

Analysis of the Ahmad Yani Street Corridor Quality in Bukittinggi City with the Livable Street Concept

Resty Aprila Hardi¹, Adewoso Tri Wijiono²

¹ Landscape Architecture/Faculty of Infrastructure and Regional Engineering, Sumatra Institute of Technology.

² Architecture, Sausa Architect.

Correspondence email: resty.hardi@arl.itera.ac.id

Received: 2026-01-23

Reviewed: 2026-02-27

Revised: 2026-02-28

Approved: 2026-03-02

ABSTRACT. The Ahmad Yani Street corridor in Bukittinggi plays an important role in supporting economic activity, tourism, and urban mobility. However, the corridor's current state does not fully align with the principles of a livable street, particularly with regard to pedestrian comfort and accessibility. This study aims to analyze the quality of the Ahmad Yani Street corridor based on the livable street concept by identifying its physical conditions and users' perceptions. Field observations and questionnaires distributed to corridor users were used as research methods. The data were analyzed using a quantitative descriptive approach with a Likert scale. The analysis was based on three main variables: feasibility, accessibility, and comfort. The results show that accessibility received a high rating with an average score of 4.1, while feasibility and comfort received relatively low ratings with average scores of 2.9 each. The main problems identified include inadequate pedestrian paths, limited shading vegetation, and insufficient supporting facilities such as benches, trash bins, and guiding blocks for people with disabilities. Based on these findings, the Ahmad Yani Street corridor has not fully met the principles of a livable street, particularly in terms of comfort and feasibility. Recommended improvements include enhancing the pedestrian paths, providing additional shading vegetation, and offering supporting facilities and a more pedestrian-friendly street design. This study is expected to provide a basis for improving the quality of the corridor and creating more inclusive urban spaces in Bukittinggi.

Keywords: pedestrian way, mobility, road space

ABSTRAK. Koridor Jalan Ahmad Yani di Kota Bukittinggi memiliki peran penting dalam mendukung aktivitas ekonomi, pariwisata, dan mobilitas masyarakat. Namun, kondisi eksisting koridor belum sepenuhnya memenuhi prinsip livable street, terutama pada aspek kenyamanan dan kelayakan bagi pejalan kaki. Penelitian ini bertujuan untuk menganalisis kualitas koridor Jalan Ahmad Yani berdasarkan konsep livable street melalui identifikasi kondisi fisik koridor dan persepsi pengguna jalan. Metode penelitian yang digunakan adalah observasi lapangan dan penyebaran kuesioner kepada pengguna koridor yang dianalisis secara deskriptif kuantitatif menggunakan skala Likert. Analisis dilakukan berdasarkan tiga variabel utama, yaitu kelayakan, aksesibilitas, dan kenyamanan. Hasil penelitian menunjukkan bahwa variabel aksesibilitas memiliki nilai baik dengan skor rata-rata 4,1, sedangkan variabel kelayakan dan kenyamanan masih tergolong rendah dengan skor rata-rata masing-masing sebesar 2,9. Permasalahan utama yang ditemukan meliputi kondisi jalur pedestrian yang kurang memadai, minimnya vegetasi peneduh, serta kurangnya fasilitas pendukung seperti bangku jalan, tempat sampah, dan guiding block bagi penyandang disabilitas. Berdasarkan hasil tersebut, koridor Jalan Ahmad Yani belum sepenuhnya memenuhi prinsip livable street, khususnya pada aspek kenyamanan dan kelayakan ruang jalan. Rekomendasi penataan meliputi perbaikan jalur pedestrian, penambahan vegetasi peneduh, penyediaan fasilitas pendukung, serta penataan ruang jalan yang lebih ramah bagi pejalan kaki. Penelitian ini diharapkan dapat menjadi dasar dalam upaya penataan koridor jalan yang lebih nyaman dan inklusif di Kota Bukittinggi.

Kata kunci: jalur pejalan kaki, mobilitas, ruang jalan

INTRODUCTION

Bukittinggi City, located in West Sumatra, plays an important role in the region's cultural and economic sectors. Bukittinggi is also a popular tourist

destination due to its high tourism potential, strategic location, and rich history (Vora & Yermadona, 2021). As the city continues to develop, the need for better urban planning and design is increasingly pressing. A crucial element in creating a comfortable urban environment is arranging transportation infrastructure, particularly main roads that serve as connecting corridors between areas.

Regional planning, which has tended to focus on motorized road use, has created an imbalance in non-vehicle road use, often neglecting the latter (Adni Syaifullah Pesa, 2022). This has resulted in some road boundaries being out of balance with the intended use of the road corridor itself, as is the case with Jalan Ahmad Yani in Bukittinggi City.

According to Law Number 26 of 2007 (UU No. 26 Tahun 2007 Pasal 8 ayat 1) spatial utilization is carried out through a spatial utilization program and its financing. Utilization along the road corridor must be in accordance with the Regional Spatial Plan, which is further regulated through a spatial utilization permit. Additionally, the good use of road corridors related to this article includes providing green open space (RTH) of at least 30%, disaster mitigation, infrastructure integration, and sustainable spatial utilization arrangements.

A corridor is defined as a space that includes a road, a pedestrian path, and a yard between two facing building facades (Syawal & Umar, nd). Efficient, safe, and comfortable road corridors are essential for achieving smooth mobility and supporting urban environmental sustainability (Sianturi et al., 2025). However, in developing cities, including Bukittinggi, many roads are poorly managed. For example, the Jalan Ahmad Yani corridor in Bukittinggi City is poorly managed, and this can disrupt the comfort of pedestrians, motorists, and other transportation users. A multitude of issues have surfaced, including congestion, inadequate pedestrian space, a paucity of bicycle-friendly facilities, and a discordance between road function and community needs.

A street corridor is defined by a series of permanent structures located on both sides of the thoroughfare, extending in parallel alignment with the direction of vehicular traffic. The presence of

these physical elements establishes a visual boundary and reflects the overall quality of urban planning and the urban environment. In terms of spatial organization, a corridor is defined by the presence of two linear masses, which may be buildings or natural elements such as trees. These elements delineate the circulation space and function as neutral connectors between distinct areas or regions within the urban landscape (Febri Hasna Aulia et al., 2025).

Pedestrian ease and quality in landscape optimization are two key principles that are commonly used in urban spatial design. A multitude of studies have demonstrated that zones conceptualized with pedestrians as the fundamental design priority tend to exhibit elevated levels of vitality. The importance of creating space in road corridors to support pedestrian accessibility has been demonstrated to reduce dependence on private vehicles and encourage sustainable mobility patterns and healthier lifestyles (Yao et al., 2024).

The design of sustainable streetscapes necessitates the consideration of numerous elements, encompassing both spatial and non-spatial preferences (Adeel et al., 2021). As posited by Zhang et al. (2024), the seven attributes of sustainable urban streetscape design are as follows: buildings, landscaping, smart street furniture, smart transportation systems, smart services, materials used on sidewalks or roads, and public open spaces.

A number of factors have been identified as being of critical importance for ensuring a positive experience for road users. These factors include the provision of adequate street furniture, the establishment of pedestrian pathways that are both straightforward and readily accessible for individuals with disabilities, and the necessity for regular maintenance of all street elements, including pedestrians, seating, and lighting systems (Shata M., & Nabeel, 2021).

As Appleyard (Samian & Jordan, 2024) asserts, the term "Livable Streets" refers to the concept of designing roads in a manner that ensures safe and comfortable travel conditions for all users, including motorized vehicles, pedestrians, public

transportation, and cyclists. As posited by Jacobs in Dwira Aulia et al. (2020), urban vitality and allure are contingent on the extent of human activity within the city's streets. In contrast, when urban streets are unoccupied or devoid of activity, the city is said to be "empty." Meanwhile, Wheeler (2004) posits that the concept of a livable city encompasses the atmosphere of an urban environment that is conducive to habitation and the execution of activities. These activities can be evaluated from various physical and nonphysical perspectives.

The quality of green open space is enhanced by increasing community utilization of open space (Ristya Arinta Safitri, 2022) and the implementation of road corridors for various community activities—in this case, liveable streets. These measures will subsequently influence economic development and tourism in the Bukittinggi City area.

Pursuant to the stipulations enumerated in the Regulation of the Minister (Permen) of Public Works Number 06/PRT/M/2009 concerning General Guidelines for Building and Environmental Planning, the following provisions have been established to guide the design of buildings in designated environments/areas. These guidelines are intended to ensure the effective control of space utilization, building configurations, and environmental arrangements. This includes the implementation of road corridors, with adherence to the prevailing statutory regulations.

In his book *Inclusive Urban Design – Streets for Life* (Burton, 2006), the author posits the concept of "livable streets," which are characterized by a set of principles including familiarity, legibility, distinctiveness, accessibility, comfort, and security. According to Jacobs (1995), the following criteria are imperative for the designation of a street as "livable": 1. The environment is characterized by its dynamism and the presence of a diverse array of activities. 2. The creation of a significant amount of movement within it. 3. The establishment of social interaction. 4. The objective is to initiate the development of activities that are environmentally sustainable. 5. The device has been deemed safe for its users. 6. The entity in question has the capacity to facilitate a variety of modes of transportation.

Furthermore, Choudhury (2008) posited in his research that roads must meet several criteria. Specifically, roads must be designed in a manner that attracts people to use the road, that maintains the road's appeal, and that instills in road users a desire to return to the road.

This is consistent with Bukittinggi City Regional Regulation (Perda) No. 1 of 2020 concerning the Bukittinggi City Tourism Development Master Plan for 2019-2025. This master plan integrates accessibility and supporting infrastructure, as well as city spatial planning regulations. The objective of these regulations is to create a safe, comfortable, and orderly city. The focus of the spatial planning is on supporting the function of roads as public services and public facilities.

This approach promotes the allocation of space for pedestrians and cyclists, as well as the incorporation of green spaces, parks, and social amenities that facilitate social interaction. This concept endeavors to metamorphose streets from mere functional spaces into more inclusive, sustainable, and welcoming spaces for all their users.

Studies about draft livable streets have been carried out in various cities as an effort to increase the quality of living spaces in a way that is more comfortable and inclusive for all users. However, studies that integrate the physical condition of the corridor with the perception of users are still limited, especially in Bukittinggi City. Understanding the existing conditions of the corridor combined with the users' perception of the road is very important for producing appropriate recommendations for the arrangement that meets the needs of society. Therefore, this research analyzes the quality of the Ahmad Yani Street corridor in Bukittinggi City based on the draft livable street through the identification of the existing corridor, the analysis of users' perceptions of the road, and the formulation of recommendations for the arrangement of the corridor in a way that is more comfortable, safe, and inclusive for all users of the road.

RESEARCH METHODS

Research Location

This research is situated on Jalan Ahmad Yani in Pasar Atas, Guguk Panjang District, Bukittinggi City, West Sumatra. The Ahmad Yani Road Corridor in Bukittinggi City has a geometric length of 360 meters (Aulia, 2025, nd). This thoroughfare extends northward from the Clock Tower, culminating at the intersection in proximity to Limpapeh Bridge. The property is situated adjacent to Jalan Veteran to the north and Jalan Istana to the south.



Figure 1. Research Location Map, 2025

Source: Authors, 2025

The Jalan Ahmad Yani corridor is characterized by its uniform road width, which is measured at 6 meters. This width is complemented by the presence of a pedestrian pathway measuring 1.5 meters on each side, thereby ensuring a balanced and accessible environment for pedestrians. The architectural structures present along this particular stretch vary in height, ranging from seven to 17 meters, with an average of one to four stories. Jalan Ahmad Yani functions as a conduit between the Jam Gadang tourist area and Bukittinggi City. The following is a sectional image of Jalan Ahmad Yani, Bukittinggi City.

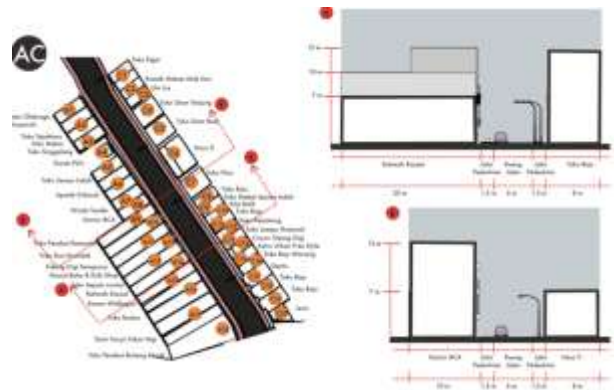


Figure 2. Road Space Section

Source: Authors, 2025

Research Stages

In this study, data were collected through two main stages: observation and questionnaire distribution. The problems and objectives of the study were formulated based on the background as well as supported by relevant literature (Krisdiyanto et al., nd). The observation field was conducted to identify the condition of the corridor road. The observation was conducted straight along the Ahmad Yani Street corridor, and elements of the corridor were recorded and documented. The observed aspects covered the condition of the pedestrian path, wide roads, and pedestrian paths, vegetation and shade elements, street furniture, signage, parking for vehicles, and the activity of users of the road. The observation results are used to describe the existing corridor conditions and as a basis for the compilation of study variables.

In addition to observations, data was collected through the distribution of questionnaires and interviews with users of the Ahmad Yani Street corridor. The questionnaire was used to understand users' perceptions of the corridor's quality based on the draft livable street. The respondents were users of the road, such as pedestrians, visitors, and traders along the Ahmad Yani Street corridor at the time the study was conducted.

The sampling technique used was accidental sampling, which is a technique that takes a sample based on respondents who were found at the location of the study and were willing to fill out the questionnaire. This technique was used because the respondents are road users who are dynamic and

not settled in one location. The number of respondents in the study is 100, who are considered to represent users of the Ahmad Yani Street corridor.

The measurement variables were based on the draft livable street, which includes three main variables: feasibility, accessibility, and comfort. The assessment of the respondents' perceptions used a Likert scale with the following range of marks:

- 1 = Very Bad
- 2 = Bad
- 3 = Fair
- 4 = Good
- 5 = Very Good

The data were further analyzed using a descriptive quantitative approach to describe the phenomenon systematically and in a structured manner based on numbers (Resty Aprila Hardi & Fitriani, 2025). The method combines two main components: descriptive, which focuses on the exposition of the studied conditions, and Well, there is quantitative research, which focuses on the collection and analysis of numerical data. According to Jauza (2025), the quantitative approach is a scientific method rooted in the philosophy of positivism, with main characteristics like objectivity, numerical measurement, statistical analysis, and the ability to generalize to a wide population. Additionally, quantitative research prioritizes testing hypotheses and relationships, as well as the validity of findings that can be replicated. The quantitative approach involves collecting and analyzing numerical data with control variables, which allow researchers to investigate phenomena and connections between variables in a structured way (Rusydi, A. Siroj, et al., 2024).

To increase the validity of the data, this research uses two methods of data collection: observation in the field and a questionnaire. This allows for a comparison between the physical condition of the corridor and the perception of the users. Meanwhile, data reliability is maintained by using the same questionnaire for all respondents, as well as using a consistent assessment scale.

Furthermore, Kusuma (2024) stated that data collection in descriptive research is done through observation and dissemination of questionnaires. The aim of the observation was to understand the characteristics and conditions of the Minangkabau Street corridor, while the questionnaire was used to capture the community's perceptions. The results obtained were then analyzed using the Importance Performance Analysis (IPA) method to determine the priority intervention arrangement for the area. The analysis produced a description of the characteristics of the space that can be used as a basis for formulating sustainable development strategies for the corridor.

Overall, the study produced important findings related to the Ahmad Yani Street Corridor in Bukittinggi City. The expected findings can contribute to addressing existing deficiencies and offer solutions to improve the quality of the corridor as a comfortable, attractive, and representative public space in a more humanist way.

RESULTS AND DISCUSSION

Observation Data

The Ahmad Yani Street Corridor was observed based on the characteristics of the road space (Nursita Rohmah et al., 2023). It was found that Ahmad Yani Street, Kota Bukittinggi consists of buildings dominated by commercial buildings in the form of shops and shophouses. The road space is used as traffic and parking areas. Pedestrian paths are defined along the road. Vegetation is spread across several points. A pedestrian arcade is present. The image below illustrates the morphological data concerning the road space.



Figure 3. Morphology of Road Space
Source: Authors, 2025

A survey of the street furniture along Jalan Ahmad Yani reveals the presence of several types of street furniture. The area contains 12 irregularly distributed vegetation areas, comprising 9 mini palms and 3 mini banyans. However, there is an absence of shade trees in this area. The corridor is furnished with a variety of signage, including wall signs, free-standing signs, door/window signs, and suspended signs. Three trash receptacles are also located along the corridor. However, the pedestrian path lacks both city hydrants and guiding blocks.



Figure 4. Vegetation
 Source: Authors, 2025



Figure 5. Rubbish bin
 Source: Authors, 2025

The buildings surrounding the Jalan Ahmad Yani corridor exhibit a preponderance of modern tropical, modern, and Chinese architectural styles. This phenomenon can be attributed to the fact that the corridor constitutes a commercial area, characterized by a preponderance of shops and shophouses that prioritize commercial activities. Certain edifices are conventional. The following image offers a visual representation of the architectural styles present in the aforementioned corridor.

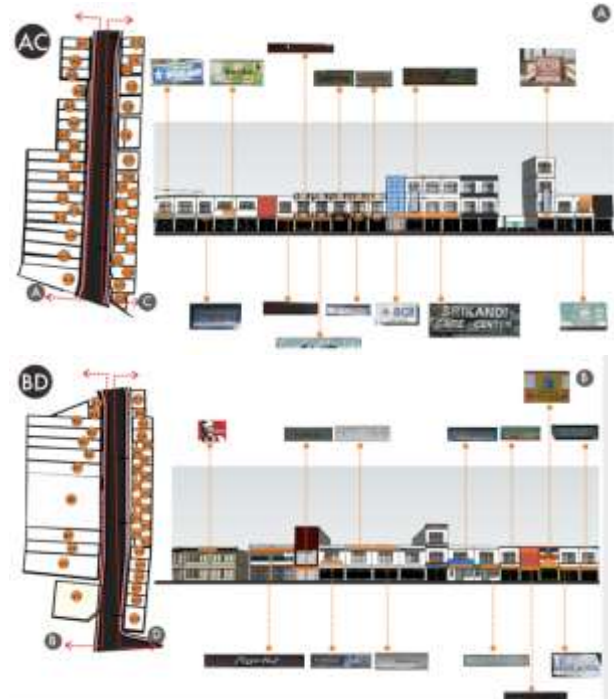


Figure 6. Signage Distribution
 Source: Authors, 2025

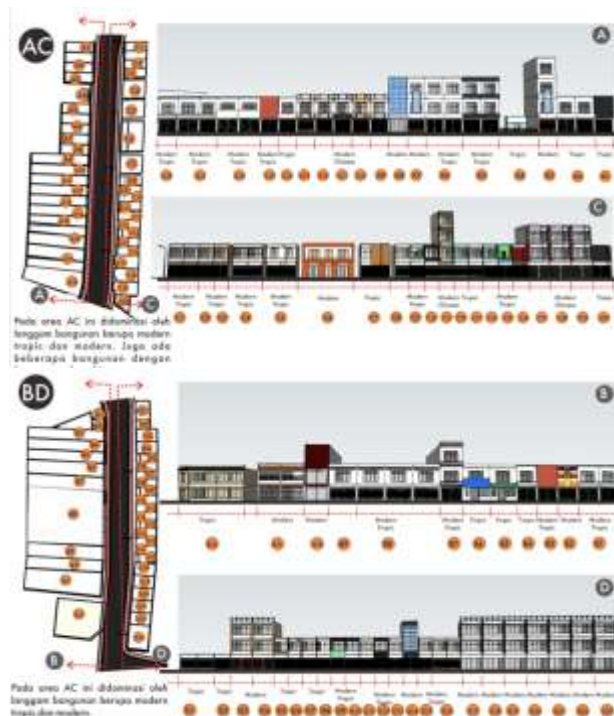


Figure 7. Building Style
 Source: Authors, 2025

In addition to the physical facilities, Jalan Ahmad Yani is characterized by a variety of social interactions, predominantly economic in nature. These interactions include, but are not limited to, roadside vendors, car and motorcycle parking, and

horse drawn carriage parking. At designated intervals, a variety of specialized activities are also scheduled. One such example is the Singkarak tour, which traverses this thoroughfare. Moreover, the aforementioned route was traversed by festival activities.



Figure 8. Social Interaction
Source: Authors, 2025

The Visitor's Perception

The collection of questionnaires has been completed to obtain results regarding the perception of visitors to Jalan Ahmad Yani based on the draft livable street by Burton (2006). The processing and analysis of the questionnaire data uses the Likert scale with data grouping and scoring techniques.

Eligibility Variable

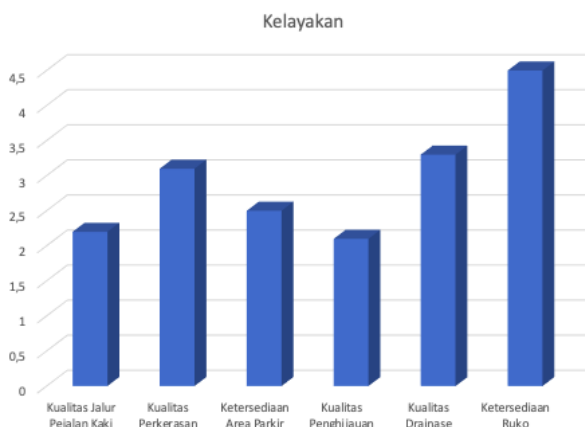


Figure 9. Feasibility Graph
Source: Authors, 2025

Based on the results of the questionnaire, the average value of the variable "eligibility" is 2.9, which is included in the "less" category. The low value of this variable is influenced by the following conditions: unpaved pedestrian paths, inadequate parking, insufficient organized parking, and a lack of vegetation shade.

Narrow pedestrian paths disturbed by parking activities decrease comfort and safety for pedestrians. Additionally, the lack of shade from vegetation causes the corridor to be uncomfortable, especially during the day. This shows that the corridor's eligibility still needs improvement to support pedestrian activity optimally.

Accessibility Variable

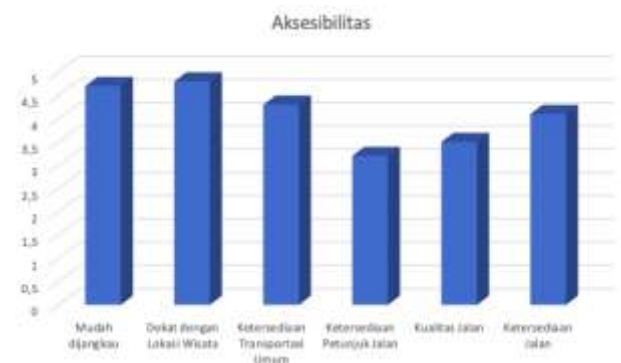


Figure 10. Accessibility Graph
Source: Authors, 2025

The accessibility variable received an average score of 4.1, falling into the "good" category. This indicates that the Ahmad Yani Street corridor is easily accessible to road users and has a good level of reachability. Located in the city center, the corridor is close to tourist areas, making it easily accessible to visitors. Additionally, the corridor's relatively good road conditions and public transportation availability further support access. The high accessibility score indicates that the Ahmad Yani Street corridor functions well as a mobility route. However, the quality of pedestrian facilities has not kept pace with this ease of access.

Comfort Variable

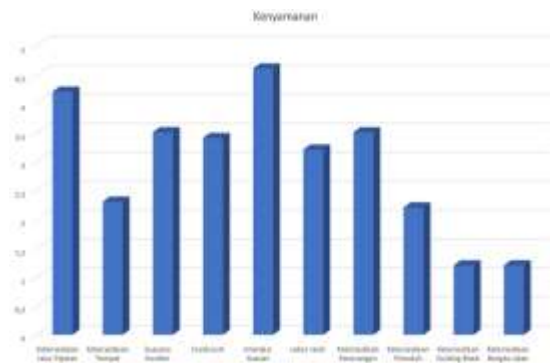


Figure 11. Comfort Graph

Source: Authors, 2025

The accessibility variable received an average score of 4.1, which is considered good. This score indicates that the Ahmad Yani Street corridor is easily accessible to road users and has a high level of reachability. Located in the city center near tourist areas, the corridor is easily accessible to visitors. Additionally, the corridor's relatively good road conditions and public transportation availability further support convenient access. The high accessibility score suggests that the Ahmad Yani Street corridor functions well as a mobility route. However, the quality of pedestrian facilities has not kept pace with this level of accessibility and remains inadequate.

Conclusion

Based on the results of observations and perceptions, the Jalan Ahmad Yani corridor has a good level of accessibility, according to Burton's theory (2006). However, it still has weaknesses in terms of suitability and comfort. This shows that the corridor functions more as a mobility track than as a comfortable public space for users. In the draft livable street, the corridor functions not only as a transportation track, but also as a supportive public space for social activities. The Ahmad Yani Street corridor shows that the mobility function is already good, but the social function of the road is still not optimal.

The main problems found on the Jalan Ahmad Yani corridor are the lack of pedestrian paths, inadequate vegetation, limited shade, insufficient support facilities, and disorganized parking. These

problems influence the level of comfort for users of the road and show that the corridor does not yet fully fulfil the principle of a livable street.

The research results also show that the corridor's physical condition aligns with users' perceptions. A corridor with limited pedestrian facilities tends to have a low level of comfort. This shows that improving the quality of pedestrian facilities is an important factor in creating a better, more comfortable, and inclusive corridor.

It can be concluded that the results of the observations are in line with the results of the perception of the respondents through the questionnaire, which can be explained through the approach of the characteristics of the scope of the road according to Nursita Rohmah et al. (2023). The characteristics of the road are important because they can help define the image of the city in a comprehensive way, so that the road can form a setting (Jacobs, 1993).

Based on the analysis of the results for the Ahmad Yani Street corridor in Bukittinggi City, it is known that the corridor has good accessibility with an average value of 4.1, as determined by the approach of the draft livable street.

This shows that the corridor is easily accessible and functional, with good mobility in the city center. However, the corridor's suitability and comfort level is still classified as low, with an average value of 2.9.

The main problem found in the corridor shows that the Ahmad Yani Street corridor does not yet fully fulfil the principle of a livable street, especially in terms of comfort and suitability for pedestrians. Based on these findings, efforts to improve the Ahmad Yani Street corridor should focus on enhancing the quality of pedestrian paths, adding vegetation for shade, providing supportive facilities, and arranging more orderly parking. These improvements are expected to increase the comfort of road users and support the corridor's function as a more inclusive public space.

This study contributes to the evaluation of the quality of the corridor based on the physical and perceptual conditions of users with a livable street approach, which can serve as a basis for planning the arrangement of corridors in Bukittinggi City.

REFERENCES

- Anggriani Niniek. (2009). Pedestrian Ways in Urban Planning. Humanities Foundation. Klaten.
- Adeel A., et al. (2021). Sustainable Streetscape and Built Environment Designs Around BRT Stations: a Stated Choice Experiment Using 3D Visualizations, Sustainability. 13(12):6594. <https://doi.org/10.3390/su13126594>
- Al Odat, Shata M., and Nabeel A. (2021). Lively Streets: The Role of Streetscape Elements in Improving the Experience of Commercial Street Users in Amman, Jordan. Journal of Settlements and Spatial Planning. <https://doi.org/10.24193/JSSP.2021.1.01>
- Burton, E., & Mitchell, L. (2006). Inclusive Urban Design Streets for Life. United Kingdom : Architectural Press Is An Imprint Of Elsevier.
- Choudhury, A. (2008). Identifying The Criteria That Sustain Livable Streets". University of Arizona.
- Dwira Aulia, Sry Malem Perbina Bangun, & Cut Sari Natasya.R. (2020). Arrangement of Public Space Corridors in Housing Complexes with a Livable Street Concept (Case Study of Bumi Asri Housing Complex, Medan). Talenta Conference Series: Energy and Engineering (EE), 3(1). <https://doi.org/10.32734/ee.v3i1.872>
- Febri Hasna Aulia, Helga Yermadona, & zuheldi. (2025). *Proceeding 9th Andalas Civil Engineering Conference*.
- Krisdiyanto, A., Dewi, K., Wiguna, S. A., Kriswandaru, A. S., & Kriswandatu, A. (n.d.). ANALISIS PENGARUH AKTIVITAS PASAR BINTORO DEMAK TERHADAP KEMACETAN DI JALAN SULTAN FATAH.
- Jacobs, Allan B. (1995). Great Street, United States of America: MIT Press.
- Jauza, N. A., & Albina, M. (2025). *Quantitative research models and approaches: Philosophical, methodological, and applied studies*. QOUBA: Journal of Education. 2(1):104–111.
- Kusuma, F. R. (2024). *Development Strategy for the Haji Agus Salim Road Corridor in Madiun City with a Livable Street Approach [Undergraduate Thesis, Sepuluh Nopember Institute of Technology]*. ITS Repository.
- Nursita Rohmah, A., Sarwadi, A., Yogyakarta, M., Master of Built Environment Design, D., Architecture, T., & Gadjah Mada Yogyakarta, U. (2023). Characteristics of Main Roads in Yogyakarta City. In Journal of Architecture Student. 1(4).
- Local Regulation (Perda) of Bukittinggi City No. 1 of 2020 concerning the Master Plan for Tourism Development in Bukittinggi City for 2019-2025.
- Minister of Public (Permen) Works Regulation Number 06/PRT/M/2009 concerning General Guidelines for Building and Environmental Planning.
- Resty Aprila Hardi, & Fitriani. (2025). Identifying the Impact of the Revitalization of Klaten Square. *Jurnal Kajian Ruang Vol 5 No 1*.
- Rusydi A. Siroj, Win Afgani, Fatimah, Dian Septaria, Gabriella Zahira, & Salsabilla. (2024). Siroj. Journal of Education and Teaching Review, 7.
- Safitri, R. A., et al. (2022). Utilization of Green Open Space in the Kyai Tapa Corridor, Grogol, West Jakarta. *Sinektika Architecture Journal*. Trisakti University.
- Samian, R., & Jordan, N. A. (2024). APPLICATION OF THE LIVABLE STREET CONCEPT IN THE ARRANGEMENT OF THE MULAWARMAN ROAD CORRIDOR IN THE CITY OF BALIKPAPAN. *Urban and Regional Planning*, 16(2), 121–132. <https://doi.org/10.21776/ub.takoda.2024.016.02.1>
- Sianturi, R. R. S., Ade, M., Harahap, K., & Saragih, H. (2025). Urban Spatial Planning to Support Sustainable Mobility (Vol. 4, Issue 2).
- Syaifullah, P., A. (2022). "The Concept of Livable Streets in the Arrangement of the Tuanku Tambusai Road Corridor in Pekanbaru City." Faculty of Engineering. Riau Islamic University.
- Syawal, H. M., & Umar, I. (n.d.). Identification of Land Use Changes in the Bukittinggi City Bypass Corridor Based on Time Series Using High-Resolution Satellite Imagery (CSRT) in 2012 and 2022.
- Law Number 26 of 2007 concerning Spatial Planning. Article 8 Paragraph 1.
- Vora, A., & Yermadona, H. (2021). ANALYSIS OF TRAFFIC IMPACT AT THE AUR INTERSECTION IN BUKITTINGGI CITY. *Encyclopedia of Research and Community Service Review*, 1. <http://jurnal.ensiklopediaku.org>
- Wheeler. (2004). *Making Cities Livable*. International Making Cities.
- Yao C., Li., dan Yan S. (2024). Design Strategies to Improve Metro Transit Station Walking Environments: Five Stations in Chongqing,

China, Buildings. 14(4):1025.
<https://doi.org/10.3390/buildings14041025>

Zhang Y, dkk. 2024. A framework for smart city streetscape (SCS) design guidelines for urban sustainability: results from a systematic literature review and a Delphi process. *Environ Dev Sustain* 26(11):27195–27226.