

Housing Needs and Population Growth Dynamics in Campaka Sub-district, Purwakarta, Indonesia: An Industrialization Perspective

Difnu Topan^{1*}, Hiroyuki Sakakibara²

Corresponding author. Email: difnutopan@yahoo.com

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Abstract

This study examines the housing needs and population growth dynamics in Campaka Sub-district, Purwakarta Regency, Indonesia, an area characterized by rapid industrial expansion. The research applies the share of growth method to compare population growth between Campaka and Purwakarta Regency, revealing a consistently upward trend in Campaka's demographic growth. Findings indicate a substantial gap between available housing supply and projected demand, with approximately 14,434 housing units estimated to be required by 2030. This demand can be met with a surplus of supply, which stimulates in-migration and accelerates the residential development. The analysis highlights the risks of unbalanced development when industrial growth outpaced housing provision, potentially leading to urban challenges such as overcrowding and infrastructure strain. The study recommends adopting a cautious approach to residential development, emphasizing the need for close monitoring of industrial activities and flexible adjustment of housing permits. Furthermore, active participation of local stakeholders in the planning process is considered crucial to ensure that housing policies align with community needs and long-term regional development objectives.

Keywords: Population Growth; Housing Needs; Share of Growth; Housing Backlog.

¹ Department of Construction and Environmental Engineering, Graduate School of Sciences and Technology for Innovation Yamaguchi University, Ube, Yamaguchi Prefecture, Japan. E-mail: e602vev@yamaguchi-u.ac.jp; difnutopan@yahoo.com

² Department of Construction and Environmental Engineering, Graduate School of Sciences and Technology for Innovation, Yamaguchi University, Japan.

1. Introduction

Industrial cities are often perceived as attractive places to reside, offering employment opportunities, business prospects, facilities, and higher wages. Purwakarta is one of those regions that rely on Industrialization. A total of seven industrial zones are currently under development, representing an investment of approximately 8.9 trillion rupiah in 2023 (Government of Purwakarta Regency 2023). Campaka sub-district is one of the most prolific industrial zones in Purwakarta regency.

Industrialization will attract a large number in population leading to a rising rate of population growth (Rustiadi et al. 2021; Whelpton 1928). Housing needs arise from the interaction of demographic effects (population projections combined with propensities of different groups of people to form new households) (Rowley et al. 2017). Population growth is inherently accompanied by increased demand for housing in the surrounding area.

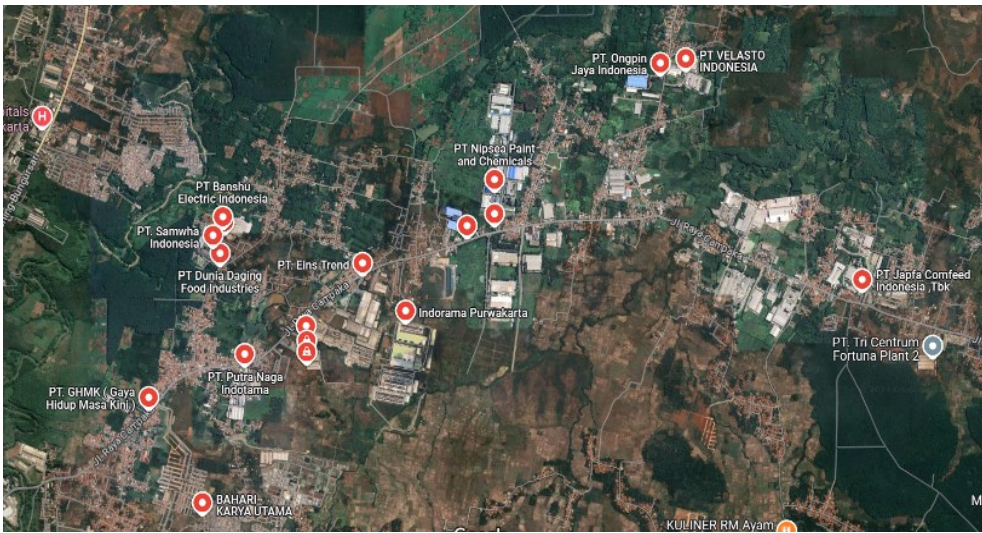


Figure 1 Industrial Activities in Campaka Sub-district

Source: Google maps

Population growth has its own positive and negative impacts. On one hand, it can be an addition to regional income through taxes, on the other hand, the demand for public facilities is lingering to be solved in the next years. It is therefore essential that the government allocate public expenditure more efficiently, prioritizing investment in areas with the highest needs while limiting development in less critical regions. Campaka has been the second largest sub-district in Purwakarta in terms of Annual Population Growth Rate from 2020 to 2022 (BPS-Statistics of Purwakarta Regency 2023a, 2023b). Since 2015, approximately 12 residential developments encompassing a total area of around 900,000 square meters have been established in the sub-district. This underscores the significant role that industrialization plays in the discourse surrounding urban planning within Purwakarta Regency.

Kecamatan Subdistrict	Penduduk (ribu) Population (thousand)	Laju Pertumbuhan Penduduk per Tahun 2020-2022 (%) Annual Population Growth Rate 2020- 2022 (%)
(1)	(2)	(3)
1. Jatiluhur	76,51	1,87
2. Sukasari	17,85	1,87
3. Maniis	37,06	1,55
4. Tegalwaru	55,11	1,96
5. Plered	86,01	1,70
6. Sukatani	79,73	1,98
7. Darangdan	73,26	1,82
8. Bojong	54,74	1,79
9. Wanayasa	44,19	1,18
10. Kiarapedes	29,41	1,95
11. Pasawahan	51,38	2,09
12. Pondoksalam	31,66	1,65
13. Purwakarta	181,96	0,92
14. Babakancikao	62,64	2,42
15. Campaka	52,39	2,17
16. Cibatu	32,16	1,58
17. Bungursari	62,52	1,76
Kabupaten Purwakarta Purwakarta Regency	1028,57	1,69

Figure 2 The Annual Population Growth Rasadte (2020-2022) in Purwakarta Regency

Source: Badan Pusat Statistik (BPS)

This research aims to assess the projected population growth in Campaka Sub-district over the next decade and to evaluate the necessity for new housing developments during this period.

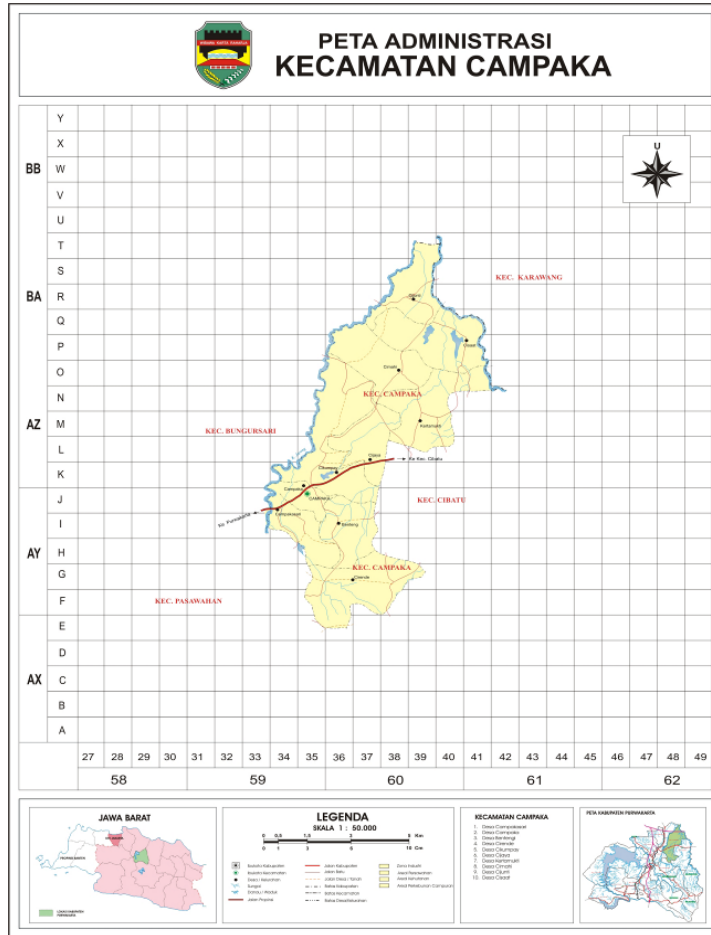


Figure 3 Campaka Sub-district Map
 Source: Badan Pusat Statistik (BPS)

Leckie (1989) proposed that Housing needs can be considered a human right or so what he labelled as the 'housing right', so the government should have a concrete plan to fulfil their people's needs. As Indonesian Government also stated in the National Constitution No. 39 of 1999 which focuses on Human Rights, clearly says in Article 27 that every citizen has the right to live in Indonesia. So, the Government must ensure that every citizen lives well in their country.

While national housing policies in Indonesia, such as the One Million Houses Program, have largely emphasized reducing the backlog through mass construction, there is also a growing concern about the risks of overdevelopment. When housing units are constructed in excess of actual demographic demand, regions may experience prolonged vacancies, declining property values, and inefficient land use (Kenichiro 2001; Sugiyantoro, Christian, and Arianto 2018). In Indonesia, rapid industrialization often accelerates this dynamic, as large tracts of land are converted for residential purposes without adequate coordination with population growth trends or infrastructure capacity (Permana 2023). This imbalance highlights the need to evaluate housing provision not only from the perspective

of shortage but also in relation to the dangers of oversupply, which may undermine long-term urban sustainability

The requirement for housing is a result of the interplay between demographic factors (such as population forecasts and the likelihood of various groups forming new households) and the labour market and housing infrastructure (Rowley et al. 2017). Projected population growth is the fundamental mechanism to estimate how many houses are needed in the future (Myers, Pitkin, and Park 2002). Many planning activities rely on population projections. These include the creation of land use and transportation plans, setting the course for future economic development, and providing guidance for the development of housing, schools, and shopping centers (Wang and Vom Hofe 2020).

2. Method

According to data from the Department of Housing and Settlement Area, the Campaka sub-district currently boasts 15 housing developments, encompassing a total area of 2,092,944 square meters. This figure represents approximately 17.27% of the entire housing area development in Purwakarta, highlighting Campaka's significant role within the region. Campaka is one of 17 sub-districts in Purwakarta and is strategically situated in the eastern part of the city, providing easy access to the Cipularang toll road via the Sadang tollgate. This advantageous location has made Campaka an attractive hub for industrial activity for which has established it as one of the largest industrial centers in Purwakarta, significantly contributing to the regional economy and labour market.

The methodology employed in this research involves a thorough collection of secondary data sourced from governmental agencies as well as reputable online platforms. The gathered data will be systematically organized and analyzed using spreadsheet software, enabling demographic analysis for enhanced interpretation. The research adopts the share of growth method, which is well-suited given the nature of the data collected, allowing for a deeper understanding of housing development trends and industrial growth within the Campaka sub-district.

3. Result and Analysis

3.1. Comparing The Data of Campaka Sub-District and Purwakarta Regency

The share of growth method is simply comparing a smaller area's population to the population of a larger area (Rayer and Wang 2022). Which is in this research, the Campaka sub-district will be the area that is chosen as a locus, and the larger area will be the Purwakarta Regency itself. To apply the share of growth method, there is one condition that needs to be addressed first. The rate of population in a sub-district has to be in the same direction as the larger area (Smith, Tayman, and Swanson 2002, 2013). That is why the rate of population in the Campaka sub-district cannot be declining while Purwakarta Regency's is growing vice versa.

Table 1. Comparing the population rate

Year	Population	
	Purwakarta	Campaka
2010	852,521	40,907
2020	997,869	50,342
2030	1,111,787	

Source: Badan Pusat Statistik (BPS)

From the data shown in the table above, it can be seen that the population rate of Purwakarta Regency is growing as well as in the Campaka sub-district. Based on that information, the share of growth method can be validated and used in this research.

3.2. Projected Population in The Next 10 Years

After comparing the data to make sure that the share of growth is attainable to use, the next step has to be calculating the projected population in the Campaka sub-district based on the historical data. The starting point that is used in this research will be the year 2020 which both data of Purwakarta and Campaka sub-district are available.

Table 2. Population Projection in 2030

Year	Population	
	Purwakarta	Campaka
2010	852,521	40,907
2020	997,869	50,342

Source: Badan Pusat Statistik (BPS)

The secondary data collected from the BPS website is the output of census data from 2010 and 2020. As indicated in the table, the population of Purwakarta is counted as 852,521 in 2010 and 997,896 in 2020. There is a leap in the number of populations nearly 150,000 people in one decade. While in the Campaka sub-district, it only had 40,907 in 2010 and an additional of 10,000 people ten years later.

To start projecting, there is only one hole to be filled, and that is the projected population of the larger area, which is Purwakarta’s projected population in 2030. The number is obtained from the BPS website.

First, the Growth-Share (GS) need to be calculated by the formula (1) below:

$$GS = \frac{(Pop_{campaka,2020} - Pop_{campaka,2010})}{(Pop_{PWK,2020} - Pop_{PWK,2010})} \tag{1}$$

Note:

PWK stands for Purwakarta

The GS coefficient now is calculated as 0.0649, and then after that the Campaka sub-district projected population in 2030 can be calculated by this formula (2):

$$Pop_{2030} = Pop_{2020} + GS (Pop_{PWK,2030} - Pop_{PWK,2020}) \quad (2)$$

So that the projected population in 2030 for Campaka sub-district is 57,737 or growing 14.7% in 10 years.

3.3. Housing Availability in Campaka

According to data from the Department of Housing and Settlement Area, as of August 2023, there are approximately 181 housing units distributed throughout Purwakarta Regency, a region known for its diverse residential developments. Notably, 15 of these housing units are situated in the Campaka sub-district, which is characterized by its scenic landscapes and growing community infrastructure. The total housing area in Campaka covers approximately 2.09 km², which constitutes 4.80% of the sub-district's overall land area.

Despite this data, the precise number of housing units available for occupancy remains undisclosed at this time. To address this gap in information, it is essential to examine the local regulations that govern land use and housing development in Purwakarta. Specifically, the District Head Regulation No. 256 of 2020, as detailed in Article 15, stipulates that developers are permitted to sell only a maximum of 60% of their owned land for commercial housing purposes. In practical terms, this regulation limits the area that can be marketed as residential property in Campaka to approximately 1.254 km². This provision aims to balance development with community needs, ensuring that a portion of land is preserved for public use and environmental sustainability.

Given that in the National Standard of Indonesia No. 03-1733-2004, the minimum requirement of acceptable housing for a family is 36 m² (Indonesia National Standardization Agency 2004). After performing simple math calculations, it was estimated that there are 34,833 available housing units in Campaka.

3.4. Housing Backlog in Campaka

The housing backlog can be defined as the housing unit that needs to be built to fulfill the housing need in a certain area. In this case we can directly know the housing backlog by dividing the total population of Campaka sub-district in 2030 by 4 people which is obtained in the National Standard of Indonesia No. 03-1733-2004 (Indonesia National Standardization Agency 2004), that the standard number of people living in the same house is maximum 4 people.

After recalculating, dividing the projected 2030 population of 57,737 by four results in a housing need of 14,434 units. When compared to the estimated housing supply of approximately 34,833 units available in Campaka as of August 2023, it becomes evident that the housing supply substantially exceeds the projected demand. This surplus suggests that, rather than facing a housing shortage, Campaka is at risk of overdevelopment if new housing projects continue without proper regulation.

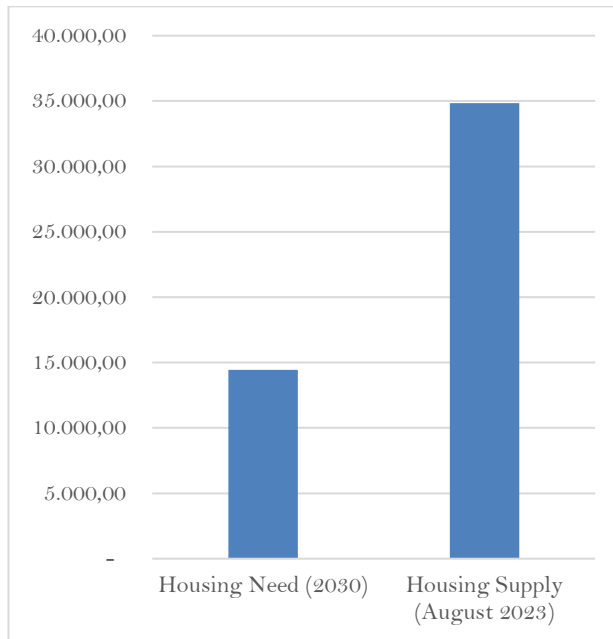


Figure 4 Housing need vs. supply chart result

4. Conclusion and Recommendation

After conducting a thorough analysis of the population dynamics, housing availability, and the existing backlog in housing in Campaka sub-district, key findings have emerged that warrant attention.

Campaka sub-district, located in Purwakarta, has positioned itself as a vital hub for industrial activity, which is attracting significant interest from real estate developers. Over the past ten years, approximately twelve new housing projects have received development permits, reflecting a robust investment trend in the region. These initiatives not only promise economic benefits for local residents through job creation and improved infrastructure but also provide financial incentives for the government through increased tax revenues. Despite these advantages, it remains crucial to monitor these developments closely and reassess the pressing need for further housing projects to ensure sustainable growth in the community.

The growth rate of the population in Campaka sub-district has been relatively stagnant, with projections indicating only marginal increases over the past decade and anticipated growth in the next ten years. Current estimates suggest that the existing housing units can adequately accommodate the population's needs during this period. By the year 2030, even if development were to cease, it is projected that there will be an excess of approximately 20,399 housing units. This figure suggests that the current supply, in relation to the anticipated demand, significantly surpasses the necessary housing requirements. With a total of 15 housing projects currently in development, it is evident that this level of construction is more than sufficient to meet the local housing requirements.

The findings of this research demonstrate a projected housing surplus in Campaka sub-district, which raises important implications for Indonesia's broader housing policies.

While the national government's 'One Million Houses Program' emphasizes large-scale construction to reduce the backlog, the case of Campaka suggests that quantity-driven approaches may not adequately address the core challenge of housing affordability and suitability. This misalignment echoes planning theories which argue that housing provision must be guided by demographic realities, income distribution, and local demand, rather than aggregate national targets (Rowley et al. 2017; Smith, Tayman, and Swanson 2002). These findings underscore the need for a more nuanced planning approach that integrates growth management principles, ensuring that housing supply is balanced with infrastructure capacity, labor market dynamics, and community needs, while also safeguarding the right to housing as mandated in Indonesia's Law No. 1/2011 and National Constitution Article 27.

Nonetheless, the government must swiftly strategize and limit the issuance of additional housing permits to prevent the potential emergence of abandoned properties. This proactive approach is essential to maintaining a balanced housing market within the region. By effectively aligning housing availability with actual community needs, the government can foster a stable and thriving environment for its residents, enhancing overall quality of life while avoiding the pitfalls of overdevelopment.

4.1. Limitation

It is essential to consider the limitations and assumptions of this research in the analysis. The impact of migration could not be considered due to the unavailability of baseline data. Migration is a crucial factor in determining population growth, along with fertility and mortality.

For similar reasons, the number of homeowners is ignored in this research, which assumes that everyone still needs a home.

Additionally, it's not possible to obtain the exact number of houses in Purwakarta Regency. Hence, the total area may need to be divided by the minimum area requirement of house units, which may change the number.

4.2. Future Research

As indicated by the research conducted in this paper, many aspects need to be uncovered in future research. Although projections indicate a potential surplus of housing units in Campaka, this does not necessarily translate into affordability or accessibility for all households. Future research should investigate the affordability dimension of housing, as rising property values may still prevent many residents from achieving home ownership despite the overall numerical surplus.

Numerous factors contribute to determining the value of a house. These include location, disaster risks, type of property and availability, among others. The writer believes that it is crucial to control the availability of houses. Therefore, the government should pay attention to these significant figures. It is necessary to conduct extensive research in the future, focusing on the connection between these figures and the housing market.

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