

Measurement and Evaluation of Social Resilience Indicators of Residential Neighborhoods (Case Study: Traditional Neighborhoods of Hamadan City)

Abstract

Residential contexts and neighborhoods, similar to other urban contexts, have been exposed to major challenges and variations following the rapid changes of cities. Resilience with the nature of being community-oriented, as a new concept; by preparing neighborhoods and residential contexts against upcoming changes and challenges, by improving conditions and cultivating the quantitative and qualitative aspects of life, and by preventing exposure to health, welfare, unity, and social cohesion play a major role in the resilience of the whole society. Based on this, the present research, with a descriptive-analytical method and using a quantitative approach; by using exploratory factor analysis test and structural equation model seeks to increase the capacity and power of resilience in localities and design resilient biological complexes. The library-document method and the questionnaire tool were used to collect information. The statistical population of the research consists of the residents of three neighborhoods named Kalpa, Haji and Kebabian. The sampling method was simple random and the sample size was calculated based on Cochran's formula of 386 people. In order to measure the internal validity and reliability of the questionnaire, Cronbach's alpha (0.948) and average variance extracted (AVE) was used for convergent validity (0.892), which shows the high reliability of the questionnaires. The findings of the research show that the dimensions of social capital, including; social trust, emotional support, social bonding, and social mediation have the highest ratings among other dimensions, respectively, based on the explained variance; in the interim, the social trust of residents towards local organizations and institutions with a factor load of 0.990% is the most important variable constituting the social network index with a total variance of 8.620%.

Research objectives:

١. Scrutinizing the effective factors and components in the category of social resilience in traditional neighborhoods and residential contexts.

٢. Developing a comprehensive framework of social resilience in order to measure evaluation and prioritization of social resilience components in localities.

Research questions:

١. What are the effective and promoting components and indicators of social resilience in neighborhoods?

٢. What is the reason for the persistence and resilience of some localities compared to other regions and localities?

Keywords: resilience, social resilience, biological collections, neighborhoods of Hamadan city.

Introduction

The changes and transformations governing cities, like other man-made phenomena in the passage of time and space, are inevitable, and since it is necessary to discard such changes, it is necessary to accept the stagnation and cessation of life, or in other words, the death of urban life and this is practically impossible (Parvizian, ٢٠١٥: ٧٥). Meanwhile, resilience as an idea in different social, physical, economic and environmental dimensions; is used as the concept of facing changes; facing unknowns, challenges and revelations (Mitchell and Harris, ٢٠١٢, ٢). Resilience is defined as the ability to respond and adapt to changes in order to increase the capacities of societies in order to meet the basic needs of its residents with the aim of improving the quality of life. Existing methods for measuring resilience in societies, despite important advances in recent years, merely analyze the phenomenon for specific disorders from the perspective of engineering and ecological resilience (Suárez et al., ٢٠١٦, ٢) Regardless of the emotional relationship of man with the place and without considering the role of socio-cultural factors, it has been in the category of resilience (LaLone, ٢٠١٢, ٢٠٩) and this is while achieving a resilient society regardless of cultural and social dimensions will not be possible (Kiss and Kiss, ٢٠١٨, ١٦٨); Therefore, among the different dimensions of resilience, one of the most important issues is to address the social aspect (Moussovian et al., ٢٠١٨: ٣٨). Social resilience causes societies to experience the same changes

differently due to the difference in the level of flexibility of individuals (LaLone, ۲۰۱۲, ۲۰۹). In the meantime, residential neighborhoods and textures, as one of the largest and most sensitive urban areas, have not been exempted from the changes caused by various crises over time, and this is despite the fact that these neighborhoods have a stable and coherent network of physical and human systems with diverse and impressive capacities and it was the best response to the needs of the residents and provided an opportunity for interaction and social relations of the groups living there (Alizadeh and Heydarian, ۲۰۱۴: ۱). Some of these neighborhoods still have the necessary function and with flexibility to changes, they provide the ability to adapt to new conditions and continue to exist, and this is the concept of resilience that has attracted the attention of researchers today. The promotion of social resilience in residential neighborhoods and contexts has played a significant role in the level of stability and resilience of human settlements and consequently in the resilience of the whole society (Masnavi, ۲۰۱۱; Chelleri and Olazabal, ۲۰۱۲, ۱۰). In addition, it should be considered in the design of contemporary biological collections. According to the material raised, the question arises as to what factors have caused the resilience of the traditional neighborhoods (Kalpa, Haji and Kebabian) of the city of Hamedan during different periods? And how can it be possible to achieve the most important components affecting resilience, especially in the social dimension in these localities to provide the ground for the promotion of social resilience in other localities as well as in the design of biological complexes.

A research titled "Rural Community Resilience and Redevelopment: A Case Study of Tangjeling Village in Beijing" was conducted by Zhang et al. in ۲۰۱۹. The conceptual model of the research was formed based on the work of Cutter, Burton and Emmerich (۲۰۱۰), including social, economic, institutional/governmental, physical and social capital domains. The results show that different indicators in each of the above areas, especially in the social area (social justice, social network, social trust, social interactions, social groups) increase the resilience of the society under research and redevelopment and thus has played a significant role (Zhang et al., ۲۰۱۹, ۱ & ۷). The study of Patel and Gleason (۲۰۱۷) examines "the relationship between social cohesion and community resilience in two urban slums of Port-au-Prince, Haiti". The results of this research show the direct relationship between social capital and community resilience. On the other hand, among the identified variables, the component of social cohesion has the greatest impact on social resilience (Patel and Gleason, ۲۰۱۷, ۷۰). Tapswan et al. (۲۰۱۸) in an article entitled "Settings for sustainable, livable and resilient neighborhoods and houses: a case study of Canberra, Australia"

identify the characteristics of sustainability and resilience in neighborhoods and houses and experimental evaluation of people's preferences. The findings of the survey show that affordability and optimal design of housing in order to save energy, safety and cleanliness of the neighborhood were the most desirable features of the neighborhood and the house among all the participating groups. Tapsuwan et al., ۲۰۱۸, ۱۳۳-۱۳۴). A research by Mohammad Pourlima et al. (۲۰۱۹) titled "Physical and social resilience of residential neighborhoods of historical context (a case study of Tehran's ۱۲th district)" was conducted in order to investigate the mutual effect of social networks and the physical environment on each other. The results show that one of the factors influencing the formation of gatherings and people's spatial dependence is the physical environment, while there is a direct relationship between resilience and the degree of desire of residents to communicate in social networks. (Mohammed Pourlima et al., ۲۰۱۹: ۹۷). Ebadollah Zadeh Maleki et al. (۲۰۱۸) in a research entitled "Prioritization of factors affecting social resilience against natural hazards with an emphasis on earthquakes", twenty-nine indicators in seven general criteria were screened by the Fuzzy Delphi method and criteria and seven were weighted and prioritized from the highest to the lowest [social capital in the first rank, human capital, demographic characteristics, individual characteristics, quality of life, social security and psychological readiness of the society in the last rank] (Abdollahzadeh Maleki et al., ۲۰۱۸: ۴۵). The relationship between social resilience and attachment to place in an applied research by Mousavian et al (۲۰۱۸) under the title "Comparative study of the role of sense of attachment to place in the promotion of social resilience" Hamadan)" has been done. The analysis of indicators affecting social resilience and place attachment shows the direct effect of these two variables on each other (Mousavian et al., ۲۰۱۸: ۳۷).

The current research, which is an applied study, follows a descriptive-analytical methodology and is quantitative in terms of approach. The library-document method was used to collect information. The survey research was documented through the completion of a researcher-made questionnaire according to the conceptual model of the research (Figure ۱۱) and the questionnaire tool was used to collect information. This questionnaire has ۵۸ questions, which was prepared to model and determine social resilience indicators in Hamedan. The statistical population of this research consists of residents of three neighborhoods named Kalpa, Haji and Kebabian. The sampling method was simple random and the sample size was calculated based on Cochran's formula of ۳۸۶ people. In order to measure the internal validity and reliability of the questionnaire, Cronbach's

alpha and average variance extracted (AVE) were used for convergent validity, as well as content validity (confirmed by seven professors in the field of urban planning and architecture). The validity value of the questionnaires is ۰,۸۹۲ and the value of Cronbach's coefficient is ۰,۷۸۴, which shows the high reliability of the questionnaires. Both descriptive and inferential methods have been used in this research. In the analysis section, inferential statistical methods including Cronbach's test, exploratory factor analysis and structural equation model (confirmatory factor analysis) were used. Moreover, SPSS and SmartPLS software were used to perform the above tests.

Conclusion

So far, one of the achievements of studies on social resilience has been entering the literature of social resilience in each of the fields of social capital, quality of life, social justice and other features. Hence policymakers and planners in various economic, political, environmental and other fields, examine social resilience indicators and its measurement is considered one of the most important actions. Based on this necessity and considering the significant growth rate of social damages in the country, the goal was to review the existing literature in the field of social resilience, while taking advantage of the knowledge produced in Iran and other countries; it is sought to investigate and present a comprehensive model of social resilience in biological complexes. On this basis, by reviewing the books and articles presented in this field, the proposed definitions of social resilience were reviewed in the theoretical foundations and research background section. After that, the conceptual models of social resilience and the indicators introduced to evaluate and measure this concept were examined (Table No. ۱). According to the conceptual model of the research (Figure ۱) and the extraction of common indicators among the neighborhoods of the city of Hamedan, the dimension of social capital, attachment to place, social safety and security, physical identity, social flexibility, social justice, quality of life, social structure and social efficiency as an example of the most important and key dimensions of measuring the social resilience of localities in the face of sudden social changes are considered, which ultimately led to the formation and presentation of a comprehensive model in the form of social resilience in the localities of Hamedan city, including Kalpa, Kebabian and Haji neighborhoods (Figure No. ۱۱). Likewise, from the results obtained in order to answer the first question, it can be inferred that in the mentioned neighborhoods, the effective and promoting

indicators of social resilience are considered including social network, social participation, social cohesion, norms, life satisfaction, lifestyle, physical identity, cognitive components (spatial identity), emotional-emotional components, behavioral components (spatial dependence), socio-cultural components, individual components, demographic composition, social health, social safety and security, social vulnerability, changeability and diversity, adaptability, justice in distribution and access to resources, social capacity (according to table 9), on this basis, the above indicators are considered the most important and effective and social resilience indicators are considered in biological groups. Among these, we can mention the most effective dimension on the social resilience of biological collections, including social capital; this dimension of social resilience has six indicators, including social networks, social participation, social cohesion, social dynamics, social activities, and social norms. It was determined by the investigations conducted with exploratory factor analysis (according to Table 9), among these indicators, four indicators (social network, social participation, social cohesion and social norms) with a total variance of ۲۷,۹۶% are more effective than other indicators.

Also, to answer the second question of the research, it can be concluded that the reason for the durability and resilience of some localities compared to other contexts and localities, according to the opinions of the residents of the localities, is the existence of factors such as: social trust among the residents towards local organizations and institutions, emotional support among the residents of the localities, the degree of social and ethnic bonding among the residents of the neighborhood, the degree of social mediation among the local people, the sense of security in the neighborhood by the residents, spaces with spiritual and historical value at the level of the neighborhood, the structure and texture of the neighborhood, the spatial and historical identity of the neighborhood, the amount belonging to the texture and form of the neighborhood and the existence of social security at the neighborhood level, etc. (Table No. 9).

According to the third question of the research, according to the opinion of the residents of Kalpa, Kebabian and Haji; a model can be explained in order to promote social resilience in biological complexes, which has the ability to significantly respond to the needs of the inhabitants of biological complexes and the ability to eliminate the risks and social damages in the complexes. By comparing the congruent and non-congruent results of different researches and the results of

this research, it was observed that there are various indicators for measuring social resilience, which should be considered according to the spatial conditions of each region.

For this purpose, the following suggestions are provided:

- Implementing the principles of local good governance in biological collections in Hamadan city; According to the good local governance approach, it is possible to provide different fields of people's participation in urban affairs; that this model can be an important step in the field of improving the social capital of the inhabitants of biological complexes.
- Activation of civil societies in biological complexes in Hamedan city; The number of non-governmental organizations in this city is very small and almost most of the non-governmental organizations are inactive. The activation and representation of civil societies in biological collections can be an important tool for the proper reconstruction of the mental space in the whole city.
- The matter of organizing the objective space such as the neighborhood center and the neighborhood mosque can increase the institutional trust of the residents; As a result, this institutional trust strengthens the sense of citizenship and, as a result, increases place belonging.
- Creating environments consisting of social networks by planning and presenting appropriate plans and solutions; Increasing social interactions and providing grounds for the participation of different groups in cultural, religious, ritual-occasional and social programs in order to strengthen social networks; increasing the sense of unity and solidarity among residents through empowering people and using the social capitals identified in the neighborhoods
- Promoting a sustainable lifestyle through activity and performance diversification and fair distribution of opportunities and educational, welfare, cultural, medical, relief services, etc.; Paying attention to local culture and taking advantage of cultural and symbolic values and commonalities in order to create vitality, strengthen the sense of belonging to the place and the connection between the residents of neighborhoods.
- Favorable access to local service centers and fair distribution of daily services and facilities in the public spaces of neighborhoods play a significant role in social resilience.

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