



Analysis of the Causes of Investment Weakness in Kertajati Aerocity Business District

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Abstract

This study investigates physical issues and proposed improvement solutions in the development of the business district in Kertajati Aerocity. A mixed-method approach was applied, combining qualitative descriptive statistics with the quantitative Analytical Hierarchy Process (AHP). The findings reveal two key physical issues contributing to the investment weakness in the Kertajati Aerocity Business District: accessibility and public facilities. Among these, issues related to public facilities were identified as having a higher priority (eigenvalue 0.595) compared to accessibility issues (eigenvalue 0.405). The public facilities problem specifically refers to the absence of entertainment facilities in the business district. Meanwhile, the accessibility issue pertains to limited road network provision. Proposed solutions to address the lack of entertainment facilities include the construction of entertainment infrastructure and partnerships or collaborations with investors. For the accessibility issue, suggested improvements involve building new road networks, prioritizing road development, and fostering collaborative investment schemes.

Introduction

Kertajati International Airport and the surrounding Aerocity hold a significant role for West Java Province, as formally designated a Provincial Strategic Area (Kawasan Strategis Provinsi/KSP) under West Java Provincial Regulation (Peraturan Daerah Provinsi Jawa Barat No.22 Tahun 2010) and Majalengka Regency Regulation (Peraturan Daerah Kabupaten Majalengka No.11 Tahun 2011). This area is also part of the West Java Rebana Golden Triangle development between Cirebon-Patimban-Kertajati, as regulated by Governor's Decree (Keputusan Gubernur Jawa Barat Nomor 553.2/Kep.812 BUMDINVESADBANG/2022 regarding the approval of the masterplan and the allocation of Kertajati Aerocity development). The Rebana Golden Triangle aims to accelerate regional development and serve as a new center of economic growth in West Java.

The development plan for Kertajati Aerocity, as stated in West Java Governor's Decree No. 553.2/Kep.812-BUMDINVESADBANG/2022, is divided into three phases: Phase I (2018–2024), Phase II (2025–2035), and Phase III (2035–2045). Phase I focuses on the development of essential infrastructure to support airport operations, including business and logistics centers. Phase II centers on the expansion of core activities and the provision of public and social services. Phase III is aimed at industrial and residential development. The business district, as the main focus of Phase I and the core of Aerocity development, is expected to serve as a catalyst for the subsequent development phases (Melnikova, 2022; Balkestein, 2023).

However, the investment weakness in the Kertajati Aerocity business district has negatively impacted the development of the area. The existing condition does not align with the development plan, as only one building has been constructed in the business district since 2018. PT. BIJB, a regional-owned enterprise (BUMD) established by the Provincial Government, has made efforts to attract investment through various strategies, including offering partnerships to both local and international investors (Budiman et al., 2022; Qurbani et al., 2020; Wibowo, 2020; Albab & Fitriana, 2025). Despite these efforts, investment activity in the area has weakened, with an investment cash flow deficit of IDR 758.29 billion, or 14.92% lower than in 2017 (BIJB, 2018). This decline is attributed to the lack of optimal revenue generation and the unrealized share sales in Aerocity. Therefore, the issue of investment weakness in the business district, which serves as the core of Kertajati Aerocity's development, must be identified, as it may affect investor interest in the area.

The development of business districts is inseparable from various issues that can contribute to investment weakness (Morçöl et al., 2017; Mitchell, 2009; Page West & DeCastro, 2001; Ding et al., 2023; Yahya et al., 2023). The first issue is traffic congestion. High population density in business districts often leads to heavy traffic and mobility-related problems (Olayiwola et al., 2014). Examples of such congestion issues have been documented in Ikeja Business District, Nigeria (Olayiwola et al., 2014), Onitsha Business District, Nigeria (Akpudo et al., 2018), Hilla Business District, Iraq (Medlol and Alwash, 2020), and Surat Business District, India (Shah et al., 2016). The second issue concerns road infrastructure, particularly the limited and poor-quality road networks, as seen in Rangpur Business District, Bangladesh (Prothan et al., 2017; Rahman & Farabi, 2022; Sarkar, 2025; Pramanik et al., 2024). The third issue relates to the absence of entertainment facilities, as reported in Polonia Medan Business District (Tarigan et al., 2020). Despite being located in a potentially strategic area near Polonia Airport and middle-to-upper-class residential zones, the district has failed to grow due to the lack of adequate economic, social, and cultural facilities tailored to the needs of the business environment. The final issue involves the reduction of open spaces in business districts, which poses challenges to spatial functionality and social interaction due to space constraints. This issue was identified in a business district in Ghana (Amoah et al., 2023; Ntim et al., 2023; Asamoah & Oduro-Ofori, 2024; Chianebeng et al., 2025). These problems need to be identified, as they may affect investor interest in business districts. Therefore, this study explores the underlying causes of investment weakness in the Kertajati Aerocity business district.

This study aims to analyze the physical problems that contribute to investment weakness in the Kertajati Aerocity business district. The research identifies and prioritizes the key issues that need to be addressed, along with corresponding improvement solutions. It is expected that the findings of this study will provide new insights for PT. BIJB, investors, and policymakers to enhance investment performance in the Kertajati Aerocity business district.

Methods

This research adopts a mixed-method approach, integrating qualitative analysis through descriptive statistics and quantitative analysis using the Analytical Hierarchy Process (AHP). The descriptive statistics applied in this study involve the calculation of the mean to identify and understand the range of issues that are perceived to contribute to the investment weakness climate within the Kertajati Aerocity business district. The mean values are derived from the percentage of affirmative "yes" responses to each item in the questionnaire distributed to respondents. In parallel, the AHP method is employed to determine the relative weights and significance of various factors contributing to the investment challenges. The AHP process involves pairwise comparisons among all variables and their respective indicators to establish a hierarchy of importance. This method allows the identification of the most critical issues that hinder investment performance. The outcome of the AHP analysis produces a set of

prioritized problems, which subsequently inform the formulation of targeted corrective strategies designed to address the underlying causes of investment weakness in the business district.

The data for this study were collected through questionnaires administered to selected respondents. Initially, respondents were asked to check (√) the issues they perceived as contributing to the investment weakness performance in the business district, along with proposed solutions to address each identified issue. Subsequently, respondents conducted pairwise comparisons to assign values indicating the relative importance of each issue associated with the investment decline in the Kertajati Aerocity business district. These pairwise comparisons were used to determine the priority of problems that should be addressed through the previously suggested solutions.

The research variables consist of Accessibility (X1) and Public Facilities (X2). The Accessibility variable includes three indicators: limited provision of road networks, Poor road quality, and traffic congestion. Meanwhile, the Public Facilities variable comprises two indicators: the lack of entertainment facilities and the lack of green open spaces.

Results and Discussion

The validity test was conducted using the Pearson Product Moment Correlation Test, which resulted in valid outcomes. The validity test results showed a significance value or Sig. (2-tailed) <0,05 for all indicators. Additionally, the validity test was confirmed by comparing the calculated correlation coefficient.

Table 1. Validity Test Results for Infrastructure and Facility Indicators

Indicator	Sig.		r _{value}	r _{table}	Validity
Limited provision of road networks	0,002	Sig<0,05	0,543	0,361	Valid
Poor road quality	0,001	Sig<0,05	0,883	0,361	Valid
Traffic congestion	0,001	Sig<0,05	0,569	0,361	Valid
Lack of entertainment facilities	0,002	Sig<0,05	0,543	0,361	Valid
Lack of Green Open Spaces	0,002	Sig<0,05	0,548	0,361	Valid

The reliability of the instrument was assessed using Cronbach's Alpha. The obtained coefficient of 0.609 indicates an acceptable level of internal consistency, allowing the data to be used in subsequent analytical procedures.

Descriptive Statistical Test

The descriptive statistical test was conducted by calculating both the overall mean and the mean of each indicator. An indicator is considered relevant, or indicative of a prevailing issue, if its mean score exceeds the overall mean. The overall mean score based on all respondent answers was 0,56.

$$\bar{x} = \frac{\sum x}{n} = \frac{84}{150} = 0,56$$

The results indicate that out of the five indicators, two recorded mean scores above the average of 0,56, namely the limited provision of road networks and the lack of entertainment facilities.

$$\text{The mean score of the limited provision of road networks} = \bar{x} = \frac{\sum x}{n} = \frac{26}{30} = 0,87$$

$$\text{The mean score of the poor road quality} = \frac{\sum x}{n} = \frac{16}{30} = 0,53$$

$$\text{The mean score of the traffic congestion} = \frac{\sum x}{n} = \frac{7}{30} = 0,23$$

$$\text{The mean score of the lack of entertainment facilities} = \frac{\sum x}{n} = \frac{26}{30} = 0,87$$

The mean score of the lack of Green Open Spaces = $\frac{\sum x}{n} = \frac{9}{30} = 0,30$

Analytical Hierarchy Process (AHP)

The Analytical Hierarchy Process (AHP) was applied as a quantitative decision-making method to analyze and determine the prioritization of problems contributing to investment weakness in the Kertajati Aerocity Business District. AHP enables the decomposition of a complex problem into a hierarchical structure consisting of goals, criteria (variables), and alternatives (indicators), thus facilitating a systematic evaluation process. In this study, AHP was conducted by constructing a pairwise comparison matrix that allowed respondents to evaluate the relative importance between each variable and between each corresponding indicator under those variables. The comparison results were then used to calculate the weight of each variable and indicator, ultimately identifying which factors are most critical in influencing investment decisions. The main objective of the AHP application was to identify the most important issues hindering investment growth in the business district. The five indicators identified through the preliminary descriptive analysis served as the alternatives in the AHP model. These alternatives were structured within a decision hierarchy framework, in which the overarching goal was to assess the root causes of investment stagnation. Each element within the hierarchy was carefully compared based on expert judgments to ensure that the resulting prioritization accurately reflects the real-world conditions in Kertajati Aerocity Business District. The final output of the AHP analysis presents a ranked list of problems based on their weighted importance, which serves as the foundation for proposing solutions. The decision hierarchy employed in this study is structured as follows

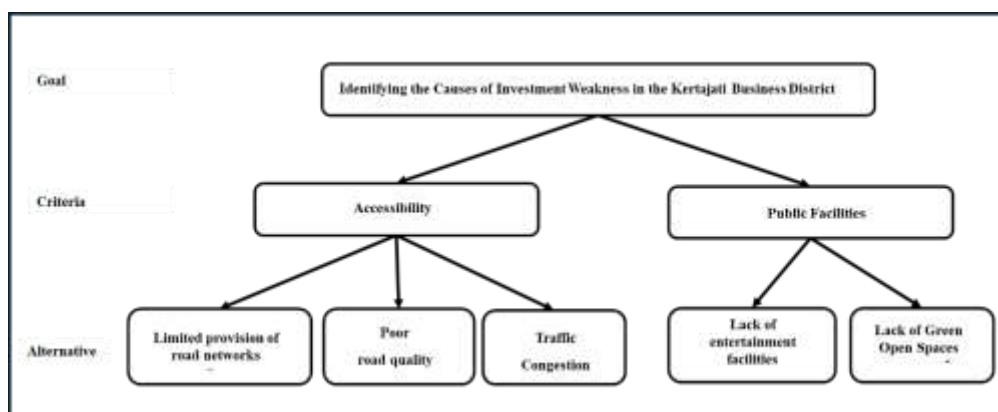


Figure 1. Hierarchical Structure of the Causes of Investment Weakness in the Kertajati Business District

The results of the Analytical Hierarchy Process (AHP) are presented in the form of eigenvector values derived from pairwise comparisons among criteria and their corresponding alternatives. The analysis reveals that the issue of Public Facilities holds a higher priority with an eigenvector value of 0.595, compared to the issue of Accessibility, which has an eigenvector value of 0.405. This indicates that stakeholders perceive inadequacies in public facilities as a more significant contributing factor to the investment weakness in the Kertajati Aerocity Business District than issues related to accessibility.

Table 2. Comparison Matrix and Eigen Vector Results for Accessibility and Public Facilities Criteria

	Accessibility	Public Facilities	Eigen Vector
Accessibility	0,449	0,361	0,405
Public Facilities	0,551	0,639	0,595

The eigenvector values indicate that the issue of limited provision of road networks, with an eigenvector score of 0.731, is identified as the most prioritized problem within the Accessibility variable. This suggests that among the three indicators evaluated under Accessibility, stakeholders consider the limited provision of road networks as the most critical factor influencing the investment weakness in the Kertajati Aerocity Business District.

Table 3. Comparison Matrix and Eigen Vector for Road Infrastructure Indicators

	Limited provision of road networks	Poor road quality	Traffic congestion	Eigen Vector
Limited provision of road networks	0,782	0,741	0,669	0,731
Poor road quality	0,158	0,251	0,305	0,238
Traffic congestion	0,060	0,007	0,026	0,031

The eigenvector value shows that the problem of the lack of entertainment facilities (eigenvector value 0.896) is more prioritized compared to the problem of the lack of green open spaces (eigenvector value 0.104).

Table 4. Comparison Matrix and Eigen Vector for Public Space Availability Indicators

	Lack of entertainment facilities	Lack of Green Open Spaces	Eigen Vector
Lack of entertainment facilities	0,896	0,896	0,896
Lack of Green Open Spaces	0,104	0,104	0,104

Based on the results, the most critical issue contributing to investment weakness is the lack of entertainment facilities, followed by the limited provision of road infrastructure as the second priority.

Proposed Solution to the Issue of the Lack of Entertainment Facilities

The proposed solution to overcome the lack of entertainment facilities in the Kertajati Aerocity Business District is the development of various entertainment facilities such as shopping centers, nature tourism, culinary tourism, festivals, and souvenir centers. Among the proposed options, the construction of a shopping center was the most frequently suggested by respondents as a form of entertainment facility provision. Currently, Majalengka Regency does not have its own shopping center. The nearest shopping center is located in Cirebon City, which is about 55 kilometers away from Majalengka, making it less accessible to the local community and visitors of Kertajati. The proposed shopping center could feature characteristics unique to Kertajati, help build the area's branding, and be accessible to the broader public. One of the possible concept for the shopping center is a Factory Outlet.

Nature tourism is considered as an alternative option proposed for the provision of entertainment facilities. In the area surrounding the business district, there exists a nature tourism site known as Sukawana Dream Village, which offers educational tourism and natural beauty. This site is strategically located to the north of Kertajati Airport. The development of this nature tourism area can be considered as part of efforts to stimulate investment within the business district. Another proposed option for entertainment facilities is culinary tourism. The development of culinary tourism should take into account the local culinary specialties of the region. Majalengka Regency possesses several potential culinary products suitable for tourism, such as Gula Cakar, Jalakotek, and Gedong Gincu. Culinary tourism development not only promotes the culinary potential of Majalengka but also highlights distinctive culinary specialties from West Java, including Empal Gentong, Docang, Tahu Gejrot from Cirebon, Tahu Sumedang from Sumedang, Dodol from Garut, and Batagor and Colenak from Bandung, among others. The provision of culinary tourism can be developed as souvenirs and served in

local restaurants. Additionally, culinary tourism can complement other entertainment facilities, for example, by being integrated within shopping centers.

Festivals represent another proposed option for enhancing entertainment facilities. Festivals can serve as significant attractions and, in several regions, are routinely held at Exhibition Centers. The absence of an Exhibition Center in West Java near the airport presents an opportunity to attract a larger number of visitors, considering its better accessibility compared to other areas. Another suggested option for entertainment facilities is the establishment of a Souvenir Center. Currently, there is no dedicated souvenir center within the business district or Aerocity. However, individual souvenir shops are located in the Kadipaten and Jatiwangi districts. Additionally, souvenirs are available at the airport through shops offering handicrafts, MSME products, and typical West Java culinary specialties. These shops also sell products originating outside Majalengka, such as hand-drawn and stamped batik, as well as processed goods from Indramayu and Cirebon, including mangoes and traditional chips. Therefore, as an alternative, the development of a Souvenir Center can be implemented as a complementary facility to other entertainment options, similar to those found in malls or popular tourist destinations frequently visited by tourists.

The provision of these facilities can be carried out through collaboration or partnership with investors (Contractor & Lorange, 2023; Danladi et al., 2023). Collaboration in establishing shopping centers can involve granting management rights of the mall and its surrounding area, which can be utilized for developing residential zones to create a consumer base. Additionally, promotional rights can be granted, allowing investors to include their name or brand in the shopping center's title. Investors may also be offered incentives such as tax reductions for several initial years to alleviate their financial burden. Collaboration in providing an Exhibition Center can be implemented by granting management rights to investors to organize large-scale events, thereby increasing strategic partnerships during the cooperation contract period. Government promotion of these events can also be conducted to attract further investors (Morfoulaki et al., 2023; Yin & Song, 2023). Regarding tourism facilities, collaboration can involve granting management rights over the tourist attractions and surrounding areas, enabling the development of supporting facilities such as lodging or restaurants. These forms of cooperation support the implementation of the Build-Operate-Transfer (BOT) scheme, in which after the main infrastructure is transferred, investors can still gain benefits from developing the surrounding supporting facilities (Oyeyoade et al., 2025; Akhtar et al., 2023; Acar, 2022; Simasiku, 2021; Singh, 2023).

Proposed Solution to the Issue of the Limited Provision of Road Networks

The proposed solutions to address the issue of limited provision of road networks include the construction of new road networks, prioritizing road development, and collaboration or partnership with investors. The existing road network within the Business District Kertajati Aerocity is 4,327.18 meters (4.3 km). This network connects the business district to the airport, as well as access points from the Cikopo-Palimanan (Cipali) toll road. Additionally, there are plans for a road network within the business district that has yet to be constructed, totaling 4,379.26 meters (4.4 km). This planned network consists of two road segments: one connecting the toll road to the airport and another located within the business district area. Improving accessibility, especially along the road segment leading to the airport, requires urgent attention. Therefore, the solution to the limited provision of road networks is to construct the planned 4.4 km road network, with priority given to the 1.8 km segment connecting the toll road to the airport. This road network development should be completed prior to the construction of other infrastructures within the business district.

One viable form of collaboration is the Build Operate Transfer (BOT) model. Nonetheless, since the planned roads are primary arterial roads rather than toll roads, direct revenue sources

like toll fees are unavailable to incentivize investors. Consequently, innovative schemes must be introduced, such as granting management rights for the development of commercial facilities along the road corridors, including service stations (SPBU) or parking facilities. These commercial ventures can attract investors given the strategic importance of the roads, particularly those connecting to the airport and within the business district. Furthermore, local authorities may offer fiscal incentives, such as fiscal incentives or reduced tariffs for the duration of the concession to stimulate investment.

Conclusion

This study analyzes the physical issues and proposed improvement solutions in the development of the business district at Kertajati Aerocity. The results reveal two primary physical issues contributing to investment weakness in the Kertajati Aerocity Business District: accessibility and public facilities. The public facilities problem is characterized by the lack of entertainment facilities, while the accessibility issue is the limited provision of road networks. Findings reveal that the lack of entertainment facilities is a higher priority problem compared to the limited provision of road networks. Proposed solutions include the development of entertainment facilities such as shopping centers, nature tourism, culinary tourism, festivals, and souvenir centers; construction of new road networks; prioritization of road development; and collaboration or partnerships with investors.

Limitations

This study has some limitations which are follows:

Focus on Physical Aspects

This study primarily concentrates on the physical aspects related to infrastructure issues. Infrastructure is considered the main element influencing investor interest and decision-making, particularly in the business district area of Kertajati Aerocity.

The proposed solutions are remain in a conceptual stage

This study proposed solutions are remain general and conceptual stage, as they are based on the perceptions and preferences of respondents, who tend to express their individual needs. The proposed solutions involve consideration of several supporting infrastructures (shopping centers, nature tourism, culinary tourism, festivals, and souvenir centers), which require further investigation regarding their suitability for the business district in Kertajati Aerocity.

Suggestions

Based on the conclusions and limitations of this study, the following recommendations are proposed for future research.

Study on Non-Physical Aspects

A study on the non-physical aspects of the proposed improvement solutions needs to be conducted. This may include the social, economic, and environmental impacts of the planned physical developments.

Prioritization of Infrastructure Development

A study on the prioritization of appropriate infrastructure development in the Kertajati Aerocity business district is necessary. This is important considering the limited land and the availability of investors involved in funding. A financial feasibility study can be conducted for the prioritized infrastructure.

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