Persian translation of this paper entitled:
اولویت‌بندی شاخص‌های تاب‌آوری اجتماعی جهت ساماندهی
سکونتگاه‌های غیررسمی ازطریق اقدامات مبتنی‌بر ارتقای منظر شهری
(مطالعه موردی: محلۀ اسلام‌آباد منطقۀ دو تهران)
is also published in this issue of journal.

Original Research Article

Prioritizing Social Resilience Indicators for Organizing Informal Settlements through Measures based on Improving the Urban Landscape (Case Study: Islamabad Neighborhood, District 2, Tehran)*

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Abstract

Problem statement: With increasing population and urbanization, the number of informal settlements has been rising. These settlements, due to their unfavorable urban appearance, have become isolated and, as a result, have faced social problems. One way to improve the current situation in informal settlements is to increase their social resilience.

Research objective: This research aims to develop strategies for organizing these neighborhoods to enhance social resilience through spatial and social interventions that improve the urban landscape.

Research method: This research adopts a descriptive-analytical approach. In the first stage, in the theoretical framework section, necessary information was collected through "library studies." In the second stage, to identify the indicators of social resilience in the neighborhood, "field observations" were conducted using tools such as interviews, observation, and photography.

Conclusion: In the final theoretical framework, in the "social" dimension, the indicators identified were interaction, cohesion, and participation; in the "identity-cultural" dimension, the indicators were attachment, social and spatial identity; in the "spatial" dimension, the indicators were accessibility, safety and security, flexibility, and diversity; and in the "supportive" dimension, the indicators were the efficiency of the local community, support, and justice. These indicators were identified as social resilience indicators in the Eslamabad neighborhood. After determining the neighborhood's existing potential and correlating it with the obtained indicators, a series of spatial and social interventions was prioritized and mapped in ArcGIS. Finally, by evaluating possible interventions to improve the neighborhood's urban appearance, it was concluded that the indicator of interactions is a priority for social resilience in the Eslamabad settlement.

Keywords: *Social resilience; Informal settlement; Islamabad neighborhood; Urban landscape.*

Introduction and Problem Statement

It is estimated that the number of urban residents living in slums and informal settlements will triple to 1 billion by 2050 (Tjia & Coetzee, 2022, 1). These neighborhoods can be "areas of destruction and decay," but their density can catalyze the unveiling of

alternative development pathways, functioning as urban neighborhoods (Campos et al., 2022, 1). Slum areas vary significantly between countries and cities, yet they share several standard features (Karlsson, 2012, 5). These settlements, in addition to lacking physical infrastructure and low social integration, which create soulless environments devoid of interaction, are breeding grounds for many social harms in urban space (Darskhan & Bayramzadeh, 2020, 84). One of their biggest challenges is social resilience and their ability to endure and manage changes (Eslami & Ebrahimi Dehkordi, 2018, 1). Over time, these communities have begun building their own homes and neighborhoods, seeking dignity, respect, and social justice (Nord, 2014, 4). Since many of their characteristics align with those of resilient environments (Rahimi & Kargar, 2021, 76), one solution to improve these settlements is to employ social resilience, which can lead to the critical goal of enhancing social interactions, preventing individuals from falling into social harm, and reducing social problems (Ragoschke, 2014, 1). Modern slum upgrading programs have often overlooked the potential of public space as a social asset in landscape architecture to enhance these areas (Karlsson, 2012, 3). According to Coco Alarcon, a landscape architecture student at the University of Washington, landscape architecture interventions have a positive impact on food security, mental health, well-being, harm reduction, and social health in informal settlements (Katsma, 2018). Given that there is currently no legal permission to intervene in the housing domain within informal settlements. These neighborhoods are assessed based on their surroundings and landscapes. Architectural and social techniques in public spaces can enhance the urban appearance of these areas, resulting in improved interactions, security, identity, and efficiency, thereby improving them and addressing their problems. Dr. Aromar Revi, director of the Indian Institute, states: "It is the transformation of urban landscapes that enables us to end poverty and create an environment that provides well-being for everyone worldwide" (PSUP Team Nairobi, 2016, 6). In this study, the Islamabad neighborhood, located in District 2 of Tehran, was examined. despite its potential in terms of climate,

green space, location, and accessibility, faces numerous challenges. It also addresses the issue of how, given the lack of permission to intervene in the housing sector, it is possible to help improve the neighborhood's existing problems, including insecurity, poverty, and its status as an urban space with an unfavorable environmental and urban sustainability outlook, by providing physical and social solutions and techniques in the public environment that result in increasing the neighborhood's resilience. Therefore, the main research question this study addresses is: In the informal settlement of Eslamabad, how can architectural and social interventions in public spaces contribute to social resilience and reduce the neighborhood's social problems?

Literature Review

The issue of informal housing, like other urban problems, has not escaped the attention of researchers and has been studied in various ways. In his thesis, Abbaspour (2011) explored the scope of landscape architecture's role in urban landscapes and its ability to meet residents' spatial needs in these areas. He developed a framework for landscape design in such places and used it as a guideline in designing the self-organized Gholabdareh neighborhood. Rahimi et al. (2018) in an article studied the Karaj Hesar neighborhood in line (4). They found that participation, education, security, justice, flexibility, interactions, and identity directly influenced social resilience and neighborhood safety. Najafi Kani & Hamidi (2021) explored the peripheral neighborhoods of Babol and presented key strategies for developing informal housing. Their results indicated that the more marginalized residents participate in various urban and service areas, the fewer problems these neighborhoods face. In international studies, Mina Karlsson (2012) analyzed four informal settlement projects in which landscape architects were involved and examined how landscape architects can address the conditions of informal settlements. Ultimately, by studying case examples, she concluded that informal settlements cannot be significantly impacted unless they are considered as part of the city's overall structure (ibid.). Dobson et al. (2015), in an article, explored the

impact of collective actions by residents of informal settlements on increasing social and urban resilience, and examined how urban poor in Uganda can organize themselves, gather important planning data, and use it for their design solutions and negotiations with other urban stakeholders. Based on studies on the topic of this research, no study has yet explored the relationship among landscape architecture, social resilience, and informal settlements.

Theoretical Framework

Table 1 divides and describes the common characteristics of informal settlements into several general categories. major international organizations, such as the World Bank, United Nations Development Programme (UNDP), and United Nations Human Settlements Programme (UN-Habitat), have recently referred to ideas such as decentralization, economic liberalization, and local participation (Kuanr, 2020, 494).

Regarding the connection between social resilience and informal settlements, it should be noted that Adger defines social resilience as the ability of groups or communities to cope with external stresses and disruptions in the face of social, political, and environmental changes (Adger, 2000). Many characteristics of informal settlements, such as flexibility, self-organization, solidarity, and residents' social participation, align with the features of resilient

environments. Therefore, depending on the types of damage and challenges these neighborhoods face, their resilience priorities should be defined, social resilience indicators within the settlements should be identified, and their extent should be measured. Specific programs for these areas should then be introduced. The resilience theory can provide the goals and objectives of social resilience that landscape architects, urban planners, and other designers need for the twenty-first century (Ragoschke, 2014). Many indicators of social resilience can be incorporated into urban landscape techniques that emerge from human activities and are integrated with the built environment over time, as interpreted by citizens (Atashinbar, 2009, 50). By utilizing these techniques in public spaces, urban conditions can be addressed in ways that allow residents to address or at least cope with their problems and challenges. Since self-built and indigenous housing is the most critical foundation of the urban landscape in informal settlements, the destruction of housing implies the destruction of that landscape. Baker states that landscape architects and urban designers can significantly improve residents' living environments when upgrading slums. He concludes that "landscape" is a vital element in these projects, and architects and urban designers should focus on improving public space in impoverished neighborhoods, not the houses, as these "are already there, more or less fixed, and most likely permanent" (Degenaar, 2009).

Table 1. Characteristics of informal settlements. Source: Authors.

Characteristics	Description
Physical- Functional	A suitable place for the transmission of infections, poor nutrition, lack of waste disposal and air pollution (Poortaheri et al, 2021,195), environmental pollution, inadequate health services and contaminated water, exposure to floods and storms (French et al, 2021, 2), lack of public space and green space (Alene, 2022, 3), living in areas with high industrial pollution and high risk, inappropriate building structures, heterogeneity in buildings and high density; (Niebergall et al., 2008,193-194), substandard housing, without security of tenure, inadequate access to services (Gil et al., 2021,623)
Cultural- Identity	Having fake jobs (peddling, traveling, etc.) or as daily wage workers or in informal sectors, exhausting work with minimum wages (Kazemisefat, 2011, 16)
Social	The need for opportunities to develop the social fabric, such as access to job, livelihood, and school opportunities (Parikh et al., 2020, 13), isolation and feelings of strangeness and alienation (Zanganeh et al., 192, 2019), lack of participation in official and non-governmental institutions and expressing one's problems, low sociability of children and adolescents, youth being organized by gangs and thugs (Zare Nejhad Talemi, 2017, 40 & 41), the broad dimension of the family, low level of awareness, and livelihood problems (Kazemisefat, 2011, 17).
Legal- Support	Unplanned urban structure and occupation of vacant land (Alene, 2022, 3), according to Dr. Piran: unemployed or hidden unemployed, without a fixed income, the lowest-income group. (Jafari Mehrabadi et al., 2018), lacking legal documents and building regulations (Repeva, 2021, 1).

• Introduction of social resilience indicators based on theorists' theories and the identification of their metrics in the environment

The primary method for measuring resilience is indirectly through indicators. The selection of these indicators depends on the variables of the system. However, due to the diverse social, technical, and environmental contexts, there is no universally agreed-upon standard or guideline for comparing resilience across systems (Copeland et al., 2020, 2). Following a review of theorists' theories and the categorization of social resilience indicators with conceptual commonalities based on the characteristics of informal settlements, 12

general indicators have been identified. To identify each of these indicators in informal neighborhoods, relevant landscape metrics, based on a review of articles, books, and related materials, are presented in Table 2.

Research Method

The research method of this article is carried out in two main stages. In the first stage, in the literature and theoretical foundations section, materials related to the research topic are collected from reliable sources including books, documents and reliable websites and are examined in a descriptive and analytical manner. In the second stage, in the field research section, information related to the case sample is collected through various

Table 2. Introduction of social resilience indicators based on theorists' theories and their identification metrics. Source: Authors based on Eslami & Ebrahimi Dehkordi, 2018; Rahimi et al., 2018.

Dimensions	Indicators	Indicators considered by theorists	Indicator identification metrics in the neighborhood
Social	Interactions	Beneficial social networks and connections, high social interactions	1. The number of people in the neighborhood, 2. The amount of interaction between neighbors in neighborhood, 3. The amount of friendly relations with each other
	Solidarity	Sense of local community, social cohesion, local connection, social cohesion	1. Institutions and popular groups, 2. Factors affecting social cohesion, 3. Collective and memory-making spaces
	Participation	Social participation, capacity of involvement	1. The amount of participation in times of crisis, 2. The amount of involvement in programs, 3. The willingness to participate in local meetings
Cultural - Identity	Attachment	Sense of belonging , place attachment	1. The amount of attachment to the neighborhood, 2. The length of time people have lived in the neighborhood, 3. Satisfaction with the neighborhood and enthusiasm for its future
	Social and physical identity	Unit identity, shared norms , sense of place, values, traditions, stories, history, and ...	1. Survey of social strata, 2. The presence of native residents and shared memories, 3. Holding religious and local ceremonies, 4. Historical and cultural monuments, 5. Memory-making elements
Physical _ Functional	Access	High access of residents to resources	1. Access to facilities and transportation, 2. Penetration
	Safety and security	Reduction in crime, existence of security, acceptance of risk	1. The amount of crime and misdemeanors, 2. The amount of safety of buildings and traffic, 3. Survey of harmful factors
	Resource diversity	Access to social, economic, and cultural capital, high availability of resources	1. Diversity of local spaces and uses, 2. Diversity of users
	Flexibility	Adaptation to stress , resilience	1. Spaces with different functions, 2. Spaces with the ability to change use
Supportive - Legal	Community effectiveness	Capacity for self-organization , local community effectiveness	1. The level of performance of the local community, 2. The capacity of the community to self-organize
	Support	Reducing vulnerability, social support	1. Mobile units in times of crisis, 2. Assistance to the homeless
	Justice	Equity in resources , equity, and social justice	1. Justice in the distribution and access to resources, 2. Assistance to vulnerable groups

methods including observation, interviewing and using statistics and information from various organizations. In this stage, the field research method is used to identify indicators and extract information related to each indicator, and the obtained data are coded and analyzed in a spatial manner on the map. After analyzing the data, the measures related to each space in the neighborhood are prioritized based on the number of codes that responded to each measure. Scores are assigned to the number of responsive codes and then these measures are scored based on the prioritization. Next, research policies for organizing the informal settlement of Islamabad are introduced and strategies that are proposed to achieve social resilience indicators are examined. Finally, by collecting the scores of actions related to the strategies, important indicators of the neighborhood are identified and the strategies that have obtained the highest scores are introduced as implementation priorities.

Study Area

Eslamabad is located in District 2 of Tehran, on the eastern side of the Evin–Darake stream, covering approximately 65 hectares and with a population of over 16,000. It has been gradually developed since 1979 (Fig. 1). This area is bounded by the Atisaz residential town, Chamran Highway, the Saadatabad residential areas, Emam Sadegh University, and agricultural land and orchards. The neighborhood has four vehicular access points: Chamran Highway, Darya Boulevard, Farhang Street, and Suri Street. However, pedestrian access to Chamran Highway is poor, and the area connects to surrounding regions via

the Evin–Darakeh valley. This valley features notable natural landscapes and is covered by valley vegetation. According to the urban development plan, all lands on the east side of the river in northern and southern Eslamabad are designated as green space (Figs. 2 & 3).

Discussion

This section, considering the criteria stated to identify social resilience indicators, uses a qualitative evaluation technique to examine a case study through interviews with residents who are more familiar with neighborhood affairs, including the neighborhood council, trustees, locals, and businessmen, people who conducted social studies on neighborhood residents, including the security and protection of the Municipality of District Seven (in order to be familiar with and fully master the neighborhood affairs and behavior of residents), the Social Deputy of the Municipality of District Two, with the help of some research conducted on the Islamabad neighborhood and visual perception, examined social resilience indicators in different dimensions, and according to the introduced criteria, codes were extracted and analyzed and located on the map. Finally, after examining the criteria, measures were introduced in accordance with the extracted codes and based on the analyses conducted on the maps.

• **Analysis of social resilience indicators in the Eslamabad Neighborhood**

In Table 3, in the interaction index, meeting friends in open and semi-open spaces, stopping and talking, random and regular weekly communications and special events, in the solidarity index, types of groups and their environments, residents' connections and
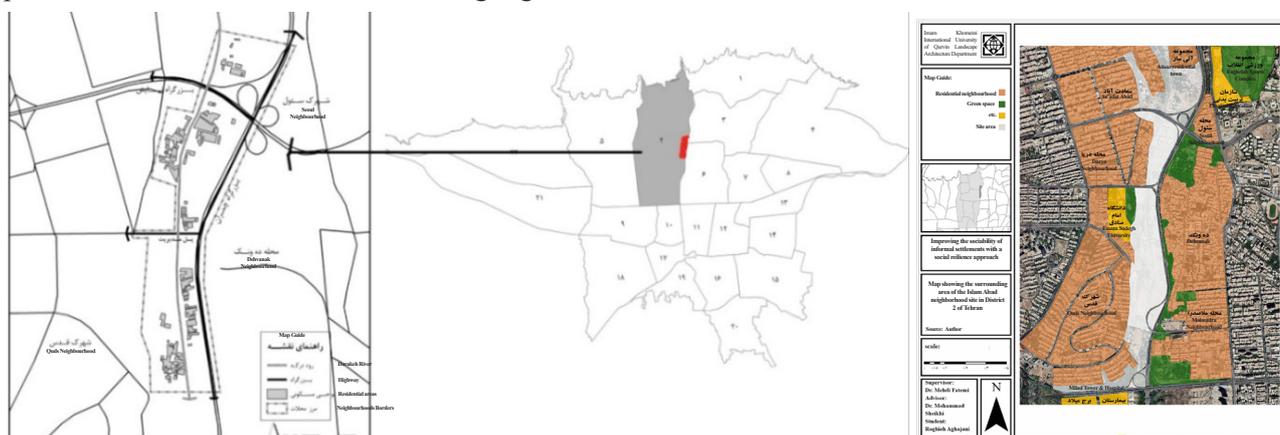

Fig. 1. Location of Eslamabad neighborhood in zones 1 and 7 of district 2, Tehran. Source: Aghajani Khankdar, 2023.
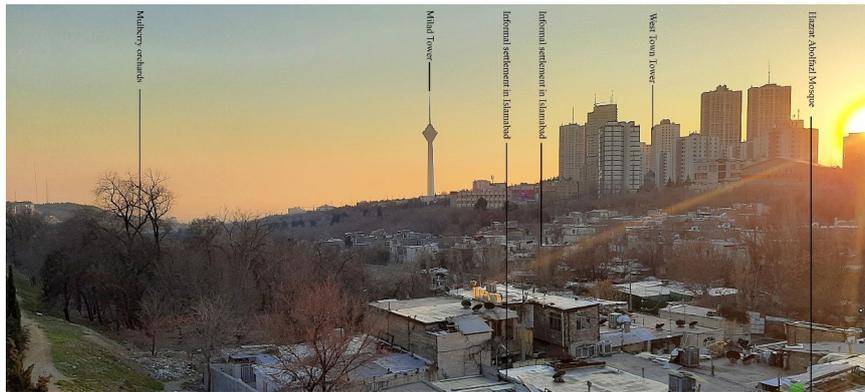
Fig. 2. View from Chamran Highway to the south of the site. Source: Aghajani Khankdar, 2023.

Fig. 3. View from Chamran Highway to the north of the site. Source: Aghajani Khankdar, 2023.

their dependence on each other and the surrounding neighborhoods, common goals, events that caused solidarity and trust between residents, commonalities and acquaintances, and in the participation index, participation in local celebrations, ceremonies and programs, support programs from government agencies, solving problems and crises in the neighborhood were measured. And finally, in Fig. 4, it was located on the map and analyzed.

• **Analysis of cultural-identity resilience indicators in the Eslamabad Neighborhood**

In Table 4, in the attachment index, the residents' sense of belonging to the house and neighborhood, in the social identity index, the types of strata, cultures and occupations specific to the neighborhood, specific local ceremonies and shared local memories, and in the physical identity index, all elements that were memorable and played a key role in the neighborhood, architecture and specific local spaces were measured and finally analyzed on the map in Fig. 5.

• **Analysis of physical-functional resilience indicators in the Eslamabad Neighborhood**

In Table 5, in the accessibility index, access to

urban facilities, urban routes and passages, public transportation and access from outside to inside, in the safety and security index, the presence of women in spaces, the level of crime at different times of the day, lighting and crime-prone places, the safety of buildings, routes and traffic, riverbeds, etc., in the diversity of resources, the diversity of types of users, local spaces and existing space constructions such as parks, etc., in the flexibility of spaces that have changed use or have the ability to change use, whether in the long term or around the clock, have been examined and analyzed on the map in Fig. 6.

• **Analysis of Supportive Resilience Indicators in the Eslamabad Neighborhood**

In Table 6, in the local community efficiency index, the performance of residents in relation to local problems and programs, in the support index, all support, lack of support from government and non-government organizations to all segments of the settlement and vulnerable and homeless people, and in the justice index, the distribution of uses and facilities at the neighborhood level is discussed and finally analyzed on the map in Fig. 7.

Table 3. Analysis of social indicators in the Eslamabad Area. Source: Authors.

| Code	Interactions	Code	Solidarity	Code	Participation
A1	Residents' need for spaces for friendly interaction and play space	B1	Different family groups	C1	Residents' desire to develop the neighborhood
A2	Need for spaces for educational and cultural courses, meetings, and gatherings, and the need to start local jobs.	B2	Unity in protecting their living environment and local affairs	C2	Residents' unwillingness to participate in off-site programs
A3	Youth interaction only in the football field, tennis club, and green space, and children and families interaction only in the children's play space	B3	Difference in the culture of Eslamabad North and South	C3	Most residents are personally insured and do not need insurance services.
A4	Interaction and gathering on special occasions	B4	Existence of different ethnic groups	C4	Residents' participation in the construction of public places
A5	Presence of tourists in the neighborhood, gardens, and riverside during holidays	B5	High security due to familiarity of residents and trust in neighbors	C5	Residents' attention to the cleanliness and hygiene of the environment and gardens, and participation in garbage collection
A6	Residents' need for space for yoga and aerobics, morning exercise, and a grass field	B6	Need for space to hold group meetings and activities.	C6	Attention to the maintenance and care of gardens
A7	Need for walking space, parking, and interactions on the paths.	B7	Social disconnection with the surrounding neighborhoods	C7	Neighbors' participation in times of crisis
A8	Interaction of all groups together in openings, and the need for a defined space for purchasing goods from vans	B8	Most residents are natives and have friendly, family-like relations with one another.	C8	Participation in performing religious and traditional ceremonies
A9	Low interaction with strangers and the surrounding neighborhoods	–		–	
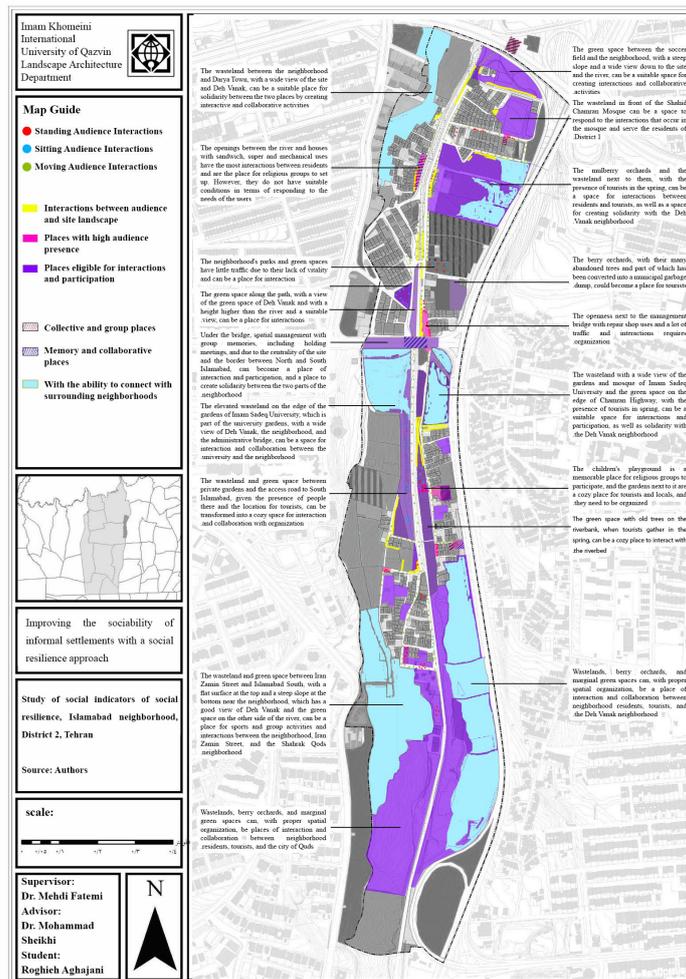
Fig. 4. Analysis map of social indicators of social resilience. Source: Aghajani Khankdar, 2023.

Table 4. Analysis of cultural-identity indicators in the Eslamabad Area. Source: Authors.

| Code	Attachment	Code	Social identity	Code	Physical identity
D1	Residents' interest in continuing to live in this place, and the independent house and trees they planted themselves	E1	The majority of the neighborhood's ethnicities: Alamuts, Turks, and Lors.	F1	Attention to flowers, plants, greenery, and beautification of the entrance and alleys, planting vegetables in front of the house, and raising poultry
D2	Residents over 70 years old, most of them	E2	Holding ethnic religious ceremonies in 4 different sections	F2	The existence of a windmill in the past, the old name of the mill, and the bridge of management are local characteristic elements.
D3	Interest in living in this place	E3	High level of culture of the people and the official occupation of the natives	F3	The existence of fruit trees in the barren lands and the aqueduct in the past, which was a place for people to have fun
D4	The sense of nostalgia of some of the neighborhood's founding residents	E4	Floristry, as a job for Turkish residents of the southern side	F4	Mulberry orchards formed by residents and as part of Dehvanak
D5	Belonging to the presence of relatives in the neighborhood	E5	The impact of the neighborhood's texture on the upbringing and culture of children	F5	A natural river was used for daily purposes in the past.
D6	Work and residence are in one place.	E6	The majority of residents are natives.	F6	Building houses with bricks with their own hands, with a long history
D7	Beautification of the house grounds by the residents and enjoyment of the river and its banks	E7	The family relationship of Alamuts and the resident Turks	F7	Chamran Mosque and Hazrat Abolfazl Mosque are characteristic elements of the neighborhood for various activities.
D8	Support from locals who left the neighborhood	E8	Recognition of neighbors and locals from strangers	F8	View of the entrance to the Iranian garden of Dehvanak, the mountains of the north, Milad Tower, and Imam Sadeq Mosque
D9	Landscaping and beautification of alleys by the residents	E9	Mosques of the neighborhood as a cultural center	F9	The native and special texture of some alleys, and the existence of garden alleys and green paths in the neighborhood
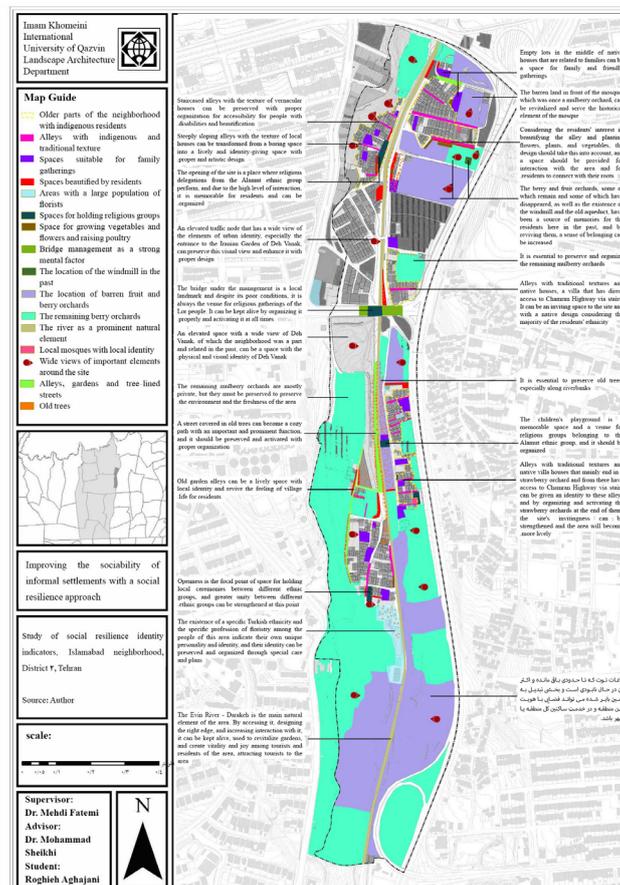
Fig. 5. Map of analysis of cultural-identity resilience indicators. Source: Aghajani Khankdar, 2023.

Table 5. Analysis of access indicators in the Eslamabad Area. Source: Authors.

| Code	Accessibility	Code	Safety and security	Code	Diversity of resources	Code	Flexibility
G1	Lack of surface water and an urban sewage disposal system	H1	Slopes, stairs, and dangerous manual passages to access the main streets	I1	Limited number of essential uses and multiple repair shops	J1	Environmental gardens for tourists' picnics
G2	Access to urban highways and the presence of a BRT station and bus system next to the Management Bridge	H2	Sewage entering the riverbed, the presence of pollution and garbage in it, and the chaos of its edges	I2	Low diversity of children's play area equipment	J2	Neighborhood openings are spaces for interactions and ceremonies, and shopping.
G3	Lack of access to water, electricity, and urban gas for some units	H3	Weak structure of walls and houses, and the accumulation of vermin in the places of destruction of houses	I3	Strangers, repair shop customers, and tourists	J3	Mosques are places for various local programs, including religious, sports, and cultural activities.
G4	Lack of access to the river and its use for irrigation of gardens, and unsuitable bridges	H4	Presence of addicts and criminals in gardens and wastelands and ruins, and places with dense texture	I4	Existence of diverse, unorganized public open spaces	J4	The tennis court used to be a football field, and the elementary school has been converted into a security headquarters.
G5	Lack of access to Iran-Zamin Street and a dead end at the end of the road	H5	Low lighting of passages and bridges: Management and social harms	I5	Low diversity of play and entertainment spaces	J5	Ruins have been converted into a local parking lot.
G6	Stair access to Chamran Highway	H6	Children are playing on the asphalt, and people are walking on the street.	I6	Lack of diversity in furniture	J6	Streets are spaces for children to play.
G7	High slope of the roads to Allameh Street and many stairs in the western alleys	H7	Unsafe space between the highway and residential houses	I7	Varieties of views of the surrounding area	J7	Management bridge and children's park for holding religious groups
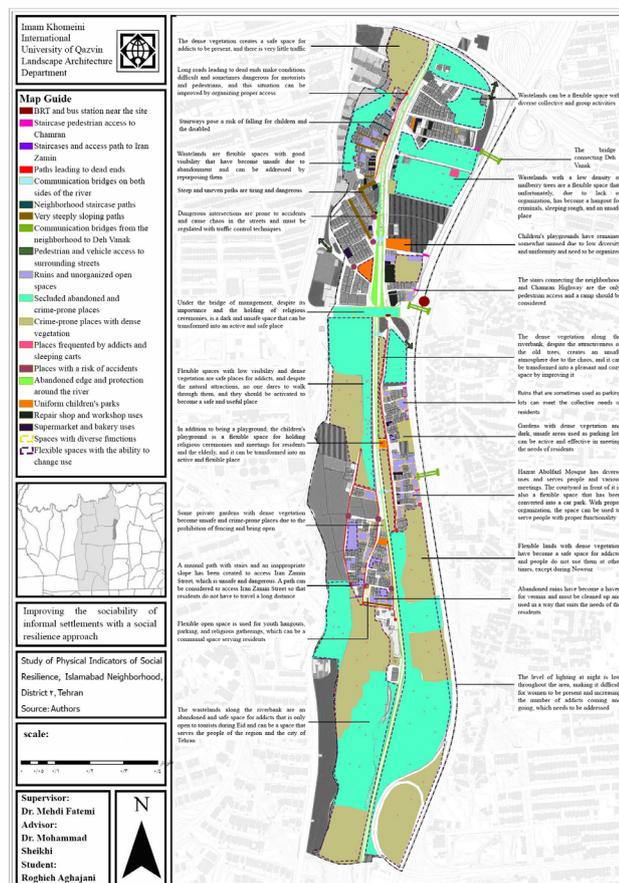
Fig. 6. Map of analysis of physical-functional resilience indicators. Source: Aghajani Khankdar, 2023.

Table 6. Analysis of supportive indicators in the Eslamabad Area. Source: Authors.

| Code	Efficiency of the local community	Code	Support	Code	Justice
K1	Preservation of privately owned gardens and elimination of state gardens	L1	The government's failure to maintain gardens, damage to the environment and the river, and the destruction of the aqueduct	M1	Lack of easy access for disabled and vulnerable people
K2	Residents are not allowed to move around in their sleeping boxes during the day or in the neighborhood.	L2	The lack of police supervision for the security of the area	M2	Lack of basic facilities
K3	Growing vegetables on unused land and raising poultry	L3	The residents' failure to welcome foreign programs	M3	Lack of suitable furniture
K4	Residents build schools and bridges on their own and help people in need in the neighborhood.	L4	The government's failure to provide educational, sports, welfare, and recreational services, and to care for the weak.	M4	Littering and construction waste on site
K5	Residents pay attention to the cleanliness of the area and trees, and collect tourists' garbage.	L5	The municipality's failure to beautify the neighborhood and make living conditions difficult for residents	M5	Lack of care for cardboard boxes and searching them at night
K6	Residents build stairs to access Iran-Zamin Street.	L6	Collecting garbage from residents' homes and dumping it on the edges of the neighborhood	M6	Lack of shopping centers
K7	Employment creation by residents	L7	The lack of care for streets and sidewalks	M7	Lack of grass and football fields
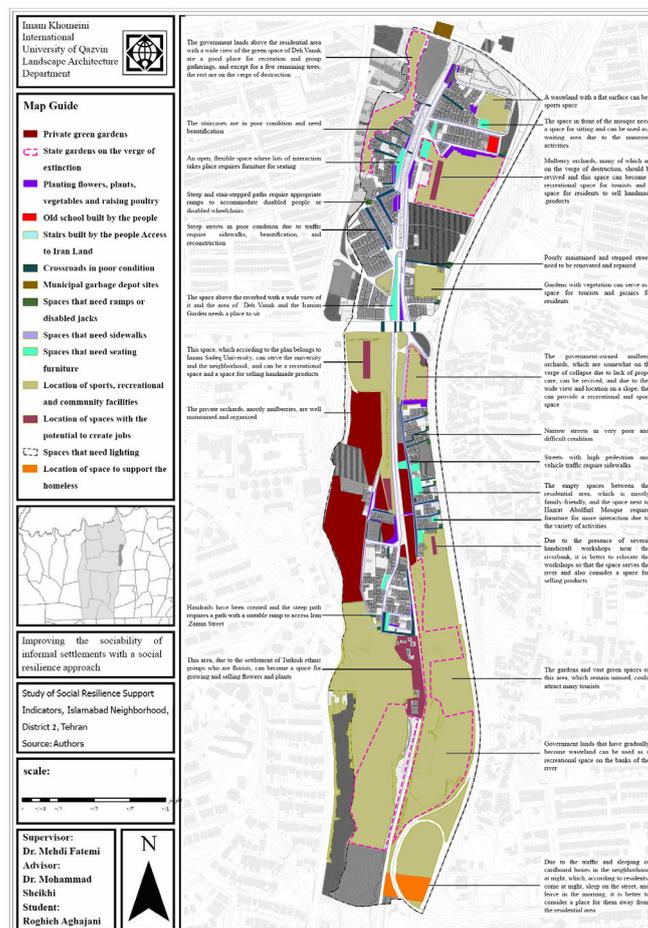
Fig. 7. Map of analysis of supportive indicators in Eslamabad. Source: Aghajani Khankdar, 2023.

Conclusion

Given the current conditions and existing regulations in the Eslamabad neighborhood, which do not permit construction or formalization, enhancing the urban appearance and landscape of the area through spatial and social interventions in public spaces will improve the introduced indicators and ultimately increase its social resilience. This will allow residents to increase their capacity to address existing challenges. As a result, based on studies conducted using local potentials and the social characteristics of the residents themselves and the challenges that exist in these areas, this research has introduced some indicators. Next, based on the introduced metrics related to each indicator, information about the neighborhood was collected through field and library studies and codes were extracted from it. Then, these codes were located and the spaces responsive to each indicator were analyzed on the map in four different dimensions. Based on the analysis performed on the maps, in Table 7, spatial and social interventions, prioritized by their relevance to the extracted codes from the site analysis, are introduced. Subsequently, based on the main objective of this research and the proposed interventions, the goals for organizing the Eslamabad settlement across four dimensions are introduced, and the strategies aimed at achieving social resilience indicators in the neighborhood are presented in Table 8. Finally, by summing up the scores of the actions related to each strategy based on their importance, the most urgent social resilience indicators for Eslamabad are identified.

According to Table 8 and the sum of the scores for the measures related to each strategy, the most important indicator that needs management in the Eslamabad neighborhood is the interaction index. Obviously, the index's sub-measures will be prioritized for implementation. The social dimension of resilience also scores higher than the other dimensions, indicating its high priority and the need for urgent action.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Table 7. Introduction of proposed interventions based on indicator analysis, prioritized by relevance to extracted codes. Source: Authors.

NO.	Measures	Relationship with codes	Socre
1	Reconstruction of ruins and open spaces between the texture and conversion into a communal space in an ethnic style	A1, A3, A7, B1, B6, B8, D5, E1, E7, E8, H3, H4, J5, M3, M4	15
2	Implementation of an urban sewage system, prevention of polluted water entering the river, and garbage collection	B2, C1, C5, D3, D7, D9, F1, G1, H2, H3, H4, L1, L5, L6, M4	15
3	Revitalization of orchards and giving residents spaces for selling fresh fruits and berries	A2, A5, A9, B2, B7,C6, D1, D6, F3, F4, K1, K5,K7	13
4	Implementation of nature tours by passing through the river and the alleys of gardens and orchards, with the responsibility of residents	A2, A5, A9, B7, F1, F3, F9, I3, I5, L1, L4, L5	12
5	Use of various collective and individual furniture with multiple uses, and covered furniture for sleeping in cardboard boxes at night	A1, A2, A3, A4, A5, A7, A8, H4, I6, K2, M3, M5	12
6	Planning a cultural center, neighborhood center, mobile library, health center, and shopping centers	A2, A3, A9, B6, B7, C2, C4, C8, I1, L3, L4, M2	12
7	Creating play and recreation spaces and green spaces in wastelands and between neighborhoods and the surrounding areas	A1, A3, A5, A9, B7, H4, H7, I3, I4, I5, J1, M2	12
8	Creating sufficient observer visibility and pruning plants in spaces with dense plant texture by placing active uses and planning a nature school in these spaces	A3, F4, H4, H6, H7, I2, I3, I4, I5, J1, J6	11
9	Planning spaces for holding local and cultural ceremonies and programs	A2, A4, B4, B6, B8, C8, E1, E2, E7, J3	10
10	Considering walking paths along the sidewalk and along the river, and the bridge, Communication between the two sides of the river	A5,A7,D7,F5, H2, H6, L5, L7, M1, M2	10
11	Provision of open spaces for holding local festivals and selling local products	A2, A5, A9, B7, E1, I3, I4, J2, K7	9
12	Provision of play spaces for all ages with local materials	A1, A3, A4, A6, A9, I4, I5, L4, M2	9
13	Spaces for growing vegetables individually and in groups, and stalls for sale	A2, A9, B2, C1, D1, D6, E4, F1, K3	9
14	Provision of friendly games such as tennis, handball, football, and volleyball	A1, A3, A6, A9, B7, I5, M2, M7	8
15	Reconstruction and revitalization of garden alleys and local alleys with traditional and local materials	D1, D4, D9, F9, H4, E1, E5, E6	8
16	Repair of murals and creation of green walls on unsuitable walls	A7, D4, D7, D9, F1, F6, F9, H3	8
17	Provision of space for yoga, aerobics, and group sports	A1, A3, A6, A9, B6, I4, I5, L4	8
18	Positioning of mobile cafes and round-the-clock activities, beautification, and furniture under the management of the bridge	A1, A7, A9, F2, H5, I4, J2, J7	8
19	Provision of shortcut accesses in stepped and steep sections, suitable entrances for cyclists and pedestrians, and semi-open parking	G2, G5, G6, G7, H1,K4, L7, M1	7
20	Construction of the Health Road (bicycle and pedestrian path passing by a coffee shop, juice shop, river, berry garden, and various stations)	A1, A5, A6, A7, A9, I3, I5	7
21	Creating various pause spaces along the routes with friendly community furniture	A1, A3, A7, A8, B6, I4, I6	7
22	Creating semi-open handicraft workshops and a space to sell them	A2, A9, B6, B7, D6, E1, K7	7
23	Naturalizing the riverbed, providing direct access, a play area, and building a suspension bridge over it	A1, A3, A5, D7, F5, G4, I5	7
24	Provisioning a public and morning sports space with sports equipment	A3, A6, B6, I4, I5, J4, L4	7
25	Provisioning family and friendly pavilions	A1, A3, A5, B1, B8, M2	6
26	Provisioning a flower garden by residents and a space to sell flowers and plants	A2, A9, B7, E4, F1,K7	6
27	Provisioning neighborhood lighting and eliminating places where criminals gather	D7, D9, H4, H5, H7, M2	6
28	Creating diverse play spaces for children	A3, I2, I4, I5, L4, M2	6
29	Provisioning waiting stations and a public space in front of mosques	A2, E9, I6, J3, F7	5
30	Constructing viewpoints and furniture in spaces in front of prominent elements around the site	A5, B7, F8, I4, I7	5
31	Provisioning a windmill next to gardens and farms, and restoring the old aqueduct	D4, F2, F3, I6,L1	5

Table 8. Introduction of proposed goals and strategies, and scoring based on relevance to actions. Source: Authors.

Goals	Policy	Strategy	Actions	Score
Social	Creating vitality in residents, reducing social harms, and increasing people's connection with the city and its surroundings Increasing responsibility and preventing the destruction of the area by land grabbers, beautifying the landscape of the highway side	Increase and strengthen interactions among residents, with strangers, and with the space	1-3-4-5-6-7-8-9-10-11-12-13-14-16-17-18-20-21-22-23-24-25-26-28-29-30	229
		Strengthen solidarity among residents and with the surrounding neighborhoods	1-3-4-6-9-11-13-14-17-21-22-24-25-26-30	134
		Increase and strengthen participation.	2-6-9-13	46
Identity	Increasing the comfort and well-being of residents, inviting urban users to the area, and increasing their use of the site's potential	Strengthen a sense of belonging	1-2-3-10-13-15-16-22-23-27-31	103
		Revive and strengthen social identity	1-9-11-13-15-22-26-29	69
		Revive and organize the neighborhood's physical identity	2-3-4-8-13-15-16-18-23-26-29-30-31	112
Physical	Preserving and revitalizing gardens, increasing residents' self-confidence, and reducing harm Policy Creating vitality in residents, reducing social harms, and increasing people's connection with the city and its surroundings	Organizing access	2-19-23	29
		Improving neighborhood safety and security	1-2-5-7-8-10-15-16-18-19-27	102
		Creating diversity in neighborhood spaces and uses	4-5-6-7-8-11-12-14-17-18-20-21-24-28-29-30	138
		Promoting flexibility	1-7-8-9-11-18-24-29	77
Supportive	Increasing responsibility and preventing the destruction of the area by land grabbers, beautifying the landscape of the highway side	Engaging the local community in organizing the neighborhood	3-11-13-19-22-26	51
		Supporting the local community and vulnerable individuals	2-4-6-10-12-19-24-28-31	73
		Equitable distribution of resources	1-2-5-6-7-10-12-14-19-25-27-28	118

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