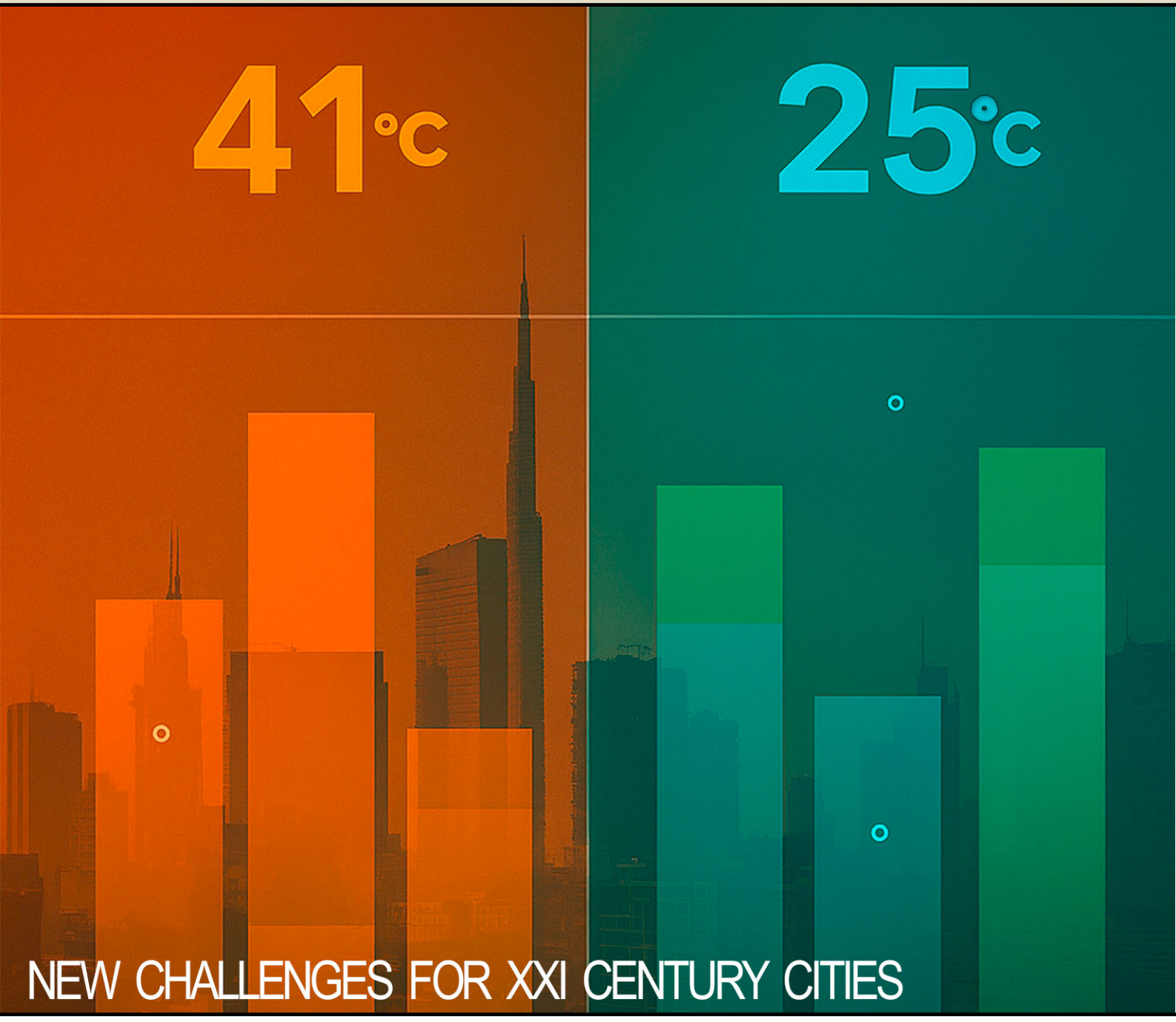
TeMA

18th TeMA Journal
Congratulation on officially becoming an adult
Enjoy your freedom

Journal of
Land Use, Mobility and Environment

print ISSN 1970-9889 e-ISSN 1970-9870
FedOA press - University of Naples Federico II

DOAJ anvur Rivista scientifica di classe A - 08/F1 Scopus WEB OF SCIENCE



NEW CHALLENGES FOR XXI CENTURY CITIES

Multilevel scientific approach to impacts of global warming on urban areas, energy transition, optimisation of land use and emergency scenario

Vol.18 n.3
Dicember 2025

TeMA Journal was established with the primary objective of fostering and strengthening the integration between urban transformation studies and those focused on mobility governance, in all their aspects, with a view to environmental sustainability. The three issues of the 2025 volume of TeMA Journal propose articles that deal with the effects of Global warming, reduction of energy consumption, immigration flows, optimization of land use, analysis and evaluation of civil protection plans in areas especially vulnerable to natural disasters and multilevel governance approach to adaptation.

TeMA is the Journal of Land Use, Mobility and Environment and offers papers with a unified approach to planning, mobility and environmental sustainability. With ANVUR resolution of April 2020, TeMA journal and the articles published from 2016 are included in the A category of scientific journals. The articles are included in main scientific database as Scopus (from 2023), Web of Science (from 2015) and the Directory of Open Access Journals (DOAJ). It is included in Sparc Europe Seal of Open Access Journals, and the Directory of Open Access Journals.

TeMA Journal of
Land Use, Mobility and Environment

NEW CHALLENGES FOR XXI CENTURY CITIES:
Multilevel scientific approach to impacts of global warming on urban areas, energy transition, optimisation of land use and emergency scenario

3 (2025)

Published by
Laboratory of Land Use, Mobility and Environment
DICEA - Department of Civil, Building and Environmental Engineering
University of Naples Federico II, Italy

TeMA is realized by CAB - Center for Libraries at University of Naples Federico II using Open Journal System

Editor-in-Chief: Rocco Papa
print ISSN 1970-9889 | online ISSN 1970-9870
Licence: Cancelleria del Tribunale di Napoli, n°6 of 29/01/2008

Editorial correspondence
Laboratory of Land Use, Mobility and Environment
DICEA - Department of Civil, Building and Environmental Engineering
University of Naples Federico II
Piazzale Tecchio, 80
80125 Naples (Italy)

https://serena.sharepress.it/index.php/tema
e-mail: redazione.tema@unina.it

The cover image was created using an AI tool, taking into account the thematic content of the articles included in this issue.

TeMA - Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.
With ANVUR resolution of April 2020, TeMA Journal and the articles published from 2016 are included in A category of scientific journals. The articles published on TeMA are included in main international scientific database as Scopus (from 2023), Web of Science (from 2015) and the *Directory of Open Access Journals* (DOAJ). TeMA Journal has also received the *Sparc Europe Seal* for Open Access Journals released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe). TeMA is published under a Creative Commons Attribution 4.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

TeMA Journal of Land Use, Mobility and Environment

NEW CHALLENGES FOR XXI CENTURY CITIES:
Multilevel scientific approach to impacts of global warming on urban areas, energy transition, optimisation of land use and emergency scenario

3 (2025)

Contents

REVIEW NOTES

TeMA Journal of Land Use, Mobility and Environment

TeMA 3 (2025) 475-487
print ISSN 1970-9889, e-ISSN 1970-9870
DOI: 10.6093/1970-9870/12482
Received 5th July 2025, Accepted 9th December 2025, Available online 31st December 2025

Urban physical characteristics for sense of security

Mohammad Sedaghatfard [a]*, Ali Soltani [bc]

[a] Department of Urban Planning, Faculty of Art and Architecture, Shiraz University, Shiraz, Iran
e-mail: m.sedaghatfard1990@gmail.com
ORCID: https://orcid.org/0000-0003-0557-0566
* Corresponding author

[b] School of Humanities, Arts and Social Sciences (HASS), University of New England, Sydney, 2150, NSW, Australia.
[c] City Futures Research Centre, UNSW Sydney, NSW, 2052, Australia
e-mail: asoltani@une.edu.au
ORCID: https://orcid.org/0000-0001-8042-410X

Abstract
This research delves into the symbiotic nexus between the morphology of the urban fabric and the phenomenology of security. Situated in Shiraz, Iran, this inquiry interrogates the determinative role of four morphological attributes; green spaces, land use, illumination, and network connectivity, juxtaposed against socio-economic traits. Through a dialectical comparison of two ontologically distinct urban enclaves, we employ structural equation modelling to forge and empirically ground the Physical Attributes Affecting Sense of Security Model (PAASSM). The analysis reveals that the city's corporeal fabric, principally its land use and green commons, are primary architects of the citizen's sense of sanctuary, with socio-economic variables exerting a subordinate yet non-trivial influence. The superior security manifest in the city's modern, planned district stands as a testament to the virtues of deliberate spatial ordering. Ultimately, this study bequeaths a novel epistemological framework, articulating a new mandate for urban praxis: to recognize the deliberate sculpting of the built form as a primary instrument for cultivating a safer, more resilient, and socially cohesive *polis*.

Keywords
Physical characteristics; Built environment; Sense of security; Structural equation modeling; Shiraz

How to cite item in APA format
Sedaghatfard, M. & Soltani, A. (2025). Urban physical characteristics for sense of security. *TeMA - Journal of Land Use, Mobility and Environment*, *18* (3), 475-487. http://dx.doi.org/10.6093/1970-9870/12482

1. Introduction

Urbanization has rapidly transformed cities into global centers of economic, social, and cultural activity (Zhong et al., 2023). Today, nearly half of the world's population resides in urban areas (Ahmed Majid & faraydoon Ali, 2024). However, this expansion has not always been strategically planned. Uncontrolled and rapid urban growth has resulted in urban sprawl, infrastructural deficits (Soltani, Azizi, et al., 2025), spatial inequality, and the decline of traditional urban cores, creating complex spatial and social challenges (Talkhabi et al., 2022). These dynamics intensify environmental and social vulnerabilities (Soltani, Jaber, et al., 2025) by generating uneven spatial structures, degrading public spaces, and creating pockets of neglect that are susceptible to crime and insecurity. For example, poorly planned peripheral developments often suffer from insufficient public services, increased exposure to natural hazards such as floods, and reduced environmental quality (Khaliji & Jafarpour Ghalehteimouri, 2024). In Tehran, spatial and temporal population shifts have contributed to urban decline and fragmented urban fabrics (Talkhabi et al., 2022), while in Kuala Lumpur, changes in water patterns have heightened flood risks (Khaliji & Jafarpour Ghalehteimouri, 2024). These negative outcomes illustrate how unplanned urbanization can exacerbate both environmental and human security risks.

Urban security is an essential dimension of sustainable development. Ensuring the safety and security of individuals in cities is fundamental to well-being and community stability (Park & Garcia, 2020; Fakhrahmad et al., 2022). Importantly, security in this context refers to protection from intentional harms such as crime and antisocial behavior, whereas safety relates more to protection from unintentional hazards (Soltani, Qadikolaei, et al., 2025), such as traffic incidents or environmental dangers. A strong sense of security supports residents' mobility (D'Amico, 2023), mental health, and social cohesion (Huang & Lin, 2023). When people feel secure, they are more likely to use public spaces and transport, participate in community activities (Carpentieri et al., 2023), and contribute to urban vitality (Bollenbach et al., 2023). Conversely, insecurity can discourage outdoor activity, foster isolation, reduce investment, and undermine trust in public institutions (Burt et al., 2022; Konkel et al., 2019). The perception of insecurity, even when crime rates are objectively low, can have profound social consequences, highlighting the importance of addressing both objective and subjective dimensions of urban safety.

A substantial body of research highlights the influence of urban physical characteristics on perceived security. Land use patterns are strongly associated with the spatial distribution (Bocca, 2024) of crime: commercial areas, transport nodes, and pawnshops are often correlated with increased property crime risks (Mburu & Helbich, 2016; Yusof & Fauzi, 2019). Street lighting has a significant impact on pedestrians' sense of safety, especially in residential areas, with higher illuminance generally associated with greater perceived security (Liu et al., 2022; Rezakhani et al., 2018). Green spaces, when well-designed and maintained, can increase natural surveillance and deter crime (Maruthaveeran, 2016; Sun et al., 2024; Turkseven Dogrusoy & Zengel, 2017). while road network patterns influence surveillance opportunities, accessibility, and the likelihood of isolation (Dinarta et al., 2025; Ye et al., 2018). These findings align with Crime Prevention Through Environmental Design (CPTED) and environmental criminology theories, which argue that the built environment can shape opportunities for crime and perceptions of safety (Cozens & Davern, 2025).

While the causal relationship between socioeconomic factors and urban form is well established, this study adopts the reverse perspective, focusing on how physical characteristics influence perceptions of security. This approach is grounded in theories emphasizing how urban design can directly shape behavioral patterns (Dehghani et al., 2025), crime opportunities, and subjective security, rather than treating physical form as merely an outcome of socioeconomic structures. Although alternative causal directions such as income and education influencing urban form are plausible, our study positions urban physical factors as key independent variables to examine their direct and indirect effects on perceived security, acknowledging that statistical tools like PLS-SEM test model fit but must be supported by theoretical rationale.

Despite extensive literature, significant research gaps remain. First, most studies are geographically limited to Western or East Asian contexts, with limited investigation of Middle Eastern cities such as Shiraz. Second, few models integrate physical and socioeconomic variables into a single analytical framework. Third, comparative analyses of traditional versus modern urban morphologies within the same city are rare, despite their potential to reveal how different planning logics (Garau et al., 2023) affect perceptions of security. Finally, many studies rely on objective crime statistics rather than subjective perceptions, which often diverge from actual crime rates but strongly influence behavior and mental health. There is also limited use of advanced modeling techniques, such as PLS-SEM, to analyze the interrelations among multiple physical factors and perceived security (Behravesh et al., 2020; Lai & Deal, 2025).

Against this backdrop, the objective of this study is to examine how four key urban physical characteristics green space, land use, street lighting, and road networks influence residents' sense of security in Shiraz, Iran. The research focuses on two contrasting urban districts: District 5, within the historic core, characterized by a compact, organic layout and mixed land uses; and District 10, in the modern expansion area, with wider streets, organized zoning, and larger green spaces. By applying PLS-SEM, this study seeks to clarify the causal pathways linking physical form to perceived security, address the identified research gaps, and offer practical insights for urban planners and policymakers. The analysis contributes to the broader discourse on urban resilience and safety, demonstrating how targeted physical design interventions can strengthen urban security in rapidly transforming cities (Dehghani et al., 2023; Moqadam & Nubani, 2022).

2. Material and method

2.1 Study design

This research adopts a comparative case study design, using multiple techniques including field surveys, spatial analysis, and geospatial data (Gaglione, 2023) to analyze selected variables across two districts with contrasting urban morphologies, in Shiraz, Southern Iran.

2.2 Conducting literature review

The study focused on four keys urban physical attributes (streets lighting, road network, green space, and land use), and two dependents' variables as a personality trait (education and income) selected based on the literature review and relevance to Shiraz's urban structure.

	Variables	**Indicators**
Target	Income	Monthly/annual household income, income bracket, income stability
	Education	Highest educational level attained, degree and careers
Explanatory	Green Spaces	Proximity to parks, vegetation density, quality and maintenance
	Streets Lighting	Distribution of street lights, intensity (lux levels), lighting uniformity
	Land-Use	Diversity of functions (residential, commercial, public), land use ratio
	Roads Network Pattern	Road density, connectivity index, intersection frequency

Tab.1 Variable and Indicators

Additionally, sense of security was operationalized through survey items measuring fear of crime, perceived safety in public spaces, and comfort during daily mobility (Fakhrahmad et al., 2023). To avoid conceptual ambiguity, **"**security**"** (freedom from crime/violence) was distinguished from **"**safety**"** (protection against traffic and environmental hazards). Field observations and GIS mapping were used to supplement questionnaire data

and document morphology, green spaces, and land-use patterns in both districts. The present study considers the factors such as education (E), income (I), district 5 green spaces (DFGS), district 5 land use (DFLU), district 5 streets lighting (DFSL), district 5 roads network (DFRN), district 10 green spaces (DTGS), district 10 land use (DTLU), district 10 streets lighting (DTSL), district 10 roads network (DTRN). Field observations were conducted to understand the actual conditions of the study areas.

2.3 Study area and case selection

The study focuses on District 5 and District 10 of Shiraz. District 5 is located in the historic core, characterized by a compact and organic urban fabric with mixed land uses and narrow alleyways (Panahi et al., 2022). District 10 represents modern urban expansion, featuring wider streets, structured zoning, and planned green spaces. These districts were deliberately selected to capture significant variations in urban form, infrastructure quality, and spatial organization, providing an ideal context for analyzing how built environment factors influence perceptions of safety and security (Hassanshahi et al., 2023). Shiraz is the capital of Fars Province and a major cultural, social, and economic center in southern Iran, with a population exceeding 1.5 million (Bagheri & Soltani, 2023; Javadpoor et al., 2023). The city is situated near the Zagros Mountains at an average elevation of 1,500 m and approximately 800 km south of Tehran (Shiraz Manucipality, 2018). The contrasting physical characteristics between District 5 and District 10, combined with the research team's familiarity with both areas, justified their selection for comparative analysis.

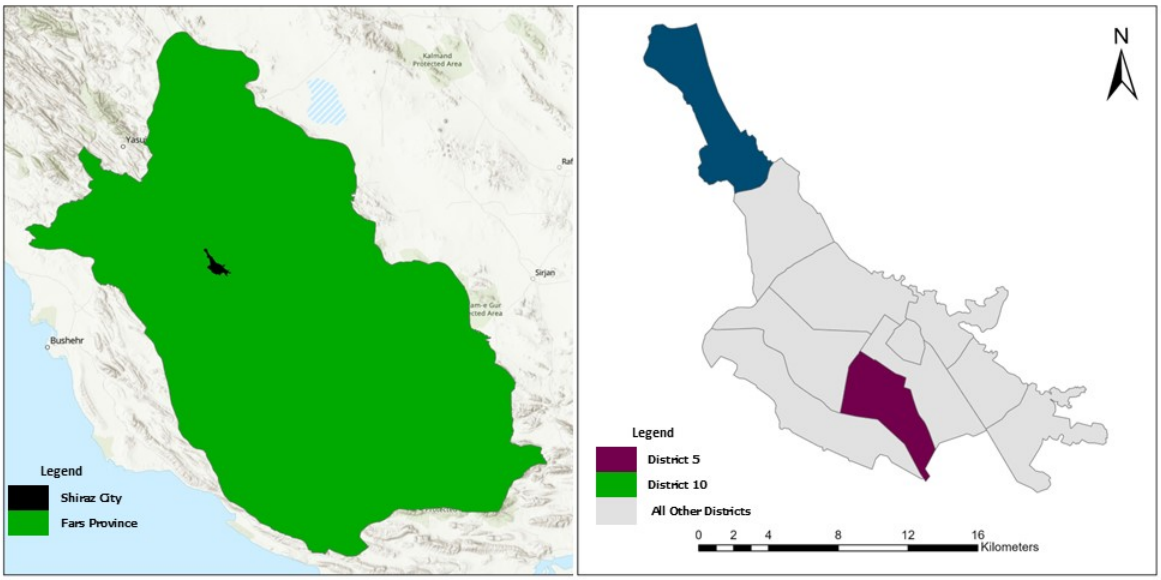


Fig.1 Study areas

2.4 Morphological perspective of study areas that may prone to crime

In (Fig.ss 2 and 3) we can see that the roads network pattern and land use planning had the weakest quality in districts 5 than district10 which causes bicycles riding on the streets especially in district 5 (Roosta et al., 2022). If the roads network settings make all parts relatively similar, more security could be felt on the streets for bike ridings and other functions. The green spaces were not created to make peace and security for residents in both districts especially in district 5. Moreover, district 5 park is an appropriate case study for investigating the sense of security due to its vast area, hidden places, and lack of proper oversight. Besides, lack of inappropriate lighting at the entrance of the parks and lack of attention to urban furniture in the district 5 caused insecure dramatically than district 10.

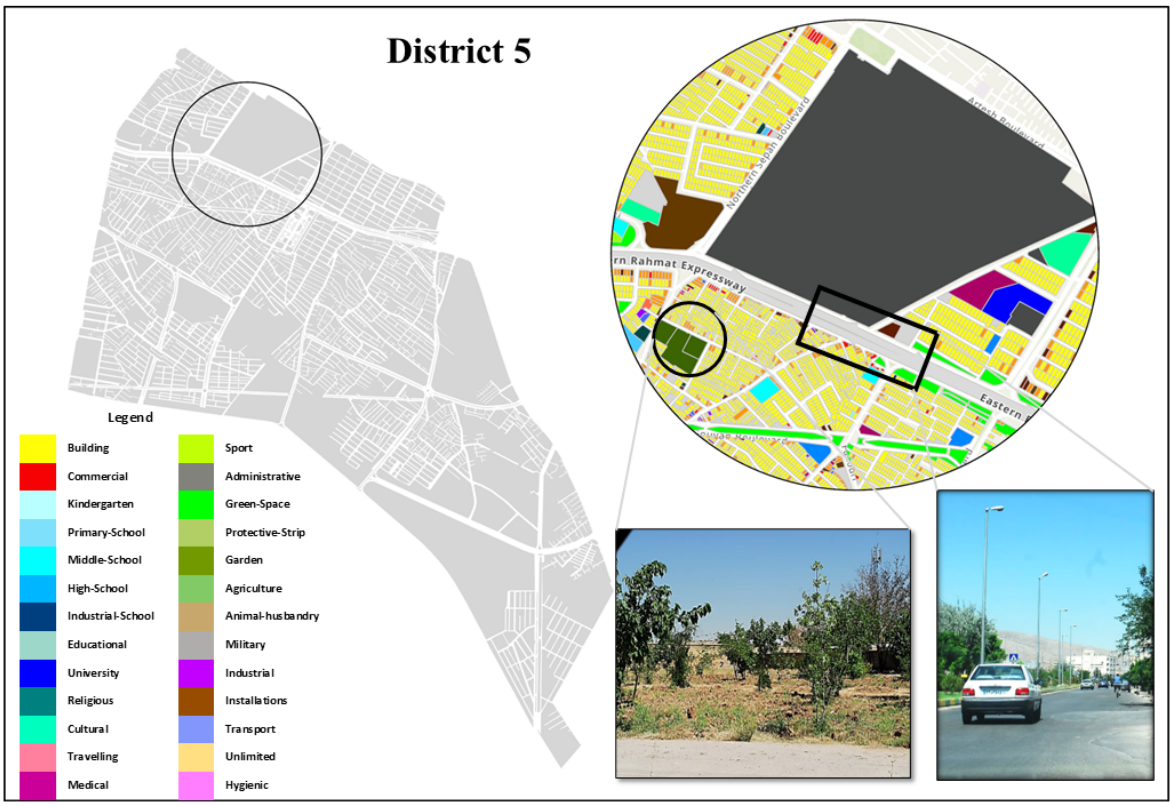


Fig.2 District 5 Land-Use

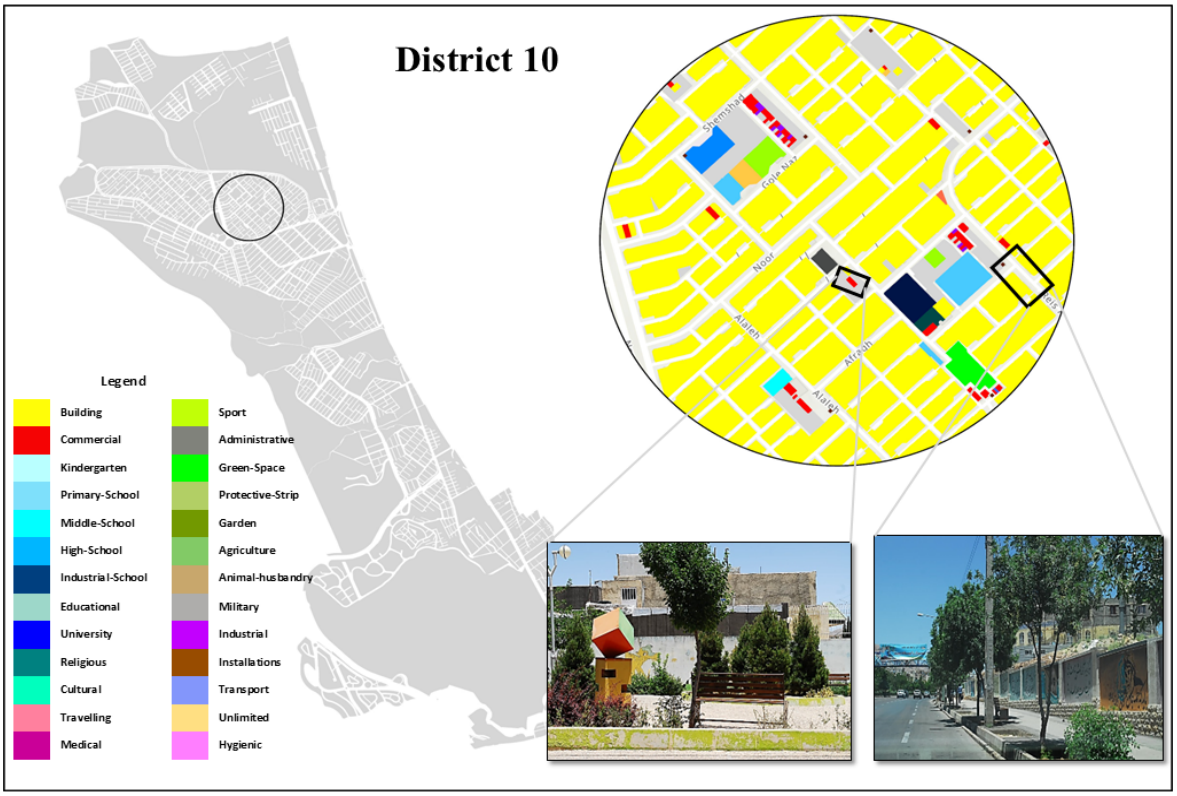


Fig.3 District 10 Land-Use

2.5 Data collection and sampling

Data were collected in 2017 as part of the author's Master's thesis at Shiraz University. A total of 384 valid questionnaires were administered through face-to-face surveys. Based on Cochran's formula, this sample size

was sufficient for the combined population of 281,341 residents in the two districts. Proportionate stratified sampling ensured representation relative to each district's population: 254 questionnaires in District 5 and 130 in District 10. The questionnaire employed a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) and included visual and multiple-choice items. Reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.80, indicating strong internal consistency.

2.6 Analytical strategy and justification for PLS-SEM

The analysis employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS version 4 (Ringle et al., 2015). The selection of PLS-SEM over Covariance-Based SEM (CB-SEM) was theoretically and practically justified as follows:

- Sample size: PLS-SEM is well-suited for moderate samples with complex models;
- Data characteristics: Several indicators exhibited non-normality, for which PLS-SEM's distribution-free estimation is appropriate;
- Model specification: The study involves both formative and reflective constructs, which PLS-SEM handles effectively;
- Research purpose: The exploratory nature of the research aligns with PLS-SEM's strengths in assessing complex relationships rather than testing a well-established theory.

2.7 Model estimation and validation

A two-stage procedure was followed:

- Measurement model evaluation: Indicator loadings (> 0.70), Cronbach's alpha and composite reliability (> 0.70), and AVE (> 0.50) were examined. Discriminant validity was assessed using the Fornell-Larcker criterion and HTMT ratio;
- Structural model evaluation: Path coefficients, R^2 values, and f^2 effect sizes were assessed. The significance of paths was tested using bootstrapping with 5,000 resamples.

3. Results

In this study, two categories of variables were examined: (1) variables that varied based on respondent characteristics, such as physical attributes, and (2) variables related to the sense of security, which were assessed on a scale ranging from low to high. Smart-PLS software tool was employed to explore the relationships between the identified variables. Test statistics were calculated based on the extracted questionnaire data.

3.1 Descriptive analysis

Fig.4 presents the distribution of perceived sense of security among citizens in Districts 5 and 10 of Shiraz. In response to the question, "How would you rate the quality of your sense of security?", the results indicate a notable difference between the two districts. In District 10, approximately 5% of respondents reported a "very low" sense of security, compared to around 40% in District 5. Conversely, 46% of respondents in District 10 rated their sense of security as "high," whereas only about 7% in District 5 reported the same. These findings suggest that District 10 experiences relatively lower levels of crime and that residents there feel significantly more secure than those in District 5.

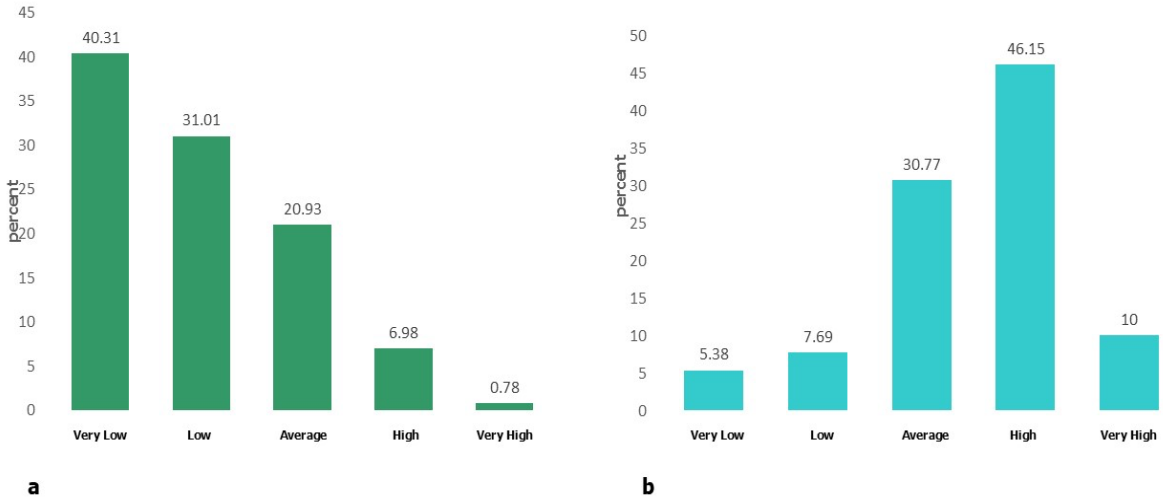


Fig.4 (a) frequency of Sense of security in district 5 and (b) frequency of Sense of security in district 10

3.2 Measurement model evaluation

To evaluate the proposed model, Structural Equation Modeling (SEM) was conducted using Smart-PLS 4.0 software. Two key aspects of the measurement model were assessed: validity and reliability. The structural framework of the model was analyzed in relation to the study variables, and its successful performance across these evaluations confirmed the suitability of the selected constructs and their associated indicators.

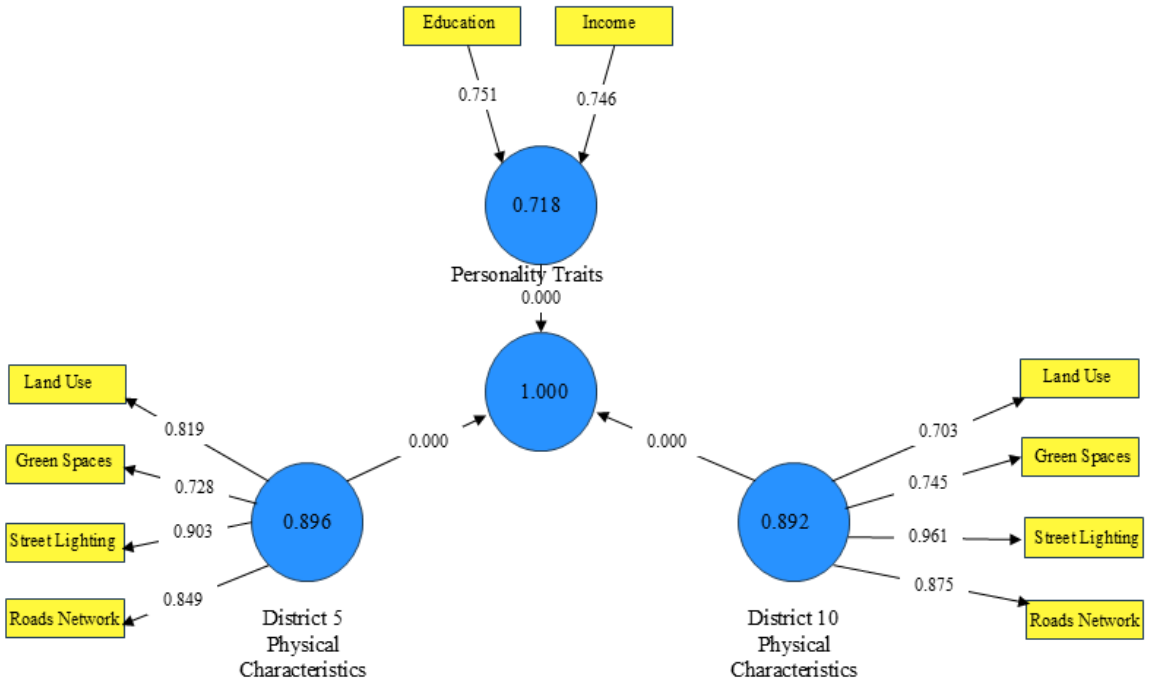


Fig.5 Smart-PLS Algorithm Value of the Measurement Model "PAASSM"

The subsequent sections present the outcomes of convergent validity and discriminant validity tests (Ringle et al., 2015). The structural relationships between the variables are also discussed. From this point onward, the analysis of the adjusted model begins, following the steps outlined (Zhao et al., 2020). The evaluation proceeded in three phases: first, the Empirical Illustration Model was assessed; second, after necessary modifications, convergent validity was re-evaluated; and third, the model's discriminant validity was analyzed. Fig.5 illustrates the Smart-PLS algorithm results for the measurement model. Data were collected via a

structured questionnaire from citizens in Districts 5 and 10 of Shiraz. All constructs were measured using validated scales, and the psychometric properties of these scales were evaluated according to the methodology described (Leroi-Werelds et al., 2014).

The empirical model developed in this study is designed for application in specific urban contexts, offering deeper insight into the perception of security among distinct communities. It can be adapted for use in other settings to examine how physical characteristics influence individuals perceived security (Sedaghatfard et al., 2018). Through iterative refinements, the empirical model enhances and extends general theoretical frameworks. This proposed model, titled the "Physical Attributes Affecting Sense of Security Model" (PAASSM), integrates multidisciplinary knowledge to address the complex factors influencing public perceptions and user acceptance of urban design strategies in future cities.

As regard to verification of latent constructs' convergence validity Cronbach Alpha, AVE (Average Variance Extracted), CR (Construct Reliability), and factor loadings were examined. Moreover, in each latent variable: Cronbach Alpha>0.7, AVE >0.5, CR >0.7; and in the case of each indicator: factor loadings >0.7, thus the existence of all of the latent variables can be justified.

Convergent Validity was examined through factor loadings, Cronbach's alpha, Average Variance Extracted (AVE), and Composite Reliability (CR) (Ringle et al., 2015). Hence, Tab.2, shows the factor loading of the corresponding measures of each construct. These vary from 0.7 to 0.9 The load value of each item on the corresponding construct is well above the recommended value of 0.7 (Fornell & Larcker, 1981) indicating the proper and desirable load factor of each item on its related construct. Measures with the value of < 0.5 can be omitted. The former table shows the result of the three indicators of convergent validity, Cronbach's Alpha was applied to assess the reliability of the variables reflecting the internal consistency of index of variables with 0.718 for Personality Traits, 0.896 for district 5 Physical Attributes, and 0.892 for district 10 Physical Attributes demonstrates that the AVE and CR values are adequate, this result indicated that the internal consistency of model variables is enough and the investigation result has a good reliability so that further data analysis is acceptable, so the findings of the measurement model accounted for the proposed conceptual framework of the research.

Construct	Factor	Load Factor	Cronbach's alpha	AVE	CR
Personality Traits	Education	0.751	0.718	0.560	0.728
	Income	0.746			
District 5 Physical Attributes	Green Spaces	0.728	0.896	0.684	0.898
	Land Use	0.819			
	Streets Lighting	0.903			
	Roads Network	0.849			
District 10 Physical Attributes	Green Spaces	0.745	0.892	0.685	0.895
	Land Use	0.703			
	Streets Lighting	0.961			
	Roads Network	0.875			

Note: average variance extracted (AVE), composite reliability (CR)

Tab.2 Results of the three criteria of Cronbach's alpha, AVE and CR

The highest correlation was observed with its structure compared to other structures. When multiple indicators are used to measure each variable, the researcher should not only reassure the individual scale, but also consider the convergent validity of the constructs. The load-factor was used to check this issue. The hierarchical correlation coefficient was calculated with all other structures of the model, which values should be more than the other structures for the selected construct. The results showed that convergent validity was also confirmed. The high level of the district 10 physical attributes AVE with 0.685 indicates that this variable has a higher relationship with the sense of security as well as these variables (green spaces, land use, streets

lighting, and roads network) next variable which is the most important of the three categories, as the district 5 physical attributes AVE with 0.684. the main respondents include composed of urban spaces users, people, and district's citizens.

Discriminant validity was tested using Fornell-Larcker (FL) criteria and HTMT ratios. To test this, Fornell Larcker (FL) criterion and cross-loadings were used. The first FL criterion (Fornell & Larcker, 1981) assumes that a latent variable (LV) shares more variance with its assigned measures than with any other LVs. The FL criterion was assessed through comparison of the constructs' correlation coefficients. The results are shown in Tab.3. The constructs values, at the far right of each row, are more than the correlation between them, which are arranged in the lower rows. Therefore, it can be concluded that in the proposed model, the constructs interact more with their own indicators than with other constructs. Since the correlation value between all latent variables was < 0.7. The tests were satisfying because they indicate that all latent variables differ sufficiently from each other (Urbach & Ahlemann, 2010). The significance level of each of the stated components can serve as an appropriate guideline for urban planners and managers in creating security in urban spaces.

3.3 Structural model evaluation

The structural model was then evaluated to test hypothesized relationships between variables. Path coefficients, R^2 values, and f^2 effect sizes were assessed. The significance of paths was tested using bootstrapping with 5,000 resamples at a 5% significance level ($p < 0.05$). All structural paths showed statistically significant relationships with sense of security ($p = 0.000$), confirming the robustness of the model. Although in Tab.3, we can see that all of variable showed significant relationship with sense of security with (0.000) the values prove that it is acceptable to consistently measure the instruments (Munir, 2018). Among the constructs, Personality Traits exhibited the highest impact (0.867), followed by District 10 Physical Attributes (0.827) and District 5 Physical Attributes (0.749) indicate those stronger relationship with sense of security.

Construct	Personality Traits	District 5 Physical Attributes	District 10 Physical Attributes	P Value
Personality Traits	0.867			0.000
District 5 Physical Attributes	0.732	0.749		0.000
District 10 Physical Attributes	0.991	0.936	0.827	0.000

Tab.3 Discriminant validity based on Heterotrait-Monotrait Ratio variables

Construct	E	I	DFGS	DFLU	DFSL	DFRN	DTGS	DTLN	DTSL	DTRN
E	0.560									
I	0.473	0.438								
DFGS	0.790	0.538	0.597							
DFLU	0.868	0.458	0.643	0.734						
DFSL	0.496	0.610	0.628	0.436	0.598					
DFRN	0.774	0.604	0.502	0.601	0.501	0.571				
DTGS	0.574	0.647	0.435	0.576	0.607	0.454	0.628			
DTLU	0.698	0.572	0.530	0.751	0.760	0.721	0.748	0.675		
DTSL	0.704	0.725	0.780	0.711	0.684	0.810	0.810	0.538	0.446	
DTRN	0.789	0.661	0.535	0.703	0.641	0.540	0.758	0.748	0.634	0.775

Tab.4 Discriminant validity based on Fornell-Larcker criteria

Tab.4 depicts that the value of HTMT of the entire construct is less than 0.90 which indicates minimal discriminant validity for the model. This is performed by looking at the HTMT criterion value to confirm that the items across the construct measure different construct in the model. It is identified by looking at the fact

that the confident interval value of HTMT statistic must not comprise the value of 1 for an entire combination of the construct and by assessing the value Discriminant validity based on Fornell-Larcker criteria which could be below that 0.90 (Munir, 2018) consequently Tab.4. Shows the value of which the entire construct is less than 0.90 which indicates minimal discriminant validity for the model.

4. Discussion

The scholarly inquiry into the human experience of urban security has long been a fragmented mosaic, composed of disparate methodologies from site-plan interpretations to direct phenomenological assessments. Our research enters this discourse not merely to add another piece, but to provide a new hermeneutic lens: the PAASSM model. This framework moves beyond mere observation to articulate the syntax through which the physical city; it's very bones and sinews, inscribes itself upon the human psyche. The empirical validation of a profound correlation between the built environment and the felt sense of security across Shiraz's districts is, therefore, more than a finding; it is a philosophical affirmation. It posits that the city is not a neutral stage upon which life unfolds but an active co-author of our existential condition, compelling urban stewards to recognize that the manipulation of steel, stone, and soil is, in essence, an act of psychological and social stewardship.

This study further dismantles the crude determinism that would reduce insecurity to a simple function of socioeconomic status. In resonance with Ratnayake's (2017) work, we find that an impoverished environmental horizon; a palpable sense of spatial disenfranchisement, emerges as a far more potent harbinger of fear. By expanding the conceptual lexicon beyond the utilitarian calculus of "ease of use," our framework integrates more nuanced dimensions of the human-place relationship: the intrinsic sense of sanctuary, the perception of relative advantage, and the deep-seated need for environmental compatibility and reliability. This enrichment is particularly vital, for it is in the concrete, material world of the city that these abstract needs find their most urgent expression.

The analysis reveals that the elemental forces of urban form; the breathing room of green spaces, the vibrant friction of mixed land use, the guiding hand of nocturnal illumination, and the logic of its circulatory networks, are the primary agents shaping the geography of fear and safety in Shiraz. Where previous research often presented a disjointed or overly generalized cartography, our systematic approach offers a more coherent grammar for guiding urban transformation. Within this grammar, land use emerges not as one variable among many, but as the linchpin, the prime mover. This discovery is a stark admonition: that a failure of spatial imagination, manifest as monolithic or poorly conceived land management, is itself a foundational source of civic anxiety, sowing the seeds of insecurity in the very soil of the city.

Furthermore, we find that green spaces operate as sanctuaries for the civic soul, fostering a topophilic bond; a love of place, through the ritual of recurrent use. This is not a mere functional attachment; it is an emotional and psychological anchoring that transforms public land into a personal refuge, thereby transmuting comfort into a lived sense of security. While the instrumental roles of street lighting and road networks are undeniable, their secondary standing in the hierarchy of influence is philosophically telling. The revelation that the road network wielded the least impact is a powerful counter-narrative to technocratic urbanism, suggesting that mere mechanical efficiency or logistical connectivity is insufficient to quell the anxieties of the urban subject. Infrastructure, it seems, provides the syntax of a city, but it is the social and ecological substance that provides its meaning. These insights present a new mandate for urban praxis. The ascendant importance of land use and green spaces must guide a paradigm shift toward development strategies that are not just functional, but are deeply resonant with the human need for sanctuary. To integrate the physical with the social is to pursue the city's highest calling: to create an urban fabric that is not only resilient and inclusive but is, in its very form, a testament to the safety and flourishing of its inhabitants.

5. Conclusion

This research confirms the symbiotic nexus between urban morphology and the phenomenology of security. We find that tangible urban forms; green spaces, land use diversity, lighting, and street networks, are not passive features but active agents that architect a citizen's sense of sanctuary. The research reveals an uneven geography of fear, proving that security is a spatially contingent experience that refutes universalist planning and demands context-specific interventions.

Consequently, this study mandates that urban governance treat the sculpting of the built environment as a primary tool for social well-being, moving beyond crime prevention to cultivate a more inclusive and cohesive polis. To aid this, we introduce the PAASSM model: a novel, adaptable framework for mapping the physical city onto its psychic landscape of security. While grounded in Shiraz, it offers a universal paradigm for cities seeking to harmonize the material world with the human spirit, advancing the global discourse on urban resilience.

We must, however, acknowledge the epistemological boundaries of this research, constrained as it was by a limited demographic and a select number of urban districts. Our reliance on quantitative modalities, while structurally insightful, cannot fully capture the nuanced poetry of lived experience. These constraints situate our findings not as a final truth but as a foundational one, opening an aperture for future scholarship. The path forward thus calls for a broader canvas and a methodological synthesis; one that weds our quantitative framework with the phenomenological depth of qualitative inquiry to achieve a more holistic understanding of urban sanctuary.

References

Ahmed Majid, R. & faraydoon Ali, A. (2024). The Effect of Security on the Process of Urban Planning: (the ComparisonStudy Between Traditional and New Residential Districts) (Sulaimani City - KRG/Iraq as a Case Study). *The Scientific Journal of Cihan University- Sulaimaniya*, *8* (1), 154-185. https://doi.org/10.25098/8.1.29

Bagheri, B., & Soltani, A. (2023). The spatio-temporal dynamics of urban growth and population in metropolitan regions of Iran. *Habitat International*, 136, 102797. https://doi.org/10.1016/j.habitatint.2023.102797

Behravesh, H., Alizadeh, K. & Jafari, H. (2020). Explaining the safety of children's parks based on the physical components of the space (Case study: Parks in Region 1 of Mashhad). *Revista Eletrônica Em Gestão, Educação e Tecnologia Ambiental* 1, 24 (20), 1-19. https://doi.org/10.5902/2236117040271

Bocca, A. (2024). Sustainable development and proximity city. The environmental role of new public spaces. *TeMA - Journal of Land Use, Mobility and Environment*, *17* (1), 71-87. https://doi.org/10.6093/1970-9870/10414

Bollenbach, L., Niermann, C., Schmitz, J. & Kanning, M. (2023). Social participation in the city: exploring the moderating effect of walkability on the associations between active mobility, neighborhood perceptions, and social activities in urban adults. *BMC Public Health*, 23(1), 2450. https://doi.org/10.1186/s12889-023-17366-0

Burt, C. J., Kondo, M. C., Hohl, B. C., Gong, C. H., Bushman, G., Wixom, C., South, E. C., Cunningham, R. M., Carter, P. M., Branas, C. C. & Zimmerman, M. A. (2022). Community Greening, Fear of Crime, and Mental Health Outcomes. *American Journal of Community Psychology*, *69* (1-2), 46-58. https://doi.org/10.1002/ajcp.12544

Carpentieri, G., Guida, C., Gorrini, A., Messa, F., Abdelfattah, L. & Büttner, B. (2023). Digital data to support urban planning processes to develop women safety cities: an application to the city of Naples. *TeMA - Journal of Land Use, Mobility and Environment*, 16(3 SE-LUME (Land Use, Mobility and Environment)), 595-608. https://doi.org/10.6093/1970-9870/10272

Cozens, P. & Davern, B. (2025). Exploring Land Use, Crime and Perceptions of Crime in a Retail Setting: Implications for Crime Prevention Through Environmental Design (CPTED). *The International CPTED Association* (ICA). https://www.thecptedjournal.net/2025-cozens_davern.html

D'Amico, A. (2023). Urban spaces and pedestrian mobility: the role of urban design for enhancing walkability. *TeMA - Journal of Land Use, Mobility and Environment*, *16* (3). https://doi.org/10.6093/1970-9870/10327

Dehghani, A., Alidadi, M. & Soltani, A. (2023). Density and Urban Resilience, Cross-Section Analysis in an Iranian Metropolis Context. *Urban Science*, 7 (1). https://doi.org/10.3390/urbansci7010023

Dehghani, A., Soltani, A. & Nateghi, K. (2025). Balancing urban growth and environmental change: Land use patterns in Tehran and Sydney. *Environmental and Sustainability Indicators*, 26, 100691. https://doi.org/10.1016/j.indic.2025.100691

Dinarta, M. W., Lubis, M. & Hasibuan, M. H. M. (2025). Analisa Environmental Jalan Raya untuk Estetika Suasana dan Manfaat pada Lingkungan Serta Bagi Pengguna. SAKOLA: *Journal of Sains Cooperative Learning and Law*, 2(1), 113-129.

Fakhrahmad, S. M., Fakhrahmad, S. M., Soltani, A. & Hajipour, K. (2023). Perceived environment and neighbourhood satisfaction: introducing a fuzzy modeling approach. *Cities & Health*, *7* (5), 808-822. https://doi.org/10.1080/23748834.2023.2207924

Fakhrahmad, S. M., Soltani, A., & Roosta, M. (2022). Assessment of travelers' fear of crime in intercity bus terminals: the case of Karandish terminal of Shiraz. *Journal of transportation security*, 15(1), 69-85. https://doi.org/10.1007/s12198-022-00244-y

Fornell, C. & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, *18* (3), 382-388. https://doi.org/10.1177/002224378101800313

Gaglione, F. (2023). Urban planning and GeoAI in smart city policies. *TeMA - Journal of Land Use, Mobility and Environment*, 16(3 SE-Review Notes), 631-637. https://doi.org/10.6093/1970-9870/10317

Garau, C., Annunziata, A., Yamu, C., D'Orlando, D. & Giuman, M. (2023). Investigating the socio-spatial logic of historic urban areas through space syntax: A comparative analysis of the Roman towns Cosa, Nora, Timgad and Thuburbo Majus. *TeMA - Journal of Land Use, Mobility and Environment*, *16* (1), 201-219. https://doi.org/10.6093/1970-9870/9469

Hassanshahi, G., Soltani, A., Roosta, M., & Askari, S. (2023). Walking as soft mobility: A multi-criteria GIS-based approach for prioritizing tourist routes. *Frontiers of Architectural Research*, 12(6), 1080-1096. https://doi.org/10.1016/j.foar.2023.09.001

Huang, W. & Lin, G. (2023). The relationship between urban green space and social health of individuals: A scoping review. Urban Forestry & Urban Greening, 85, 127969. https://doi.org/10.1016/j.ufug.2023.127969

Javadpoor, M., Soltani, A., Fatehnia, L. & Soltani, N. (2023). How the Built Environment Moderates Gender Gap in Active Commuting to Schools. *In International Journal of Environmental Research and Public Health, 20*, (2). https://doi.org/10.3390/ijerph20021131

Khaliji, M. A. & Jafarpour Ghalehteimouri, K. (2024). Urban security challenges in major cities, with a specific emphasis on privacy management in the metropolises. *Discover Environment, 2* (1), 74. https://doi.org/10.1007/s44274-024-00116-3

Konkel, R. H., Ratkowski, D. & Tapp, S. N. (2019). The Effects of Physical, Social, and Housing Disorder on Neighborhood Crime: A Contemporary Test of Broken Windows Theory. *In ISPRS International Journal of Geo-Information* (Vol. 8, Issue 12). https://doi.org/10.3390/ijgi8120583

Lai, S. & Deal, B. (2025). An innovative approach to urban parks and perception: a cross-cultural analysis using big and small data. *Discover Cities*, 2 (1), 27. https://doi.org/10.1007/s44327-025-00075-1

Leroi-Werelds, S., Streukens, S., Brady, M. K. & Swinnen, G. (2014). Assessing the value of commonly used methods for measuring customer value: a multi-setting empirical study. *Journal of the Academy of Marketing Science*, *42* (4), 430-451. https://doi.org/10.1007/s11747-013-0363-4

Liu, M., Zhang, B., Luo, T., Liu, Y., Portnov, B. A., Trop, T., Jiao, W., Liu, H., Li, Y. & Liu, Q. (2022). Evaluating Street Lighting Quality in Residential Areas by Combining Remote Sensing Tools and a Survey on Pedestrians' Perceptions of Safety and Visual Comfort. *Remote Sensing*, *14* (4). https://doi.org/10.3390/rs14040826

Maruthaveeran, S. (2016). The Perception of Social Safety in a Green Environment: A preliminary study at the Kepong Metropolitan Park. *Asian Journal of Environment-Behaviour Studies*, 1(1), 99-111. https://doi.org/10.21834/aje-bs.v1i1.171

Mburu, L. W. & Helbich, M. (2016). Environmental Risk Factors influencing Bicycle Theft: A Spatial Analysis in London, UK. *PLOS ONE*, 11(9), e0163354. https://doi.org/10.1371/journal.pone.0163354

Moqadam, S. & Nubani, L. (2022). The Impact of Spatial Changes of Shiraz's Historic District on Perceived Anti-Social Behavior. *Sustainability*, *14* (14). https://doi.org/10.3390/su14148446

Munir, F. F. A. (2018). Reliability and validity analysis on the relationship between learning space, student's satisfaction and perceived performance using SMART-PLS. *International Journal of Academic Research in Business and Social Sciences*, 8(1), 775-783.

Panahi, N., Pourjafar, M., Ranjbar, E., & Soltani, A. (2022). Examining older adults' attitudes towards different mobility modes in Iran. *Journal of Transport & Health*, 26, 101413. https://doi.org/10.1016/j.jth.2022.101413

Park, Y. & Garcia, M. (2020). Pedestrian safety perception and urban street settings. *International Journal of Sustainable Transportation*, 14 (11), 860-871. https://doi.org/10.1080/15568318.2019.1641577

Ratnayake, R. (2017). Sense of safety in public spaces: university student safety experiences in an Australian regional city. *Rural Society*, 26, 69-84. https://doi.org/10.1080/10371656.2017.1284616

Rezakhani, M., Mahdavinejad, M. J. & Pilechiha, P. (2018). Light in Nightscape and Perception of Security among Pedestrians, Case Study: Tehran. *Advanced Engineering Forum*, 29, 46-56. https://doi.org/10.4028/www.scientific.net/AEF.29.46

Ringle, C., Wende, S. & Becker, J.-M. (2015). SmartPLS 3.

Roosta, M., Javadpoor, M. & Ebadi, M. (2022). A study on street network resilience in urban areas by urban network analysis: comparative study of old, new and middle fabrics in shiraz. *International Journal of Urban Sciences*, 26(2), 309-331. https://doi.org/10.1080/12265934.2021.1911676

Sedaghatfard, M., Soltani, A., Ahmadi, H. & Pakshir, A. (2018). Research on the Physical Characteristics for Improving the Security Perceptions of Citizens: A Comparative Analysis of Zones Five and Ten of Shiraz, Iran. *Chinese Journal of Urban and Environmental Studies*, 06(03), 1850021. https://doi.org/10.1142/S2345748118500215

Shiraz Manucipality. (2018). Shiraz Detailed City Plan. Naghsh-e-Jahan Pars Consulting Engineers, Shiraz Municipality, Deputy of Urban Planning and Architecture.

Soltani, A., Azizi, P., Rahimioun, A. & Sedaghatfard, M. (2025). Volumetric urban Sprawl: Horizontal and vertical growth in two metropolitans. *Journal of Urban Management*. https://doi.org/10.1016/j.jum.2025.03.006

Soltani, A., Jaber, A., Kashkooli, H. N. & Bencekri, M. (2025). Unveiling the Severity of Pedestrian Traffic Crashes in South Australia: Age-based Insights and Safety Implications. *Injury,* 56(11), 112716. https://doi.org/10.1016/j.injury.2025.112716

Soltani, A., Qadikolaei, M. R., Pojani, D., Moeini, M. & Abdekhoda, K. (2025). Women's perceived safety in public transport: Insights from the Middle East. *Journal of Transport Geography*, 129, 104413. https://doi.org/10.1016/j.jtrangeo.2025.104413

Sun, X., Nie, X., Wang, L., Huang, Z. & Tian, R. (2024). Spatial Sense of Safety for Seniors in Living Streets Based on Street View Image Data. *Buildings* 14 (12). https://doi.org/10.3390/buildings14123973

Talkhabi, H., Ghalehteimouri, K. J., Mehranjani, M. S., Zanganeh, A. & Karami, T. (2022). Spatial and temporal population change in the Tehran Metropolitan Region and its consequences on urban decline and sprawl. *Ecological Informatics*, 70, 101731. https://doi.org/10.1016/j.ecoinf.2022.101731

Turkseven Dogrusoy, I. & Zengel, R. (2017). Analysis Of Perceived Safety In Urban Parks: A Field Study In Büyükpark And Hasanağa Park. *Journal of The Faculty of Architecture METU,* 34. https://doi.org/10.4305/METU.JFA.2017.1.7

Urbach, N. & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. Journal of Information Technology Theory and Application (JITTA), 11(2), 2.

Ye, C., Chen, Y. & Li, J. (2018). Investigating the Influences of Tree Coverage and Road Density on Property Crime. *In ISPRS International Journal of Geo-Information*, 7 (3). https://doi.org/10.3390/ijgi7030101

Yusof, I. & Fauzi, R. (2019). The spatial relation between land use and crime. *Malaysian Journal of Society and Space*, 15. https://doi.org/10.17576/geo-2019-1502-08

Zhao, L., Shen, Z., Zhang, Y. & Sheng, F. (2020). Study on the Impact of the Objective Characteristics and Subjective Perception of the Built Environment on Residents' Physical Activities in Fuzhou, China. *Sustainability* 12 (1). https://doi.org/10.3390/su12010329

Zhong, C., Guo, H., Swan, I., Gao, P., Yao, Q. & Li, H. (2023). Evaluating trends, profits, and risks of global cities in recent urban expansion for advancing sustainable development. *Habitat International*, 138, 102869. https://doi.org/10.1016/j.habitatint.2023.102869

Image sources

Fig.1: Shiraz, d. p. o. (2018). Shiraz Municipalities detailed plan*. Retrieved* from https://en.shiraz.ir;
Fig.2: Authors;
Fig.3: Authors;
Fig.4: Authors;
Fig.5: Authors.

Author's profile

Mohammad Sedaghatfard

He holds a Master's degree in Urban Planning from Shiraz University. His research focuses on urban safety, the physical characteristics of the built environment, and perceptions of security in public spaces. He has conducted several studies on the impact of spatial and social factors on urban life, with a particular interest in enhancing the sense of security in city neighborhoods.

Ali Soltani

He is Currently on leave for doing FIAS fellowship - Marie Curie Actions of the European Commission and a researcher at Flinders University, Australia. He specializes in urban planning, spatial analysis, and sustainable development. Prior to this, he served as a Professor at Shiraz University. Dr. Soltani has an extensive research background in GIS applications, environmental planning, and urban design, and applied to road safety, health geography, environmental health, and environmental impacts of transport networks development. Over his career, he has collaborated extensively with researchers across countries and Australian universities and has published widely in these areas. His academic work continues to contribute to evidence-based urban policy and planning both in Australia and internationally.