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# Evaluation of Factors Affecting Social Resilience with an Approach to Improving Quality of life in Residential Neighborhoods; Case Study: Selected Neighborhoods of Babol

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## ABSTRACT

As an alternative to financial well-being, quality of well-being has become one of the most substantial social goals of communities over several decades. Two keywords, quality of life and social resilience, are direct and bilateral relationships. Indicators of quality of life are indeed realized when available conditions can meet the needs of individuals and users. The potential for change in these indicators against intentional or unintentional changes directly affects the utility and quality of life. Also, a lack of social resilience may result in an accelerated physical deterioration of residential textures. Because changes and crises surely occur, it is necessary to study and plan to be ready and reduce possible vulnerabilities. In this way, the safety of residents will be ensured, and their vulnerability against crisis will be alleviated by creating a network of human communities and physical systems. This study aims to identify the factors affecting social resilience and develop a theoretical framework for its assessment. To do so, the extant study reviews theoretical studies and documentary examination in the first step. The effective factors are classified into two general categories: environmental and nonenvironmental factors. Moreover, environmental factors are divided into three classes physical environment, social environment, and perceptual environment based on the theory of Lyon Spatial Systems to achieve a better understanding of how components depending on the body of residential neighborhoods are affected. In the next step, a questionnaire was distributed in three residential neighborhoods of Babol City to evaluate the proposed theoretical framework. Residents living in these neighborhoods filled out 384 questionnaires. The data collected from questionnaires are analyzed through Structural Equation Modeling (SEM). The results obtained from the study indicate the effect of 11 components presented in the theoretical framework on social resilience. Thus, three factors of "skills and abilities," "social interactions," and "resources diversity," respectively have the highest effect on social resilience in the residential neighborhoods.

**Keywords**: Social Resilience, Improving Quality of Life, Residential Neighborhoods, Babol.

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## 1. INTRODUCTION

Social resilience refers to the ability of groups and communities to cope with external pressures and disorders caused by environmental, social, and political changes (Adger 2000). Since social events occur in a place, there is a strong relationship between social resilience and the characteristics of a place. Resilient cities must be created to decrease the risk of hazards in the cities and increase resilience to dangers. A resilient city is a sustainable network of human communities and physical systems that ensure the security of the city and citizens while mitigating vulnerability to crisis (Hwikyung, Seokho, and Bon-Gang 2017, 2). The social dimension is one of the main and essential components of resilience. This aspect of resilience refers to the unique structure of every single society and its different responses to crises. Other factors include attempts to keep the cultural heritage and values of neighborhoods, increasing awareness, and providing high-quality housing and access to medical and health services will enhance social resilience (Abadalahzadeh Maleki et al. 2017). However, adaptation and survival strategies, particularly in poor and deprived areas of cities are mainly ignored despite urban growth and development (Fahlberga et al. 2020). Physical vulnerability in these areas leads to social vulnerability, and these areas are damaged more than other areas when a crisis occurs (Dehghani 2020). Another considerable point is that high-level social resilience can enhance the individuals' capacity for learning from previous experiences and applying them intelligently in interactions with physical and social environments. According to this principle, social resilience is necessary because it plays a central role in converting changes caused by the crisis to tolerable conditions for residents living in a neighborhood (Bahrami, Sarvar, and Asadian 2017). Determination of measurement indicators and evaluation of the social resilience of cities are the most important steps to building resilient communities. Therefore, the main purpose of this study is to identify components affecting the social resilience in neighborhoods by evaluating their physical and social quality.

## 2. SOCIAL RESILIENCE AND QUALITY OF LIFE

The concept of social resilience in the context of urban development and planning has become a critical issue over recent years. This component in residential neighborhoods can result in improved quality of life for citizens and enhanced general resilience of the city. Social resilience tends to prevent the expansion of crises and limit their impacts on society. In societies where individuals support and cooperate during crises, the damages caused by crises will be recovered faster (Norris et al. 2008). Despite the high resilience level, crisis probability still exists. Nevertheless, cities with high social resilience levels can repair themselves and continue their previous development plans. For instance, after Hurricane Katrina devastated New Orleans in 2005, the city faced big challenges in renovation. However, those neighborhoods with high social resilience could recover themselves more quickly and aid the overall recovery of the city. These neighborhoods could renovate the infrastructures of their societies by using resources and coordinated collaboration of individuals (Chaskin and Joseph 2011).

The need for resilient structures in residential neighborhoods indicates itself not only during the crisis but also in other aspects. Those neighborhoods with high social resilience would promote a sense of place, a sense of belonging, and social interactions between residents. This topic may result in enhanced social support, a sense of belonging, and a sense of security. Moreover, social resilience is related to the improvement of mental health outcomes for residents. Living in a neighborhood having powerful social and supportive networks would mitigate the sense of loneliness and depression. Also, it can provide opportunities for social interactions and the development of new friendships (Kim, Lee, and Park 2019). Social resilience can provide positive results for physical health too. Living in a neighborhood with access to green spaces and societal facilities promotes physical activities and reduces the risk of chronic diseases, for instance (Wang, Li, and Li 2020). In general, high social resilience levels in residential neighborhoods can improve the quality of life of residents. These neighborhoods provide some opportunities for creating social interactions, personal growth, and a sense of belonging. On the other hand, a lack of social resilience in neighborhoods may cause some problems for residents. In neighborhoods with low social resilience, residents may feel less security and confidence, for example. This issue leads to more fear of crime and offense, less trust in neighbors, and less social solidarity. In addition, these neighborhoods may have no access to societal facilities, public transportation, and other resources that can promote social interactions and social participation (Chaskin and Joseph 2011).

## 3. FACTORS AFFECTING SOCIAL RESILIENCE

The available literature about social resilience does not provide a single tool for its measurement. Especially, social resilience has particularly received less attention in residential neighborhoods. Hence, an appropriate summarization of factors affecting the topic can be achieved by reviewing the viewpoints of the various researchers and theorists.

**Table 1: Components Affecting Social Resilience in the Opinion of Theorists in this Context**

| Theorists | Components Affecting Social Resilience | Reference |
|---|---|---|
| Adger | Diversity of Resources<br>Equal Access to Resources<br>Social Solidarity<br>Immigration | (Adger 2000) |
| Cinner et al. | Flexibility<br>Assets<br>Capacity for Learning<br>Self-Organize | (Cinner, Fuentes, and Randriamahazo 2009) |
| Kuhlicke et al. | Presence of Social Networks<br>Knowledge and Awareness<br>Motivation for Action<br>Economic Ability | (Kuhlicke et al. 2011) |
| Arefi | Active Public Spaces<br>Participation<br>Social Solidarity<br>Social Justice | (Arefi 2011) |
| Larimian et al. | Sense of Belonging and Place Attachment<br>Participation<br>Social Networks and Trust<br>Support of Local Community<br>Social Justice<br>Safety and Security<br>Tolerance and Capacity for Adaptability | (Larimian et al. 2020) |

In the opinion of Adger, those areas in the world that have diverse resources can embrace population and economic growth and shape many economic and social niches. These communities are more flexible and resilient than the areas without diverse resources (Adger 2000). Arefi believes that resilience is a goal that is realized by reducing vulnerability and increasing flexibility. This idea is drawn from the renovation of cities after the big fire occurred in Chicago and San Francisco 19th century and the Wars of Berlin and Beirut in the 20th century, which occurred along with a movement in some cities such as Istanbul, New York, and Mumbai by chanting the slogan "towards resilient city." In this case, decreased vulnerability levels and enhanced capacity of flexibility in urban bodies can improve the resilience level and quality of life of individuals (Arefi 2012).

Larimian and colleagues explained a conceptual and measurable model to examine the gaps existing for an accurate definition of social resilience in residential neighborhoods. The extant model called Neighborhood Social Resilience (NSR) considers seven main components affecting social resilience in neighborhoods at the first step. After doing top-down (viewpoint of managers and decision-makers about the topic) and bottom-up (opinion and expectations of residents about the topic) assessments, another component is added to this model, which is called "tolerance and capacity for adaptability."

"Tolerance and capacity for adaptability" refer to individuals' ability to accept and respect differences in their local society and their ability to adapt to changes. Studies show that those communities that promote cultural values and accept different individuals from various ethnicities would have a higher capacity for adaptability. A vital characteristic of a resilient neighborhood is its residents' capacity for change and effective response to external shocks. In the context of social resilience, capacity for adaptability can be defined as strategies and skills that individuals use individually or collectively to cope with crises and external changes. The capacity for adaptability of a

neighborhood is based on the social characteristics of different communities. Some characteristics such as social capital, a sense of belonging to a place, and stability of social relationships are among these features. In general, the ability of different individuals in a neighborhood to live peacefully and accept differences may lead to cooperation with each other to cope with difficult circumstances during a crisis (Larimian et al. 2020).

## 4. SOCIAL RESILIENCE AND PLACE

According to the theory of resilient place, place characteristics are divided into three groups material place, immaterial place, and subjective place (Fig. 1). Every category plays a role in promoting social resilience and improving the quality of life of residents.

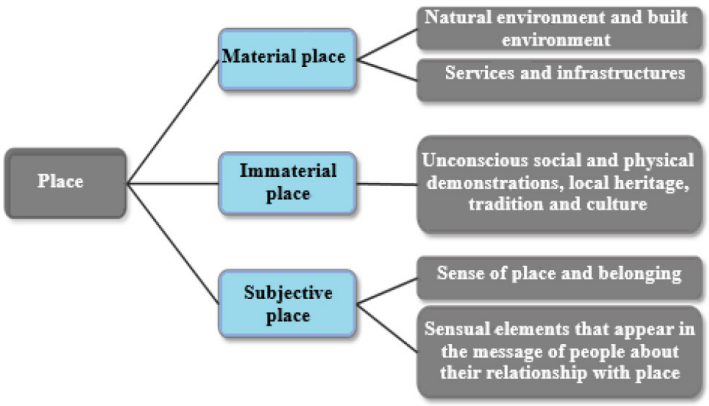


**Fig. 1. Dividing place into smaller subsystems**

Material place refers to the physical features of the neighborhood, including buildings, infrastructures, and natural characteristics. These features would promote social resilience by providing opportunities for social interactions, residents' participation, and the development of social networks. Immaterial place refers to the social and cultural characteristics of the neighborhood, including history, traditions, and cultural identity. These features would improve social resilience by creating a sense of belonging to the place, social communications, and common goals. Moreover, subjective place refers to psychological and emotional aspects of the neighborhood, including perceptions, attitudes, and beliefs of residents. These features would improve social resilience by creating a positive and supportive environment that encourages residents to interact with each other and their society (Lyon 2014).

Therefore, the extant conceptual model has been designed based on the opinions of previous researchers and the resilient place model by Lyon. Validity, reproducibility, simplicity and proportionality, sensitivity, and powerfulness are among the criteria affecting the selection of main components and sub-characteristics.

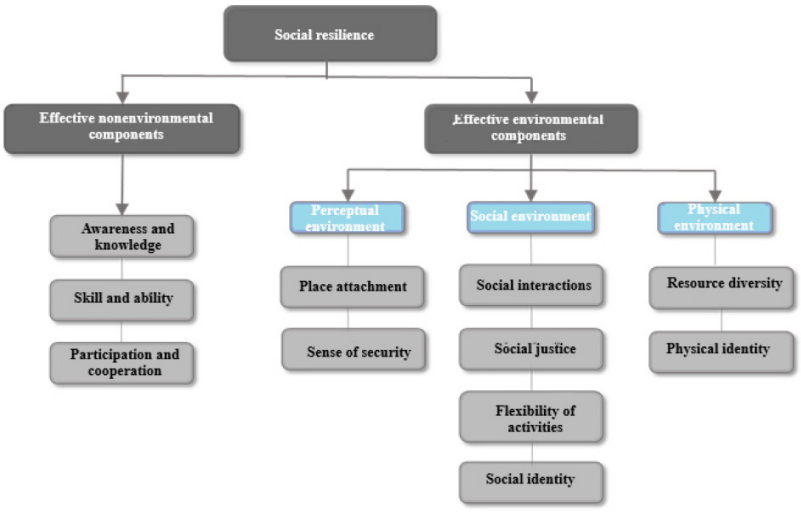


**Fig. 2. The Theoretical Framework of the Study**

## 5. METHOD

This study uses two documentary and survey methods to collect data. In this way, the assessment method of social resilience in communities is examined in the first step by reviewing previous studies, and theories presented by relevant theorists, books, and papers. The factors affecting social resilience were then discovered and classified into two general categories of environmental and nonenvironmental components to achieve a better understanding of how components affect them. In the next step, a questionnaire consisting of 37 questions evaluates considered components in three residential neighborhoods based on the Likert Scale method. These three neighborhoods (Shahabnia, Borj Ben, and Pir Elm) are located in Babol City. This city has been changed and developed due to the migration of villagers to urban areas over the years. Despite the urban development and progress, the old areas still exist in Babol, so developed urban areas are shaped next to the old and worn fabrics. In this case, it was decided to select the studied neighborhoods from old, moderate, and new areas to achieve a more comprehensive assessment of Babol City. To do so, three neighborhoods of Pir Elm, Borj Ben, and Shahabnia have been chosen as the representatives of old to new neighborhoods.

In the next step, 420 questionnaires were randomly distributed among residents living in the three mentioned neighborhoods; 384 questionnaires were filled out of the distributed questionnaires. In general, 46.6% of respondents were women, and 53.4% were men. The data obtained from the questionnaires are analyzed through LSP3 Software based on the SEM method. The validity and reliability of the study are reported in Table 2 and Table 3.

**Table 2: Cronbach's Alpha Coefficient and Composite Reliability and Convergent Validity Values**

| | Components | Cronbach's Alpha | Composite Reliability | Rho_A | Convergent Validity (AVE) |
|---|---|---|---|---|---|
| 1 | Awareness and Knowledge | 0.817 | 0.869 | 0.822 | 0.528 |
| 2 | Flexibility of Activities | 0.846 | 0.840 | 0.889 | 0.725 |
| 3 | Social Resilience | 0.836 | 0.859 | 0.870 | 0.790 |
| 4 | Social Interactions | 0.715 | 0.875 | 0.729 | 0.777 |
| 5 | Resource Diversity | 1.000 | 1.000 | 1.000 | 1.000 |
| 6 | Sense of Security | 0.752 | 0.753 | 0.778 | 0.610 |
| 7 | Social Justice | 0.867 | 0.836 | 0.869 | 0.718 |
| 8 | Place Attachment | 0.800 | 0.868 | 0.804 | 0.623 |
| 9 | Participation and Cooperation | 0.732 | 0.808 | 0.744 | 0.613 |
| 10 | Skill and Ability | 0.805 | 0.786 | 0.846 | 0.550 |
| 11 | Social Identity | 0.939 | 0.713 | 0.956 | 0.608 |
| 12 | Physical Identity | 0.725 | 0.728 | 0.804 | 0.573 |

**Table 3: Divergent Validity; Fronell-Larcker Method**

| Components | EH | TH | DH | ZH | OH | MH | PH | TH | DH | ZH | OH | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Awareness and Knowledge | 0.726 | | | | | | | | | | | |
| Flexibility of Activities | 0.236 | 0.851 | | | | | | | | | | |
| Social Resilience | 0.722 | 0.265 | 0.811 | | | | | | | | | |
| Social Interactions | 0.159 | 0.018 | 0.567 | 0.882 | | | | | | | | |
| Resource Diversity | 0.210 | 0.016 | 0.300 | 0.021 | 1.000 | | | | | | | |
| Sense of Security | 0.226 | 0.023 | 0.407 | 0.245 | 0.231 | 0.781 | | | | | | |
| Social Justice | 0.280 | 0.195 | 0.510 | 0.178 | 0.224 | 0.115 | 0.847 | | | | | |
| Place Attachment | 0.120 | 0.013 | 0.471 | 0.257 | 0.238 | 0.206 | 0.149 | 0.789 | | | | |
| Participation and Cooperation | 0.390 | 0.159 | 0.520 | 0.623 | 0.132 | 0.274 | 0.399 | 0.290 | 0.770 | | | |
| Skill and Ability | 0.493 | 0.128 | 0.465 | 0.100 | 0.053 | 0.130 | 0.185 | 0.009 | 0.224 | 0.742 | | |
| Social Identity | 0.166 | 0.096 | 0.491 | 0.248 | 0.185 | 0.188 | 0.199 | 0.375 | 0.301 | 0.095 | 0.629 | |
| Physical Identity | 0.205 | 0.002 | 0.310 | 0.003 | 0.101 | 0.073 | 0.130 | 0.134 | 0.136 | 0.188 | 0.436 | 0.757 |

Moreover, the research modeling process has been done through SRMR Software. In this case, SRMR, rms Theta, and NFI indexes have been used for research model fit. The value of the SRMR index equals 0.002 (lower than 0.015), rms Theta equals 0.039 (less than 0.1), and NFI equals 0.995 (greater than 0.95). Therefore, the model is fit and can be generalized.

## 6. RESULTS

According to the theoretical framework of the study, 11 factors within two categories of environmental and nonenvironmental components affect social resilience. The SE M has been used to prove this claim.

### 6.1. Evaluation of the Structural (Internal) Model

Several different indicators are used to examine the fit of the structural model of the study. The first index is a significant coefficient of Z. The structural model fit of the study is done using the t coefficient, so this value must be greater than 1.96 for the components to confirm their significance at the confidence level of 95%. Also, it must be considered that the t value just reveals the accuracy of relationships, but the intensity of the relationship between structures cannot be assessed based on this index. The path coefficient will be significant at the confidence level of 99% if the t-value is greater than 2.58 at the confidence level of 95%. In the same way, the significance rate between research components and their respective structures is examined by using the regression coefficient or path coefficient (Fig. 3). The results of this assessment have been depicted through SMART PLS3 Software in Figure 4.

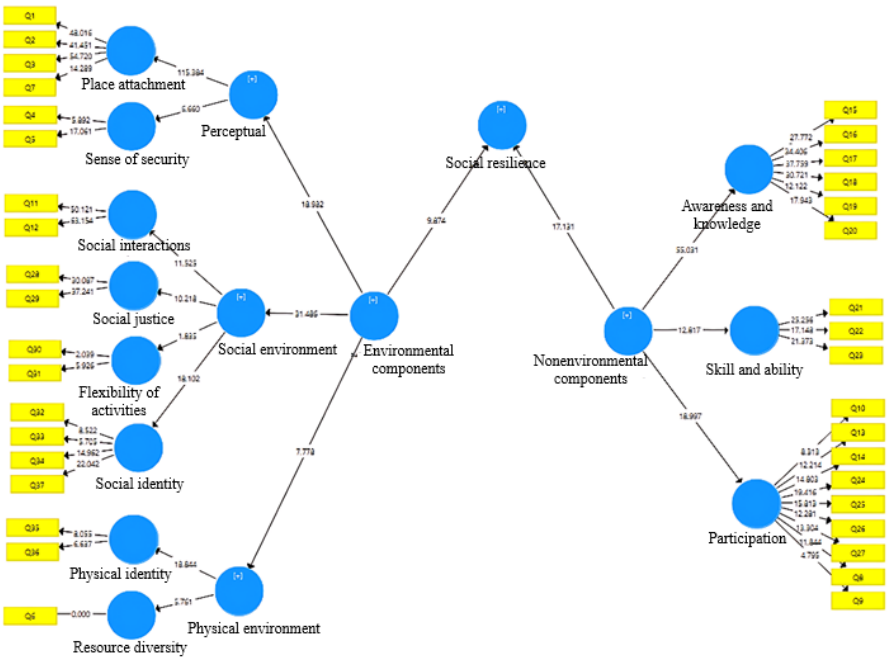


**Fig. 3. (t) Coefficient Values of the Structural Model**

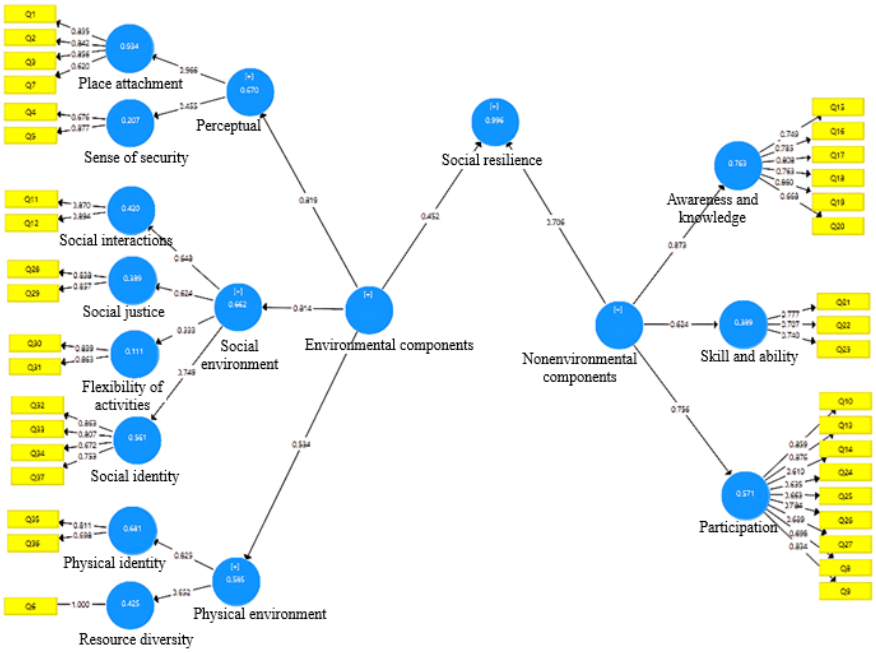


**Fig. 4. Coefficient Values of the Structural Model**

The value of the $R^2$ parameter related to research components is measured through SMART PLS3 Software (Table 4); in this case, the larger the $R^2$ value respective to the endogenous structure of a model, the better the model fit will be. Three values of 0.19, 0.33, and 0.67 respectively indicate weak, moderate, and strong fit of the structural part of the model.

**Table 4: $R^2$ Values of Research Dimensions**

| Dimensions | $R^2$ Value |
|---|---|
| Social Resilience | 0.996 |

According to the results (Table), the main structure of the study is strong due to the obtained $R^2$ value, which is greater than 0.67.

## 6.2. Impact Factor Criterion ($f^2$) and $Q^2$ Metric

The impact factor criterion outlines the relationship between structures of the model, and values 0.02, 0.15, and 0.35 depict the low, moderate, and high effects of a structure on another one, respectively. Table 5 reports the value of the impact factor ($f^2$) related to the variable of improving generated performance.

**Table 5: $f^2$ Impact Factor**

| Path | $f^2$ |
|---|---|
| Place Attachment → Social Resilience | 0.438 |
| Sense of Security → Social Resilience | 0.414 |
| Social Interactions → Social Resilience | 0.601 |
| Social Justice → Social Resilience | 0.598 |
| Flexibility of Activities → Social Resilience | 0.621 |
| Social Identity → Social Resilience | 0.334 |
| Resource Diversity → Social Resilience | 0.264 |
| Physical Identity → Social Resilience | 0.499 |

| Path | $f^2$ |
|---|---|
| Awareness and Knowledge of → Social Resilience | 0.601 |
| Skill and Ability → for Social Resilience | 0.523 |
| Participation and Cooperation → Social Resilience | 0.226 |
| Environmental Components of → Social Resilience | 0.488 |
| Nonenvironmental Components → Social Resilience | 0.509 |

$Q^2$ index determines the model's power of prediction, and values 0.02, 0.15, and 0.35, respectively indicate the weak, moderate, and strong prediction power of relevant exogenous structures. Table 6 reports the $Q^2$ index values of research variables.

**Table 6: $Q^2$ Values of Research Dimensions**

| Dimensions | $Q^2$ Values |
|---|---|
| Awareness and Knowledge | 0.367 |
| Flexibility of Activities | 0.490 |
| Social Resilience | 0.313 |
| Social Interactions | 0.304 |
| Resource Diversity | 1.00 |
| Sense of Security | 0.367 |
| Social Justice | 0.270 |
| Place Attachment | 0.360 |
| Participation and Cooperation | 0.486 |
| Skill and Ability | 0.312 |
| Social Identity | 0.446 |
| Physical Identity | 0.269 |
| Awareness and Knowledge | 0.367 |

### 6.3. Final Assessment of Hypotheses

The research hypothesis asserts that there are significant relationships between 11 components (classified into two groups of environmental and nonenvironmental components) and social resilience. The T-value and path coefficients (beta) have been used to assess and prove the applied hypotheses (Table 7). T-values greater than 0.96 imply a significant relationship between considered factors and social resilience. Also, path coefficients indicate the impact size of that factor on social resilience. For instance, social resilience will change by 28.2% when one unit variation occurs in the place attachment. The research results confirm that all components of the research theoretical framework affect social resilience.

**Table 7: Test Results (T-Value)**

| | (T-Value) | Path Coefficient | P-Value | Status |
|---|---|---|---|---|
| Place Attachment → Social Resilience | 4.507 | 0.282 | 0.000 | Confirmed |
| Sense of Security → Social Resilience | 7.377 | 0.479 | 0.000 | Confirmed |
| Social Interactions → Social Resilience | 11.667 | 0.641 | 0.000 | Confirmed |
| Social Justice → Social Resilience | 8.355 | 0.417 | 0.000 | Confirmed |
| Flexibility of Activities → Social Resilience | 5.842 | 0.363 | 0.000 | Confirmed |

| | (T-Value) | Path Coefficient | P-Value | Status |
|---|---|---|---|---|
| Social Identity → Social Resilience | 17.599 | 0.524 | 0.000 | Confirmed |
| Resource Diversity → Social Resilience | 14.866 | 0.557 | 0.000 | Confirmed |
| Physical Identity → Social Resilience | 5.351 | 0.448 | 0.000 | Confirmed |
| Awareness and Knowledge → of Social Resilience | 12.182 | 0.366 | 0.000 | Confirmed |
| Skill and Ability → for Social Resilience | 25.933 | 0.722 | 0.000 | Confirmed |
| Participation and Cooperation → Social Resilience | 16.122 | 0.380 | 0.000 | Confirmed |
| Environmental Components → of Social Resilience | 9.874 | 0.452 | 0.000 | Confirmed |
| Nonenvironmental Components → Social Resilience | 17.131 | 0.706 | 0.000 | Confirmed |

According to analyses, three factors of "skills and abilities," "social interactions," and "resource diversity" have the highest effect on social resilience in residential neighborhoods. Among the mentioned components, "skills and abilities" are a nonenvironmental factor that may be acquired in the environments out of the neighborhood, such as schools, training classes, and media. Now, the physical design of residential neighborhoods and urban development plans do not pay attention to this factor. However, if improvement of this component is possible through physical characteristics and public environments in the neighborhoods, it can play a more significant role in promoting social resilience. Therefore, it is recommended to examine the feasibility and possibility of this case in further studies. Another substantial factor for the improvement of social resilience is "social interactions." Improvement of social interactions at the level of neighborhoods may lead to increased cooperation and participation, trust between residents, and a sense of belonging to the place. In such neighborhoods, individuals are more willing to take responsibility and participate in affairs during crises regarding the background of trust creation and effective knowledge about their neighbors. This process would mitigate the damages caused by the crisis and accelerate the renovation step. In this case, after repairing the occurred damages, the city can pursue its anticipated development plans within a shorter time.

## 7. CONCLUSION

Social resilience is a complex concept and consists of a set of interconnected factors. By identifying the effective factors and classifying them into two groups of environmental and nonenvironmental components, this study proposes a framework for the evaluation of social resilience in residential neighborhoods. Classification of these factors to environmental and nonenvironmental groups leads to a better understanding of every single component's origin and a clearer prospect for future planning. The environmental components are then divided into three groups physical environment, perceptual environment, and social environment components based on the resilient place theory. Although social resilience is an umbrella notion containing various scopes, this classification technique clarifies the entry point of architects and urban planners to the topic and describes the complexity of the relationship between different components. Analysis results confirm the effect of all 11 components introduced within the theoretical framework of study on the social resilience. Also, the results indicate that three factors of "skills and abilities," "social interactions," and "resource diversity" respectively leave the highest effect on social resilience in residential neighborhoods.

Thus, the quality of social resilience in residential neighborhoods can be examined by evaluating 11 main components with emphasis on the three components mentioned above, and then plan for the case and improve this variable. Promotion of social resilience in the residential neighborhoods as constituent units of a city would ensure its promotion in the whole city. A resilient city is a network of resilient human communities and physical systems that work with each other to ensure the residents' safety and decrease their vulnerability to crises. Ultimately, it can be mentioned that living in residential neighborhoods with high social resilience would result in the mental well-being of residents and their improved quality of life and reduce the individuals' desire to emigrate from that area and change their living place.

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## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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## PARTICIPATION PERCENTAGE

The authors state that they have directly participated in the stages of conducting research and writing the article.

## REFERENCES


- Abdolah Zadeh Maleki, Shahram, Nasim Khanloo, Keramatollah Ziyari, and Vahid Shali Amiri. 2017. "Evaluation and assessment of social resilience for coping with natural disasters: A case study of earthquake in historical neighborhoods of Ardabil city". *Journal of Urban Management* 48: 263-280. [in Persian]
- Adger, Neil. 2000. "Social and Ecological Resilience: are They Related?" *Progress in Human Geography* 24(3): 347-364. https://doi.org/10.1191/030913200701540465
- Arefi, Mahyar. 2011. "Design for resilient cities-Reflection from a studio." In *Companion to Urban Design*, edited by Tridib Banerjee and Anastasia Loukaitou-Sideris, Routledge. Taylor & Francis Group.
- Bahrami, Sirvan, Rahim Sarvar, and Farideh Asadian. 2017. "Analyzing the status of resilience in Sanandaj neighborhoods (Case study: Sartopal, Shalman, and Hajibabad neighborhoods)". *Environmental Studies of Hefzha's Seven* 6(22): 45-62. https://sid.ir/paper/116207/fa. [in Persian]
- Chaskin, Rabert, and M. L. Joseph. 2011. *Building community capacity*. New York: Aldine de Gruyter.
- Cinner, Joshua, Mariana Fuentes, and Herilala Randriamahazo. 2009. "Exploring social resilience in Madagascar's marine protected areas". *Ecology and Society* 14(1): 41. http://dx.doi.org/10.5751/ES-02881-140141
- Dehghani, Shima. 2020. "Designing the urban fabric of neighborhoods to enhance social resilience (Case study: Khazani Bokharayi neighborhood)." Master's thesis, Iran University of Science and Technology.
- Fahlberga, Anjuli, Tomas Vicinob, Ricardo Fernandesc, and Viviane Potiguarad. 2020. "Confronting chronic shocks: Social resilience in Rio de Janeiro's poor neighborhoods". *Cities* 99. https://doi.org/10.1016/j.cities.2020.102623
- Hwikyung, Chun, Chi Seokho, and Bon- Hwang Gang. 2017. "A Spatial Disaster Assessment Model of Social Resilience Based on Geographically Weighted Regression." *Sustainability* 9(2222): 1-16. https://doi.org/10.3390/su9122222
- Kim, S., D. Lee, and Y. Park. 2019. "Social resilience and mental health among older adults living in residential neighborhoods". *Journal of Gerontological Social Work* 62(4): 408-418. doi: 10.1080/01634372.2019.1588502.
- Kuhlicke, Christian, Annett Steinfu¨ Hrer, Chloe Begg, Chiara Bianchizza, Michael Bru¨ ndl, Matthias Buchecker, Bruna De Marchi, Marina Di Masso Tarditti, Corina Ho¨ ppner, Blaž Komac, Louis Lemkow, Jochen Luther, Simon McCarthy, Luigi Pellizzoni, Ortwin Renn, Anna Scolobig, Meera Supramaniam, Sue Tapsell, Gisela Wachinger, Gordon Walker, Rebecca Whittle, Matija Zorn, and Hazel Faulkner. 2011. "Perspectives on social capacity building for natural hazards: outlining an emerging field of research and practice in Europe." *Environmental Science & Policy* 14: 804-814. https://doi.org/10.1016/j.envsci.2011.05.001
- Larimian, Taimaz, Arash Sadeghi, Garyfalia Palaiogou, and Robert Schmid. 2020. "Neighbourhood Social Resilience (NSR): Definition, Conceptualisation, and Measurement Scale Development". *Sustainability* 12: 6363. https://doi.org/10.3390/su12166363
- Lyon, Christopher. 2014. "Place Systems and Social Resilience: A Framework for Understanding Place in Social Adaptation, Resilience, and Transformation." *Society & National Resources* 27(10): 1009-1023.
- Norris, Fran, Susan Stevens, Betty Pfefferbaum, Karen Wyche, and Rose Pfefferbaum. 2008. "Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness". *American Journal of Community Psychology* 41(1-2): 127-150. https://doi.org/10.1007/s10464-007-9156-6
- Shaw, Duncan, Judy Scully, and Tom Hart. 2014. "The paradox of social resilience: How cognitive strategies and coping mechanisms attenuate and accentuate resilience". *Global Environmental Change* 25: 194-203. https://doi.org/10.1016/j.gloenvcha.2014.01.006
- Wang, X., Y. Li, and Z. Li. 2020. "Social resilience and physical health outcomes in residential neighborhoods: A systematic review". *International Journal of Environmental Research and Public Health* 17(6): 1882. doi: 10.3390/ijerph17061882


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