



PLANNING MALAYSIA:

Journal of the Malaysian Institute of Planners

VOLUME 24 ISSUE 5 (2026), Page 280 – 296

VISITORS BEHAVIOR PATTERNS IN PRODUCING SPACE ON HISTORIC SHOPPING STREET IN TUNJUNGAN STREET CORRIDOR, SURABAYA CITY, INDONESIA

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Abstract

In recent years, the pedestrian space in the Jalan Tunjungan Corridor has been massively developed by the Surabaya City government to fulfill the image as a street-oriented architecture. This development was carried out by changing the concept, form, and atmosphere along the corridor, which ultimately created different spaces at certain periods of time. This study explains the production of space in a historic pedestrian corridor by examining the interaction between visitor activities and government interventions through Lefebvre's spatial triad. This research uses a case study method by mapping the behavior of visitors, daily workers and trader who carry out their activities in the pedestrian area of the Jalan Tunjungan corridor. The data obtained coupled with interviews conducted by purposive-convenience method sampling shows that there are differences in visitors' perspectives in producing space along the corridor. The visitor's preference for choosing an activity space is part of a lifestyle that makes this place a 'place for gathering' and 'communal activity'.

Keywords: Behavior pattern; Historical street corridor; Space production

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INTRODUCTION

Tunjungan Street has been an economic center and a prominent landmark in Surabaya from the 1950s to the late 1960s (Effendi, 2015; Patriajaya & Kusliansjah, 2019). The unique features of this destination have been observed to facilitate the continuous efforts made by the Surabaya government to develop the area and restore its former glory. Since 1906, Tunjungan Street has been renowned as a pedestrian shopping street (Benlin & Sigit, 2013). Initially, the area's corridor was designed with two vehicle flows, but due to certain factors, it was turned into a one-way vehicle flow. These factors include a widening of the pedestrian lane size, a reduction in traffic, and changes in the type of intersection (Patriajaya & Kusliansjah, 2019).

In an effort to develop Tunjungan Street as a tourist landmark, it is important to comprehend and map the behavioral patterns of visitors when interacting directly with the corridor of the cultural heritage area. In this context, mapping is considered significantly crucial because the behavioral patterns can have either positive or negative effects, especially on pedestrian paths which affect space, movement, and action (Poerbantanoë, 1999; Benlin & Sigit, 2013). Therefore, this research aimed to explain how visitor activities and government interventions interact to produce space in a historic pedestrian corridor, drawing on Lefebvre's spatial triad.

Beyond its local context in Surabaya, this study offers valuable empirical insights for heritage street revitalization and pedestrian corridor planning across Southeast Asia, particularly in Malaysia (Chua & Ahmad, 2021). Historic corridors in Malaysian cities face similar socio-spatial challenges, where authorities must balance heritage building preservation with active night economies, informal street vending, and pedestrian accessibility (Chua & Ahmad, 2021; Wan Ismail et al., 2026). By framing the transformation of Tunjungan Street through Lefebvre's spatial triad, this study provides a transferable planning framework for historic street management in comparable regional urban settings.

LITERATURE REVIEW

The relationship between human socioeconomic activities and physical space, which impacts urban design development and growth, has been examined using various approaches, including the socio-spatial approach (Hegazi et al., 2022; Akcali & Cahantimur, 2023). As stated in previous research, the socio-spatial approach identifies the mental factors influencing visitors in the creation of social spaces (Rahmi et al., 2022). Henri Lefebvre, in his book "The Production of Space" (1991), emphasized socio-spatial aspects through three principles namely spatial practices, representations of space, and representational space. These principles can be empirically implemented, with the inclusiveness of humans and the surrounding environment (Pierce & Martin, 2015). In validating the

relationship between humans and the environment through social, economic, and environmental interactions, a common method used is the behavior mapping method (Chai et al., 2016).

Numerous studies on socio-spatial-related topics have been observed to utilize the behavior mapping method. For instance, the investigation carried out by Shamekh and Ashour (2023) on the socio-spatial aspects of pedestrian spaces in Cairo, was similar to Al-Maimani et al. (2014) in Oman, though with different observation variables. Shamekh and Ashour (2023) focused on daily activities such as walking and cycling, while Al-Maimani et al. (2014) examined the socio-cultural aspects influencing the activities of visitors. Both studies share similarities in terms of data collection procedures, which included open interviews and the distribution of questionnaires.

Another study was carried out by Loebach et al. (2020), where it was shown that the behavior mapping method effectively identified certain behavioral patterns occurring in specific objects. During the course of the research, the method served as a valuable observational tool for understanding interactions in public spaces. Based on this finding, it can be inferred that the method is useful for mapping the activities of visitors, particularly when identifying spatial practices.

Table 1: Study Observation Parameters

Sources	Behavior Mapping Aspects
Shamekh and Ashour (2023)	User's postures (standing, seating, walking, lying, cycling/skating)
Al-Maimani et al. (2014)	Illustrate gender, age group, and socio-economic background The map illustrates the movements occurring at the study location, such as sitting, walking, and cycling.
Loebach et al. (2020)	Group size, group composition, play type, activity type, initiator of activity, activity intensity, environmental interaction

In this research, the behavior mapping method was applied to analyze place-centered mapping along the Tunjungan Street corridor in Surabaya City. In order to improve the analysis results, open interviews were conducted to collect relevant and accurate information about the activities of the visitors. Following the reviewed works of literature, the present research specifically examined pedestrian spaces in the Tunjungan Street corridor, focusing on the activities of visitors throughout the day at the research location.

METHODOLOGY

The present research was carried out with the aim to explain the production of space in a historic pedestrian corridor by examining how visitor activities and government interventions interact across time and space, using systematic observation, behavior mapping, and Henri Lefebvre's spatial triad as the analytical framework. To achieve this objective, the study adopts a qualitative

case study design grounded in a naturalistic inquiry paradigm, focusing on the socio-spatial dynamics of Tunjungan Street, Surabaya. A methodological triangulation approach was employed, combining systematic behavior mapping and open-ended interviews to capture both spatial patterns and user perspectives.

The observation unit covered the behavior patterns of visitors in pedestrian corridor spaces from a socio-spatial perspective, drawing on Lefebvre's (1991) theory of the production of space resulting from human activity. Accordingly, the first observation unit, "Behavior Pattern of Visitors' Activity", was based on prior studies, including Elsheshtawy (2013) and Al-Maimani et al. (2014), and incorporated sub-units such as social activities, actors, and behavior patterns. The second observation unit, "Space Production in Socio-Spatial Context", referred to previous studies by Leary (2009), Al-Maimani et al. (2014), Cihanger (2018), Harani et al. (2023), and Shamekh & Ashour (2023). This unit comprised sub-units including spatial practice, spatial representation, and representational space.

Observations were conducted 24 times within the period of two weeks period from December 27, 2023, to January 10, 2024 (Al-Maimani et al., 2014; Shamekh & Ashour, 2023). To reflect temporal variations in space usage, each observation day systematically tracked pedestrian activity across three time slots (Al-Maimani et al., 2014; Loebach et al., 2020; Sari & Alhamdani, 2021; Petrtýlová & Jaššo, 2022; Gümüş & Yılmaz, 2022; Shamekh & Ashour, 2023; Hasibah, et al., 2025):

- Morning Slot: 07:00 – 10:00 AM
- Afternoon Slot: 01:00 – 04:00 PM
- Evening Slot: 07:00 – 10:00 PM

Activity observation took place during clear weather and post-rain periods, capturing moments when visitors actively moved through and inhabited the pedestrian space. Physical activity counts identified pedestrian behaviors on-site, categorized them through standardized symbols, and plotted spatial data directly onto base maps prior to digital synthesis.

During field observations, visual data were collected using cameras, visitor activities were documented through systematic field notes for behavior mapping, and open-ended interview responses were recorded with audio recorders. These data served as the basis for the analysis process, which was conducted in the NVivo program to create a project map and concept map.

These observations were carried out in four predetermined corridor zones along the Tunjungan Street corridor (Sommer & Sommer, 1991). Accordingly, it is important to emphasize that this research was carried out on the pedestrian path of Tunjungan Street in Surabaya. In order to facilitate behavior

mapping (Sommer & Sommer, 1991), the corridor was divided into four zone segments namely:

- Zone One, consists of buildings that function as public facilities and offices.
- Zone Two, comprises buildings that function as business places. A zone for Micro, Small, and Medium Enterprises (MSMEs), and shops.
- Zone Three, consists of buildings that function as shops, cafes, and hotels.
- Zone Four, which is made up of hotels and abandoned buildings.



Figure 1. Location of research object

This investigation adopted a naturalistic qualitative paradigm to objectively observe the behavior of people. Focusing on tangible materials capable of being used as an object of study, it used a naturalistic approach to achieve behavior mapping goals, all of which were implemented through the behavior and place-centered mapping methods.

Open interviews were conducted with 31 respondents, including visitors, daily workers, and government officials, to explore the production of pedestrian space in the Tunjungan Street corridor, Surabaya. The primary criterion for respondent selection was visitors who stopped within one of the pedestrian zones and were willing to participate in interviews. No restrictions were imposed regarding age or gender. Selection focused on visitors (27 individuals), and daily workers (3 individuals: a trader, and 2 street artists) who were actively engaged in activities within the pedestrian space. In addition, one staff government official from the Department of Culture, Tourism, and Sports, the primary policymaking body responsible for the revitalization and development of the research locus, was included as a key informant.

Table 2: Demographic and Spatial Activity Profiles of Respondents (N = 31)

Respondent Category	Role	Total	Age Range	Gender Ratio (M/F)	Spatial Activity
Visitors	Pedestrian Visitors	27	13-60 years	20 M 7 F	Walking, standing, posing for a photo, cycling, and sitting (in public or commercial chairs)
Trader	Street Vendor's Owner	1	47 years	F	Trading and organizing visitor placement
Daily Workers	Street Artists	2	22-23 years old	M	Sitting, interacting with pedestrians
Government Official	Key Informant (Dept. of Culture, Tourism, & Sports)	1	27 years old	F	Spatial management, heritage corridor policymaking, and oversight of public amenities

The questions, which were adapted from previous studies by Liu et al. (2022) for the government, and Raulet-Croset & Borzeix (2014) and modified to align with the research focus, addressing the development process of Tunjungan Street from the government's perspective and visitors' direct experiences while engaging in activities within the area. Interview transcripts were analyzed using NVivo through a three-stage process:

1. Code Development: Primary coding extracted key units of meaning regarding spatial experiences, regulations, and commercial activities.
2. Map Modeling: NVivo Project Maps visually organized codes into two core themes: Government Involvement in Pedestrian Space Development and Visitor Impressions.
3. Relational Analysis & Inter-Coder Checking: NVivo Concept Maps were generated to model the structural connections between the two themes.

Table 3: Open Interview Questions

Source	Question
Liu et al. (2022)	What is the main purpose of developing the pedestrian space in the Tunjungan Street corridor?
	Does the development of the pedestrian space in the Tunjungan Street corridor reflect heritage areas in other cities?
	What meanings and values does the government expect in the development of the pedestrian space in the Tunjungan Street corridor?
	What factors are considered in its development?
	Who is involved in the development of the pedestrian space?
	What further developments should be made in the pedestrian space of the Tunjungan Street corridor in Surabaya? Why?
	What type of tourism is expected in the development of the pedestrian space in the Tunjungan Street corridor?
	What is the main purpose of developing the pedestrian space in the Tunjungan Street corridor?
	What positive impacts have been felt after the development of the pedestrian space in the Tunjungan Street corridor?
	Are there any differences in goals between visitors and developers after the pedestrian space development in the Tunjungan Street corridor has been completed?
Raulet-Croset & Borzeix (2014)	What do you feel when engaging in activities in the pedestrian space of the Tunjungan Street corridor?
	What are the reasons for choosing this place for activities?
	What comes to mind when thinking about the pedestrian space in the Tunjungan Street corridor?

ANALYSIS AND DISCUSSION

The analysis of behavior patterns observed at the research location was divided into two parts. The first part included an extensive discussion of the behavior mapping patterns in the pedestrian spaces on Tunjungan Street, Surabaya. The second part synthesized these findings through Lefebvre's socio-spatial perspective, incorporating the information obtained from the open interviews conducted with 31 respondents. The interview results, which were processed using the Nvivo program, showed two key themes namely direct government inclusiveness and the diversity of impressions possessed by different visitors. The first theme examined the participation of the government in spatial representation in correspondence with the principles of socio-spatial production. Meanwhile, the second theme explored the impressions of visitors towards the physical space, corresponding to Lefebvre's (1991) principles of spatial practices and representational space.

Visitors' Behavior Patterns in Pedestrian Spaces on Tunjungan Street Surabaya

The analysis of behavior patterns included an observation of the postures that showed the activities of visitors in the pedestrian space during the observation period. Based on the analysis, significant differences were observed in the activities carried out and behaviors possessed by people in each zone at different

times, especially during holiday nights. These activities include walking, sitting, standing, eating, selling, and shopping. The variety of activities allows visitors to use the pedestrian spaces for social activities such as meeting people, enjoying free time together, and engaging in group activities, contributing to the vibrancy of the street (Mehta, 2007).

During the course of the investigation, Zone One was particularly crowded with public service office workers and visitors staying at the Platinum Hotel or visiting cafes. It is also important to state that on holidays, community events organized by cycling, MSMEs, and arts communities increase visitor density. The high-density locations in Zone One were observed to typically around cafes, close to locations where artists perform.

Zone Two is a location crowded with visitors and office workers. During holidays, some visitors engage in reading activities on mats near the T-junction to Genteng Besar Street while enjoying a car-free day, creating significant interaction in the pedestrian space. Additionally, a cycling community often takes a break here to enjoy coffee in the morning. At night, this zone, similar to others, becomes increasingly busy with the activities of visitors.

Zone Three was observed to have significant differences in activity throughout the day. In the morning, visitors in the area were mainly tourists and daily workers such as hotel staff, street sweepers, newspaper sellers, and photographers. On Sundays, the cycling community frequents this zone in the morning to rest. Shops and cafes in the area are usually closed in the morning and open only in the afternoon and evening. At night, musical performances attract a dense crowd of visitors who sit, enjoy the music, and walk around Zone Three.

In Zone Four, activities vary according to the observation time. At night, significant economic activities were usually carried out including street vendors and buyers, primarily young people, engaging in the traditional ‘*angkringan*’ (*Angkringan* derived from the Javanese ‘*Angkring*’, which means sit down is a push cart that sells a variety of foods and beverages commonly contained in each side of roads) culture. Furthermore, buyers in the area often come in groups and engage in social activities such as chatting, taking photos, and purchasing snacks from street vendors around collector roads towards Tunjungan Street.

“Also, at night, many people visit the street food stalls (angkringan), so selling from late afternoon to evening is much better.” (Yani, Traders).

The following figures compare the density of activities during weekdays and holidays in the research area. Accordingly, Figures 2 and 3 show comparisons for the morning, Figures 4 and 5 for the afternoon, and Figures 6 and 7 for the night.

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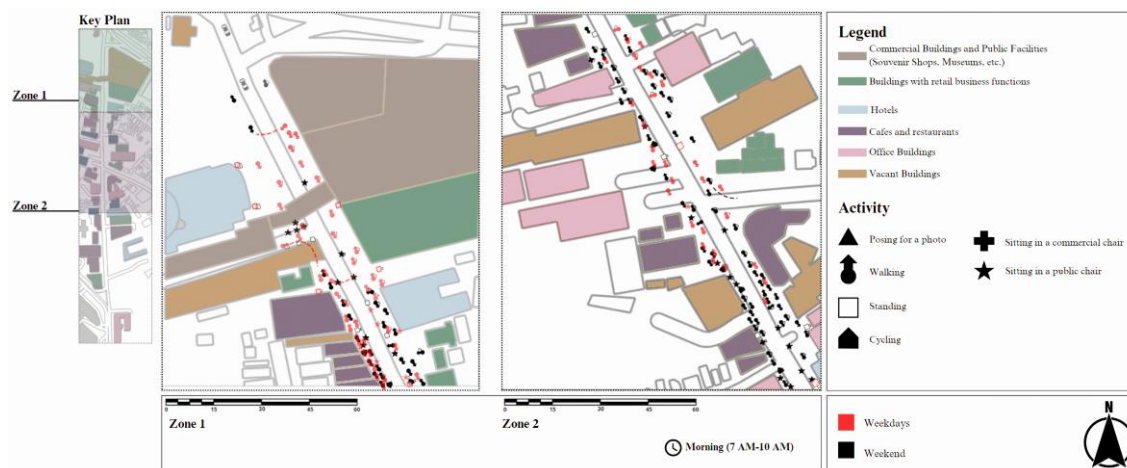


Figure 2. Combined behavior patterns on weekdays and weekend in the mornings of zones 1 & 2

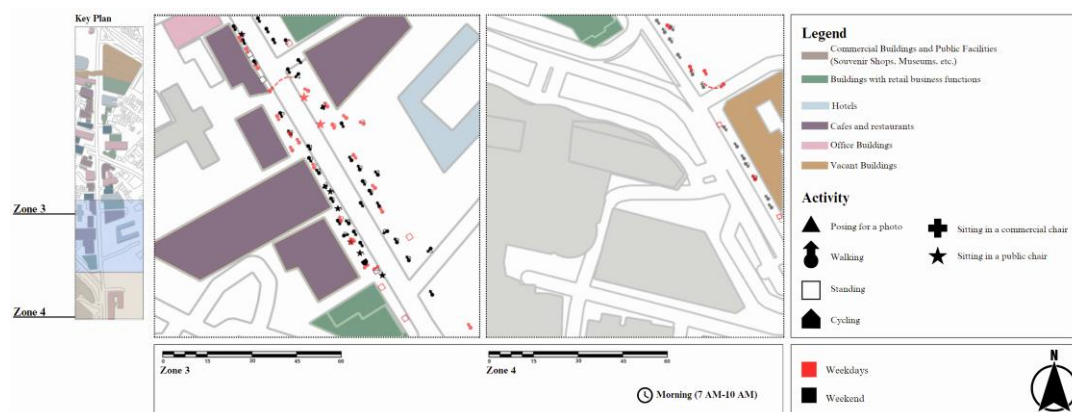


Figure 3. Combined behavior patterns on weekdays and weekend in the mornings of zones 3 & 4



Figure 4. Combined behavior patterns on weekdays and weekend during the afternoon in zones 1 & 2

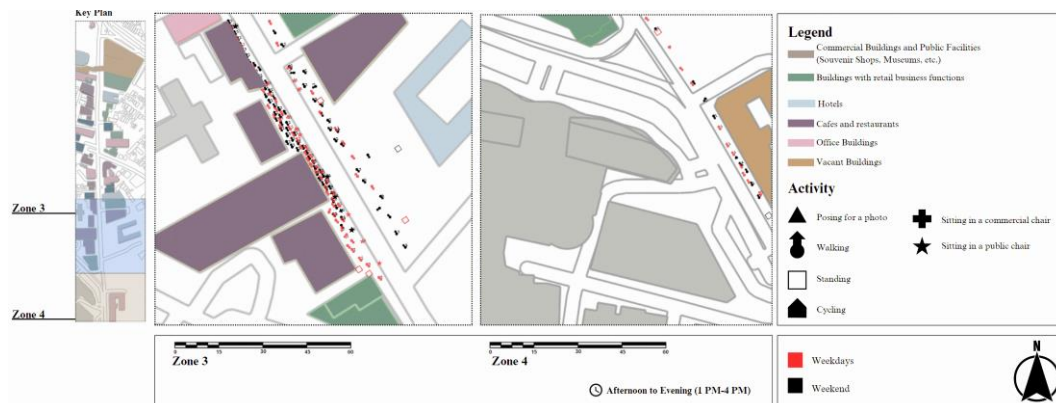


Figure 5. Combined behavior patterns on weekdays and weekend during the afternoon in zones 3 & 4

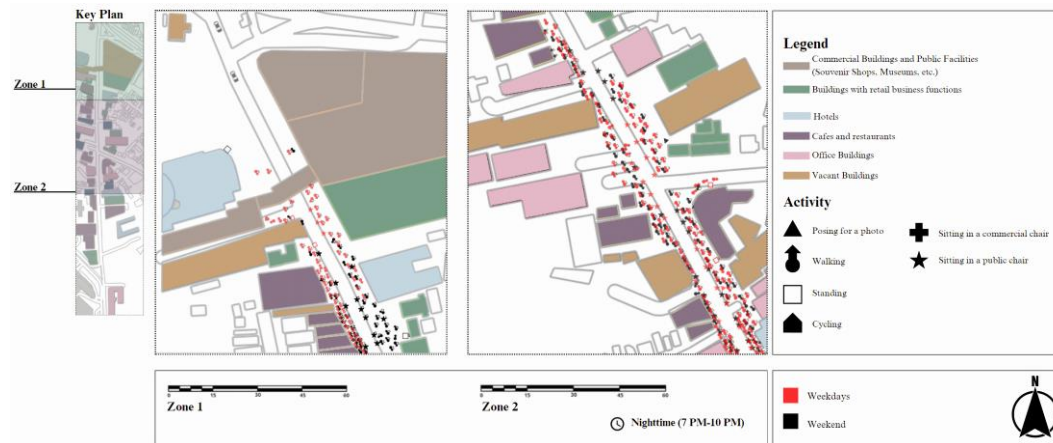


Figure 6. Combined behavior patterns on weekdays and weekend in the evenings of zones 1 & 2

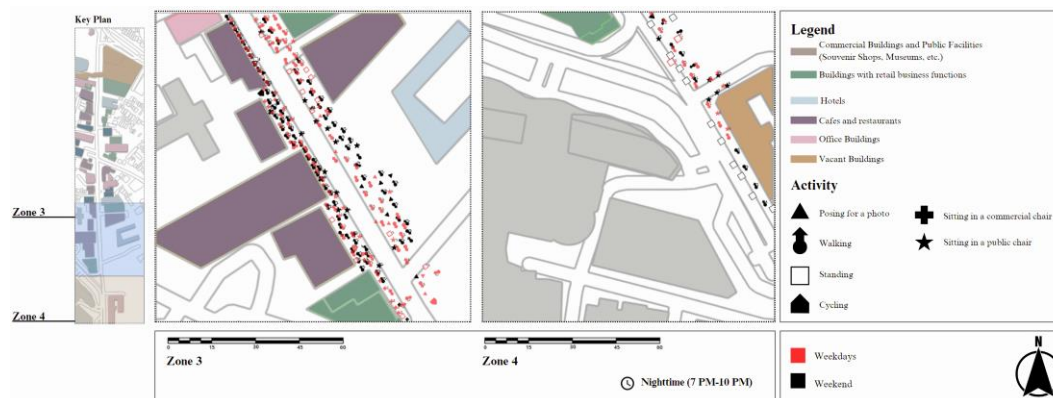


Figure 7. Combined behavior patterns on weekdays and weekend in the evenings of zones 3 & 4

Government Participation as a Supporter of Spatial Representation

The government has physically developed the pedestrian area on Tunjungan Street, Surabaya. Interviews with the Surabaya City government showed the several concepts and themes applied in developing the pedestrian space in this corridor. The overarching themes include lifestyle, modern ethics, and heritage. For the pedestrian space, the government is implementing an al fresco dining concept, which would allow visitors to enjoy the city atmosphere while eating and drinking outside cafes or restaurants. It is also important to state that the government has collaborated with cultural heritage experts to preserve the value and identity of the buildings in the area and partnered with the Department of Cooperatives and Trade to stimulate economic activity and support MSMEs as a primary step in economic advancement.

Direct government inclusiveness in this context is evident through economic categorization and the enhancement of the regional image. Tunjungan Street has become known as an icon of Surabaya City due to the perceptions and stigma of visitors (Mutfianti, 2013). The presence of cultural heritage buildings along the location further reinforces this “regional image”. However, the government acknowledges that the street does not fully represent the entire image of Surabaya City. Regardless of this perception, some respondents believe that the area has the potential to develop into a prominent tourist destination with its own distinct identity.

“... our current activation focuses specifically on the street corridor rather than the entire district, which extends into the inner urban settlements (kampung). Therefore, while it does not represent the entire heritage area of the city, it serves as one of its key cultural heritage corridors.” (Ms. Lidya, Government Staff)

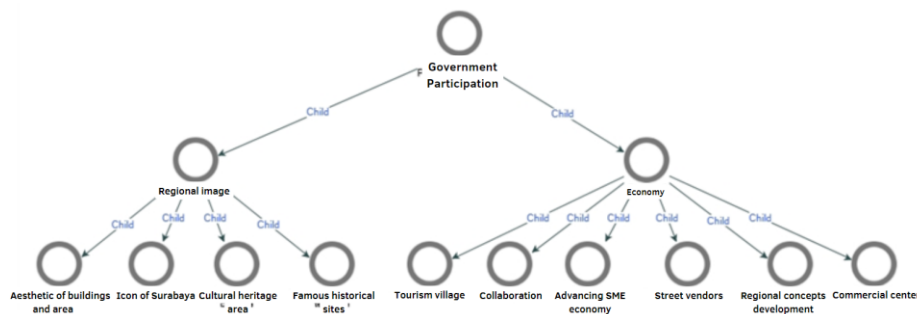


Figure 8. Project map for theme 1 by Nvivo program

The economic aspect is shaped by factors such as tourist village development, cooperation with street vendors, and the implementation of regional concepts that support the image of the area as a commercial center. In accordance with this, the efforts of the government to revitalize the economy include supporting MSMEs through direct guidance from the Tourism Awareness Group (POKDARWIS) as well as collaboration with sports and arts communities in Surabaya.

Diversity of Visitors' Impressions of Physical Space as Spatial Practice and Representational Space

Visitors play a crucial role in the development of the Tunjungan Street pedestrian corridor as planned by the government. This is evident by the observations made and interviews carried out, which showed both similarities and differences in visitors' perspectives on the destination. In this context, the commonalities

include views on comfort, accessibility, and building aesthetics, which contribute to the creation of gathering spaces due to repeated activities in the morning, afternoon, and evening in Zones One and Three. This space also established a distinct territory among visitors, pedestrians, and street vendors.

Differences in visitors' perspectives primarily concerned the atmosphere. During the interviews, 27 out of 31 respondents emphasized the impact of the atmosphere on daily activities at the location.

"I was quite surprised because it was my first time visiting and it was so crowded. It really took me by surprise." (Bayu, Visitor)

The majority (22 respondents) viewed a busy atmosphere as a positive factor in the Tunjungan Street corridor. This variance in perspective creates a relaxing space in Zone Three, which is evidenced by visitors frequently sitting in front of the Tunjungan Market booth and enjoying music performances at night.

"I've only been to Tunjungan a few times. It's really pleasant here because there are so many young people hanging out. There are plenty of culinary options, it's close to Genteng Street, and there are many coffee shops, making it an ideal public space for social gathering." (Farurozi, Visitor)

It is important to comprehend that these relaxing spaces were developed following visitors' preference for less crowded areas, while the music performance space caters to those who enjoy a vibrant atmosphere. Although sometimes uneven expectations can also create negative senses in a place (Pramudito & Ikaputra, 2023).

This phenomenon shows how visitor behavior patterns relate to comfort, impressions, and lifestyle during activities on Tunjungan Street. Additionally, the habit of the Surabaya locals, including gathering and socializing while walking, contributes to the creation of spaces through repeated communal activities, shaping spatial practices.

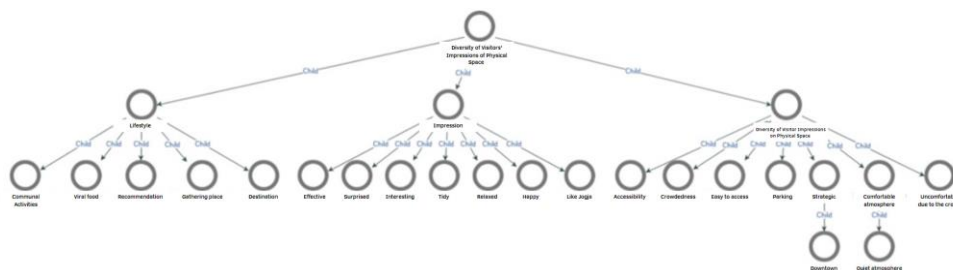


Figure 9. Project map for theme 2 by Nvivo program

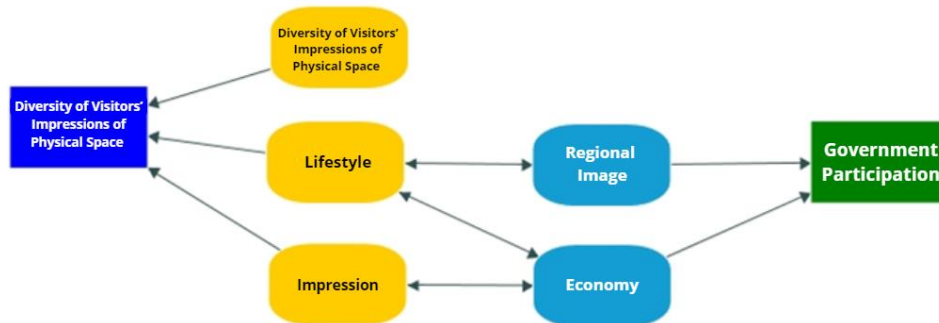


Figure 10. Concept map of the relationship between two themes

In Zone Two, art performances by local artists at night have become a key feature. This feature was introduced and sustained following the collaboration between the government and the arts community in Surabaya. Based on observations, these performances enhance activities in the pedestrian spaces, attract visitors, and contribute to the creation of informal spaces in the area. The observed relationship between lifestyle, impressions, and the regional image and economy in this study is in line with Lefebvre and Bononno's (2003) principle of "the right to the city". This concept advocates that social movements should shape open spaces, and economic activities, long supported by the government, are expected to drive economic growth and development in these spaces.

Synthesis of Socio-Spatial Production via Lefebvre's Spatial Triad

The empirical interaction between government initiatives and daily visitor activities along Tunjungan Street clearly demonstrates the mechanics of Lefebvre's spatial triad. Municipal heritage policies, commercial zoning regulations, and physical infrastructure developments represent conceived space (representations of space), establishing the official spatial framework intended to promote economic regeneration. This formal framework is materialized through perceived space (spatial practice), where daily pedestrian movement, morning cycling routines, and evening informal vending (*angkringan*) physically occupy and reconfigure the corridor. Concurrently, youth community gatherings, live art performances, and social media interactions transform these physical settings into lived space (representational spaces), imbuing the historic street with contemporary lifestyle meanings and emotional resonance. Consequently, Tunjungan Street operates not merely as a static municipal heritage asset, but as a dynamically produced public space continuously reshaped through the ongoing dialectic between institutional planning and everyday social practices.

CONCLUSION

In conclusion, this study demonstrates that the revitalization of the Tunjungan Street corridor in Surabaya extends beyond physical heritage preservation into a process of dynamic socio-spatial production. By integrating behavior mapping and qualitative thematic analysis with NVivo, the findings reveal that pedestrian space is continually reshaped by everyday human activities and visitor engagement. Specifically, the analysis identified two primary themes: the diversity of visitor impressions and direct government inclusiveness.

Grounded in Lefebvre's spatial triad, these findings illustrate a continuous interplay between municipal heritage policies (conceived space), daily pedestrian routines and nighttime activities like the *angkringan* phenomenon (perceived space), and the emotional or lifestyle meanings attributed by youth communities (lived space). Visitors perceive the corridor not only as a commercial hub amplified by social media but as a vital communal gathering space anchored by historical imageability. Ultimately, this study contributes to socio-spatial literature by providing an empirical framework for pedestrian corridor revitalization in historic urban contexts.

To translate these empirical insights into practice, municipal authorities should implement targeted spatial planning interventions along the corridor. Pedestrian comfort should be enhanced through strategic, shaded public seating, while street vendors (*angkringan*) require designated zones and regulated operating hours to support the night-time economy without compromising sidewalk circulation. Additionally, peak-hour crowd management and curated event programming are essential to prevent spatial bottlenecks. To preserve the corridor's historic character, clear heritage guidelines must regulate facade alterations and commercial developments to balance modern lifestyle uses with architectural preservation. Finally, upgrading barrier-free infrastructure, including continuous tactile paving and accessible curb ramps, is crucial to ensure inclusive access for all user groups.

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Received: 29th July 2026. Accepted: 19th August 2026