



Published by the UFS

<http://journals.ufs.ac.za/index.php/trp>


© Author(s)

**How to cite:** Akbarishahabi, L. 2025. Revitalising semi-rural historic commercial areas: Pedestrian-friendly and ecological principles in the Ürgüp Bazaar District, Turkey. *Town and Regional Planning*, no. 87, pp. 69-85.

# Revitalising semi-rural historic commercial areas: Pedestrian-friendly and ecological principles in the Ürgüp Bazaar District, Turkey

Leila Akbarishahabi

Research article

 <https://doi.org/10.38140/trp.v87i.9354>

Received: July 2025

Peer reviewed and revised: November 2025

Published: December 2025

\*The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article

## Abstract

Historic commercial districts are vital components of urban identity and cultural continuity. Yet, many, including the Ürgüp Bazaar District, have experienced physical deterioration, spatial irregularity, and a loss of urban vibrancy. To address these challenges, this study aims to develop a comprehensive Urban Design Guide for Ürgüp Bazaar District, grounded in pedestrian-friendly and ecological principles. A mixed-methods approach is adopted, combining literature review, field observations, PESTEL analysis, and a user survey involving 432 participants. Drawing from international revitalisation and transformation projects with similar historical and commercial characteristics, the study formulates context-specific strategies that prioritise walkability and green infrastructure. Observations indicate that narrow, obstructed sidewalks, building façade inconsistencies, and vehicle dominance severely limit public space quality. The PESTEL analysis emphasises political conservation restrictions, environmental vulnerabilities, and technological inadequacies, while the surveys highlight user dissatisfaction with functional organisation and a strong demand for ecological and pedestrian-oriented improvements. The findings reveal critical deficiencies such as traffic congestion, lack of green spaces, poor pedestrian infrastructure, insufficient public amenities, and weak integration of sociocultural activities, in line with the findings obtained and the strategies formulated within the scope of similar projects. An Urban Design Guide is developed for the Ürgüp Bazaar District, and aims to restore the historical and environmental values of the Ürgüp Bazaar District and support sustainable urban living. The study endeavours to contribute to academic discussions, by proposing an integrated, evidence-based framework for the revitalisation of small historic commercial areas, particularly in semi-rural urban contexts.

**Keywords:** Ecological principles, ecological urbanism, PESTEL, Urban Design Guide, historic commercial districts, pedestrian-friendly revitalisation, walkability, Ürgüp Bazaar District

## HERLEWING VAN SEMI-LANDELIKE HISTORIESE HANDELSGEBIEDE: VOETGANGER EN EKOLOGIESE BEGINSELS IN ÜRGÜP, TURKYE

Historiese kommersiële distrikte is noodsaaklike elemente van stedelike identiteit en kulturele kontinuïteit. Tog het baie, insluitend die Ürgüp Bazaar-distrik, fisiese

agteruitgang, ruimtelike onreëlmatigheid en 'n verlies aan stedelike lewendigheid ervaar. Hierdie studie het ten doel om 'n omvattende stedelike ontwerpgerig vir die Ürgüp Bazaar-distrik te ontwikkel, gegrond op voetganger-vriendelike en ekologiese beginsels. 'n Gemengde metode is gebruik wat literatuurstudie, veldwaarnemings, PESTEL-analise en 'n gebruikersopname met 432 deelnemers insluit. Gebaseer op internasionale herlewingsprojekte met soortgelyke historiese en kommersiële kenmerke, is konteks-spesifieke strategieë geformuleer wat stapbaarheid en groen infrastruktuur prioritiseer. Waarnemings toon dat smal, versperde sypaadjies, geboufasade-inkonsekwentheid en voertuigoorheersing die kwaliteit van openbare ruimtes ernstig beperk. Die PESTEL-analise beklemtoon politieke bewaringbeperkings, omgewingsk-wesbaarhede en tegnologiese tekortkominge, terwyl opnames lig gebruikersontevredenheid oor funksionele organisasie en 'n sterk vraag na ekologiese en voetganger-georiënteerde verbeterings uit. Die bevindings toon kritieke tekortkominge soos verkeersopeenhoping, 'n gebrek aan groen ruimtes, swak voetgangerinfrastruktuur, onvoldoende openbare geriewe en beperkte sosio-kulturele integrasie. Die ontwerpgerig poog om die historiese en omgewingswaardes van die Ürgüp Bazaar-distrik te herstel en volhoubare stedelike leefstyl te ondersteun.

## TSOSELETSO EA LIBAKA TSA KHOEBO TSA NALANE ÜRGÜP

Libaka tsa khoebo tsa nalane ke karolo ea bohlokoa ea boitsebahatso ba litoropo le ho tsoela pele ha setso. Leha ho le joalo, tse ngata, ho kenyeletsoa le Ürgüp Bazaar, li tobane le ho senyeha ha sebopelo, ho hloka taolo ea sebaka le ho fokotseha ha bophelo ba toropo. Thuto ena e ikemiselitse ho nts'etsapele tataiso ea moralo oa toropo e ipapisitseng le melao-motheo e khothalletsang maoto le tikoloho. Mekhoa e fapaneng e sebelisitsoe, ho kenyeletsoa liphuputso tsa lingoliloeng, tlhahlobo ea PESTEL le lipatlisiso tsa basebelisi ba 432. Ho ipapisitsoe le merero ea machaba ea ho nchafatsa libaka tse tsoanang, maano a khethehileng a entsoe ho matlafatsa ho tsamaea ka maoto le ho kenya mehaho e tala. Liphuputso li bontšitse mathata a kang litsela tse moqotetsane, ho se lumellane ha lifaese tsa meaho le ho feteletseng ha likoloi. Tlhahlobo ea PESTEL e totobalitse lithibelo tsa lipolotiki, bofokoli ba tikoloho le mathata

Ass. Prof. Leila Akbarishahabi, Department of City and Regional Planning, Cappadocia University, Nevşehir, Turkey. ROR: <https://ror.org/01zx17h33>, Email: [leila.akbarishahabi@kapadokya.edu.tr](mailto:leila.akbarishahabi@kapadokya.edu.tr), ORCID: <https://orcid.org/0000-0002-0547-7874>



a theknoloji, ha lipatlisiso li bontša ho se khotsofale ha basebelisi ka mokhatlo oa sebaka le tlhoko e matla ea ntlafatso e kothalletsang maoto le tikoloho. Tataiso ena e ikemiselitse ho khutlisetsa boleng ba nalane le tikoloho ho tšehetsa bophelo bo tsitsiseng ba toropo.”

## 1. INTRODUCTION

Historic commercial centres such as bazaars and old town squares are integral to urban identity. Urban design projects and conservation strategies must balance historical authenticity with contemporary needs in this context (Orbasli, 2000; Pendlebury, 2008). Recent research further shows that heritage districts increasingly need to be planned as green, walkable, and climate-responsive environments, where green infrastructure and “green walkability” support everyday mobility, comfort, and liveability (Roscoe *et al.*, 2022; Wang *et al.*, 2025; Zarei & Shahab, 2025). Integrating modern urban functions and pedestrian-oriented uses into heritage areas without compromising their character is, therefore, a key challenge, especially in historic commercial streets and squares (Carmona *et al.*, 2003; Maniei *et al.*, 2024; Shehab El-Deen, Aboulsaadat & Nour, 2024). Developing a multidimensional urban design approach that respects cultural heritage, while increasing accessibility, usability and environmental performance has become an important and complex task. To ensure sustainability, these towns must be viewed as evolving places, managed through integrated planning, inclusive decision-making, and holistic conservation (Huang *et al.*, 2024; Orbasli, 2000). Although old bazaar areas in historical cities have a unique identity, they are becoming problematic areas that do not offer social activities for users and cause visual pollution. While existing research addresses urban aesthetics, walkability, and sustainability, few studies focus on the integrated revitalisation of small-scale historic commercial areas in semi-rural contexts. This study aims to develop a pedestrian-friendly and ecologically sustainable Urban Design Guide to enhance the aesthetics,

functionality, and sustainability of the deteriorating Ürgüp Bazaar District.

The primary objectives of the study are to document and analyse the current spatial, functional, and environmental characteristics of Ürgüp Bazaar as a historic commercial centre, and to identify key challenges and opportunities related to walkability, ecological performance, and public-space quality. The study also explores the perceptions and spatial experiences of users through a randomly selected sample, while investigating the critical factors for the sustainable transformation of the district within the context of PESTEL analysis. In addition, the research evaluates how principles of walkability and ecological design can contribute to the district’s revitalisation. This article examines Ürgüp Bazaar as a historic commercial hub and explores how to enhance ecological walkability without compromising its heritage. The study employs a mixed-methods approach, combining literature review, field observations, PESTEL analysis, and a user-based survey. The goal is to create an urban design framework for promoting ecological walkability in historic bazaar districts. The framework, based on the findings from Ürgüp, is intended to offer an adaptable model for other small and medium-sized historic trade zones with similar morphological and socio-economic characteristics.

## 2. LITERATURE REVIEW

### 2.1 Sustainable urban design and green infrastructure

Within the framework of sustainable urban development and ecological city principles, green infrastructure is a key strategy that enhances the environmental resilience of cities, supports biodiversity, and improves quality of life (McMahon & Benedict, 2006). Green infrastructure aims to provide ecosystem services in urban areas, by incorporating natural and semi-natural elements such as green spaces, ecological corridors, sustainable drainage systems, and vertical gardens (Tzoulas *et al.*, 2007). Sustainable urbanism

advocates for walkable, mixed-use communities with efficient public transportation, eco-friendly buildings, and resilient infrastructure. It serves as a roadmap for cities seeking to adopt sustainable design principles and create liveable, environmentally responsible urban spaces (Farr, 2008). Urban greening strategies such as permeable surfaces, green roofs, and rain gardens are essential in adapting cities to climate change (Ahern, 2011; Beatley, 2011). Philips (2013) highlights urban farming as a multifunctional, sustainable practice that enhances urban life, by integrating agriculture into public spaces. Key principles include biodiversity, water management, community involvement, and sustainable design. It supports education, social connection, and resilience, while reconnecting people with nature and food (Philips, 2013). In line with the principles of ecological design in cities, it is important to increase the total percentage of green space and the amount of green space per person (Gill *et al.*, 2007), the number and diversity of local and exotic plant species in the region (Hansen & Pauleit, 2014), and use the trees that can reduce PM or ambient air temperature (McDonald *et al.*, 2016).

Recent scholarship further expands the role of green infrastructure as a nature-based solution for urban climate mitigation and adaptation, showing how green roofs, rain gardens, and urban forests can reduce flood risk, improve thermal comfort, and deliver multiple ecosystem services in dense urban areas (Kadić *et al.*, 2025; Korkou, Tarigan & Hanslin, 2023; Ramyar, Ackerman & Johnston, 2021; Wan *et al.*, 2025). At the same time, emerging research on ‘green walkability’ demonstrates that integrating trees, pocket parks, and blue-green elements into street networks strengthens walkability, enhances pedestrian safety and comfort, and supports low-carbon everyday mobility (Del Rosario *et al.*, 2025; Liu *et al.*, 2024; Wang *et al.*, 2025). Ecological principles in urban design focus on enhancing green infrastructure, increasing biodiversity,

and creating resilient, liveable spaces through strategies such as urban greening, sustainable drainage, and climate-adaptive vegetation.

## 2.2 Pedestrian-friendly and mixed-use commercial areas

Walkability is a fundamental element of sustainable urban development, offering economic, environmental, and social benefits (Gehl, 2010). It enhances economic activity, promotes healthier lifestyles, supports environmental sustainability, reduces traffic, and improves physical and mental well-being (Gehl, 2010; Southworth, 2005; Wang *et al.*, 2016). Defined as the suitability and attractiveness of environments for walking, walkability encompasses both physical infrastructure and human perception, prioritising people over cars to create liveable, human-scaled cities (Knapskog *et al.*, 2019; Newman & Kenworthy, 2015; Yin, 2017). Despite its widespread study, the concept remains complex and multidisciplinary in nature, linking empirical measures with normative goals in urban design, health, and social life (Dovey & Pafka, 2020; Shields *et al.*, 2021). Understanding the factors that influence walking behaviour across regional, individual, social, and spatial dimensions is essential, with both macro-scale planning and micro-scale user perceptions playing a crucial role (Halu, 2010, 2019). Improving walkability requires a comprehensive approach, involving mixed land use, pedestrian-friendly infrastructure, reduced car dependency, tactical urbanism, and integration with public transit. Key strategies such as optimising street design, providing greenery, ensuring safe intersections, and fostering compact urban forms contribute to resilient, inclusive, and vibrant cities (Speck, 2018). In addition, structured evaluations using urban attributes such as pedestrian flow, sidewalk conditions, safety, accessibility, buffer zones, shading, barrier design, and maintenance offer a detailed framework for assessing and comparing walkability in different contexts (Alnaim *et al.*, 2025).

Recent research further underlines that walkability is a key lever for the revitalisation of historic city centres and commercial streets. Studies in cultural heritage sites demonstrate how urban design performance, including spatial configuration, landmark integration, wayfinding, and mixed socio-economic functions, shapes pedestrian behaviour and perceived walkability (Maniei *et al.*, 2024; Van Nes, 2021). Evidence from commercial streets in rapidly motorised contexts such as central Riyadh highlights the importance of micro-scale design elements such as shade, surface quality, safe crossings, and street furniture for improving comfort and safety in walkable commercial districts (Alkrides *et al.*, 2025). At the same time, new data-driven approaches use big data and deep learning to develop more comprehensive walkability indices (Huang *et al.*, 2024), while recent case studies on the renovation of historic commercial streets propose integrated strategies that combine heritage conservation with vitality, liveability, and environmental performance (Shehab El-Deen *et al.*, 2024). Together, these perspectives underline the critical importance of walkability in advancing sustainable, healthy, and socially connected urban environments.

Pedestrian-friendly and mixed-use commercial areas are supported not only by safe walking conditions, but also by a fine-grained mix of land uses that keeps streets active throughout the day. A higher degree of land-use diversity has repeatedly been linked to more walking for daily transport and to shorter, more frequent trips (Brown *et al.*, 2009; Salvador *et al.*, 2024). In historic and contemporary city centres alike, dense mixtures of retail, services, housing, and public facilities create overlapping patterns of use that enhance vitality and natural surveillance (Erturan & Aksel, 2023; Yuan *et al.*, 2023). Recent studies also emphasise that mixed-use development can significantly improve walkability, by blending living, working and leisure functions in compact urban

blocks (Alnaim *et al.*, 2025; Li *et al.*, 2024), while walkability frameworks routinely include land-use mix as a core component alongside density, connectivity, and accessibility (Baobeid, Koç & Al-Ghamdi, 2021; Sonta & Jiang, 2023). In historic bazaar districts, this interdependence between walkability and land-use diversity is particularly critical, as the continuity of small-scale commercial and residential uses underpins both everyday life and heritage-related attractiveness (Yuan *et al.*, 2023).

## 2.3 Pedestrian-friendly and ecological principles in urban regeneration projects

International urban regeneration projects provide valuable insights into how pedestrian-friendly and ecological principles can be integrated into historic and commercial districts. Drawing on documented case studies from multiple continents, this literature review synthesises findings from diverse contexts, illustrating strategies such as shaded pedestrian pathways, green infrastructure, adaptive reuse, sociocultural programming, and heritage-sensitive materials as examples that inform contemporary urban design approaches.

### 2.3.1 Heritage, materials, and visual integrity

Restoration of building façades respecting historical texture – Sensitive façade restoration reinforces place identity and cultural continuity. In Istanbul's Fener-Balat Rehabilitation Project, early phases restored historic buildings and improved pedestrian infrastructure, although later stages became car-oriented, reducing walkability and ecological connectivity (Dinler & Güçhan, 2016). In Cairo's Khan El-Khalili, pedestrianisation and monument restoration enhanced heritage accessibility, air quality, and commercial vitality, but also produced gentrification and displacement pressures (Fahmi, 2012).

Use of local ecological materials – Locally sourced, climate-appropriate

materials strengthen ecological performance and cultural authenticity. Tokyo's Yanaka Ginza retained human-scaled, walkable forms and used local materials for passive cooling and adaptive reuse (Muminović, Radović & Almazan, 2013). Santiago's Barrio Lastarria implemented green-certified developments with local sourcing and renewable energy (Maturana, McInney & Bravo, 2019). Mutrah Souq in Muscat preserved traditional Omani motifs and materials for climate-sensitive, heritage-compatible design (Amer, 2024).

Preservation of key view corridors – Protecting sightlines reinforces spatial orientation and heritage appreciation. Miami's Paseo Ponti preserved key views, while integrating greenery and public art (Island Planning Corporation, n.d.). Auckland's Britomart Precinct maintained view corridors to maritime heritage sites (Hunt, 2011).

### 2.3.2 Green infrastructure, microclimate and public comfort

Continuous shaded pedestrian pathways – Shaded, continuous pedestrian routes improve microclimate comfort and walkability. Cheonggyecheon in Seoul removed vehicle infrastructure and created uninterrupted shaded pedestrian routes with green buffers (Kim, 2020). Miami's Paseo Ponti integrated shaded paths, rooftop gardens and native planting to enhance pedestrian comfort (Island Planning Corporation, n.d.).

Green corridors, mini parks, and landscape improvements – Pocket parks and green corridors boost biodiversity, resilience, and public life. Granville Island prioritised green infrastructure to reduce car dependence and increase climate resilience (CMHC, 2017). In Stone Town, Forodhani Park and other public parks were preserved and improved to embed ecological functions into a compact heritage context (Haji Khamis *et al.*, 2024).

Green roofs and vertical gardens – Rooftop and vertical planting support

climate adaptation, biodiversity, and aesthetic quality. New Spitalfields Market incorporated extensive green roofs, tree planting, and ecological buffers (London Borough of Waltham Forest, 2024). Miami's Paseo Ponti also used rooftop gardens and native plantings (Island Planning Corporation, n.d.).

Public seating and resting areas integrated with greenery – Seating integrated with vegetation improves comfort, social interaction, and inclusivity. Marvila in Lisbon redesigned small squares with seating, play areas, and gardens via community-led greening (Falanga, Nunes & Chaves, 2024). Pelourinho in Salvador widened pavements, introduced plazas, and restricted vehicles to activate public space (Nobre, 2002).

Revitalisation of public squares – Repaired and reprogrammed squares reinforce social interaction and civic identity. Stone Town's restored Forodhani Park and Jamhuri Gardens combined ecological and cultural functions (Haji Khamis *et al.*, 2024). Havana's Centro Histórico used pedestrianisation, programming, and adaptive reuse to revitalise its plazas (Toft, 2011).

### 2.3.3 Mobility, access control, and street function

Car-free or limited-vehicle access zones – Restricting vehicles improves walkability, safety, and public realm quality. Via Caracciolo in Naples became a pedestrian-prioritised waterfront, boosting active mobility and public life (Sommella & D'Alessandro, 2021). Gaslamp Quarter in San Diego widened sidewalks and removed on-street parking to favour pedestrians, although some interventions were commercially driven (Ervin, 2007). Rue de la République in Lyon historically prioritised boulevards, thus reducing organic walkability until preservation movements responded (De Oliveira, 2017).

Eco-friendly transportation – Prioritising walking, cycling, and low-carbon modes reduces emissions and enhances liveability. Surry Hills

in Sydney introduced a separate cycle track, narrowed lanes, and rain gardens to support safer active travel (Global Designing Cities Initiative, n.d.). New Spitalfields Market in London prioritised walking/cycling infrastructure and climate-responsive design (London Borough of Waltham Forest, 2024).

Street-level logistics and service needs – (Implicit across cases) Historic commercial streets commonly require careful management of parking, loading, and service deliveries to avoid undermining pedestrian priority and ecological goals (see discussion of traffic, parking and loading pressures in an earlier review).

### 2.3.4 Public realm activation, local economy, and safety

Expansion of sociocultural activity areas – Sociocultural spaces bolster cohesion and economic vitality. Barranco in Lima restored plazas and pedestrian zones to support heritage and cultural tourism (Fernández-de-Córdova, Moschella & Fernández-Maldonado, 2021). Rotterdam's Market Hall created a central promenade linking retail, food, and culture (Smit, 2016). Lisbon's Bairro Alto & Chiado improvements enhanced cultural venues but entailed tensions between tourism and residential life (Nofre *et al.*, 2017).

Support for local commerce – Pedestrian-first interventions sustain small-scale commerce and authenticity. Pike Place Market in Seattle preserved local vendors and pedestrian zones (Aiello & Gendelman, 2008). Granville Island combined pedestrian-first design with cultural venues and eco-friendly markets (CMHC, 2017).

Public lighting improvements – Contextual, energy-efficient lighting improves safety and night-time character. Souq Waqif in Doha integrated upgraded lighting with public realm enhancements (Furlan & AL-Mohannadi, 2020). Britomart in Auckland used lighting to reinforce maritime identity and extend evening use (Hunt, 2011).

Educational and environmental awareness signage – Interpretive signage supports heritage appreciation and stewardship. Souq Waqif incorporated interpretive elements on culture and history (Furlan & AL-Mohannadi, 2020). Barrio Lastarria included heritage and environmental information in the public realm (Maturana *et al.*, 2019).

### 2.3.5 Technology, governance, and social risks

Integration of smart urban solutions – Digital tools can enhance accessibility, wayfinding, and environmental monitoring. Hyllie in Malmö used digital systems for cultural access and resource management (Sjöblom, 2023). Surry Hills in Sydney applied integrated wayfinding and inclusive intersection redesigns to improve liveability (Global Designing Cities Initiative, n.d.).

Urban renewal and social dynamics – Regeneration can prompt gentrification, loss of local materials, and reduced climatic resilience when ecological and cultural sensitivities are ignored. Neukölln's improvements contributed mainly to gentrification (Kadioğlu, 2024). Diyarbakır's Alipaşa-Lalebey renewal replaced local materials, removed trees, and weakened climatic resilience (Akalp & Ayçam, 2024). Conversely, Xintiandi in Shanghai combined Shikumen preservation with walkable lanes and commercial vitality (Ren, 2008).

Across the cases reviewed, historic commercial streets and bazaar-like centres operate as both everyday retail environments and heritage attractions, sharing morphological traits such as narrow plots, continuous frontages, and fine-grained commercial uses – features also characteristic of the Ürgüp Bazaar. These districts face comparable challenges related to traffic, parking, tourism pressures, and the need to protect architectural heritage and urban identity. The international revitalisation strategies examined, including pedestrianisation, streetscape upgrades, green-blue infrastructure, and public space reorganisation, therefore, offer relevant guidance

for shaping an ecological walkability framework in Ürgüp. However, despite advances in heritage-sensitive and pedestrian-oriented design, many projects struggled with gentrification, displacement, and cultural dilution, and none employed a fully holistic methodology integrating comparative analysis, observation, PESTEL assessment, and user surveys. This highlights the need for a more integrated, context-specific approach to regenerating historic bazaar districts.

## 3. STUDY AREA

Situated in Türkiye's Cappadocia region approximately 20 km east of Nevşehir within the Kızılırmak section of Central Anatolia, Ürgüp is a historic settlement distinguished by its unique cultural and natural characteristics. The area's volcanic origin has shaped a rugged landscape dotted with distinctive fairy chimneys. The local climate features hot, dry summers and cold, snowy winters. Covering 574 km<sup>2</sup>, Ürgüp is the largest district in Nevşehir and had a population of 39,055 in 2024, with 48.54% male and 51.46% female residents. Historically, Ürgüp has been inhabited by successive civilisations, including the Hittites, Byzantines, Seljuks, and Ottomans. Its built heritage comprises rock-carved houses, mosques, churches, monasteries, and

traditional stone houses exemplifying Cappadocian architecture. The local culture is characterised by traditional crafts such as carpet making, wine production, pottery, and stonemasonry. The present study focuses on the historic commercial district within the Sivritaş Neighbourhood, the core of Ürgüp's historical centre (Figure 1).

According to Figure 1, the panel on the left (scale bar 5 km) situates Ürgüp within its wider Cappadocia landscape and municipal boundaries, providing regional context. The central panel (scale bar 500 m) focuses on the urban fabric, delineating the Sivritaş Neighbourhood and the location of the historic bazaar. The panel on the right (scale bar 100 m) presents a detailed view of the Ürgüp Bazaar District, where individual blocks, streets, and open spaces are clearly identifiable, defining the core study area.

The Ürgüp Bazaar District, centred around Sivritaş Neighbourhood and Dumlupınar Street, comprises three parcels and three distinct units, covering approximately 1.3 hectares on relatively flat terrain. Figure 2 illustrates the district's functional connections with its surroundings and its land use, according to the 2014 Conservation Zoning Plan. The district occupies a central location that fosters strong spatial and

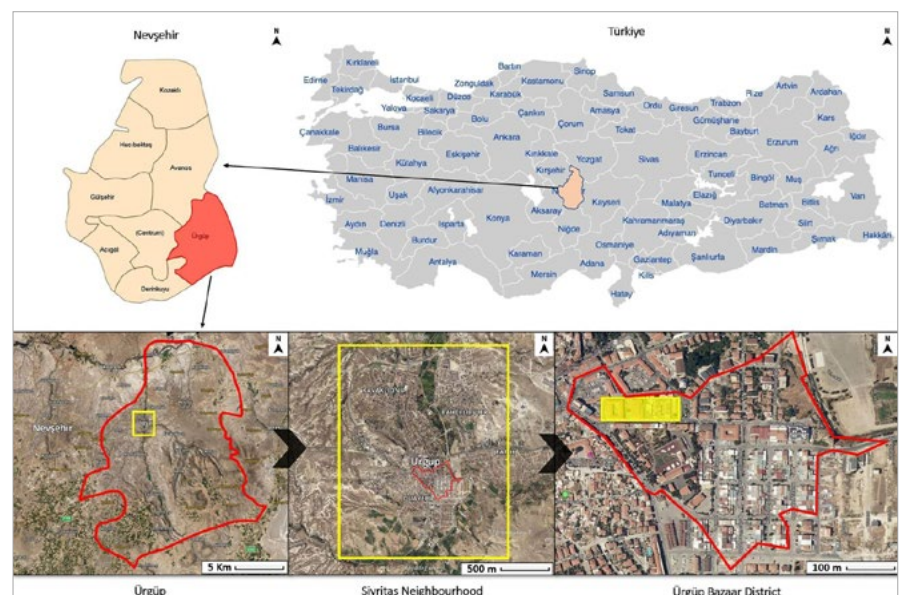


Figure 1: Location of the study area

functional relationships with diverse urban components: cultural and touristic sites, including the Historical Texture and Temenni Hill, lie to the west; commercial and residential areas to the east; public buildings to the northeast, and the Cappadocia University campus and industrial zone to the south. This positioning renders the bazaar both a transit hub and a multifunctional centre.

Proximity to the bus terminal, parking facilities, and the broader market enhances accessibility and regional mobility. According to the 1/5000-scale Conservation Zoning Plan approved in 2014 (Figure 2, panel on the right), the Ürgüp Bazaar is designated as a conservation-trade area. It is classified as both a third-degree natural site and an urban site, reflecting an approach that balances conservation principles with sustainable commercial development. Existing structures include shops and offices, with future plans emphasising functional integration. Figure 3 provides visual documentation of the district.

The study area comprises three independent sections of two-storey buildings. The western section contains commercial units, the central section includes a cinema and cultural facility, and the eastern section encompasses an old industrial area that has largely lost its original function. Archival research and historical photographs indicate that the buildings were constructed between 1970 and 2000, reflecting the modern architectural style of that period. Although Ürgüp is generally designated as an urban conservation site and a third-degree natural conservation area, none of the buildings in the study area are registered or register-worthy.

Architecturally, the existing structures are two-storey reinforced concrete buildings, encompassing approximately 60 business units, including workshops, offices, warehouses, and shops. However, aesthetic weaknesses, limited functionality, and inadequate social interaction have disrupted tourism-oriented commercial activities. The buildings exhibit low architectural

identity, with façades and claddings inconsistent with the historical context. Spatial organisation is poor for pedestrian mobility: narrow sidewalks, sidewalk encroachments, and irregular vehicle parking reduce public space quality, while insufficient public and social areas result in low pedestrian density throughout the day and evening.

The area lacks green infrastructure and sustainable urban design practices. Physical deficiencies include aesthetic inconsistencies, façade disunity, exposed electrical panels, signage pollution, inadequate lighting, poorly maintained sidewalks, and poorly defined pedestrian crossings. Transportation access is supported by wide external roads and

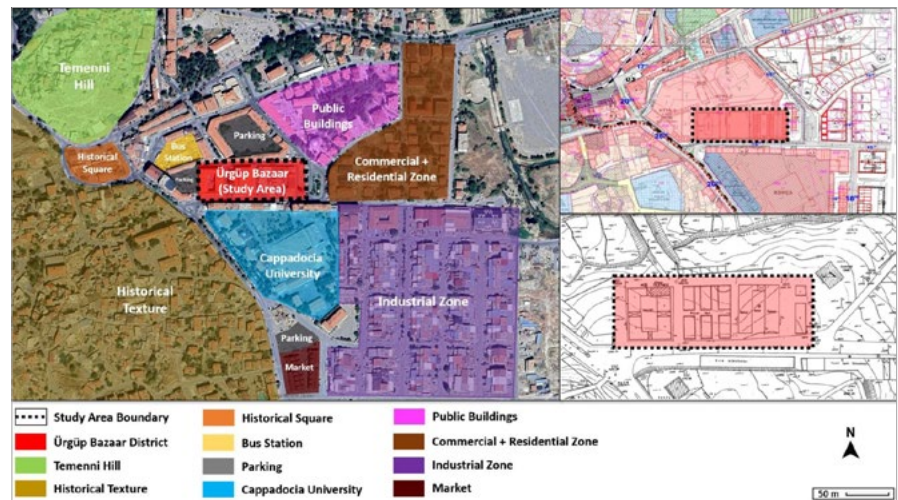


Figure 2: Ürgüp Bazaar land-use and functional connection with its surroundings



Figure 3: Ürgüp Bazaar District images  
Source: Author

narrower internal streets, with taxi and minibus stops and traffic signals at key intersections. However, the current layout prioritises vehicles over pedestrians. Enhancing pedestrian-focused spaces, ensuring continuity of public areas, and promoting sustainable urban life are critical needs for the district.

## 4. METHODOLOGY

### 4.1 Research design

This study adopted a mixed-methods research design, combining qualitative and quantitative approaches to explore the physical, functional, and aesthetic characteristics of the Ürgüp Bazaar District. The integration of multiple data sources enhances the validity of the findings and provides a comprehensive understanding of the study area (Creswell & Creswell, 2018). The methodology integrates a literature review, field observations, and user surveys to assess the district's physical, functional, and sociocultural characteristics. Drawing insights from literature review, the research systematically identifies strategies for walkability, ecological enhancement, and sustainable urban transformation. Field observations and user surveys provided data on functionality, aesthetics, safety, and ecological conditions of the study area. Using the PESTEL (Political, Economic, Sociocultural, Technological, Environmental, and Legal) analysis approach (Richardson, 2006), data from field observations, surveys, and literature were synthesised to provide a comprehensive contextual assessment of the study area. This descriptive analysis helped prioritise needs and directly informed the formulation of the Urban Design Guide. The holistic approach ensures that both spatial diagnostics and user experiences inform the proposed design principles, that were included in the proposed pedestrian-friendly and ecological Urban Design Guide.

### 4.2 Population, sample, and response rate

The survey was conducted voluntarily with male and female participants aged 18 years and older who lived in Ürgüp, worked in the Ürgüp Bazaar District, or visited it as users. Accordingly, the research population was defined as adult residents of Ürgüp. To ensure internal coherence, the study focuses on residents and shopkeepers, with residents providing insights into daily spatial experiences and public-space use, and shopkeepers offering perspectives on commercial functionality and the district's vitality.

According to the 2024 population data, Ürgüp had 39,055 residents, with approximately 65% aged 18 years or older, yielding a research population of roughly 25,400 individuals. To achieve statistical validity at a 95% confidence level and a significance level of 0.05 ( $P \leq 0.05$ ), 432 valid surveys were conducted. According to Krejcie and Morgan's (1970) sample size table, a population of this size requires a sample of 378; thus, the 432 responses exceed the recommended minimum. Of the respondents, 25.5% were shopkeepers, ensuring that both commercial and residential perspectives are adequately represented and aligning the sample with the study's objectives.

### 4.3 Data collection

#### 4.3.1 Literature review

A desktop review of international studies and case examples was conducted, using Web of Science (WOS), Scopus, and Google Scholar, covering publications from January 2000 to June 2025. The search strategy combined keywords such as walkability, pedestrian-friendly design, ecological resilience, green infrastructure, climate-adaptive design, heritage conservation, historic commercial districts, and bazaar revitalisation. Inclusion criteria comprised peer-reviewed journal articles, book chapters, and documented case studies in English addressing sustainable urban design, ecological infrastructure, or the revitalisation of historic

commercial or commercial-heritage districts. Exclusion criteria eliminated non-English work, studies outside the urban design domain (e.g., tourism marketing or transport-only analyses), and research focused solely on new metropolitan developments without a heritage component. Titles and abstracts were screened, followed by full-text review. A total of 27 studies and projects met the criteria. These sources were synthesised thematically into categories including shaded pedestrian pathways, green corridors, façade restoration, adaptive reuse, sociocultural activation, and support for local commerce.

#### 4.3.2 Field observations

Field observations in the Ürgüp Bazaar District documented spatial, functional, and aesthetic characteristics of the area. Rather than a structured checklist, an open-ended note-taking approach was used to capture context-specific conditions, emerging issues, and nuanced aspects of urban life that predefined categories might miss. Open-ended observation is recognised in urban and planning research as a valid qualitative method, enabling documentation of both tangible and intangible dimensions of place, including sensory qualities, informal spatial practices, and evolving social behaviours (Angrosino, 2011; Creswell & Creswell, 2018; Kawulich, 2005; Whyte, 1980). Across several site visits, descriptive notes and photographs were collected on building conditions, public space organisation, pedestrian circulation, ecological features, signage, and overall visual quality. These observations informed the survey design: issues such as inadequate pedestrian pathways, deteriorated historic façades, traffic congestion, limited green areas, and deficient signage were translated into survey dimensions and corresponding close-ended questions. The fieldwork thus provided an inductive foundation for the quantitative instrument, ensuring that the survey reflected context-specific realities rather than abstract categories. The open-ended observational data

were later organised thematically and used as a baseline for interpreting survey findings.

### 4.3.3 Survey

Data collection was carried out using an online Google Form survey, administered during face-to-face interviews. Trained 37 interviewers used personal tablets or phones to record responses in real time, following a standardised survey script to ensure consistency. In this study, a random sampling approach was adopted, and the survey was administered to volunteers aged 18 years and above in the Ürgüp Bazaar District. This approach is particularly appropriate in urban research, where the aim is to capture diverse and context-specific perspectives from those who directly engage with a space rather than to obtain statistically representative samples (Etikan, 2016; Palinkas *et al.*, 2015).

The survey was designed to cover key themes such as walkability, safety, aesthetics, ecological concerns, heritage preservation, public amenities, green space provision, and sociocultural activities, with the aim of identifying participants' perceived problems and expectations regarding the district. The survey comprised four main sections, namely demographic information; marketplace usage habits; current condition assessment; problems, and valued and improvable features of the district.

The survey used both closed- and open-ended questions. One closed-ended item employed a five-point Likert scale (1 = "very insufficient" to 5 = "very sufficient") to assess conditions such as functionality, aesthetics, safety, and ecological quality as a combined overall evaluation. Close-ended, multiple-choice items were also included, allowing respondents to select more than one applicable answer (for marketplace usage purposes, features liked, and perceived problems). One open-ended question invited participants to share specific suggestions for making the area more functional and aesthetically pleasing. Before beginning the survey, participants were informed

of the study's purpose, anonymity, and the voluntary nature of their participation. They were instructed to select the most appropriate option for each question and, in the case of multiple-choice questions, to mark all relevant responses. For open-ended items, participants were encouraged to provide as much detail as possible.

## 4.4 Data analysis

### 4.4.1 Literature review

The literature review was analysed using the six-phase thematic analysis framework outlined by Braun and Clarke (2006), which provides a flexible yet rigorous approach to identifying, analysing, and reporting themes.

1. Familiarisation with the data – All selected studies obtained through Web of Science, Scopus, and Google Scholar were read in full to gain a deep understanding of their scope and findings. Initial notes were made regarding recurring issues such as pedestrian accessibility, ecological interventions, and heritage conservation.
2. Generating initial codes – Key concepts were systematically coded by highlighting segments of text that directly related to the research questions. Examples of codes included walkability barriers, adaptive reuse of historic fabric, public realm activation, and green space deficiency.
3. Searching for themes – The initial codes were then collated into broader candidate themes, which grouped related ideas across multiple studies. For instance, codes relating to shaded walkways, accessibility, and pedestrian safety were brought together under the theme Pedestrian Network Design.
4. Reviewing themes – The candidate themes were reviewed against the coded extracts and the literature set as a whole to ensure coherence and distinctiveness. Themes that overlapped were refined, and less relevant codes were excluded to maintain conceptual clarity.

5. Defining and naming themes – Each theme was then defined in terms of its analytical scope and given a descriptive label that captured its essence. The final themes identified were Pedestrian Network Design, Green Infrastructure and Ecological Enhancement, Public Realm Activation, Heritage Preservation and Visual Quality, Safety, Comfort, and Wayfinding, Sustainable Mobility, and Context-Sensitive Urban Renewal.
6. Producing the report – The refined themes were synthesised into a conceptual framework that structured the literature review narrative. This framework not only highlighted international best practices but also guided the empirical phases of the study, by informing field observation categories, shaping survey design, and contextualising the PESTEL analysis.

### 4.4.2 Field observations

The field observations were analysed, using a qualitative coding and categorisation process to ensure systematic treatment of the open-ended notes and photographs. First, all field notes taken during site visits were carefully reviewed to ensure familiarisation with the material. Secondly, the notes were coded inductively, with recurring features and issues such as narrow pedestrian routes, signage clutter, neglected façades, lack of green space, and traffic dominance highlighted as initial codes. Thirdly, the coded material was grouped into broader categories, including pedestrian circulation, heritage fabric conditions, environmental quality, public space provision, and infrastructure adequacy. Photographs taken during fieldwork were cross-referenced with these categories to strengthen the consistency of interpretation. Finally, the categorised observations were subjected to descriptive synthesis, which enabled a narrative summary of spatial deficiencies and opportunities. This systematic procedure ensured that the observational data moved beyond impressionistic description to a structured analysis. Moreover,

the emergent categories provided the empirical foundation for the survey design, as recurring problems and opportunities identified in the field were translated into corresponding survey questions.

#### 4.4.3 User surveys

Statistical analyses were conducted using IBM SPSS Statistics v.27 (IBM Corp., 2020). Descriptive statistics (frequencies and percentages) were used to analyse the participant profile, marketplace usage habits, problems, and valued features of the district. Because participants could select multiple options for these items, percentages were calculated relative to the total number of responses rather than the number of respondents. Results were ordered from highest to lowest frequency to highlight issues most commonly perceived as critical by the community.

To assess the condition of the district, a five-point Likert scale was used (very insufficient = 1, insufficient = 2, moderately sufficient = 3, sufficient = 4, very sufficient = 5). This approach enabled consistent comparison of perceived adequacy across categories such as physical layout, functionality, safety, infrastructure,

and environmental quality (Joshi *et al.*, 2015). Likert-scale responses were numerically coded and analysed, using descriptive statistics to report a combined overall evaluation rating (see Table 2).

Data from the open-ended question, where participants offered suggestions for improving functionality and aesthetics, were analysed, using qualitative content analysis (Elo & Kyngäs, 2008; Schreier, 2012). Responses were reviewed, inductively coded, and grouped into thematic categories including transportation, green and open spaces, physical transformation, social and cultural activities, and support for local commerce. The frequency of mentions within each category was calculated to identify the most commonly expressed needs and priorities.

#### 4.4.4 PESTEL analysis

This study employs the PESTEL (Political, Economic, Sociocultural, Technological, Environmental, and Legal) framework to provide a comprehensive contextual assessment of the study area. The analysis synthesises insights from field observations, user surveys, stakeholder feedback, and official

planning documents. Originating as ETPS with the focus on economic, technical, political, and social factors, the framework evolved into STEPE and later expanded to include legal considerations, forming the current PESTEL model (Richardson, 2006). PESTEL has since been widely applied across multiple disciplines (Shilei & Yong, 2009). In urban design and planning, PESTEL offers a structured method for evaluating the broader political, economic, sociocultural, technological, environmental, and legal forces that shape urban development. It supports an understanding of policy contexts, investment conditions, community needs, technological shifts, sustainability imperatives, and regulatory constraints, thereby enabling informed, adaptable, and future-oriented planning strategies.

## 5. FINDINGS

### 5.1 Qualitative results

#### 5.1.1 Literature review

Based on the findings of the literature review, Table 1 lists seven themes that integrate sustainable urban design and ecological principles into historic commercial districts

Table 1: Design principles and implementation actions

Theme	Design principles and implementation actions
Pedestrian network design	Continuous shaded pedestrian pathways: Establish uninterrupted, accessible pedestrian corridors; integrate shading elements (trees, arcades, pergolas); ensure barrier-free access. Car-free or limited-vehicle access: Restrict motor vehicle access in core heritage areas; allow timed delivery access; provide peripheral parking and active transport connections.
Green infrastructure and ecological enhancement	Green corridors and mini parks: Create interconnected green spaces to enhance biodiversity and ecological resilience; integrate pocket parks into dense commercial areas. Use of local ecological materials: Prioritise locally sourced, climate-appropriate building and paving materials; incorporate permeable surfaces to improve drainage. Green roofs and vertical gardens: Promote rooftop gardens for climate adaptation and visual amenity; install vertical greenery on façades, where appropriate.
Public realm activation	Public seating with greenery: Provide comfortable seating within shaded, landscaped settings; design clusters to encourage social interaction. Sociocultural activity areas: Allocate spaces for markets, performances, and community gatherings; integrate cultural programming to sustain local identity. Support for local commerce: Prioritise local businesses over chain stores; integrate market stalls and local crafts into the pedestrian network.
Heritage preservation and visual quality	Façade restoration: Restore and maintain façades in accordance with heritage conservation guidelines; encourage adaptive reuse to maintain vitality. View corridor preservation: Protect visual connections to significant landmarks; avoid new structures that obstruct heritage sightlines.
Safety, comfort, and wayfinding	Public lighting improvements: Use energy-efficient, context-sensitive lighting to enhance safety and ambience; highlight heritage features through lighting design. Smart urban solutions: Implement digital wayfinding systems and real-time information points; introduce smart monitoring for environmental conditions. Educational signage: Provide interpretive panels explaining local history and ecology; use signage to encourage responsible visitor behaviour.
Sustainable mobility	Eco-friendly transportation: Integrate cycling infrastructure and pedestrian-priority crossings; provide bike parking facilities near commercial hubs. Connection to public transport: Ensure pedestrian routes connect to public transport stops; offer shuttle services from peripheral parking areas.
Context-sensitive urban renewal	Public square revitalisation: Restore historic plazas as multifunctional community spaces; integrate greenery, seating, and cultural activities. Urban renewal and social dynamics: Avoid displacement through inclusive planning processes; incorporate climate adaptation measures into renewal projects.

through practical strategies. It is structured around themes identified from international literature and case studies, providing both design principles and implementation actions to enhance walkability, ecological resilience, and heritage conservation.

### 5.1.1 Field observation

Based on field observations in the Ürgüp Bazaar District, several key spatial and functional challenges have been identified that compromise the area's liveability, aesthetic value, and walkability. Despite its central location and proximity to historical landmarks, educational institutions, and transport infrastructure, the area suffers from physical and organisational deficiencies. The architectural character of the existing two-storey buildings, dating from the 1970s to 2000s, displays a lack of harmony with the historic fabric of Ürgüp. Façade elements are inconsistent and often incompatible with the broader conservation context. Field observations reveal that the pedestrian experience is severely hampered by narrow pavements, physical obstructions, unregulated parking, and insufficient pedestrian crossings. Public spaces are sparse and poorly defined, resulting in minimal social interaction and low pedestrian flow throughout the day. The absence of greenery, shaded resting areas, and ecological design features contributes to the overall lack of spatial comfort. The area is visually cluttered, due to signage pollution, exposed utility elements, and inadequate lighting. These factors collectively diminish the attractiveness and functionality of the public realm. While the district is relatively well-connected via surrounding arterial roads and public transport nodes, the internal street network remains vehicle-oriented, with hardly any prioritisation of pedestrian mobility or safety. This emphasises the urgent need for a comprehensive reorganisation of circulation systems and the integration of sustainable urban design strategies focused on enhancing walkability, accessibility, and place identity.

## 5.2 Quantitative results

### 5.2.1 Participant profile

According to Table 3, 432 users participated in the survey, with 44.4% female and 55.6% male. The vast majority of the participants were aged 18-25 years (34%), followed by those aged 36-50 years (28.6%), and 26-35 years (19.5%). Students formed the largest occupational group (32.4%), followed by tradespeople and business owners (25.5%). Other prominent occupational groups included public sector employees (14.4%) and service sector workers (11.6%), while retirees (approximately 8%) and freelancers (7.6%) were less represented. Overall, participants' educational levels were concentrated in secondary and higher education, including high school graduates

(34.2%), bachelor's degree (20.5%) and associate degree holders (18.8%). A significant portion of the participants had been connected to the Ürgüp Bazaar District for over 10 years (38.2%), followed by those with 1-5 years of stay (34.3%). In addition, 15% of the participants had been in the area for 6-10 years, and 12.5% had been connected to the district for less than one year.

The vast majority of the participants reported using the Ürgüp Bazaar District almost every day (59.7%), followed by those who used it several times a week (28.2%). The proportion of those who visited several times a month (approximately 7%) or less frequently was fairly low. This distribution indicates that the area is an active and integral part of daily life. The Ürgüp Bazaar District is

Table 2: Participant profile and marketplace usage habits

Demographic	Category	Frequency (n=432)	%
Gender	Female	192	44.4
	Male	240	55.6
Age (years)	18-25	147	34
	36-50	124	28.6
	26-35	84	19.5
	51 and above	77	17.9
Occupation	Students	140	32.4
	Business owners	110	25.5
	Public sector employees	62	14.4
	Service sector workers	50	11.6
	Retirees	37	8.5
Education	Freelancers	33	7.6
	Illiterate	16	3.7
	Primary school graduate	36	8.4
	Secondary school graduate	46	10.7
	High school graduates	148	34.2
	Bachelor's degree holders	89	20.5
Duration of connection with area (years)	Associate degree holders	81	18.8
	Postgraduate graduate	16	3.7
	More than 10	165	38.2
	1-5	148	34.3
Frequency of use	6-10	65	15
	Less than 1	54	12.5
	Almost every day	258	59.7
	Several times a week	122	28.2
Purpose of use (more than one option could be chosen)	Several times a month	30	7
	Less frequently	22	5.1
	Daily shopping and needs	245	56.7
	Use as a transit point	201	46.5
	Business activities	190	44
	Sociocultural interaction	145	33.6
Functionality and overall condition of the district	Tourism visit	48	11.1
	Do not use at all	7	1.6
	Moderately sufficient	168	38.8
	Insufficient	147	34
	Very insufficient	75	17.4
	Sufficient	39	9.1
	Very sufficient	3	0.7

primarily used for daily shopping and basic needs (56.7%) and as a transportation and transit point (46.5%). Business activities (44%) and sociocultural interactions (33.6%) are also significant purposes of use. Tourist-oriented usage (11.1%) is relatively low. These findings indicate that spatial usage in the area predominantly serves the daily life needs of the local population. Table 2 also summarises the distribution of Likert ratings for evaluating the functionality and overall condition of the district. The vast majority of participants (168 out of 432) evaluated the Ürgüp Bazaar District as “moderately sufficient”, while 147 participants found it “insufficient”. A notable 75 participants considered it “very insufficient”. Only 39 participants evaluated the area as “sufficient”, and only 3 participants rated it as “very sufficient”. These findings highlight a clear need for improvements in spatial quality, accessibility, and the diversity of functions within the district.

### 5.2.2 Key problems

Table 3 presents the participants' perceptions of key urban problems in the Ürgüp Bazaar District. The survey item was a multiple-choice, close-ended question, developed based on 12 field observations to ensure relevance to the study area's actual conditions. Respondents were allowed to select more than one issue, enabling a nuanced understanding of overlapping concerns. The responses highlight the most critical spatial, aesthetic, functional, and ecological deficiencies as perceived by the local users. Table 3 shows the number and percentage of respondents who identified each problem.

According to Table 3, the vast majority of the participants identified traffic congestion and lack of parking (72.6%) as the most significant problem in the Ürgüp Bazaar District. This was followed by the insufficiency of green spaces and landscaping (57.5%), inadequate pedestrian areas (50.6%), and the lack of social and cultural activities (42.7%). These findings indicate that the area is predominantly vehicle-oriented and

highlight the urgent need for public space enhancements and pedestrian-friendly urban design interventions.

### 5.2.3 Key features

Table 4 presents the features that the participants liked in the Ürgüp Bazaar area. The question was a closed-ended, multiple-choice item, designed based on 12 field observations conducted during preliminary site visits. Participants could select more than one option when responding. The collected data was analysed, by calculating the frequency and percentage of selections for each feature, offering a quantitative insight into the positive aspects of the district from the users' perspective. This analysis helped identify key strengths that can be built upon in future urban design proposals.

According to Table 4, among the features most appreciated by participants in the Ürgüp Bazaar District, the diversity and friendliness of local tradespeople ranked first (41%), followed by the historical

texture and architecture (39.8%) and the natural environment and landscape (36.8%). Ease of transportation (28%) and the liveliness of the bazaar (23.4%) also emerged as other notable positive aspects. In contrast, pedestrian-friendly areas (3.2%) and the organisation of social and cultural events (6.3%) received relatively low levels of appreciation, indicating that these aspects require further improvement.

### 5.2.4 Areas to be developed

Table 5 presents the priority fields to be developed in the Ürgüp Bazaar Area. Table 5 presents the results of a multi-option, closed-ended survey question, where participants were allowed to select multiple areas that they believed required development in the Ürgüp Bazaar District. The 11 options were generated based on prior field observations, and the responses were analysed using frequency and percentage distribution to identify the most critical needs as perceived

Table 3: The most important problems encountered in the Ürgüp Bazaar District

Problem	F	%
Traffic congestion and lack of parking	313	72.6
Insufficient green spaces and landscaping	248	57.5
Inadequate spatial design for pedestrians	218	50.6
Lack of social, cultural, and artistic activities	184	42.7
Lack of public spaces (benches, seating areas, etc.)	170	39.4
Lighting and security issues	149	34.6
Imbalance between residential and commercial uses	121	28.1
Lack of tourist information and signage	104	24.1
Problems with environmental cleanliness and waste management	101	23.4
Neglect and visual incompatibility of historic buildings	97	22.5
Noise and air pollution	92	21.3
Infrastructure problems (electricity, water, internet, and natural gas)	56	13.0

Table 4: The features that the participants liked in the Ürgüp Bazaar District

Liked features	F	%
Diversity and friendliness of local tradespeople	177	41.0
Historical texture and architecture	172	39.8
Natural environment and landscape	159	36.8
Ease of transportation and central location	121	28.0
Liveliness and vibrancy of the bazaar	101	23.4
Tourist appeal and visitor interest	84	19.4
No feature they liked	77	17.8
Safety and peaceful atmosphere	52	12.0
Preservation of the traditional bazaar atmosphere	33	7.6
Organisation of social and cultural events	27	6.3
Quality of food and beverage venues	24	5.6
Presence of pedestrian-friendly areas	14	3.2

by local users. This clarification addresses the link between the responses and the core focus of the study – identifying user-prioritised interventions to enhance ecological and walkable qualities of the district.

According to Table 5, the top priorities for improvement in the Ürgüp Bazaar District are green spaces and landscaping (61.8%) as well as the arrangement of parking areas and public transportation (59.3%). These are followed by the development of public seating and resting areas (52.5%), the enhancement of sociocultural activities (47.5%), and the improvement of pedestrian pathways (41%). These findings reveal a significant need for stronger ecological infrastructure, pedestrian-oriented planning, and expanded public spaces within the area.

Table 6 includes suggestions from participants shared in an open-ended survey question to make the area more functional and aesthetic, thematically categorised through qualitative content analysis into seven themes, with the frequency and percentage of mentions quantified to indicate priorities.

The highest proportion of suggestions (24.4%) focused on green infrastructure and open spaces, highlighting users' need for spaces that are integrated with nature, offer opportunities for relaxation, and enhance walkability. Physical and spatial transformation (19.2%) along with social and cultural interaction (20.2%) also emerged as major priorities, indicating an expectation for holistic improvements across both the physical environment and the social life of the district. Transportation-related issues (15%) emphasised that parking shortages and vehicle congestion remain unresolved core problems. Meanwhile, suggestions related to revitalising commerce and supporting local tradespeople (11.7%) pointed to the area's potential for strengthening its economic vitality. Although mentioned by fewer participants, lighting, security, and tourism development were also recognised as important areas for future attention.

### 5.3 PESTEL analysis results

Table 7 shows the PESTEL analysis results. The data presented in the analysis were derived from a combination of literature review, field observations, archive of the Ürgüp Municipality, and survey responses conducted within the scope of this study.

In this study, PESTEL ensures the study moves beyond surface-level diagnosis, providing a holistic and interdisciplinary evaluation that strengthens the scientific credibility, strategic focus, and practical relevance of the urban design proposals for the Ürgüp Bazaar District.

Table 5: Priority fields to be developed in the Ürgüp Bazaar District

Area for improvement	F	%
Green spaces and landscaping improvements	267	61.8
Parking areas and public transportation arrangements	256	59.3
Public seating and resting areas	227	52.5
Increasing sociocultural and artistic activities	205	47.5
Widening and organising pedestrian pathways	177	41.0
Enhancing lighting and security features in the area	131	30.3
Environmental improvements and cleanliness	124	28.7
Expanding eco-friendly transportation options	120	27.8
Preservation and restoration of historic buildings	119	27.5
Establishment of tourist information systems	116	26.9
Supporting local businesses and tradespeople	165	38.2

Table 6: Suggestions from participants to make the area more functional and aesthetic

Category	Suggestion description	F	%
Transportation organisation	Parking issues, vehicle congestion, bicycle lanes	46	15.0
Green and open spaces	Green infrastructure, seating/resting areas, walking paths, recreational spaces	75	24.4
Physical/Spatial transformation	Building restoration, aesthetic improvement, revitalisation and regeneration	59	19.2
Lighting and security	Lighting systems, safe city initiatives	16	5.2
Commerce/Tradespeople support	Shopping centre proposals, support for local tradespeople, local product markets	36	11.7
Sociocultural spaces and activities	Social and cultural activities, spaces for socialisation and events	62	20.2
Tourism and promotion	Tourism development, tourist information systems	13	4.2

Table 7: PESTEL analysis results (Author's construct)

Dimension	Analysis (in items)
Political	- Area designated as Urban Conservation and 3rd Degree Natural Conservation Area. - Governed by the 2014 Conservation-Oriented Zoning Plan. - No registered buildings, but conservation rules still apply. - Tourism-based development is politically encouraged.
Economic	- 60 small-scale businesses exist (workshops, shops, offices). - Weak tourism integration due to spatial isolation and poor quality. - Public amenities and recreational spaces are insufficient. - Economic vitality is fragile; potential for revitalisation through pedestrianisation and cultural tourism.
Social	- Lack of social interaction spaces reduces community life. - Low pedestrian density during day and evening. - Vehicle dominance limits safe and inclusive public spaces. - Absence of green, communal areas restricts public events and street life. - Bazaar's traditional cultural atmosphere is weakened.
Technological	- Infrastructure is outdated (exposed panels, poor lighting, degraded sidewalks). - Lack of smart urban solutions (e.g., wayfinding, intelligent lighting). - No sustainable urban technologies (e.g., solar energy, smart drainage). - Weak integration of modern mobility solutions (bike, e-scooter infrastructure).
Environmental	- No green infrastructure (trees, shaded areas, green corridors). - Loss of passive cooling due to modernisation and wider streets. - Reduced natural climate adaptation (e.g., missing courtyards, shading). - Poor air quality due to high vehicle presence. - Low urban resilience to climate change impacts.
Legal	- Subject to national and local conservation regulations. - No individually registered buildings, but urban identity protection is mandatory. - Flexibility exists for interventions but must respect conservation principles. - Emphasis on adaptive reuse and sensitive urban renewal over demolition.

## 6. PROPOSED URBAN DESIGN GUIDE FOR ÜRGÜP

Drawing upon a comprehensive literature review, field observations, survey data, and international case comparisons, this study culminates in the development of a Proposed Urban Design Guide for the Ürgüp Bazaar District. This guide is intended as a practical and adaptable tool for urban planners, architects, designers, and municipal decision-makers seeking to revitalize small-scale, semi-rural historic commercial districts through ecological, pedestrian-friendly, and context-sensitive approaches. The guide focuses on site-specific design recommendations directly linked to the challenges and opportunities identified during the research process. Each recommendation is supported by observed local needs, validated survey results, and relevant best practices from successful international urban regeneration projects. The Table 8 outlines the main components of the guide, providing actionable strategies underpinned by stakeholder needs,

environmental assessments, and comparative urban experiences.

Table 8 systematically presents the urban design proposals for the Ürgüp Bazaar District, drawing inspiration from successful international projects and grounding each strategy in observations, PESTEL analysis, and survey data. It balances physical space issues with user expectations, supporting each intervention with concrete evidence and global examples. This approach demonstrates that the Urban Design Guide is developed in alignment with both local needs and broader sustainability goals. This guide offers a holistic framework for transforming historic commercial districts into more pedestrian-friendly and ecologically sustainable environments. Grounded in both theoretical insights and practical precedents, it provides actionable strategies that, when adapted to local context and implemented with stakeholder participation, can enhance spatial quality, preserve cultural heritage, and strengthen social sustainability.

In addition to their expected positive effects, the proposed interventions may also generate certain trade-offs

and negative externalities. For example, converting selected streets into car-free or limited-vehicle zones could temporarily reduce vehicular accessibility for some businesses, complicate loading and delivery operations, or disadvantage customers with reduced mobility. Similarly, concentrating pedestrian flows on specific routes and squares may increase noise, congestion, or pressure on nearby residential uses. These potential impacts highlight the need for phased implementation, consultation with local shopkeepers and residents, and complementary measures such as designated loading hours, accessible drop-off points, and clear wayfinding.

## 7. DISCUSSION

Integrating ecological principles and walkability is essential for creating resilient, sustainable, and liveable urban environments, where green infrastructure and pedestrian-centred design jointly enhance environmental quality, social cohesion, and urban vitality. Ecological strategies such as increasing green spaces, supporting urban farming, and using climate-adaptive vegetation

Table 8: Urban Design Guide for Ürgüp Bazaar District

Component	Similar international project	Study finding
Create continuous shaded pedestrian pathways throughout the district	Cheonggyecheon (South Korea), Paseo Ponti (Miami)	Observation: Narrow sidewalks, sidewalk invasions Survey: 50.6% cite pedestrian inadequacy
Develop green corridors, mini parks, and landscape improvements	Granville Island (Canada), Stone Town (Zanzibar)	PESTEL Environmental: No green infrastructure Survey: 61.8% demand green spaces
Convert selected streets into car-free or limited-vehicle access areas	Via Caracciolo (Naples), Gaslamp Quarter (San Diego)	Observation: Traffic congestion and vehicle dominance Survey: 72.6% traffic issue
Enhance public seating and resting areas integrated with greenery	Marvila District (Lisbon), Pelourinho (Brazil)	Observation: Lack of resting areas Survey: 52.5% demand more public seating
Restore building façades with design respecting historical texture	Fener-Balat (Istanbul), Khan El-Khalili (Cairo)	Observation: Façade inconsistency, weak architectural identity Survey: 39.8% value historic architecture
Introduce local ecological materials (e.g., natural stone) in street furniture and pavements	Yanaka Ginza (Tokyo), Lastarria (Santiago)	Observation: Incompatible materials PESTEL environmental: Loss of passive cooling elements
Establish green roofs and vertical gardens, where possible	New Spitalfields Market (London), Paseo Ponti (Miami)	Observation: Lack of natural shading PESTEL environmental: Weak climate adaptation
Expand sociocultural activity areas: small squares, open cultural events	Barranco District (Lima), Market Hall District (Rotterdam)	Observation: Low social interaction Survey: 47.5% desire more cultural activities
Foster local commerce and support local tradespeople through design (e.g., integrated bazaar stalls)	Pike Place Market (Seattle), Granville Island (Canada)	Observation: Weak tourism integration Survey: 38.2% request support for local businesses
Improve public lighting with energy-efficient and aesthetic designs	Souq Waqif (Doha), Britomart Precinct (Auckland)	Observation: Poor lighting and infrastructure PESTEL technological: Outdated urban infrastructure
Integrate smart urban solutions such as wayfinding, digital kiosks	Hyllie District (Malmö), Surry Hills District (Sydney)	PESTEL technological: Lack of smart technologies Survey: Need for better organisation
Promote eco-friendly transportation (bicycle lanes, bike parking)	Surry Hills District (Sydney), New Spitalfields Market (London)	Survey: Low eco-transport options (27.8%); Observation: No bike lanes available
Revitalise public squares and gathering areas (e.g., creating shaded plazas)	Stone Town (Zanzibar), Centro Historico (Havana)	Observation: Missing social hubs Survey: Low satisfaction with public space quality
Preserve key view corridors towards surrounding natural and historical sites (e.g., Temenni Hill)	Paseo Ponti (Miami), Britomart Precinct (Auckland)	Observation: Visual connections are underused; ecological aesthetic enhancement needed
Introduce educational and environmental awareness signage related to Ürgüp's natural and cultural heritage	Souq Waqif (Doha), Barrio Lastarria (Santiago)	Survey: Lack of touristic information systems (26.9%) PESTEL social: Cultural atmosphere weakening

improve environmental quality, foster community engagement, and mitigate climate-change impacts (Ahern, 2011; Beatley, 2011; Gill *et al.*, 2007; Hansen & Pauleit, 2014; McDonald *et al.*, 2016; McMahon & Benedict, 2006; Philips, 2013; Tzoulas *et al.*, 2007). Walkability enhances health, environmental quality, and social life, by prioritising pedestrian-centred, human-scaled design (Gehl, 2010; Knapskog *et al.*, 2019; Newman & Kenworthy, 2015; Southworth, 2005; Wang *et al.*, 2016; Yin, 2017). Despite its multidisciplinary complexity (Dovey & Pafka, 2020; Shields *et al.*, 2021), improving walkability through integrated planning, user-centred approaches, and environmental strategies is critical for resilient and inclusive cities (Alnaim *et al.*, 2025; Halu, 2010, 2019; Speck, 2018).

This study identified significant challenges in the Ürgüp Bazaar District related to walkability, ecological infrastructure, and public space quality, consistent with international literature. Unlike previous studies, this research adopted a holistic approach, combining literature review, field observation, survey data, and PESTEL analysis to develop a context-sensitive Urban Design Guide. Survey responses from 432 participants reinforced the urgency of ecological and pedestrian-oriented interventions: 72.6% highlighted traffic and vehicle circulation as major concerns, 61.8% noted the lack of green areas, 50.6% reported walkability issues, and 63.2% prioritised shaded pedestrian routes. Additional priorities included mini parks and landscaped resting areas (61.1%), façade restoration (45.4%), improved lighting (40.5%), public seating (35.2%), vehicle-access limitation (47.2%), eco-friendly transport (53.9%), and support for local commerce (60.2%). These findings substantiate the guide's integrated strategies and underscore the need for interventions that address both physical and socio-environmental dimensions.

The revitalisation of the Ürgüp Bazaar District illustrates how small-scale interventions can catalyse

broader spatial transformation. Prioritising walkability, ecological resilience, and heritage-sensitive design not only mitigates immediate urban vulnerabilities such as vehicle dominance, lack of green infrastructure, and functional decline, but also stabilises rural-urban dynamics. Strengthening public spaces, ecological corridors, and local commerce mitigates socio-economic marginalisation and positions the bazaar as a resilient anchor of community life.

Several limitations should be noted. The single-case focus limits generalisability to districts with different socio-economic and cultural contexts. Surveys may underrepresent transient users such as tourists. PESTEL analysis, while broad in scope, involves some subjectivity, due to reliance on secondary data. Field observations were limited in time and may not capture seasonal variations. Lastly, while international cases informed the guide, contextual differences may limit full transferability of certain interventions.

## 8. CONCLUSION

Revitalising historic commercial areas requires approaches that restore physical structures, while rebuilding ecological, social, and functional connections within the urban fabric. This study demonstrates that integrated strategies prioritising walkability, green infrastructure, inclusive public spaces, and the use of local, climate-responsive materials enhance aesthetics, liveability, and long-term resilience.

The Urban Design Guide developed for the Ürgüp Bazaar District offers a flexible, context-sensitive framework that combines ecological design, public realm improvements, and stakeholder-driven processes. Grounded in literature, spatial analysis, and user perceptions, it can be adapted for other semi-rural, heritage-rich commercial districts, by assessing local pedestrian patterns, heritage characteristics, ecological potential, and sociocultural needs. Context-specific adjustments such as phased implementation,

stakeholder consultation, and mitigation of potential trade-offs such as restricted vehicle access or pedestrian congestion ensure that interventions remain effective and socially inclusive.

Policy and practice recommendations include:

- Integrate ecological and cultural heritage considerations into planning codes and design guidelines.
- Promote multi-stakeholder governance involving government, civil society, small businesses, and cultural institutions.
- Establish funding and incentive programmes supporting adaptive reuse, green infrastructure, and façade restoration.
- Implement pilot projects with incremental design interventions to refine principles based on local feedback.
- Mandate monitoring and evaluation frameworks to assess long-term environmental, social, and economic impacts.

Future applications of the guide should emphasise flexible, scalable, and inclusive urban design principles, adaptable to changing environmental conditions, user expectations, and cultural sensitivities. Comparative studies across other historic bazaar districts, inclusion of diverse stakeholders (tourists, officials, heritage experts), and integration with sensor-based data and microclimate simulations would strengthen evidence-based refinement of the ecological walkability framework over time.

By situating pedestrian-friendly and ecological principles within the semi-rural context of Ürgüp, this study highlights their role in addressing vulnerabilities of small historic settlements and guiding sustainable spatial transformation. The Urban Design Guide demonstrates how ecological design, walkability, and heritage continuity can reinforce resilience, social cohesion, and functional vitality in historic commercial districts.

## REFERENCES

- AHERN, J. 2011. From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world. *Landscape and Urban Planning*, 100(4), pp. 341-343. <https://doi.org/10.1016/j.landurbplan.2011.02.021>
- AIELLO, G. & GENDELMAN, I. 2008. Seattle's Pike Place Market (de) constructed: An analysis of tourist narratives about a public space. *Journal of Tourism and Cultural Change*, 5(3), pp. 158-185. <https://doi.org/10.2167/jtcc093.0>
- AKALP, S. & AYÇAM, İ. 2024. Evaluation of urban renewal practices in traditional settlement structures in the context of sustainability: The case of Alipaşa-Lalebey Neighborhood. *Kent Akademisi*, 17(4), pp. 1500-1530. <https://doi.org/10.35674/kent.1432288>
- ALKRIDES, B.F., WASHINGTON, T., LIMB, M. & CUSHING, D. 2025. Assessing walkability in Riyadh's commercial streets: Public perceptions and prioritization. *Sustainability*, 17(13), 5748. <https://doi.org/10.3390/su17135748>
- ALNAIM, M.M., MESLOUB, A., ALALOUCHE, C. & NOAIME, E. 2025. Reclaiming the urban streets: Evaluating accessibility and walkability in the City of Hail's streetscapes. *Sustainability (Switzerland)*, 17(7). <https://doi.org/10.3390/su17073000>
- AMER, M. 2024. Mutrah Old Market, Oman: Analysis to enhance a living heritage. In: *Tangible and intangible heritage in the age of globalisation*, pp.103-126. Open Book Publishers. <https://doi.org/10.11647/obp.0388.06>
- ANGROSINO, M. 2011. *Doing ethnographic and observational research*. SAGE Publications Ltd. <https://doi.org/10.4135/9781849208932>
- BAOBEID, A., KOÇ, M. & AL-GHAMDI, S.G. 2021. Walkability and its relationships with health, sustainability, and liveability: Elements of physical environment and evaluation frameworks. *Frontiers in Built Environment*, 7. <https://doi.org/10.3389/fbuil.2021.721218>
- BEATLEY, T. 2011. *Biophilic cities: Integrating nature into urban design and planning*. Washington, DC: Island Press. <https://doi.org/10.5822/978-1-59726-986-5>
- BRAUN, V. & CLARKE, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- BROWN, B.B., YAMADA, I., SMITH, K.R., ZICK, C.D., KOWALESKI-JONES, L. & FAN, J.X. 2009. Mixed land use and walkability: Variations in land use measures and relationships with BMI, overweight, and obesity. *Health Place*, 15(4), pp. 1130-1141. <https://doi.org/10.1016/j.healthplace.2009.06.008>
- CARMONA, M., HEATH, T., OC, T. & TIESDELL, S. 2003. *Public places – Urban spaces; the dimensions of urban design*. Oxford: Architectural Press.
- CMHC. 2017. Granville Island 2040: Bridging past and future. [granvilleisland2040.ca](http://granvilleisland2040.ca) [Accessed: 2 March 2025].
- CRESWELL, J.W. & CRESWELL, J.D. 2018. *Research design: Qualitative, quantitative, and mixed methods approaches*. 5<sup>th</sup> edition. London: SAGE Publications, Inc.
- DEL ROSARIO, L., ASTELL-BURT, T., OLSEN, J.R., THOMPSON, S., MITCHELL, R. & FENG, X. 2025. Walkable by nature? Adding green and blue space to walkability indices and assessment of socio-economic inequalities. *Environmental Research*, 284, article 122278. <https://doi.org/10.1016/j.envres.2025.122278>
- DE OLIVEIRA, P. 2017. Imagining an old city in nineteenth-century France: Urban renovation, civil society, and the making of Vieux Lyon. *Journal of Urban History*, 45(1), pp. 67-98. <https://doi.org/10.1177/0096144216689090>
- DINLER, M. & GÜÇHAN, N.Ş. 2016. On Fener and Balat districts' transformation: Three visions / three periods / three diverse "Conservation" perspectives. *Turkish Academy of Sciences Journal of Cultural Inventory*, 14, pp. 225-245.
- DOVEY, K. & PAFKA, E. 2020. What is walkability? The urban DMA. *Urban Studies*, 57(1), pp. 93-108. <https://doi.org/10.1177/0042098018819727>
- ELO, S. & KYNGÄS, H. 2008. The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), pp. 107-115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- ERTURAN, A. & AKSEL, B. 2023. Multidimensional analyses of walkability in city centres by using mobile methodologies: Beşiktaş and Delft experiences. *Urban Design International*, 28(1), pp. 52-69. <https://doi.org/10.1057/s41289-022-00209-6>
- ERVIN, J. 2007. Reinventing downtown San Diego: A spatial and cultural analysis of the Gaslamp Quarter. *The Journal of San Diego History*, 53(4), pp. 188-199.
- ETIKAN, I. 2016. Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), pp. 1-4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- FAHMI, W. 2012. Sustainable tourism and the rehabilitation of Cairo's historical districts: The case of the Bazaar area and the Cities of Dead. In: *2<sup>nd</sup> World Sustainability Forum*. MDPI AG, article 906. <https://doi.org/10.3390/wsf2-00906>
- FALANGA, R., NUNES, M.C. & CHAVES, H. 2024. Community engagement in urban regeneration: Highlights from the 'Sê Bairrista' project in Marvila (Lisbon). In: *Social cohesion and resilience through citizen engagement: A place-Based Approach*, pp. 140-162. Edward Elgar Publishing Ltd. <https://doi.org/10.4337/9781035317103.00022>
- FARR, D. 2008. *Sustainable urbanism: Sustainable design with nature*. Berlin: Wiley.
- FERNÁNDEZ-DE-CÓRDOVA, G., MOSCHELLA, P. & FERNÁNDEZ-MALDONADO, A.M. 2021. Changes in spatial inequality and residential segregation in metropolitan Lima. In: *Urban Book Series*, pp. 471-490. Springer. [https://doi.org/10.1007/978-3-030-64569-4\\_24](https://doi.org/10.1007/978-3-030-64569-4_24)
- FURLAN, R. & AL-MOHANNADI, A. 2020. An urban regeneration planning scheme for the Souq Waqif heritage site of Doha. *Sustainability*, 12(19), article 7927. <https://doi.org/10.3390/su12197927>
- GEHL, J. 2010. *Cities for People*. Washington, DC: Island Press.
- GILL, S., HANDLEY, J., ENNOS, A. & PAULEIT, S. 2007. Adapting cities for climate change: The role of the green infrastructure. *Built Environment*, 33(1), pp. 115-133. <https://doi.org/10.2148/benv.33.1.115>
- GLOBAL DESIGNING CITIES INITIATIVE [n.d.]. Case study: Bourke St.; Sydney, Australia. In: *Global street design guide*. Island Press. Global Designing Cities Initiative – Bourke Street Case Study.
- HAJI KHAMIS, A., HOLLMÉN, S., KOSKINEN, A. & NIMRI, L. 2024. Stone Town built heritage identity as a stimulus to sustainable urban growth within Zanzibar City. *Environmental Science and Sustainable Development*, 9(4), pp. 19-33. <https://doi.org/10.21625/essd.v9i4.1107>
- HALU, Z.Y. 2010. Kentsel Mekân Olarak Caddelerin Mekânsal Karakterinin Yürünebilirlik Bağlamında İrdelenmesi Bağdat Caddesi Örneği. Istanbul Technical University.

- HALU, Z.Y. 2019. Transactional approach for walkable urban spaces: Hierarchy of walking needs. *Journal of Environmental Protection and Ecology*, 20(1), pp. 302-312.
- HANSEN, R. & PAULEIT, S. 2014. From multifunctionality to multiple ecosystem services? A conceptual framework for multifunctionality in green infrastructure planning for urban areas. *Ambio*, 43(4), pp. 516-529. <https://doi.org/10.1007/s13280-014-0510-2>
- HUANG, X., ZENG, L., LIANG, H., LI, D., YANG, X. & ZHANG, B. 2024. Comprehensive walkability assessment of urban pedestrian environments using big data and deep learning techniques. *Scientific Reports*, 14(1), article 26993. <https://doi.org/10.1038/s41598-024-78041-x>
- HUNT, J.G. 2011. Urban renewal, master planning and design information management: A New Zealand waterfront case study. *ITU AZ: Journal of the Faculty of Architecture*, 8(2), pp. 32-51.
- IBM CORPORATION. 2020. *IBM SPSS Statistics for Windows (Version 27.0)*. IBM Corporation.
- ISLAND PLANNING CORPORATION. [n.d.] The district's landscape design by IPC. Miami Design District. [Online]. Available at: Retrieved, from <<https://www.miamidesigndistrict.com/blog/entries/982/the-districts-landscape-design-by-ipc/>> [Accessed: 23 February 2025].
- JOSHI, A., KALE, S., CHANDEL, S. & PAL, D. 2015. Likert scale: Explored and explained. *British Journal of Applied Science and Technology*, 7(4), pp. 396-403. <https://doi.org/10.9734/bjast/2015/14975>
- KADIĆ, A., MALJKOVIĆ, B., ROGULJ, K. & PAMUKOVIĆ, J.K. 2025. Green infrastructure's role in climate change adaptation: Summarizing the existing research in the most benefited policy sectors. *Sustainability*, 17(9), article 4178. <https://doi.org/10.3390/su17094178>
- KADIOĞLU, D. 2024. Producing gentrifiable neighborhoods: Race, stigma and struggle in Berlin-Neukölln. *Housing Studies*, 39(6), pp. 1444-1466. <https://doi.org/10.1080/02673037.2022.2042494>
- KAWULICH, B.B. 2005. Participant observation as a data-collection method. *Forum Qualitative Sozialforschung*, 6(2). <https://doi.org/10.17169/fqs-6.2.466>
- KIM, E.J. 2020. The historical landscape: Evoking the past in a landscape for the future in the Cheonggyecheon reconstruction in South Korea. *Humanities (Switzerland)*, 9(3). <https://doi.org/10.3390/h9030113>
- KNAPSKOG, M., HAGEN, O.H., TENNØY, A. & RYNNING, M.K. 2019. Exploring ways of measuring walkability. In: *Transportation Research Procedia*, pp. 264-282. <https://doi.org/10.1016/j.trpro.2019.09.047>
- KORKOU, M., TARIGAN, A.K.M. & HANSLIN, H.M. 2023. The multifunctionality concept in urban green infrastructure planning: A systematic literature review. *Urban Forestry and Urban Greening*, 85, article 127975. <https://doi.org/10.1016/j.ufug.2023.127975>
- KREJCIE, R. & MORGAN, D. 1970. Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), pp. 607-610. <https://doi.org/10.1177/001316447003000308>
- LI, J., CHEN, Y., ZHAO, D. & ZHAI, J. 2024. The impact of built environment on mixed land use: Evidence from Xi'an. *Land*, 13(12), 2214. <https://doi.org/10.3390/land13122214>
- LIU, Y., MAURER, M.L., CARSTENSEN, T.A., WAGNER, A.M., SKOV-PETERSEN, H. & OLAFSSON, A.S. 2024. An integrated approach for urban green travel environments: Planning factors, benefits and barriers as perceived by users and planners. *Journal of Transport Geography*, 117, article 103849. <https://doi.org/10.1016/j.jtrangeo.2024.103849>
- LONDON BOROUGH OF WALTHAM FOREST. 2024. *Local Plan Part 2 – Proposed Submission Version: New Spitalfields Market (R19002)*.
- MANIEI, H., ASKARIZAD, R., POURZAKARYA, M. & GRUEHN, D. 2024. The influence of urban design performance on walkability in cultural heritage sites of Isfahan, Iran. *Land*, 13(9), article 1523. <https://doi.org/10.3390/land13091523>
- MATURANA, B., MCINNENY, A. & BRAVO, M. 2019. Urban transformations in the culture of Santiago's barrios. *Open House International*, 44(4), pp. 20-26. <https://doi.org/10.1108/OHI-04-2019-B0004>
- MCDONALD, R., KROEGER, T., BOUCHER, T., LONGZHU, W., SALEM, R. et al. 2016. *Planting healthy air: A global analysis of the role of urban trees in addressing particulate matter pollution and extreme heat*. Arlington, USA: The Nature Conservancy.
- MCMAHON, E.T. & BENEDICT, M.A. 2006. *Green infrastructure: Linking landscapes and communities*. Washington, DC: Island Press.
- MUMINOVIĆ, M., RADOVIĆ, D. & ALMAZAN, J. 2013. On innovative practices which contribute to preservation of the place identity: The example of Yanesen, Tokyo. *Journal of Civil Engineering and Architecture*, 7(3), pp. 328-340. <https://doi.org/10.17265/1934-7359/2013.03.009>
- NEWMAN, P. & KENWORTHY, J. 2015. *The end of automobile dependence: How cities are moving beyond car-based planning*. Island Press – Center for Resource Economics. <https://doi.org/10.5822/978-1-61091-613-4>
- NOBRE, E.A.C. 2002. Urban regeneration experiences in Brazil: Historical preservation, tourism development and gentrification in Salvador da Bahia. *Urban Design International*, 7(2), pp. 109-124. <https://doi.org/10.1057/palgrave.udi.9000066>
- NOFRE, J., SÁNCHEZ-FUARROS, Í., CARLOS MARTINS, J., PEREIRA, P., SOARES, I., MALET-CALVO, D., GERALDES, M. & LÓPEZ DÍAZ, A. 2017. Exploring nightlife and urban change in Bairro Alto, Lisbon. *City and Community*, 16(3), pp. 330-344. <https://doi.org/10.1111/cico.12248>
- ORBASLI, A. 2000. *Tourists in historic towns: Urban conservation and heritage management*. London and New York: E & FN Spon.
- PALINKAS, L.A., HORWITZ, S.M., GREEN, C.A., WISDOM, J.P., DUAN, N. & HOAGWOOD, K. 2015. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), pp. 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
- PENDLEBURY, J. 2008. *Conservation in the age of consensus*. London: Routledge Taylor & Francis Group. <https://doi.org/10.4324/9780203892343>
- PHILIPS, A. 2013. *Designing urban agriculture: A complete guide to the planning, design, construction, maintenance and management of edible landscapes*. Hoboken, NJ: Wiley.
- RAMYAR, R., ACKERMAN, A. & JOHNSTON, D.M. 2021. Adapting cities for climate change through urban green infrastructure planning. *Cities*, 117. <https://doi.org/10.1016/j.cities.2021.103316>
- REN, X. 2008. Forward to the past: Historical preservation in globalizing Shanghai. *City and Community*, 7(1), pp. 23-43. <https://doi.org/10.1111/j.1540-6040.2007.00239.x>

- RICHARDSON, J.V. 2006. The library and information economy in Turkmenistan. *IFLA Journal*, 32(2), pp. 131-139. <https://doi.org/10.1177/0340035206066410>
- ROSCOE, C., SHERIDAN, C., GENESHKA, M., HODGSON, S., VINEIS, P. *et al.* 2022. Green walkability and physical activity in UK Biobank: A cross-sectional analysis of adults in Greater London. *International Journal of Environmental Research and Public Health*, 19(7), article 4247. <https://doi.org/10.3390/ijerph19074247>
- SALVADOR, C.C., LOPES, A.A. DOS S., SABOYA, R.T., DE, KANASHIRO, M. & D'ORSI, E. 2024. Land use mix and walking for transportation among older adults: An approach based on different metrics of the built environment. *Urbe. Revista Brasileira de Gestão Urbana*, 16. <https://doi.org/10.1590/2175-3369.016.e20220211>
- SCHREIER, M. 2012. *Qualitative content analysis in practice*. SAGE Publications. <https://doi.org/10.4135/9781529682571>
- SHEHAB EL-DEEN, A.S., ABOULSAADAT, A.H. & NOUR, W.A. 2024. Reviving the past: Urban strategies for renovating historic commercial streets in city centres. *Journal of Engineering and Applied Science*, 71(1), article 155. <https://doi.org/10.1186/s44147-024-00488-6>
- SHIELDS, R., GOMES DA SILVA, E.J., LIMA E LIMA, T. & OSORIO, N. 2021. Walkability: A review of trends. *Journal of Urbanism*. <https://doi.org/10.1080/17549175.2021.1936601>
- SHILEI, L. & YONG, W. 2009. Target-oriented obstacle analysis by PESTEL modelling of energy efficiency retrofit for existing residential buildings in China's northern heating region. *Energy Policy*, 37(6), pp. 2098-2101. <https://doi.org/10.1016/j.enpol.2008.11.039>
- SJÖBLOM, J. 2023. Cultural sustainability in city planning: A case study on the urban development project Embassy of Sharing in Malmö. Unpublished Master's thesis. Malmö University. [mau.diva-portal.org](http://mau.diva-portal.org) [Accessed: 2 May 2025].
- SMIT, L. 2016. *The Markthal illuminated: Intentions and perceptions of developers, vendors, and visitors*. Erasmus University, Rotterdam.
- SOMMELLA, R. & D'ALESSANDRO, L. 2021. Retail policies and urban change in Naples city centre: Challenges to resilience and sustainability from a Mediterranean city. *Sustainability*, 13(14), article 7620. <https://doi.org/10.3390/su13147620>
- SONTA, A. & JIANG, X. 2023. Rethinking walkability: Exploring the relationship between urban form and neighbourhood social cohesion. *Sustainable Cities and Society*, 99, article 104903. <https://doi.org/10.1016/j.scs.2023.104903>
- SOUTHWORTH, M. 2005. Designing the walkable city. *Journal of Urban Planning and Development*, 131(4), pp. 246-257. [https://doi.org/10.1061/\(ASCE\)0733-9488\(2005\)131:4\(246\)](https://doi.org/10.1061/(ASCE)0733-9488(2005)131:4(246))
- SPECK, J. 2018. *Walkable city rules: 101 steps to making better places*. Washington, DC: Island Press. <https://doi.org/10.5822/978-1-61091-899-2>
- TOFT, N. 2011. Old Havana as an exemplary case of world heritage management. *International Journal of Cuban Studies*, 3(1), pp. 32-42.
- TZOULAS, K., KORPELA, K., VENN, S., YLI-PELKONEN, V. & KAŽMIERCZAK, A. *et al.* 2007. Promoting ecosystem and human health in urban areas using green infrastructure: A literature review. *Landscape and Urban Planning*, 81(3), pp. 167-178. <https://doi.org/10.1016/j.landurbplan.2007.02.001>
- VAN NES, A. 2021. Spatial configurations and walkability potentials. Measuring urban compactness with space syntax. *Sustainability*, 13(11), article 5785. <https://doi.org/10.3390/su13115785>
- WAN, S., LU, C., LI, S.S., PENG, H., TIAN, X., YUE, R. & AN, C. 2025. Enhancing urban sustainability: An energy-based framework to support green infrastructure planning. *Landscape and Urban Planning*, 261, article 105397. <https://doi.org/10.1016/j.landurbplan.2025.105397>
- WANG, X., WEI, S., TANG, X., ZHANG, Z. & SHENG, S. 2025. Mapping the global knowledge landscape of urban green walkability: A bibliometric analysis. *Buildings*, 15(21), 3814. <https://doi.org/10.3390/buildings15213814>
- WANG, Y., CHAU, C.K., NG, W.Y. & LEUNG, T.M. 2016. A review on the effects of physical built environment attributes on enhancing walking and cycling activity levels within residential neighbourhoods. *Cities*, 50, pp. 1-15. <https://doi.org/10.1016/j.cities.2015.08.004>
- WHYTE, W.H. 1980. *The social life of small urbans*. The Conservation Foundation.
- YIN, L. 2017. Street level urban design qualities for walkability: Combining 2D and 3D GIS measures. *Computers, Environment and Urban Systems*, 64, pp. 288-296. <https://doi.org/10.1016/j.compenvurbsys.2017.04.001>
- YUAN, K., ABE, H., OTSUKA, N., YASUFUKU, K. & TAKAHASHI, A. 2023. A comprehensive evaluation of walkability in historical cities: The case of Xi'an and Kyoto. *Sustainability*, 15(6), article 5525. <https://doi.org/10.3390/su15065525>
- ZAREI, M. & SHAHAB, S. 2025. Nature-based solutions in urban green infrastructure: A systematic review of success factors and implementation challenges. *Land*, 14(4), article 818. <https://doi.org/10.3390/land14040818>