205	27.002	15,43
Larangan	19.569	21.325	24.143	23,37
Tanjung	14.723	15.583	17.782	20,37
Bantarkawung	12.644	13.066	15.145	19,78
Losari	11.933	12.806	14.268	19,57
Paguyangan	9.444	5.189	12.234	29,54
Banjarharjo	8.898	10.795	12.092	35,90
Tonjong	8.377	8.048	9.306	11,09
Sirampog	9.231	9.412	9.250	0,21
Salem	6.918	7.797	8.360	20,84
Songgom	6.629	6.429	8.302	25,24

Source: Processed Data, 2024

The urban areas of Brebes and Bumiayu are classified as large populations (>50,000 inhabitants). The difference between them lies in the rate of population growth, where the urban area of Brebes has a fast growth rate, while Bumiayu has a slow growth rate. The medium-sized urban areas (population 30,000-50,000 inhabitants) classified as fast-growing (BPS, 2024) are the urban areas of Bulakamba and Wanasari, while the slow-growing area is Ketanggungan-Kersana. The small urban areas classified as fast-growing are Larangan, Banjarharjo, Paguyangan, and Songgom, while the slow-growing areas are Jatibarang, Bantarkawung, Tonjong, Salem, Losari, and Sirampog (Table 3). Spatial analysis of urban area classification in Brebes Regency is presented in Figure 2.

Table 3. Classification of urban regio	n
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Classificatiom	Big (>50.000)	Medium (30.000- 50.000)	Small (<30.000)
Rapidly Growing	Brebes	Bulakamba	Larangan

Classificatiom	Big (>50.000)	Medium (30.000- 50.000)	Small (<30.000)
		Wanasari	Banjarharjo Paguyangan Songgom
Slowly Growing	Bumiayu	Ketanggungan-Kersana	Jatibarang Bantarkawung Tonjong Salem Tanjung Losari Sirampog

Source: (Baperlitbangda Kabupaten Brebes, 2023)

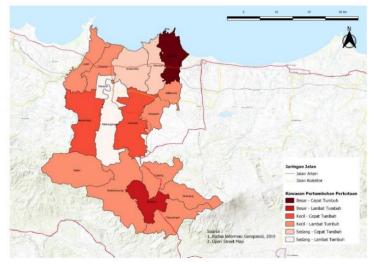


Figure 2. Map of urban growth areas in Brebes Regency Source: (Baperlitbangda Kabupaten Brebes, 2023)

Most of the fast-growing small urban areas in Brebes Regency already have a solid foundation of basic infrastructure. Access to internet networks, electricity, and telecommunications is readily available and generally adequate. However, the provision of clean water, designated industrial zones, and proper waste management facilities remains inconsistent across these areas. For a thriving urban environment, essential infrastructure like clean water supply, waste management systems, waste disposal facilities (Kusumawardhani et al., 2016), electricity, and internet connectivity are crucial. Table 4 presents a detailed overview of the potential and challenges related to infrastructure in these rapidly developing small urban areas within Brebes Regency.

No.	District	Potential	Issues
1.	Larangan	 Having access electricity, telecommunica networks that adequate 	

Table 4. Potential and issues in infrastructure provision

No.	District	Potential Issues
		2. Designated industrial zones
		exist
		3. There is a dedicated sub-
		terminal for the shallot
		agribusiness
		4. The physical condition of the national road is
		excellent, presenting a
		strong potential for
		accessibility
2.	Banjarharjo	1. Having access to 1. Several villages experience
		electricity and road damage
		telecommunications
		networks that are already
		adequate
		2. Several villages have
		received sufficient and
		good clean water supply
		 Waste management in some villages has reached
		the recycling stage
3.	Paguyangan	1. Having access to internet, 1. Several villages experience
01	i uguyungun	electricity, and road damage
		telecommunications 2. Several villages do not have
		networks that are already waste management facilities
		adequate such as Waste Collection
		2. Passed by commodity Points (WCP)
		distribution routes
		3. Having a market near the
		flyover
		4. Having one private
4.	Conggom	university 1. Having access to internet, 1. There are several damaged
4.	Songgom	1. Having access to internet, 1. There are several damaged electricity, and road sections in several
		telecommunications villages
		networks that are already
		adequate
		2. Some villages have
		received sufficient and
		good clean water services
		3. Waste management stages
		include waste sorting to
		increase the selling value
		4. Having advanced
		processing facilities such
-	Drogogod Data 2024	as rice milling houses

Source: Processed Data, 2024

Not all rapidly growing small urban areas in Brebes Regency have industries up and running. The presence of a primary product that serves as industrial raw material is the most significant factor. Larangan's primary product is shallots, while Songgom's is rice

(BPS, 2024). These primary products haven't yet developed a robust industrial chain, so industries based on them are still in their infancy. The primary products and types of industries in rapidly growing small urban areas in Brebes Regency are presented in Table 5. ~1

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		Table 5. Industry Classificatio	on
No.	District	Main Product	Industry Classification
1.	Larangan	-	-
2.	Banjarharjo	Recycled cotton fabric scraps	Textil
3.	Paguyangan	Albasia barcore	Wood processing
		Gondorukem and turpentine	Wood latex processing
4.	Songgom	-	-
	Source: Processed Data	2024	

Source: Processed Data, 2024

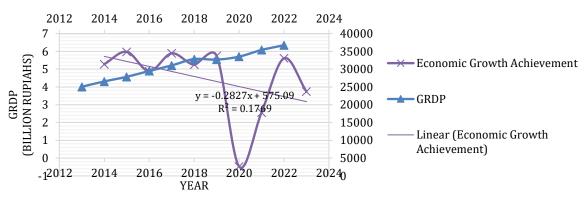
Economic service infrastructure plays a crucial role in driving economic growth in these areas (Setyorini et al., 2020). Larangan, known for its shallot production, boasts a dedicated shallot market, while Songgom, with rice as its primary product, has established small to medium-sized rice mills (TPP). Basic economic service infrastructure, such as shops, minimarkets, and "toko kelontong" (traditional neighborhood stores), are readily available in all rapidly growing small urban areas in Brebes Regency. However, not all areas have established medium-scale industries. Table 6 provides a detailed overview of the current state of economic service facilities in these rapidly developing urban areas within Brebes Regency.

Table 6. Available Facilities						
	Economic Service Function					Agricultural
District		gricultural			General	Economic
	Strategic Facility	Number	Supporting Facilities	Number	Economy	Service Function
Larangan	Medium rice mill	2	Animal health	2	General market;	Small to medium-
	Small rice mill	70	center		minimarket;	scale rice
	Shallot market agricultural	1	Aricultural store		shopping complex;	processing Shallot
	business sub-		Agricultural		grocery	marketing
	terminal	1	cooperative		store;	Animal
					MSMEs;	health
					bank;	services
					cooperative;	
					small and	
					medium	
Destades to		100		1	industries	D'
Banjarharjo	Small rice	100	Fish Seed	1	General	Rice
	slaughterhouse	1	Center	1	market;	processing
			Agricultural	1	minimarket;	on a small
			Vocational School	10	shopping	scale
				10	complex;	Livestock
			Agricultural	3	grocery store;	butchering Fish
			Input Kiosk Agricultural	J	MSMEs;	breeding
			Cooperative		bank;	Agricultural
			cooperative		cooperative;	Agricultural
					cooperative,	

		Econom	nic Service Fun	ction		Agricultural
District	A	gricultural	Comoral	Economic		
District	Strategic Facility	Number	Supporting Facilities	Number	General Economy	Service Function
					small industries	education services
Paguyangan	Medium rice mill	2	UPT sheep	1	General market;	Processing of rice on a
	Small rice mill Essential oil	116 5	breeding center Fisheries	1	minimarket; shopping	small to medium
	industry	5	Vocational School	12	complex; grocery	scale Processing
			Agricultural input kiosk Agricultural cooperative	1	store; MSMEs; bank; cooperative; small and medium industries	of plantations (cloves, patchouli, lemongrass) Livestock breeding (sheep) Fisheries education services
Songgom	Medium rice mill	1	Agricultural Vocational		General market;	Processing of rice on a
	Small rice mill	39	School Agricultural Input Kiosk Agricultural Cooperative		minimarket; shopping complex; grocery store; MSMEs; bank; cooperative; small industries	small to medium scale Livestock butchering and marketing

Source: Processed Data, 2024

Brebes Regency's Gross Regional Domestic Product (GRDP) growth has exhibited fluctuations, occasionally surpassing targets but frequently falling short. For instance, in 2020 and 2021, GRDP achievement lagged behind targets. While 2022 saw GRDP growth meet its target, 2023 experienced a shortfall attributed to the El Niño weather phenomenon (Figure 3). To optimize GRDP growth and mitigate the impact of such external factors, a comprehensive identification of infrastructure needs to support economic activities across Brebes Regency is crucial, particularly focusing on rapidly growing small towns where targeted interventions can maximize impact and ensure equitable development.



GRDP AND ECONOMIC GROWTH

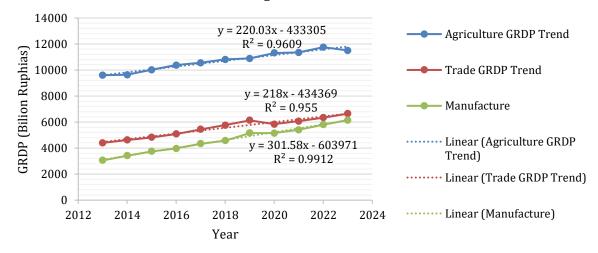
Figure 3. GRDP and economic growth in Brebes Regency on 2013-2023 Source: Processed Data, 2024

Analysis using Klassen's classification reveals that the agriculture, forestry, and fisheries sector, including livestock farming, is a dominant contributor to Brebes Regency's economy, exhibiting both high contribution to GRDP and rapid growth (Figure 4 and 5). This sector's prominence provides a strong foundation for prioritizing infrastructure development. By focusing infrastructure investments on supporting this key sector, the local government can optimize economic activity and ensure maximum impact on the regional economy. This targeted approach will be instrumental in maximizing the potential of this vital sector and driving sustainable economic growth in Brebes Regency.

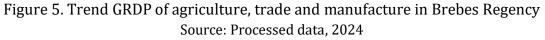
Soctoral Crowth

	Sectora	Growth	
Sectoral Contribution	gi>=g	gi<=g	
si>=s	Agriculture, Forestry and Fisheries	Construction	
	Accommodation and Food Services	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	
	Educational Services	Transportation and Warehousing	
		Other Services	
si<=s	Mining and Quarrying	Information and Communication	
	Manufacturing	Real Estate	
	Electricity and Gas Supply	Public Administration, Defense, and Compulsory Social Security	
	Water Supply, Waste Management, Waste Treatment and Recycling	Health and Social Work Activities	
	Financial and Insurance Services		
	Business Services		
Figure	4. Klassen tipology of economics	sector in Brebes Regency	

Source: Processed data, 2024



GRDP on the Highest Contribution Sectors



The pressing needs for urban area status differ depending on the population size and density. Urban areas with a large population face a critical need for providing urban facilities. On the other hand, urban areas with high population density require urgent attention to urban planning. The interplay between population size and density necessitates tailored approaches, as outlined in Table 7.

		Population Density	
Population Size		High (>3.000 inhabitans/km ²)	Low (<3000 inhabitans/km ²)
Population	Big (>100.000 inhabitans)	Higher Density, Larger-Size Town Urban facilities need to be added urgently and arranged	Lower Density, Larger-Size Town Urban facilities need to be added as a priority, while restructuring can be addressed less urgently
	Medium (50.000- 100.000 inhabitans)	Higher Density, Medium-Size Town Urban planning is a top priority	Lower Density, Medium-Size Town Completing city facilities is a top priority
	Small (<50.000 inhabitans)	Higer Density, Small- Size Town Urban planning is a top priority, while adding urban facilities can be addressed less urgently	Higher Density, Small-Size Town Adding and arranging urban facilities is not a priority

Table 7. Urban Needs Assesement

Source: Processed Data, 2024

The availability of essential economic services is key to maximizing the economic function of urban areas. Identifying the availability of these services and prioritizing their needs can accelerate economic growth in the region. The focus should be on public service facilities that directly support the main economic activities of the urban area. Understanding the value chain of these key products is essential to ensure that the infrastructure for economic service facilities is built strategically. Given the Klassen classification and the observed trends in GRDP growth, priority infrastructure development should focus on supporting the agriculture, forestry, and fisheries sectors. Table 8 presents the current state of public service facilities in rapidly growing small urban areas in Brebes Regency.

District	Brebes Regency Economic Service Function	Availability of Existing Facilities & Priority Needs for Additional Facilities
Larangan	Existing: Red onion marketing function Animal health service function Small and medium-scale rice processing function Promotion: Supporting red onion promotion function Supporting livestock promotion function	Availability of Facilities: Red onion market; Sub Terminal Agribusiness (STA) Community Health Center Rice Milling Place (medium and small scale) Facility Needs: Red onion seedling center; red onion warehouse (warehouse receipt system) Artificial Insemination Post (IB)
Banjarharjo	Existing: Small-scale rice processing function Fish breeding function Agricultural education service function Livestock slaughtering function Promotion: Promotion function for rice agricultural waste processing	Availability of facilities: Small rice milling place (TPP) Fish Seed Center Agricultural Vocational High School Animal Slaughterhouse (RPH) Facility needs: Rice seedling center Freshwater fish processing area Fishery tourism area
Paguyangan	Existing: Livestock breeding function (sheep) Small and medium-scale rice processing function Fishery education service function Promotion: Fish processing promotion	Availability of Facilities: Technical Livestock Breeding Unit (UPT) Sakub Sheep Medium and small-scale Rice Milling Place (TPP) Fishery Vocational High School Facility Needs: Freshwater Fish Processing Area

Table 8. The availability and need for facilities in rapidly growing small towns in

District	Economic Service Function	Availability of Existing
District	Economic Service Function	
		Facilities & Priority Needs for
		Additional Facilities
	function	Fishery Tourism Area
	Supporting fisheries	Chicken Egg Packaging
	promotion function	Industry
	Poultry egg processing	Sakub Sheep Agrotourism
	promotion function	
	Supporting livestock	
	promotion function	
	promotion function	
Songgom	Existing:	Availability of Facilities:
Sougeon	Medium and small-scale rice	Medium and small-scale Rice
		Milling Place (TPP) Fishery
	processing function	
	Capture fisheries education	Vocational High School
	service function	Facility Needs: Rice Seedling
	Promotion:	Center Chili Processing
	Supporting rice agriculture	Industry
	promotion function	
	Vegetable processing	
	promotion function	

Source: Processed Data, 2024

This study emphasizes that strategic infrastructure development is not merely a supplementary aspect of economic growth but a fundamental requirement for unlocking the full potential of Brebes Regency's rapidly developing small towns. By integrating insights from both primary data collected through Focus Group Discussions and secondary data from Local Government Agencies, the research provides a comprehensive understanding of the current landscape and the pressing needs for infrastructure. The identified key sectors, particularly agriculture and fisheries, present significant opportunities for growth, necessitating targeted investments in essential facilities such as rice mills, fish hatcheries, and vocational training center.

Moreover, the findings advocate for a coordinated approach to infrastructure planning, where investments are aligned with the specific economic activities that drive local growth. This targeted strategy will not only enhance local economic resilience but also promote equitable development by ensuring that all segments of the population benefit from improved infrastructure. Ultimately, the recommendations derived from this study can guide policymakers in making informed decisions that foster sustainable economic growth and improve the overall quality of life in Brebes Regency's small towns.

5.Conclusion

Analysis of infrastructure needs in rapidly growing small towns is crucial to maximize the potential of the local economy. This study identifies several dominant economic functions, including rice processing, agricultural education services, agricultural promotion, fish processing promotion, and other agricultural promotions. The analysis results highlight the urgent need for infrastructure supporting the agricultural and fisheries sectors. Facilities such as rice mills, fish hatcheries, fishery vocational high schools, and rice seedling centers are top priorities. Additionally, functions like fish breeding, capture fisheries education services, and vegetable processing promotion underscore the necessity of infrastructure supporting the fisheries and other agricultural sectors. Development of infrastructure in rapidly growing small towns should encompass various facilities, including livestock breeding units, rice mills, fishery vocational high schools, freshwater fish processing areas, fishery tourism areas, chicken egg packaging industries, and sheep agrotourism. Strategic investments in identified infrastructure can serve as a primary driver for sustainable local economic growth.

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References

- Adhistian, P., Ruspendi, Aprina, B., Candra, A., & Wahyu. (2020). Pemberdayaan Ekonomi Masyarakat Berbasis Potensi Lokal terhadap Peningkatan Ekonomi Rumah Tangga. *Abdi Laksana: Jurnal Pengabdian Kepada Masyarakat, 1*(1), 1–5. http://www.jurnalfkip.unram.ac.id/index.php/SemnasBIO/article/view/666
- Adil, M., Ashad, H., & Supardi, S. (2022). Analisis Faktor-Faktor Keberhasilan Pembangunan Melalui Program Pengembangan Infrastruktur Sosial Ekonomi Wilayah (PISEW) di Kawasan Perbatasan Pulau Sebatik Provinsi Kalimantan Utara. *Jurnal Konstruksi: TeKNik ..., 01*(05), 1–12. http://pasca-umi.ac.id/index.php/kons/article/view/1077%0Ahttps://pasca-umi.ac.id/index.php/kons/article/download/1077/1222
- Aji, A. D. S., Suhardono, S., Suryawan, I. W. K., & Prayogo, W. (2024). Impacts of Sanitation Practices on Human Development: A Decade-Long Analysis of the Malang District. *Ekuilibrium : Jurnal Ilmiah Bidang Ilmu Ekonomi*, 19(2), 276–288. https://doi.org/10.24269/ekuilibrium.v19i2.2024.pp276-288
- Ariyani, N., Fauzi, A., & Umar, F. (2020). Model hubungan aktor pemangku kepentingan dalam pengembangan potensi pariwisata Kedung Ombo. *Jurnal Ekonomi Dan Bisnis*, *23*(Oktober), 357–378.
- Asnuryati. (2023). Strategi Pengembangan Ekonomi Berkelanjutan di Desa: Mendorong Pemberdayaan Komunitas dan Kemandirian Ekonomi Lokal. *Innovative: Journal Of Social Science Research*, *3*(2), 2175–2183.
- Astuti, W. A., Hidayat, M., & Darwin, R. (2017). Pengaruh Investasi, Tenaga Kerja dan Pertumbuhan Penduduk Terhadap Pertumbuhan Ekonomi di Kabupaten Pelalawan. *Jurnal Akuntansi Dan Ekonomika*, 7(2), 141–147.

- Azizah, N. A., Kumalawati, R., Normelani, E., & Bachri, A. A. (2021). Analisis Ekonomi Wilayah Dan Evaluasi Dampak Pembangunan Ekonomi Di Kabupaten Bondowoso. Jurnal Geografika (Geografi Lingkungan Lahan Basah), 2(2), 51. https://doi.org/10.20527/jgp.v2i2.4779
- Bahri, M., Kunaifi, A., & Ghufron. (2021). Agrowisata Pengembangan Sektor Pertanian Buah Melon Dalam Mitigasi Resesi Ekonomi Dampak Pandemi Covid-19. *EKOSIANA: Jurnal Ekonomi Syari'ah*, 8(1), 49–63. http://ejournal.stainim.ac.id/index.php/ekosiana
- Baperlitbangda Kabupaten Brebes. (2023). *Strategi Pengembangan Infrastruktur Wilayah Kabupaten Brebes.*
- BPS. (2024). Kabupaten Brebes Dalam Angka 2024.
- Dwinarko, Sjafrizal, T., & Muhamad, P. (2023). Pemberdayaan Petani Manggis Generasi Milenial Melalui Pelatihan Dan Pendampingan Digital Komunikasi Pemasaran Di Desa Ponggang Serangpanjang Subang. *Intelektiva*, 4(10), 97–113. https://www.jurnalintelektiva.com/index.php/jurnal/article/view/971
- Febrayanto, C. R., & Kurniasih. (2022). Analisis Sektor Unggulan dalam Pembangunan Ekonomi di Kabupaten Brebes. *Ultras*, *6*(1), 20–32.
- Haridison, A., Iskandar, D., & Gaffar, U. H. (2022). Model Pengembangan Ekonomi Lokal: Studi Kasus Desa Sampirang I (Satu) Kecamatan Teweh Timur, Kabupaten Barito Utara, Kalimantan Tengah. *JIIP: Jurnal Ilmiah Ilmu Pemerintahan*, 7(2), 85–101. https://doi.org/10.14710/jiip.v7i2.14208
- Hariyoko, Y. (2021). Analisa Pengembangan Ekonomi Lokal Desa Mojomalang Kecamatan Parengan Kabupaten Tuban. *Jurnal Kebijakan Pembangunan*, *16*(2), 197–206. https://doi.org/10.47441/jkp.v16i2.180
- Hasibuan, M., Rahmanta, & Sri Fajar Ayu. (2022). Analisis Faktor-Faktor Yang Mempengaruhi Pertumbuhan Sektor Pertanian Di Provinsi Sumatera Utara. *Jurnal Agrica*, *15*(1), 1–12.
- Helmiati, S. (2023). Potensi dan Kontribusi UMKM Dalam Pengembangan Ekonomi Masyarakat Di Kelurahan Mudunglaut Kecamatan Pelayangan Kota Jambi. *Jurnal Ilmiah Research and Development Student*, 1(1), 194–201.
- Ikhsani, M. M. (2016). Analisis Efisiensi Klaster Rumput Laut di Kabupaten Brebes. *Economics, Social, and Development Studies, 3*(1), 116–145.
- Iriyanti, & Munandar, A. (2023). Systematic Literature Review: Penerapan Sistem Informasi Untuk Mendukung Peningkatan Kualitas Laporan Keuangan Di Badan Usaha Milik Desa (Bumdes). Equilibrium: Jurnal Ilmiah Ekonomi, Manajemen Dan Akuntansi, 12(2), 218. https://doi.org/10.35906/equili.v12i2.1563
- Juantoro, E. E., Magribi, L. O. M., Lakawa, I., & Sufriyanto. (2020). Kajian Infrastruktur Transportasi Darat Dalam Pengembangan Wilayah Kecamatan Tongauna Kabupaten Konawe. *Sultra Civil Engineering Journal*, 1(2), 44–53. https://doi.org/10.54297/sciej.v1i2.143
- Juniati, H. (2017). Analisis Pengaruh Transportasi Multimoda Terhadap Disparitas Harga Di Propinsi Papua Baratanalisis Pengaruh Transportasi Multimoda Terhadap Disparitas Harga Di Propinsi Papua Barat. Jurnal Transportasi Multimoda, 15(1), 39. https://doi.org/10.25104/mtm.v15i1.412
- Kusumaningdyah, A. A. (2022). Perencanaan dan Pengembangan Wilayah Kabupaten Temanggung Provinsi Jawa Tengah Berbasis Sektor Ekonomi Unggulan. *Geodika: Jurnal*

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Kajian Ilmu Dan Pendidikan Geografi, 6(1), 13–24. https://doi.org/10.29408/geodika.v6i1.4363

- Kusuma, S. H., & Tomyagistyawan, D. (2023). Pengembangan Kawasan Pertanian Tanaman Pangan Berkelanjutan Di Kabupaten Madiun Melalui Pendekatan Pengembangan Ekonomi Lokal. *TheJournalish: Social and Government*, 4(5), 336–352.
- Kusumawardhani, V., Sutjahjo, S. H., & Dewi, I. K. (2016). Penyediaan Perumahan dan Infrastruktur Dasar Di Lingkungan Permukiman Kumuh Perkotaan. *Jurnal Arsitektur NALARs*, 15(1), 13– 24. https://jurnal.ftumj.ac.id/index.php/nalars/article/view/551/517
- Marinda, R., R.P. Sitorus, S., & Pribadi, D. O. (2020). Analisis Pola Spasial Persebaran Kawasan Lahan Pertanian Pangan Berkelanjutan Di Kabupaten Karawang. *Jurnal Geografi*, *12*(02), 161. https://doi.org/10.24114/jg.v12i02.17646
- Nanga, M., & Widjaja, W. (2024). Structural Transformation in the Indonesian Economy: Why does "Financial Development" Matter? *Ekuilibrium : Jurnal Ilmiah Bidang Ilmu Ekonomi*, 19(2), 213–222. https://doi.org/10.24269/ekuilibrium.v19i2.2024.pp213-222
- Ningsih, R. W., Utami, P., & Dumasari. (2016). Potret Kewirausahaan Petani Pembudidaya Rumput Laut di Desa Randusanga Kulon Kecamatan Brebes Kabupaten Brebes. *Agritech, XVIII*(1), 16– 24.
- Nizar, N. I., & Sholeh, A. N. (2021). Peran Ekonomi Digital Terhadap Ketahanan dan Pertumbuhan Ekonomi Selama Pandemi COVID-19. *Jurnal Madani: Ilmu Pengetahuan, Teknologi, Dan Humaniora*, 4(1). https://doi.org/10.33753/madani.v4i1.163
- Nugroho, I. S. (2023). Pendampingan Pengolahan Kotoran Ternak Sapi Menjadi Pupuk Organik Cair Pada Kelompok Petani Milenial "Belik Lesung." *SUBSERVE: Community Service and Empowerment Journal*, 1(1), 1–7.
- Nuraini, I., Rochminarni, A. B., & Hariyani, H. F. (2021). The Growth Pattern and Potential Development of Manufacturing Industry in East Java. *Ekuilibrium : Jurnal Ilmiah Bidang Ilmu Ekonomi*, 16(2), 129–138. https://doi.org/10.24269/ekuilibrium.v16i2.2021.pp129-138
- Nurlaeli, F., Mubtadi, N. A., & Abdilah, A. I. (2021). Analisis Peran Pembiayaan Lembaga Keuangan Syariah pada Sektor Pertanian di Kabupaten Brebes. *Velocity : Journal of Sharia Finance and Banking*, 1(2), 36–47.
- Octoviani, A., & Puspita, A. S. (2023). Implementasi Triple Helix Dalam Meningkatkan Competitive Advantage Industri Kreatif. *Jurnal Digital Bisnis, Modal Manusia, Marketing, Entrepreneurship, Finance, & Strategi Bisnis (DImmensi), 3*(1), 13. <u>https://doi.org/10.32897/dimmensi.v3i1.2319</u>
- Rajab, A., & Rusli. (2019). Penentuan Sektor-Sektor Unggulan yang Ada Pada Kabupaten Takalar Melalui Analisis Tipologi Klassen. GROWTH Jurnal Ilmiah Ekonomi Pembangunan, 1(1), 16– 38.
- Ramadani, A. P. (2019). Analisis Hubungan Pertumbuhan Ekonomi, Inflasi, dan Pengangguran Terbuka Terhadap Tingkat Kemiskinan di Kabupaten Brebes Tahun 1991-2019.
- Rusdiarti, & Fafurida. (2016). Strategi Pengembangan Daerah Growth Pole Melalui Pemanfaatan Potensi Lokal. *Jurnal Ekonomi Dan Bisnis*, 19(3), 425–440.

- Rustam, K., & Subarkah, R. (2021). Studi Pengembangan Ekonomi Lokal Kota Bogor Berbasis Produk Unggulan Daerah Dengan Analisis Swot. *Kajian Ekonomi Dan Bisnis*, 16(2), 127–146. https://doi.org/10.51277/keb.v16i2.98
- Safitri, I., & Aliasuddin. (2016). Pengaruh Penduduk Terhadap Pertumbuhan Ekonomi. Jurnal Ilmiah Mahasiswa (JIM) Ekonomi Pembangunan Fakultas Ekonomi Dan Bisnis Usnyiah, 1(1), 56–65.
- Sagala, D. (2024). Analisa pola perkembangan wilayah kota Medan. *JPSTD: Journal of Placemaking* and Streetscape Design, 1(2), 75–82.
- Setyorini, D. A., Muhartanto, A., & Burhannudinnur, M. (2020). Analisis Struktur Geologi Untuk Perencanaan dan Pengembangan Wilayah Kota Sorong, Papua. *Journal of Geoscience Enginering & Energy (JOGEE)*, I(2), 83–95. https://www.trijurnal.lemlit.trisakti.ac.id/jogee
- Siwi, H. F. D. (2017). Strategi Pertumbuhan Dan Pembangunan Ekonomi Daerah. *Jurnal Pembangunan Ekonomi Dan Keuangan Daerah, 18, No.6,* 1–11. https://www.mendeley.com/library/
- Supriyatin, R., Pravitasari, A. E., & Pribadi, D. O. (2020). Pemetaan Karakteristik Wilayah Urban Dan Rural Di Wilayah Bandung Raya Dengan Metode Spatial Clustering. *Jurnal Geografi*, *12*(02), 125. https://doi.org/10.24114/jg.v12i02.17647
- Utami, D. P. (2020). Pengenalan Digital Marketing dalam Pemasaran Produk Pertanian Untuk Petani Milenial Desa Wonotulus Kecamatan Purworejo Kabupaten Purworejo. *Peningkatan Daya Saing Hasil Pertanian Menuju Revolusi Industri 4.0*, 25–32.
- Wahyudin, D. (2018). Peluang Dan Tantangan "Big Data" Dalam Membangun "Smart City" Untuk Sistem Transportasi. *Jurnal Reformasi Administrasi:*, 5(1), 109–115. http://ojs.stiami.ac.id/index.php/reformasi/article/view/270
- Wijayanto, R., Mulyadi, L., & Wulandari, L. K. (2023). Analisis Dampak Pembangunan Jembatan Ngujang 2 Terhadap Pengembangan Wilayah Kabupaten Tulungagung. *Jurnal Infomanpro*, 12(1), 41–46.
- Yamani, A. Z., Wirawan Muhammad, A., & Faiz, M. N. (2019). Penguatan Ekonomi Lokal Pada Pelaku UMKM Berbasis Digital Di Desa Winduaji Kabupaten Brebes. *Madani : Indonesian Journal Of Civil Society*, 18(1), 24–28. https://ejournal.pnc.ac.id/index.php/madani
- Yuniarti, Q., & Imaningsih, N. (2022). Pengaruh Pertumbuhan Ekonomi, Tingkat Kemiskinan dan Indeks Pembangunan Manusia terhadap Tingkat Pengangguran Terbuka di Kabupaten Sidoarjo. *Ekonomis: Journal of Economics and Business*, 6(1), 44. <u>https://doi.org/10.33087/ekonomis.v6i1.474</u>
- Yusri, M. (2020). Analisis Deskriptif Pengembangan Ekonomi Lokal dan Kaitannya Dengan Pengembangan Wilayah Berkelanjutan. Jurnal Somasi: Sosial Humaniora Komunikasi, 9, 1689–1699.