

Connectivity and Integration of Trading Space: A Space Syntax Study of *Pasar Tengah*, Bandar Lampung

Fasha Nurliansyah Mahendra¹, Hadi Jaya Putra²

¹ Department of Architecture, Faculty of Infrastructure Technology and Regional Planning, Institut Teknologi Sumatera, Lampung Selatan

² Department of Architecture, Faculty of Engineering, Presiden University, Bekasi

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Abstract

Pasar Tengah in Bandar Lampung has evolved as a vibrant trading hub, developing spontaneously and organically over time. Due to the limited availability of land and the use of roads for both social and economic activities, understanding the spatial configuration of this area is crucial for analyzing movement patterns and activity distribution. This study investigates how the spatial configuration of *Pasar Tengah* influences the distribution and concentration of social and economic activities within the market. Connectivity and spatial integration are key factors shaping the strategic placement of commercial spaces. By employing space syntax analysis and reviewing relevant literature on market activities, the research identifies areas with dominant activity levels based on connectivity and integration metrics. The findings highlight key locations with high activity concentrations, though other factors must also be considered when selecting sites for commercial development.

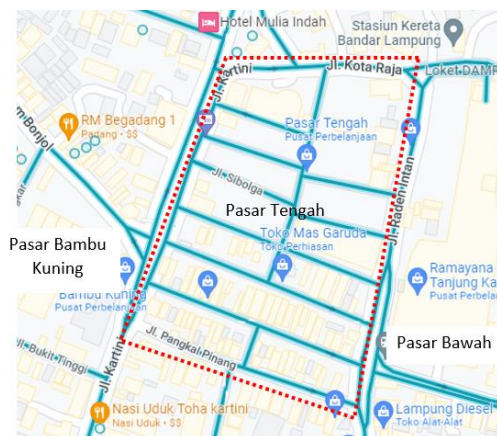
Keywords: *Bandar Lampung; connectivity; integration; Pasar Tengah; space syntax*

Introduction

Pasar Tengah was originally a traditional market managed under the Regional Market Technical Implementation Unit of *Pasar Bawah*. It is commonly referred to as the "middle market" due to its central location, and this name has persisted over time. In reality, *Pasar Tengah* is an extension of *Pasar Bawah*, which has been in existence since 1960. As its name suggests, *Pasar Bawah* is located underground, specifically at the lower level of the Ramayana terminal (also known as Tanjung Karang terminal).

Figure 1. Location of *Pasar Tengah*

Source: Google Maps, 2024



Pasar Tengah is situated between *Pasar Bawah* and *Pasar Bambu Kuning*. It emerged as a trading hub around 1980, although the exact year is uncertain because it initially began as a simple gathering place for trading. Today, *Pasar Tengah* remains one of the busiest traditional markets in

Correspondence: Fasha Nurliansyah Mahendra
Department of Architecture, Institut Teknologi
Sumatera, Lampung Selatan
E-mail: fasha.mahendra@ar.itera.ac.id



Bandar Lampung. From 2013 to 2018, the number of visitors to *Pasar Tengah* ranged from 8,639 to 23,875 people, according to the Lampung Province Trade and Industry Office (Disperindag, 2018). The market is surrounded by modern shopping centers such as Ramayana, Central Plaza Mall, Kartini Mall, and Simpur Mall, as well as a train station and the Damri Bus terminal, which provides intercity travel services.

Figure 2. *Pasar Bambu Kuning* in 1980
Source: (SSCI Lampung, n.d.)



A market is a place where sellers and buyers interact, attracting each other and establishing prices for goods. Markets are generally divided into two categories: traditional markets and modern markets. Traditional markets are characterized by straightforward buying and selling activities, where bargaining is common and cash is the primary means of payment (Prianto, 2008). These markets have the potential to become regional icons. However, the growth of modern markets has increasingly marginalized traditional markets. This marginalization is exacerbated by the often-disorganized state of traditional markets, such as the presence of informal market stalls and scattered garbage (Djau, 2009). Despite this, modern markets cannot replace traditional ones, as both types of markets serve essential roles for all levels of society. Therefore, traditional markets need to be given special consideration amidst rapid urban development (Permatasari et al., 2024; Wahjudy & Tjandra, 2006). This study investigates how the spatial configuration of Central Market influences the distribution and concentration of social and economic activities within the market. The layout of Central Market, located in the middle of other major markets and

surrounded by modern shopping malls and transportation hubs, plays a significant role in shaping the movement of people and goods.

Literature Review

There are three types of visitors to the market: those who come without any intention of purchasing goods or services, buyers who arrive with the intention of purchasing but without a specific destination, and customers who visit the market with a clear intention to buy from specific kiosks (Fitri, 2021). For buyers and visitors who have the potential to shop, reaching kiosks in less accessible locations can be challenging. Typically, these visitors will first approach kiosks that are close to the main road (Alshammari, 2023; Brown & Jenkins, 2023), and if they do not find what they are looking for, they will then explore the interior of the market. Moreover, most markets are primarily accessible by pedestrians due to their locations on narrow, busy roads. This study identifies several other factors that are important when determining visits to commercial locations. These factors include access, traffic, visibility, parking availability, environment, and atmosphere (Elrawy & Elian, 2024)

The location of a kiosk significantly and positively influences purchasing decisions (Hidayat, 2021). It is also the most dominant factor affecting consumer purchasing decisions, compared to price, promotion, and service quality (Sinambow & Trang, 2015). The accessibility of a kiosk's location can be influenced by the connectivity and integration of the paths leading to it. Connectivity refers to the ability of a space to connect to several other spaces. In other words, a space with a high level of connectivity, according to space syntax, has good accessibility, offering opportunities for movement from one space to another (Yang et al., 2015). Good accessibility means that a customer finds it convenient to reach a product or service (Handayani et al., 2019). Spaces with a higher level of space syntax integration have better accessibility to the main routes in a city (Batty, 2022). A higher level of integration indicates stronger connections between the intended space and other spaces

(Sharmin & Kamruzzaman, 2018; Yazdanfar et al., 2008).

To determine the level of connectivity and integration of a space, the space syntax research method can be used. Space Syntax is a method for describing and analyzing the relationship between urban spaces and buildings, often referred to by architects as "layout." In spatial syntax, spaces are understood as voids (paths, rooms, or fields) between walls, fences, or other barriers (Klarqvist, 2015).

Space syntax is a method used to analyze spatial relationships in the built environment that includes aspects of configuration, visibility, and accessibility. This method calculates the potential for movement and accessibility in a road network, which can be evaluated based on the shortest distance, the fewest number of turns, or the smallest change in angle (Van Nes & Yamu, 2021). In addition, space syntax also assesses the level of integration and connectivity between each space or road segment with the entire network. Integration shows how easily a space is accessed from the overall network, while connectivity describes the number of spaces that are directly connected to that space.

This pattern of integration and connectivity greatly influences the accessibility of space in an urban context (Chiu et al., 2021). Spaces with high integration are usually more accessible and increase the potential for movement and activity within them. Conversely, spaces with low integration tend to be more isolated and difficult to reach, which can have an impact on patterns of space use as well as economic and social activities around them (Batty, 2022; Rosid & Nareswari, 2020). Good accessibility is often related to access efficiency, where an orderly network can support vehicle and pedestrian mobility, while encouraging more active social interactions. Good integration also plays a role in ensuring the distribution of services evenly, which ultimately affects the quality of life and connectivity in a city.

Methodology

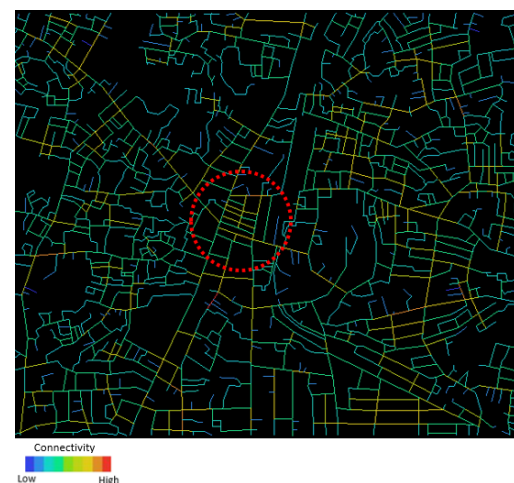
This study employs a quantitative space syntax technique using ground plan data in the form of axial spaces (van Nes & Yamu, 2017). An axial map with a single line is used to determine the spatial relationship between *Pasar Tengah* and Bandar Lampung. Additionally, an axial map with two lines is utilized to analyze the spatial relationships within the *Pasar Tengah* environment. The next step involves observing the differences in spatial characteristics with good and poor accessibility, using Google Street View and relevant literature. Data analysis is conducted by comparing the results from the space syntax analysis with the data obtained from these observations (Liu & Nijhuis, 2020; Pafka et al., 2020).

Result and Discussion

1. Spatial Relationship *Pasar Tengah* and Bandar Lampung City

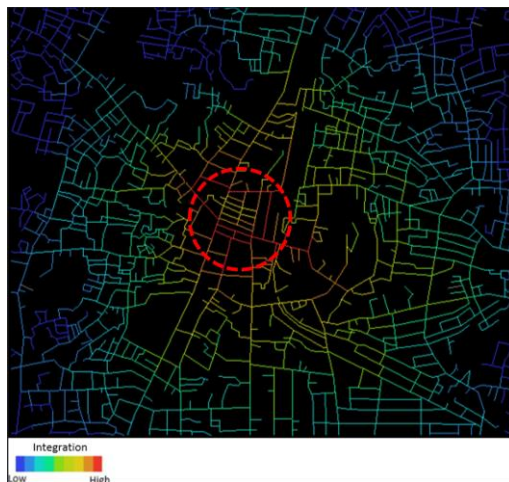
The space syntax analysis carried out in this study is based on 2-dimensional mapping. The resulting diagram shows the level of connectivity and integration of an area. Low levels of connectivity and integration are indicated by blue lines, medium connectivity and integration are indicated by green and yellow lines, and high levels of connectivity and integration are indicated by orange and red lines.

Figure 3. Connectivity *Pasar Tengah* with Axial 1-line
Source: Authors, 2024.



The first stage of this study involves determining the connectivity between the location of *Pasar Tengah* in Bandar Lampung and the broader Bandar Lampung City area. To achieve this, a 1-line axial space map with a 3-kilometer radius from *Pasar Tengah* was used to assess the connectivity and integration of *Pasar Tengah* with surrounding settlements. The location of *Pasar Tengah*, marked with a red circle, is situated between Jalan Kartini, Jalan Kota Raja, Jalan Raden Inten, and Jalan Pangkal Pinang. The map indicates that connectivity in the *Pasar Tengah* area is predominantly represented by yellow and orange, suggesting a medium level of connectivity. This dominance of yellow is also evident in several areas surrounding *Pasar Tengah* in Bandar Lampung.

Figure 4. Integration *Pasar Tengah* with Axial 1-line
Source: Authors, 2024



The axial space map also reveals a high level of integration at the *Pasar Tengah* Bandar Lampung location and its surroundings, indicated by the orange and red lines. It is also noted that the area around *Pasar Tengah* includes a market area, a train station, and a terminal. As a central market, *Pasar Tengah* occupies a strategic location accessible to residents of Bandar Lampung, particularly those within a 3-kilometer radius. *Pasar Bawah* and *Pasar Bambu Kuning*, markets adjacent to *Pasar Tengah*, further highlight its central position in the city. This central location facilitates easy access to *Pasar Tengah* from

various parts of the city.

2. Spatial Relationship in *Pasar Tengah* Environment

Figure 5. Connectivity and Integration *Pasar Tengah* with Axial 2-lines
Source: Authors, 2024



The connectivity and spatial integration depicted in the image above indicate that there are three spot areas within the *Pasar Tengah* vicinity with a high level of connectivity and integration. These areas correspond to the main roads surrounding *Pasar Tengah*. High connectivity and integration in these spots are advantageous for sellers in the area, as they make the stores more easily accessible and likely to attract a high volume of market visitors.

3. Discussion

The first spot, is one of the main routes to enter the main road section which can bring visitors to the inner sections of the market.

Figure 6. The first spot
Source: Authors, 2024



This spot is located on the outermost edge of *Pasar Tengah* and, being a main road, experiences heavy vehicle traffic. As the area with the highest connectivity and integration, it is frequented by many pedestrians crossing the street to move between different locations. Given this high foot traffic, it would be beneficial to provide a pelican crossing as a community facility to aid road crossing. This area does not experience significant market congestion as it primarily comprises places of worship; a church is located on the left side, and a mosque is on the right.

Figure 7. The second spot
Source: Authors, 2024



The second spot is also situated on a main road, similar to the first. In this area, the market's activity becomes apparent, with crowds gathering to trade and transact. Visitor vehicles are often parked along the roadside,

and traders extend their stalls into the road area.

Figure 8. The comparison of second spot
Source: Authors, 2024



In the comparison of this spot, differences in crowd density are observed on the left and right sides of the road. The closure of shops in an area with high connectivity and integration may result from various factors. A notable difference is the lack of a proper parking area in front of the shop fronts on the left side, unlike the right side, where visitors typically prefer to park directly in front of their destination. Additionally, the right side features a public transportation stop and is near the entrances to the Damri intercity bus stop and train station. The fence separating the two sides of the road also makes it difficult for visitors who park on the right side to cross to the shops on the left. Market visitors also seem reluctant to use the provided pedestrian bridge.

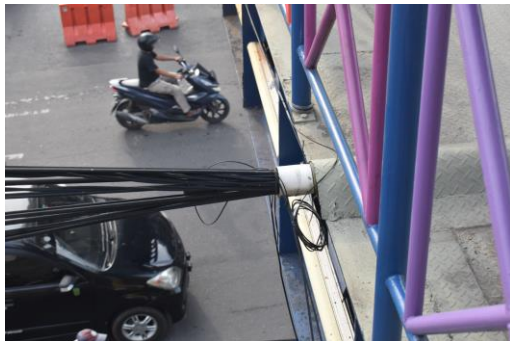
The third spot is identified as the area with the highest connectivity and integration, as shown by the 2-line axial analysis. This road serves as a major thoroughfare connecting several busy areas in Bandar Lampung, including Kedaton, Teluk Betung, and Tanjung Karang. This spot encompasses the *Pasar Bawah* area, which directly borders the *Pasar Bambu Kuning* area and is the busiest part of *Pasar Tengah*. Along this road are several large malls, such as Central Plaza Lampung and Kartini Mall, as well as major banks with branches in the area.

Figure 9. The third spot
Source: Authors, 2024



In the image above, it is evident that both sides of the road are lined with parked visitor vehicles, and numerous traders have extended their stalls onto the streets. This area also sees many market visitors crossing the main road to visit shops on the opposite side. Although there is a pedestrian bridge available, it is heavily used by market visitors but is considered too dangerous to use safely.

Figure 10. The cable under the crossover bridge
Source: Authors, 2024.



Many modern commercial buildings, such as banks, malls, hotels, and other large stores, are located in the third spot area. This is likely because these establishments have conducted feasibility studies to determine the optimal location for their businesses. It is also probable that they recognize the area's high level of connectivity and integration, as indicated by the 2-line space syntax analysis.

Conclusion

The study of *Pasar Tengah* in Bandar Lampung reveals the intricate relationship between spatial configuration and the distribution of social and economic activities. Through space syntax

analysis, it becomes clear that areas with strong connectivity where roads and paths link easily to other spaces attract more visitors and have higher economic activity. In spots with good connectivity, like the main roads around the market, the shops and stalls thrive because they are easily accessible. However, just having well-connected spaces isn't enough. The study shows that factors like poor pedestrian facilities and limited parking can still make it difficult for people to move around and shop comfortably, even in high-traffic areas.

Pasar Tengah also faces the challenge of competing with modern shopping centers, which are better organized and more convenient for visitors. While the market remains a key hub for trade, its outdated infrastructure like the lack of proper crossings and scattered, informal stalls make it harder for both sellers and buyers to navigate the space effectively. For instance, the difference between the two sides of the second spot shows how even small issues, such as a lack of parking or a difficult-to-cross road, can discourage shoppers from visiting certain kiosks. Even in areas where connectivity is high, such barriers limit the market's full potential.

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