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ADAPTIVE URBAN PLANNING STRATEGIES FOR MANAGING COFFEE SHOP GROWTH IN BANDA ACEH

Fadhila Fitria¹, Winda Hanifah^{2*}, Zahrul Fuady³

^{1,2,3}Department of Architecture and Planning, Faculty of Engineering, Universitas Syiah Kuala, Banda Aceh, 23111, Indonesia

*Corresponding author: winda.hanifah@usk.ac.id

ABSTRACT

This study investigates the spatial dynamics of coffee shop growth in Banda Aceh, focusing on Kuta Alam Sub-District, an area characterized by dense population and vibrant socio-economic activities. Aimed at assessing the conformity of coffee stall and coffee shop expansion with urban spatial planning, the research integrates Geographic Information Systems (GIS) and spatial statistical techniques. The analysis method employed includes the Average Nearest Neighbour (ANN) analysis to determine spatial distribution patterns and overlay analysis to evaluate alignment with the city's Detailed Spatial Plan (RDTR). Primary data were collected through GPS-based field mapping of coffee stall and coffee shop locations, while secondary data comprised land-use zoning maps, demographic information, and official planning documents. Results indicate that coffee stalls are significantly clustered, particularly in culturally rooted residential zones, while modern coffee shops exhibit a less pronounced, more dispersed distribution concentrated around commercial nodes. Overlay analysis shows that although many establishments comply with permitted zoning categories, a notable number are situated in restricted zones, such as green corridors and defense areas—highlighting gaps in spatial regulation and enforcement. These findings underscore the need for adaptive urban planning strategies that balance economic growth with spatial order. Adaptive planning is needed—integrating coffee stalls with clear guidelines, improving infrastructure for coffee shops, and strengthening zoning compliance to preserve the district's socio-spatial balance in Banda Aceh's urban landscape.

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1. INTRODUCTION

Coffee shops have long been an integral part of the social life of people in various parts of the world. The existence of coffee shops was first recorded in 1475 in the city of Constantinople (now Istanbul), Turkey. At that time, coffee shops served as social centers where people gathered to discuss politics, religion, and current events (Muammar et al., 2018). A similar concept emerged in London in 1650, where the first coffee shops became places where people gathered to socialize and have fun (Morrow, 2005). In Western countries, coffee shops have evolved into what is referred to as a “third place” - a third space besides home and work - that provides a space for individuals or groups to meet, relax, and build connections (Ferreira et al., 2021). This phenomenon shows that coffee shops are not just a place to drink coffee, but also play an important role in shaping people's social interactions.

In Indonesia, the culture of drinking coffee has become part of people's daily lives. This culture is growing along with the increasing consumption of coffee in various regions. By 2023, the Indonesian Coffee and Chocolate Entrepreneurs Association (APKCI) estimates that there will be around 10,000 coffee shops spread across Indonesia (Kurniawan, 2023). The culture of drinking coffee has now transformed into a modern lifestyle, especially among millennials, who make “hanging out” at coffee shops part of their social routine. Based on data from the Ministry of Agriculture, coffee consumption in Indonesia has increased significantly, from 249.8 thousand tons in 2016 to 369.9 thousand tons in 2021 (Ifthiharfi, 2021). This shows that coffee shops are not only growing in quantity, but are also increasingly becoming part of the lifestyle of urban Indonesians.

Aceh is one of the provinces in Indonesia known for its distinctive coffee culture. Coffee shops in Aceh have become very popular places for local people. Not only used as a place to fill leisure time, coffee shops are also a discussion space, a place to study, and of course a place to enjoy Acehnese specialty coffee which is famous for its strong and unique taste (Rivqi et al., 2018). The existence of coffee shops in Aceh has a major influence in shaping the pattern of social life of the community, where the habit of gathering with friends and family has become an inherent characteristic (Muammar et al., 2018).

In the city of Banda Aceh in particular, the presence of coffee stalls (*warung kopi*) is highly prominent and has become an integral part of the urban landscape. The city is even known by the nickname “The City of a Thousand and One Coffee Shops” due to the sheer number of establishments scattered throughout its various corners (Fadhil et al., 2022). These coffee shops not only serve as gathering places and hubs for social interaction, but also function as sources of information and spaces that strengthen social ties (Rivqi et al., 2018). The proliferation of coffee shops in the city has been driven by several factors, including an increase in newcomers and a growing public interest in coffee culture (Muammar et al., 2018). This growth has reshaped the urban landscape. The spatial distribution of coffee shops reflects not only social and cultural dynamics but also impacts urban spatial planning. This phenomenon brings with it specific consequences for the urban environment, including increased noise from customer activities, which can affect the comfort and concentration of nearby residents (Sidqi Lisan, 2022).

Data indicates that Banda Aceh is home to 34,428 units of Micro, Small, and Medium Enterprises (MSMEs), with Kuta Alam District as the highest concentration, comprising 6,438 units (Maulana et al., 2024). Coffee shops represent one of the fastest-growing MSME sectors and contribute significantly to the city's economy. The high density of coffee shops in Kuta Alam underscores the importance of this sector in the district's socio-economic fabric. Accordingly, this district was selected as the primary study area in this research to analyze the spatial distribution of coffee shops and its implications for spatial planning.

Urban spatial planning at the city or regency level plays a critical role in regulating the growth of economic activities, including the development of coffee shops. The Detailed Spatial Plan (Rencana Detail Tata Ruang, RDTR) functions as a key spatial planning document, outlining the planning area's objectives, spatial structure, and land-use patterns, while also identifying sub-areas prioritized for intervention (Wijayanti & Sutanta, 2020). To be effectively implemented, the RDTR requires support from zoning regulations as instruments of spatial control (Akhyar, 2022). Zoning regulations define land-use limitations and requirements for each zone, encompassing zone classification, intensity of land use, building regulations, and minimum infrastructure standards (Sugiarto, 2017; Kautsary, 2018). In this context, the rapid growth of coffee stalls and coffee shops in urban areas such as Banda Aceh needs to be managed adaptively to ensure alignment with spatial plans and to prevent land-use conflicts.

From a spatial perspective, analyzing distribution patterns is an essential tool in understanding how coffee shops are distributed across urban areas. These patterns typically fall into three categories: clustered, dispersed, and random (Bangun, 2022; Widodo, 2022). One commonly used method to analyze these patterns is the Nearest Neighbour Analysis (NNA), which calculates the distances between locations and the total area to generate a spatial distribution index (Hirsan, 2022). Understanding these patterns is crucial for urban planning, as it helps identify areas with high concentrations of coffee stalls and coffee shops that may require further regulation to prevent excessive land-use density or other conflicts. A clustered distribution, for example, often signals the presence of specific attractors, such as business districts or high-accessibility areas, which influence business location preferences (Briggs in Widodo, 2022).

The presence of coffee shops as elements of urban space affects not only the economy but also the social and cultural dynamics of urban society. Modern coffee shops serve as public spaces for interaction, socializing, work, and have even become lifestyle symbols (Rahmadani et al., 2023; Lukitaningsih & Juliani, 2021). In terms of spatial planning, coffee shops are often located near city centers or commercial areas due to economic appeal and high accessibility, as explained by Hotelling's Law, which states that businesses tend to cluster to maximize market share (Boots & Getis, 2024). This phenomenon is observable in many large cities, where coffee shop distribution tends to concentrate around centers of economic activity (Zhou et al., 2023; Dedeoğlu & Doğan, 2021). Therefore, adaptive urban planning strategies are essential to accommodate the socio-economic functions of coffee shops while maintaining spatial balance within the city.

Previous studies have shown that spatial distribution analyses of coffee shops have been conducted in various cities both within Indonesia and internationally. Putri et al., (2021), for example, employed the Average Nearest Neighbor method in Bangko District, Jambi Province, and identified a clustered pattern of coffee shops along major roads. Similarly, Sophian & Muttaqin, (2023) found a clustered distribution of cafés in the city center of Banjarmasin, correlated with the availability of facilities and high commercial activity. Another study by Mardaletha and Widyatmoko (2024) in Kartasura District, using nearest neighbor analysis, found a more random distribution pattern, with site potential highly influenced by accessibility and population density. Internationally, You and Zhang (2022) examined the retail locations of Starbucks and Luckin Coffee in Shenyang, China, using kernel density and Ordinary Least Squares (OLS) regression. Their findings revealed that Starbucks locations exhibited a monocentric pattern focused on the city center, while Luckin Coffee followed a more dispersed, polycentric pattern. This study highlighted the roles of commercial density and accessibility in shaping spatial patterns of coffee shops.

These findings suggest that coffee shops tend to exhibit particular spatial patterns influenced by factors such as strategic location, commercial zoning, and proximity to public facilities. However, there remains a lack of research specifically examining the relationship between the spatial distribution of

coffee shops and urban spatial planning in Banda Aceh—particularly in Kuta Alam District. This study seeks to address that gap through a quantitative spatial analysis approach using Geographic Information Systems (GIS), specifically employing the Nearest Neighbour Analysis (NNA) and spatial overlay with The Detailed Spatial Plan to determine whether coffee shop locations align with the designated zoning or diverge from established spatial plans.

This research is expected to contribute both practically and theoretically to more effective and adaptive urban space management. On a practical level, the findings can serve as a foundation for local governments and urban planners to formulate policies on business location regulation, particularly concerning coffee shops, in alignment with sustainable development principles. Theoretically, the study enriches the academic discourse on spatial distribution patterns and urban spatial planning in the context of Indonesian cities.

2. RESEARCH METHODOLOGY

2.1 The Study Area

This study was conducted in Kuta Alam District, one of the nine administrative districts within the City of Banda Aceh, Aceh Province. The district was selected as the study area due to its high population density and dynamic social and economic activities. According to the 2024 edition of Kuta Alam District in Figures (Statistics Indonesia, BPS), the population of this area has reached approximately 44.83 thousand residents, making it the most populous district in Banda Aceh. This significant population size reflects a high intensity of social interaction and rapid growth in the service sector, including the proliferation of coffee stalls (*warung kopi*) and modern coffee shops.



Figure 1 Study Location – Kuta Alam Sub-district, Banda Aceh City, Indonesia

The dense distribution of coffee shops in this district indicates a distinct pattern of business location preferences, which is particularly compelling for spatial analysis. Moreover, Kuta Alam represents a highly urbanized area characterized by complex land-use functions that require coordinated spatial planning aligned with the city's broader urban development framework. Therefore, this district is highly relevant as the focal point of the study, especially in examining the relationship between the spatial distribution patterns of coffee shops and urban spatial planning initiatives.

2.2 Data Acquisition

This study employed both primary and secondary data collection methods. Primary data were obtained directly from the field, while secondary data were sourced from relevant documents and institutions. In the context of this research, the primary data included the geographic coordinates of coffee shop locations in Banda Aceh. Primary data collection was carried out using two main techniques:

observation and documentation. Observation involved recording the locations of coffee shops using satellite imagery of Banda Aceh and GPS software, consistent with field observation approaches as described by Prawiyogi et al., (2021).

In addition to primary data, this study also relied on secondary data to complement the analytical framework. The secondary data used in this study included land use planning of Banda Aceh, derived from the RDTR – Detailed Spatial Plan documents. These maps served as the foundation for assessing the spatial conformity of coffee shop locations within the designated zoning areas. Additional secondary data included demographic statistics, data on the number and distribution of MSMEs, and supporting literature relevant to spatial distribution patterns and urban spatial planning. The integration of primary and secondary data is expected to offer a comprehensive understanding of the phenomena investigated in this research.

2.3 Data Analysis

To investigate the spatial distribution patterns of coffee shops in Banda Aceh, the study utilized Nearest Neighbor Analysis (NNA). This method is used to determine whether the spatial arrangement of coffee shop locations tends toward a clustered, random, or uniform (dispersed) pattern, based on statistical outputs such as the z-score, which is derived from the inter-point distances, number of data points, and total study area (Hirsan, 2022; Widodo, 2022). The analysis was conducted using ArcMap 10.8 software through the Average Nearest Neighbor tool, which generates five critical outputs: Observed Mean Distance, Expected Mean Distance, Nearest Neighbor Index, z-score, and p-value (Butar et al., 2022; Annaafi et al., 2022). These indicators form the basis for classifying spatial patterns, as outlined by Sibly et al., (2023), and support a more precise and objective interpretation of spatial phenomena.

To evaluate the spatial conformity of coffee shop locations with Banda Aceh's land-use planning, an overlay analysis was performed by integrating the NNA output map with the official urban spatial plan. This geospatial technique involved superimposing two layers to generate a new map that highlights levels of spatial compatibility (Fathan et al., 2019). The resulting overlay map enabled the identification of areas that either align or conflict with the city's designated land-use zones. From this analysis, potential planning issues—such as zoning violations or environmental disruptions caused by the presence of non-compliant establishments—were identified, providing insights into how unregulated commercial growth may impact the broader spatial order of the urban landscape.

3. RESULTS AND DISCUSSION

3.1 Spatial Distribution of Coffee Stalls and Coffee Shops

The spatial distribution of coffee stalls (*warung kopi*) and modern coffee shops in Banda Aceh reflects the dynamic transformation of urban consumption spaces influenced by cultural, economic, and spatial factors. As coffee culture continues to evolve, these establishments have become significant markers of both traditional and contemporary urban lifestyles. Understanding how they are distributed across the city—particularly in key urban areas such as Kuta Alam Sub-District, which is known for its dense commercial activity and youthful population—provides insights into urban land use patterns, zoning effectiveness, and the socio-economic clustering of informal and formal economic activities. This chapter aims to analyze the spatial characteristics and concentration patterns of both traditional *warung kopi* and modern coffee shops within the urban landscape of Banda Aceh.

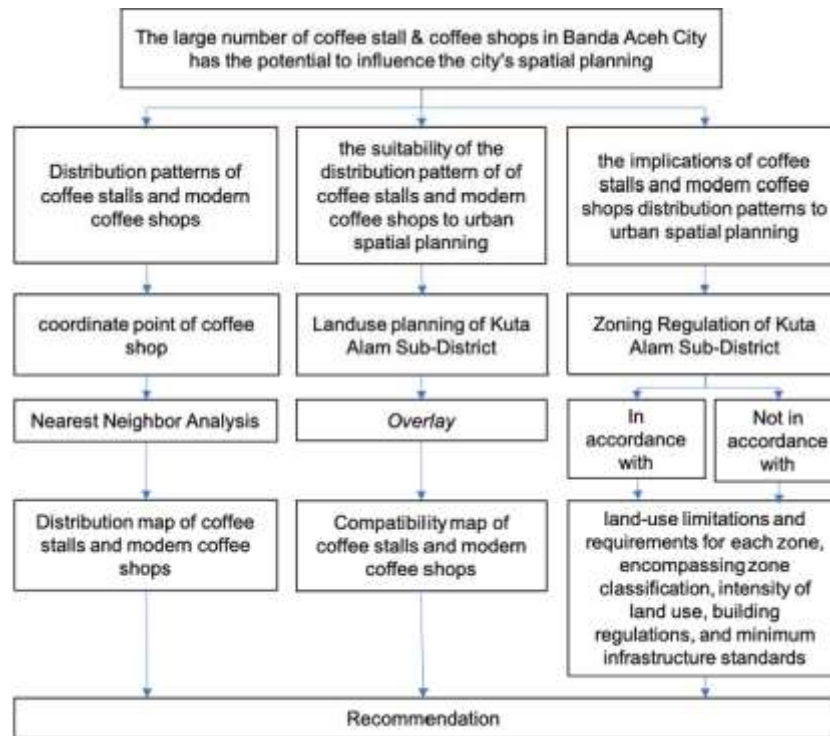


Figure 2 Conceptual Framework

Table 1 Spatial Distribution of Coffee Stalls and Coffee Shops in Kuta Alam Sub-District

Village (Gampong)	Coffee Stalls (Warung Kopi)	Coffee Shops
Peunayong	5	8
Laksana	3	8
Keuramat	5	6
Kuta Alam	13	6
Beurawe	11	4
Kota Baru	7	4
Bandar Baru	9	23
Mulia	12	6
Lampulo	5	1
Lamdingin	7	1
Lambaro Skep	16	-
TOTAL	93	67

Source: Analysis Results, 2025

The spatial distribution of coffee stalls (warung kopi) and modern coffee shops in Kuta Alam Sub-District reveals distinct patterns that reflect the socio-economic and spatial dynamics of each village. Overall, traditional coffee stalls are more prevalent, with a total of 93 units compared to 67 modern coffee shops. Several villages, such as Kuta Alam, Beurawe, Mulia, and Lambaro Skep, show a strong dominance of traditional coffee stalls, indicating a robust local coffee culture rooted in community-based interactions. Notably, Lambaro Skep records the highest number of coffee stalls (16) without a single modern coffee shop, suggesting a predominantly traditional, possibly residential character.

Conversely, the presence of modern coffee shops is concentrated in a few key areas. Bandar Baru stands out as a significant hotspot, hosting 23 coffee shops—by far the highest among all villages—followed by Peunayong and Laksana, each with 8 units. These areas likely benefit from commercial

activity, proximity to educational institutions, or youth-oriented urban environments, making them attractive locations for more contemporary coffee shop formats. Villages like Keuramat show a relatively balanced distribution, while others such as Lampulo and Lamdingin have minimal modern coffee shop presence.

These spatial patterns suggest that urban planning strategies in Banda Aceh should account for the dual nature of coffee-based establishments. In areas with a concentration of modern coffee shops, especially in Bandar Baru and Peunayong, there is a need for adaptive zoning and infrastructure management to address potential issues such as parking, accessibility, and pedestrian space. Meanwhile, the persistence of traditional coffee stalls across most villages reflects the importance of preserving local culture and informal economic activity. A nuanced approach that balances modernization with cultural preservation is essential to support sustainable and inclusive urban development in Kuta Alam.

The spatial distribution pattern of traditional coffee stalls (warung kopi) and modern coffee shops in Kuta Alam Sub-District was analyzed using ArcMap 10.8, specifically employing the Average Nearest Neighbor (ANN) tool. This spatial statistical method automatically evaluates whether the distribution pattern of the observed points exhibits a clustered, dispersed, or random tendency, based on the computed z-score (critical value). The input data for this analysis were derived from the geographic coordinates of each coffee stall and coffee shop location, which were collected using Google Maps.

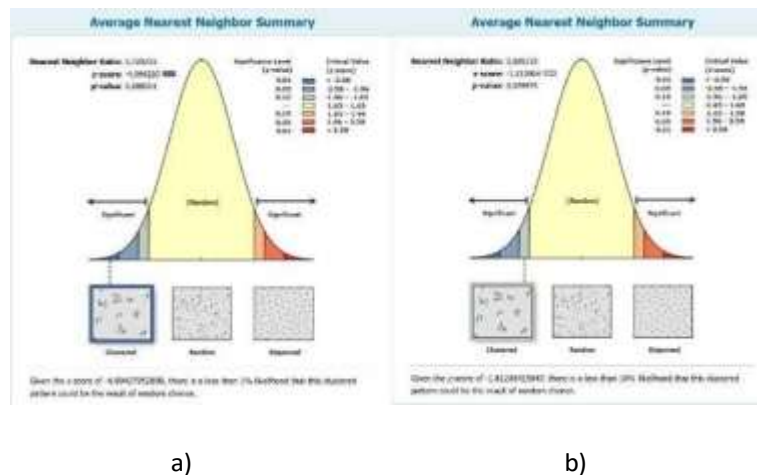


Figure 3 Results of Distribution Pattern Analysis Using Average Nearest Neighbor (ANN) —
a) Coffee stall Distribution Pattern and b) Coffee shop Distribution Pattern

Table 2 Five critical outputs of Average Nearest Neighbor tool of Coffee Stalls and Coffee Shops in Kuta Alam Sub-District

	Coffee stall	Coffee shop
Avarage Nearest Neighbor Summary		
Observed Mean Distance	110.3531 Meters	121.0525 Meters
Expected Mean Distance	151.31153 Meters	136.7616 Meters
Nearest Neighbor Ratio	0.729292	0.885135
z-score	-4.994280	-1.812064
p-value	0.000001	0.069976
Dataset Information		
Input Feature Class	Coffee Stall	Coffee Shop
Distance Method	EUCLIDIEN	EUCLIDIEN
Study Area	8517426.378122	5087415.973543
Selection Set	False	False

Sumber: Avarage Nearest Neighbor ArcMap, 2025

The spatial analysis of coffee stalls and coffee shops in Kuta Alam Sub-District using the Average Nearest Neighbor tool reveals distinct distribution patterns. For coffee stalls, the observed mean distance between locations is 110.35 meters, which is notably less than the expected mean distance of 151.31 meters under a random distribution. This results in a nearest neighbor ratio of 0.729, indicating a clustered spatial arrangement. The corresponding z-score of -4.99 and a p-value of 0.000001 further confirm that this clustering is statistically significant, with less than a 1% likelihood that the pattern occurred by chance. In contrast, coffee shops exhibit a slightly higher observed mean distance of 121.05 meters compared to an expected 136.76 meters. Their nearest neighbor ratio of 0.885 suggests a mild tendency toward clustering, but the z-score of -1.81 and a p-value of 0.06998 indicate that this pattern is not statistically significant at the 0.05 level. Therefore, while coffee stalls demonstrate a clear and significant clustering pattern, coffee shops appear more randomly or evenly distributed across the study area.

3.2 Compatibility of the Distribution of Coffee Stalls and Coffee Shops with the Spatial Plan of Banda Aceh City

The rapid growth of coffee stalls (warung kopi) and modern coffee shops in Banda Aceh reflects the dynamic evolution of urban socio-economic activities and lifestyle preferences. However, this spatial expansion raises questions regarding its alignment with the city's official Detailed Spatial Plan. Assessing the compatibility between the actual distribution of these establishments and the designated land use zones is crucial for understanding potential spatial conflicts, informal land use practices, and regulatory challenges. This chapter aims to evaluate how the current locations of coffee-related businesses correspond to the planned zoning regulations, particularly in terms of commercial, residential, and mixed-use designations, thereby identifying areas of conformity and potential deviation from the city's spatial vision.

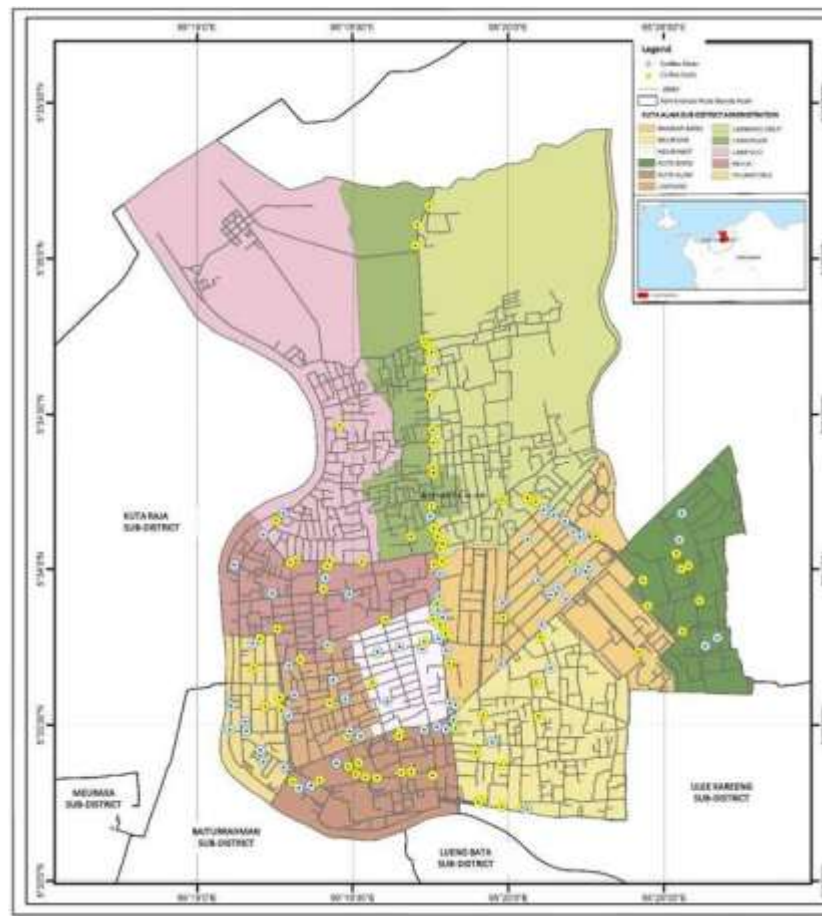


Figure 4 Distribution map of coffee stalls and coffee shops in Kuta Alam Sub-district

Table 3 The Results of Overlaying Coffee Stalls and Coffee Shops to the Landuse Spatial Planning of Kuta Alam Subdistrict

No	Zone	Code	ITBX	Number of Coffee Stalls	Number of Coffee Shop
1	Urban Forest	RTH-1	B	1	-
2	City Park	RTH-2	B	1	-
3	Green Corridor	RTH-8	X	4	4
4	High-Density Residential	R2	B	6	6
5	Medium-Density Residential	R3	B	2	1
6	City-Level Trade and Services	K1	I	7	15
7	Sub-district-Level Trade and Services	K2	I	26	16
8	Neighborhood-Level Trade and Services	K3	I	14	12
9	Office Zone	KT	B	13	2
10	City-Level Public Facilities	SPU-1	B	4	1
11	Sub-District Level Public Facilities	SPU-2	B	1	-
12	Public Space	PL-3	X	1	-
13	Defense and Security Zone	PL-7	X	-	2
14	Tourism Zone	PL-13	I	1	-
15	Fisheries Zone	PL-14	T	2	-

No	Zone	Code	ITBX	Number of Coffee Stalls	Number of Coffee Shop
16	Mixed Residential and Commercial Area	C-1	B	8	5
17	Mixed Office and Commercial Area	C-3	B	2	2

ITBX Description:

I = Allowed

T = Limited/ Specific (special/particular activities only)

B = Conditional Permit

X = Not Allowed

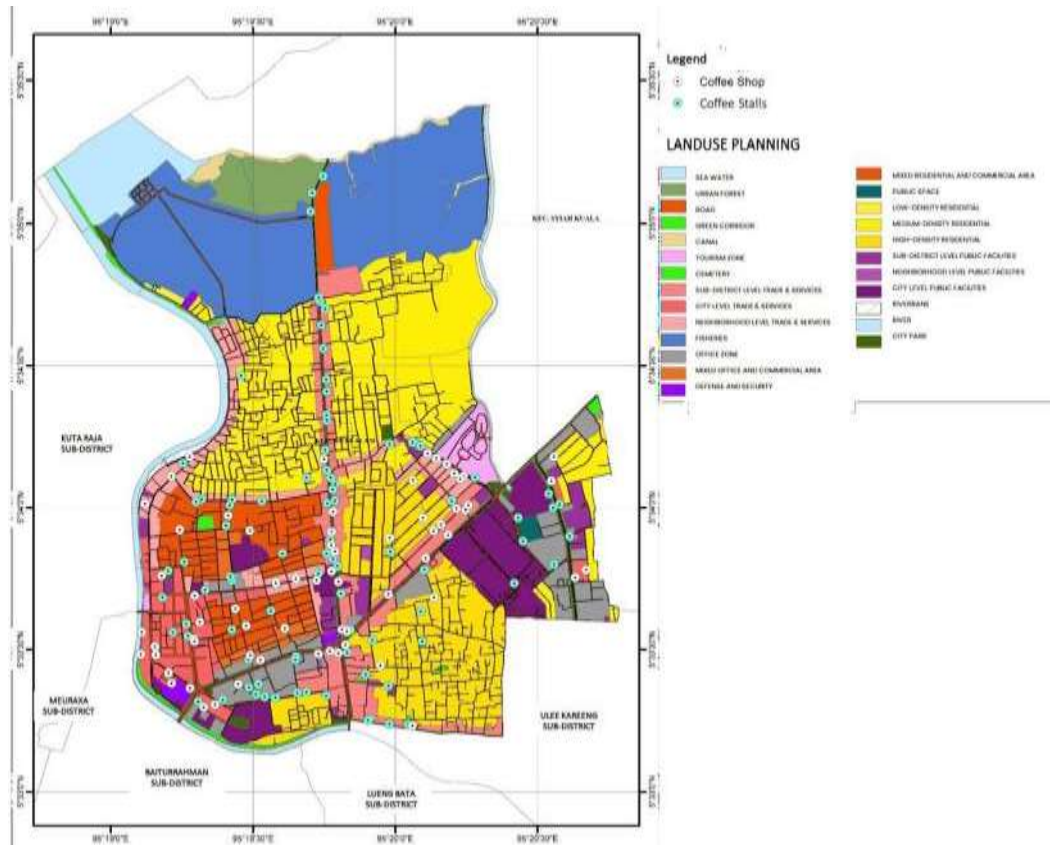


Figure 5 Compatibility map of Coffee Stalls and Coffee Shop in Kuta Alam Subdistrict with the Detailed Spatial Plan of Banda Aceh City

The overlay analysis between the distribution of coffee stalls and coffee shops and the land use spatial planning of Kuta Alam Subdistrict highlights varying degrees of alignment with existing zoning regulations. Based on the ITBX classification system, zones are categorized as I (Allowed), T (Limited/Specific – for particular activities only), B (Conditional Permit), and X (Not Allowed). The majority of coffee stalls and coffee shops are located within zones marked “I” (Allowed), particularly in sub-district-level trade and services (K2), where 26 stalls and 16 shops are situated, and in city-level trade and services (K1), which hosts 7 stalls and 15 shops. Similarly, neighborhood-level trade and services (K3) and mixed-use zones such as C-1 (Mixed Residential and Commercial Area) and C-3 (Mixed Office and Commercial Area) accommodate a significant number of these establishments. The presence of businesses in these areas is appropriate, as such commercial activities are fully permitted. Several zones, however, fall under “B” (Conditional Permit), such as high- and medium-density residential areas (R2 and R3), office zones (KT), and public facility areas (SPU-1 and SPU-2). These locations host a mix of coffee stalls and shops and are legally permissible but require compliance with

specific conditions or permits. Their presence here suggests a need for regulatory oversight to ensure that operations align with local planning policies.

On the other hand, there are notable instances of non-compliance where coffee-related businesses are present in zones marked “X” (Not Allowed). For example, stalls and shops are located in the green corridor (RTH-8) and public space (PL-3), where such commercial activity is prohibited. Furthermore, two coffee shops were recorded in the defense and security zone (PL-7), which also falls under the “X” category. These placements directly contradict zoning restrictions and may require enforcement action or reevaluation. Additionally, two coffee stalls are found in the fisheries zone (PL-14), which is designated as “T” (Limited/Specific), indicating that only highly specific, typically fisheries-related activities are allowed. This raises concerns about potential zoning conflicts.

In summary, while most coffee stalls and coffee shops are located in zones where they are either fully allowed or conditionally permitted, a significant number are situated in areas where such use is either highly restricted or outright prohibited. These discrepancies highlight the importance of monitoring spatial conformity with the Banda Aceh urban spatial plan, especially in preserving the intended function of public, ecological, and security-related zones. Urban planners and local authorities may need to review and address these inconsistencies to maintain the balance between commercial growth and sustainable urban land use.

3.3 Adaptive Planning Strategies for Managing the Growth of Coffee Stalls and Coffee Shops in Kuta Alam Sub-District, Banda Aceh City

The rapid proliferation of coffee stalls and coffee shops in urban areas presents both opportunities and challenges for sustainable spatial development. In Banda Aceh, particularly within Kuta Alam Sub-District, this phenomenon is not only a reflection of evolving consumer behavior and entrepreneurial activity but also a marker of shifting urban dynamics. As a high-density area with vibrant economic and social interactions, Kuta Alam has experienced a notable concentration of coffee-related businesses, which in turn exerts pressure on land use, infrastructure, and spatial organization. In the absence of adaptive planning, such unregulated growth risks disrupting existing urban functions, creating land-use conflicts, and undermining long-term spatial efficiency.

Table 4 The regulations for each zone regarding land use for coffee stalls and coffee shops are based on the Zoning Regulations (PZ) of the Detailed Spatial Plan (RDTR) of Banda Aceh City

No	Zone	Code	ITBX	Requirements
1	Urban Forest	RTH-1	B	Coffee stalls and shops must be environmentally friendly, accessible by public transport, and located on roads at least 6 meters wide. They must prepare environmental and traffic studies, provide standard parking, and obtain approvals from local officials.
2	City Park	RTH-2	B	
3	Green Corridor	RTH-8	X	-
4	High-Density Residential	R2	B	Coffee stalls and shops must be eco-friendly, match surrounding buildings, and get neighbor approval if adjacent. HO permit and recommendations from local officials are required. Max BCR: 60%, FAR: 1.2, min GOS: 30%, max height: 2 floors. Area limited to 10% of R1 zone per block. Must provide on-site parking, 8m road access, integrated sidewalks, and 20% green space with trees and plants.
5	Medium-Density Residential	R3	B	Coffee stalls and shops must be eco-friendly, match surrounding buildings, and get neighbor approval if adjacent. HO permit and recommendations from local

No	Zone	Code	ITBX	Requirements
				officials are required. Max BCR: 50%, FAR: 1.0, min GOS: 30%, max height: 2 floors. Must provide on-site parking, 8m road access, integrated sidewalks, and 20% green space with trees and plants.
6	Office Zone	KT	B	Coffee stalls and shops must be eco-friendly, match surrounding buildings, and get neighbor approval if adjacent. HO permit and recommendations from local officials are required. Max BCR: 50%, FAR: 2.0, min GOS: 40%, max height: 2 floors. Must provide on-site parking, 10m road access, integrated sidewalks, and 40% green space with trees and plants.
7	City-Level Public Facilities	SPU-1	B	Max BCR: 60%, FAR: 1.8, min GOS: 40%, max height: 3 floors. Must provide on-site parking, 3m road access, integrated sidewalks, and 30% green space with trees and plants, maximum 16 hours of operation per day.
8	Sub-District Level Public Facilities	SPU-2	B	
9	Public Space	PL-3	X	-
10	Defense and Security Zone	PL-7	X	-
11	Fisheries Zone	PL-14	T	Coffee stalls and shops must blend with their surroundings, maintain order, and get neighbor approval if adjacent. Max 2 floors, BCR 40%, FAR 0.8, GOS 40%, and 4 m spacing. Minimarkets: 400 m from public markets, 2,000 m between same brands. Must provide parking, 30% green space with 2 trees, and utilities like hydrants, APAR, drainage, 3R waste bins, and infiltration wells or biopores
12	Mixed Residential and Commercial Area	C-1	B	-
13	Mixed Office and Commercial Area	C-3	B	Max BCR: 20%, FAR: 0.4, min GOS: 80%. Must provide on-site parking, 8m road access, integrated

4. CONCLUSION

This study highlights the evolving dynamics of coffee stalls and coffee shop development in Kuta Alam Sub-District, Banda Aceh City. Traditional coffee stalls dominate residential and culturally-rooted areas, while modern coffee shops concentrate in commercial, youth-driven neighborhoods. The spatial analysis reveals a statistically significant clustering of coffee stalls, whereas coffee shops show a more dispersed pattern. Although most coffee-related businesses align with zoning regulations for trade and mixed-use areas, some violations occur in restricted zones, signaling a gap in enforcement. To manage this growth sustainably, adaptive planning strategies are needed, focusing on integrating small-scale stalls in residential zones with clear guidelines, supporting modern coffee shops with better infrastructure, and enhancing zoning transparency and compliance mechanisms. These strategies aim to balance cultural preservation with urban development to maintain Kuta Alam's socio-spatial integrity.

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